
BACKGROUND AND FINANCIAL FLOWS FROM THE MINE
Lode Shedding: A Case Study of the Economic Benefits to the Landowners, the Provincial Government and the State, from the Porgera Gold Mine: Background and Financial Flows from the Mine

by

Peter Johnson
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PREFACE

This publication reviews agreements relating to the Porgera gold mine and its institutional structures and financial flows. After twenty years of mining in a dynamic political and institutional environment, Porgera stands as an example of both the successes of Papua New Guinea and its failures. While the data contained in this report summarise most payments between miners, governments, and landowners, some data could not be found. Where there are gaps in the data, the report lays out as clearly as possible the responsible parties and how the payments may have been received.

I would like to thank all those who helped in the development of this discussion paper — in particular, the National Research Institute for having the vision to undertake such a project, Dr. Alphonse Gelu for his knowledge of Papua New Guinea's legal and political system, and those in Porgera and Enga Province who helped in the search for the data. Lastly, I would like to thank the referees for their comments on the paper.

Peter Johnson
### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>CFG</td>
<td>Community Facilities Grant</td>
</tr>
<tr>
<td>DA</td>
<td>Porgera District Authority</td>
</tr>
<tr>
<td>EITI</td>
<td>Extractive Industries Transparency Initiative</td>
</tr>
<tr>
<td>EPG</td>
<td>Enga Provincial Government</td>
</tr>
<tr>
<td>f.o.b.</td>
<td>free on board</td>
</tr>
<tr>
<td>IDP</td>
<td>Infrastructure Development Program</td>
</tr>
<tr>
<td>IPA</td>
<td>Investment Promotion Authority</td>
</tr>
<tr>
<td>iPi</td>
<td>Ipili Porgera Investment</td>
</tr>
<tr>
<td>LLG</td>
<td>local-level government</td>
</tr>
<tr>
<td>LMP</td>
<td>Lease for Mining Purposes</td>
</tr>
<tr>
<td>MAF</td>
<td>Mining Agreement Funding</td>
</tr>
<tr>
<td>MDC</td>
<td>Mining Development Contract</td>
</tr>
<tr>
<td>MoA</td>
<td>Memorandum of Agreement</td>
</tr>
<tr>
<td>MRA</td>
<td>Mineral Resources Authority</td>
</tr>
<tr>
<td>MRDC</td>
<td>Mineral Resources Development Company</td>
</tr>
<tr>
<td>MRE</td>
<td>Mineral Resources Enga</td>
</tr>
<tr>
<td>MRSF</td>
<td>Mineral Revenue Stabilisation Fund</td>
</tr>
<tr>
<td>PDA</td>
<td>Porgera Development Authority</td>
</tr>
<tr>
<td>PIP</td>
<td>Public Investments Program</td>
</tr>
<tr>
<td>PJV</td>
<td>Porgera Joint Venture</td>
</tr>
<tr>
<td>PLoA</td>
<td>Porgera Landowners Association</td>
</tr>
<tr>
<td>PNG</td>
<td>Papua New Guinea</td>
</tr>
<tr>
<td>SML</td>
<td>Special Mining Lease</td>
</tr>
<tr>
<td>SPA</td>
<td>Special Purpose Authority</td>
</tr>
<tr>
<td>SSG</td>
<td>Special Support Grants</td>
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<td>TCS</td>
<td>Tax Credit Scheme</td>
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EXECUTIVE SUMMARY

Papua New Guinea (PNG) is a land rich in natural resources, yet it struggles to provide its people with the finances to live secure lives. PNG’s economic development has a history of boom and bust, feast and famine, hope and despair. Its people and its communities question where all the money has gone and why their expectations have not been fulfilled. In the end, the questions are left unanswered and PNG’s people continue to live with the precious little that is left. PNG is again faced with the challenge of turning a resource boom into meaningful development. Therefore, it is pertinent to review what has happened to the financial resources created by one of PNG’s great mines.

To the communities who are supposed to be the ultimate beneficiaries of PNG’s mining and mineral wealth, the legal and payments system is complex, opaque, and one sided. There remains a critical lack of transparency at both the national and sub-national government levels. Audited payments made by the mining company to the government and various stakeholders can be tracked; however, the question of where these payments go and how they are spent once they leave the mine remains unresolved.

The national government lacks a credible, concise, and explicit program to detail its payments from and to stakeholders and track how stakeholders under its control operate. Details of how much of the revenues from mining projects have been spent are difficult, if not impossible, to access. Some agencies, particularly the Mineral Resources Development Company (MRDC), have displayed a complete lack of willingness or ability to understand the revenue over which they are supposed to have control. Other agencies, such as the Investment Promotion Authority (IPA), lack the legislative power to effectively achieve their mandate.

The first step to improve transparency is to implement the Extractive Industries Transparency Initiative (EITI). The benefits of introducing EITI, in terms of transparency, are limited, as payments from mining companies to the government is not the underlying issue, but it would create trust and understanding between landowners and mining companies. The second and more important development is to increase transparency domestically — to create an audit trail of payments from the government to other institutions including the Porgera Development Authority (PDA), the Porgera Landowners Association (PLoA) and local-level governments (LLGs). The second phase is a domestic version of the EITI, designed to focus, not on developer-to-government payments but on national-level intra-government responsibilities and sub-national government responsibilities.

Should a fully developed domestic EITI be implemented, changes to the payment structures should then follow. For example, payments that are currently channelled through the national government to the Enga Provincial Government (EPG) or the PDA could be made directly. This would stop unilateral changes to the contracts and increase revenue security for local institutions from the mining project.

The lack of ability and willingness by the national government and its agencies to collect, audit, and disseminate information on the large amount of mining revenue has
led to rumour and innuendo driving the mining policy debate. Institutions such as landowner groups, statutory government agencies, and landowner companies are being run in an information vacuum. This has created conditions under which the boards that are responsible for the money become unaccountable and large amounts of money become untraceable. Much of the financial benefits are thought to be consumed in Port Moresby (at the Crowne Plaza), with only a few individuals having access to a large slice of the wealth. The PDA, the PLoA, the managers of the landowner portion of the equity stake, and LLG officials have been unable or unwilling to explain where and how billions of kina are spent. This has led to distrust between landowners, the government, and the company.

To improve information and trust between the groups, all revenues should be audited and all reports tabled in Parliament. Reports should include how much money was given to various stakeholders, if money received is equal to that required under the law or agreement, what the agreed use of that money was, and whether the money was spent appropriately. These reports should apply not only to Porgera but to all mining operations in PNG. They should be written by a well-resourced and qualified independent auditor. As a tentative suggestion, the work of the auditor could be financed either by a levy placed on the mining industry or out of the revenues received by the government.

The following report could be used as a template and replicated for each mining project. An outline would include an independent audit of all revenues, set against a background of institutions’ legal responsibilities and the objectives contained in the agreement. This idea should be thoroughly reviewed and discussed in the broader community.

To further improve landowner benefits, a review should be undertaken of how well the equity arrangements function. The current structure has produced little in the way of returns to the EPG and landowners. A more transparent structure, such as selling the equity stake and rolling the proceeds into a future fund, is likely to provide a better return. Ownership of equity and a financial fund could be equivalent in terms of benefits to landowners; however, a fund offers the opportunity to diversify the income stream from gold mining to a balanced portfolio and therefore reduce risk. The risk of relying too heavily on one mine and one source of revenue has been well documented in studies of communities after mines have closed. In this case, dividend payments from equity can only last as long as the mine (or as long as the price of gold is high). After that, communities lose income. This is not necessarily the case with financial portfolios, provided adequate structures are in place. In order for this to occur, cultural factors, such as a sense that ownership in the mining project gives them ownership over the benefit stream and the perception of sharing in the benefits, would need to be overcome.

An information fault line exists between revenues paid from mining dividends and the costs associated with running the Porgera mine. In order for this divide to be bridged, no matter which options are taken regarding the selling of equity, landowners must be fully informed on financial issues. One way to facilitate the shift from owning a mine to owning a financial portfolio is to educate landowners in financial literacy.
While there are education programs on balancing household finances, financial literacy is much broader. Landowners need to be informed about the risks, both internationally and domestically, to which their benefits are exposed.

The Porgera mine is expected to be in operation for three decades in total. To date, over a billion kina in cash and benefits have spread throughout the Porgera region. And while the revenues from the mine can be estimated, it is almost impossible to see where the money has gone. There may be less than a decade of gold production left, but there is still time to improve how the revenues from the mine are spent, and thus ultimately improve the lives of the people. But this will require more will than is presently being expressed by PNG’s politicians and community leaders. PNG has the expertise and resources, domestic or international, to design and develop strong policies to ensure all revenues are adequately accounted for and spent as determined by its people. However, should the years slip by and nothing change, the answer to the question of why PNG is so rich yet its people remain so poor will simply be, because that’s what we chose.
INTRODUCTION

This study seeks to track the financial benefit streams of the Porgera gold mine and to analyse some of the important frameworks put in place to achieve the outcomes sought by the developer, landowners, provincial and national governments. The links between the Memorandum of Agreement (MoA), the financial benefits from the mine, institutional structures, and development outcomes, as they have played out over twenty years of mining revenue, could shed light on the perennial question of why Papua New Guinea (PNG) is resource rich yet its citizens are poor.

The paper initially focuses on the content of the original Porgera agreements and how well those agreements have been implemented. It estimates the size and type of benefits derived from the mine and how they are distributed. It also explores where the revenues from the mine are spent and how effectively they are spent by the recipient institutions. It reviews the chain of finance payments to see if the desires and goals set out in the original MoA and later agreements have been achieved, and it suggests some policy directions to improve how these important and increasingly disputed benefits are handled.

Since the development of the Porgera mine agreements, development partners, government institutions, and the circumstances the landowners face have changed — yet there have been few significant changes to the original financial agreements.

Like many mining projects, after the initial agreements have been signed the impacts on the people living close to the mine begin to be felt. Mining companies generally do not have the experience or staff resources to develop social and community infrastructure such as schools and police and health services. Therefore, compensation for land access and mineral resources usually comes as financial payments, employment, business opportunities, infrastructure, and training benefits.

A number of institutions were set up to fulfil the desire for development expressed in negotiated settlements. These institutions are responsible for implementing health care, education, and infrastructure improvements, amongst other things, for the benefit of landowners. In the early years, these institutions operated within their mandate and largely achieved their goals. Recently, however, their success has been more difficult to judge. Oversight and transparency have lapsed to unacceptable levels.

Landowners receive revenues from royalties, compensation, and equity as well as wages and business opportunities. Indirect benefits to landowners include improvements in health, education and infrastructure services. For the national government, company tax, income taxes, and various duties expand the budget in order (at least in theory), to improve services and accelerate development for all PNG citizens. Provincial governments and those most affected by the mine benefit through royalties, equity, infrastructure development, and supporting payments from the national government.

Payments from the Porgera Joint Venture (PJV) travel through a number of different institutions, each with its own set of responsibilities and objectives. Key institutions
include the national government and the Enga Provincial Government (EPG), the Porgera Development Authority (PDA), the Mineral Resources Development Company (MRDC), the Mineral Resources Authority (MRA), and the Porgera Landowners Association (PLoA).

The expectations of the landowners and the responsibilities of institutions will be, in part, determined by the distribution of the financial flows. The success of the institutions will be measured by the outcomes achieved in terms of improvements to schools, health services, and infrastructure. The gap between expectations and reality may never be fully closed, but determining where the greatest distance exists may bring the two closer together.

The Porgera gold mine has thus far produced approximately K16.4 billion in value. This revenue is first used to meet the costs of operating the mine and then paid to various institutions and individuals both domestically and internationally before profits are distributed to the mine owner.

Of the total value created, approximately K6.4 billion has been distributed to seven groups and institutions: landowners, the PDA, the EPG, the people of Enga Province, the national government, the people of PNG, and international companies and employees. Chart 1 shows the difference between the total value and total benefits.

**Chart 1: Total Value and Total Benefits (millions kina)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Value</th>
<th>Total Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>200.0</td>
<td>200.0</td>
</tr>
<tr>
<td>1991</td>
<td>400.0</td>
<td>400.0</td>
</tr>
<tr>
<td>1992</td>
<td>600.0</td>
<td>600.0</td>
</tr>
<tr>
<td>1993</td>
<td>800.0</td>
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<td>1994</td>
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<td>1996</td>
<td>1,400.0</td>
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<td>1997</td>
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<tr>
<td>2002</td>
<td>2,600.0</td>
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<tr>
<td>2003</td>
<td>2,800.0</td>
<td>2,800.0</td>
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<td>2004</td>
<td>3,000.0</td>
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<td>3,400.0</td>
<td>3,400.0</td>
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<tr>
<td>2007</td>
<td>3,600.0</td>
<td>3,600.0</td>
</tr>
<tr>
<td>2008</td>
<td>3,800.0</td>
<td>3,800.0</td>
</tr>
</tbody>
</table>

The gap between value and benefits has continued to widen since 1998. This does not necessarily imply higher profits for the PJV; it is more likely that operating costs have risen as all the low-cost, easy-to-reach gold deposits have been mined. Site costs from 1997 to 2001 were reported to be K1.9 billion, against production valued at K2.7 billion (PJV 2000a).

Source: PJV (2009) and EPG

Unfortunately, data on site costs are not available for years prior to 1997 and after 2001. Profits during this time were estimated to be K723 million. Profits for other years could not be sourced. Therefore, the K6.4 billion in benefits excludes PJV profits. The proportion of benefits that accrue directly to various groups and institutions are presented in Table 1.

1 This refers to benefits that accrue to Enga Province but are not financial payments to the EPG.

2 Barrick (the current operator of the Porgera mine), does not report profits or other figures from the Porgera mine separately.
Table 1: Distribution of Benefit Streams (kina)

<table>
<thead>
<tr>
<th></th>
<th>Total benefits</th>
<th>Transfers</th>
<th>Benefits after transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landowners(^a)</td>
<td>1 068 142095</td>
<td>110 759 299</td>
<td>1 178 901 394</td>
</tr>
<tr>
<td>PDA(^b)</td>
<td>13 997 258</td>
<td>116 215 448</td>
<td>130 212 706</td>
</tr>
<tr>
<td>EPG</td>
<td>164 660 716</td>
<td>114 255 448</td>
<td>278 916 164</td>
</tr>
<tr>
<td>Enga Province</td>
<td>360 823 187</td>
<td>481 217 218</td>
<td>424 378 635</td>
</tr>
<tr>
<td>National Government</td>
<td>2 194 114 644</td>
<td>(-) 660 988 113</td>
<td>1 712 897 426</td>
</tr>
<tr>
<td>PNG nationals</td>
<td>1 011 622 518</td>
<td>76 431 575</td>
<td>1 088 054 093</td>
</tr>
<tr>
<td>Internationals(^c)</td>
<td>1 635 091 829</td>
<td>0</td>
<td>1 635 091 829</td>
</tr>
</tbody>
</table>

\(^a\) assumes landowner equity equals that received by EPG;  
\(^b\) assumes Special Support Grants are equal to EPG, excluding Public Investments Program (PIP) payments made to PDA;  
\(^c\) does not include operating earnings before tax; and  
(-) denotes total transfers from the National Government to other beneficiaries.

Before transfers, landowners received K1.1 billion, the PDA K14.0 million, Enga Province (including EPG and Engan residents) K525.0 million, the national government and PNG nationals K3.2 billion, and international people and companies K1.6 billion. After transfers, landowners have received approximately K1.2 billion in cash and in-kind benefits (or 18.3 percent) of the mining output since the mine began operations. The PDA has received K130.0 million (or 2.2 percent), the EPG and Enga Province have received approximately K703.0 million (or 11 percent), the national government and PNG nationals have received K2.8 billion (or 43.5 percent), and international persons and companies have received K1.6 billion (or 25 percent).

Porgerans received K597.0 million in wages, compensation, equity payments and royalties; the amount of these yearly payments has been steadily rising since 1990 (see Chart 2).

In 2009, approximately K56 million in royalties, compensation, and dividends was injected into the local economy, representing a per capita income of K3935. This is substantially higher than the average PNG per capita income of US$850\(^3\). If these payments are shared between an estimated 12 000 migrants, in terms of wages and as family members, in Porgera (Finlayson 2000), per capita incomes are still relatively high at K2137 and still above the national average.

\(^3\) Porgera’s estimated population was 6763 landowners in 1988 and 10 000 in 2000.
Lode Shedding

Chart 2: Payments to Landowners – (millions Kina)

Wages have been contributing approximately 50 percent of landowner cash income. Royalties and compensation each accounted for 25 percent. Data on equity are only available from 1997 to 2006.

SML = Special Mining Lease
Source: PJV (2009) and EPG

The amount of funds held in trust accounts is more difficult to estimate. Data are available for the Children’s Fund (K6.7 million in 2009); however, investments made by Kupiane Investments were more difficult to trace. Except for records of an initial endowment of K9.0 million in 1997, this study was unable to find information on the current state of benefits or how those payments are distributed. Indeed, it would appear that no information exists on the financial health of Kupiane Investments outside of a few individuals.

Enga Province has received K872 million, split between the Enga Provincial Government (K389 million) and the Enga people (K483 million). Most of the benefit to Enga Province comes in the form of infrastructure expenditure, such as the Porgera-Wabag Highway and the Lae-Porgera Highway, while the financial benefits flow to the EPG in the form of Special Support Grant (SSG) payments, royalties, and equity.

The EPG receives almost 60 percent of its benefits as redistribution from the national government. Receiving such a high proportion of the benefits from the national government has made planning budgets difficult, given that unilateral variations to agreements by the national government are not usual. This places considerable strain on the finances of the EPG and reduces its ability to undertake long-term planning as revenues are unreliable.

Data on expenditure at the service delivery level by the PDA were not forthcoming. This makes it impossible to reach a firm conclusion regarding its effectiveness and diligence in ensuring that landowner expectations are met. The organisation, as it currently stands, lacks oversight of, and transparency, in its operations.

The lack of information from the PDA is a concern. When landowners protest about not receiving benefits as promised by the developer, it is difficult to know if they understand exactly how much money is being spent by the leaders in their community and where.
Recommendations

The purpose of the case study is to report to Parliament and the community how well financial arrangements compensate communities affected by mining. While the case study will focus on the Porgera gold mine, its broader role is to serve as an example of how to approach landowner and development issues faced by resource-dependent communities, for example in relation to the PNG LNG project.

The paper offers the following recommendations to address deficiencies in the current system.

Investment Promotion Authority (see Section 4)

- Enact legislation to extend the IPA’s powers, or another suitable institution beyond information collection to guarantee that landowner associations have effective oversight ensuring compliance with the Associations Incorporation Act.

Porgera Development Authority (see Section 4)

- SSG payments should go directly to the EPG and the PDA (to make them subject to greater oversight, transparency, and therefore enforcement).
- The EPG should review its informal arrangement with the PDA on SSG payments with a view to formalising this arrangement.
- Public Investments Program (PIP) payments should be subjected to greater scrutiny by applying cost/benefit analysis to projects and issuing competitive tenders where possible.

Extractive Industries Transparency Initiative (see Section 8)

- Undertake a full audit of the service delivery arm of government in Porgera — the PDA, lower level government (LLG), and district authority (DA).
- Undertake an audit of the landowners associations.
- Undertake an audit of equity managers such as MRDC, Mineral Resources Enga (MRE), and Kupiane Investments.
- Implement an Extractive Industries Transparency Initiative at the sub-national level to further increase transparency.

Financial Literacy (see Section 8)

- Place greater emphasis on informing landowners on the various benefit streams.
- Increase all landowners’ knowledge of what determines the amount of their benefits.
- Provide financial counselling early to all landowners.
- Place greater emphasis on educating landowners to become financially literate.
**Equity Stake** (see Section 8)

Two options are recommended for managing PNG actors’ equity stake in the Porgera gold mine.

Option 1 involves the following:

- Sell the landowners’ and EPG’s equity stake in the Porgera gold mine.
- Manage the equity stake under the same process as that of the State’s Sovereign Wealth Fund.
- Give responsibility for oversight of the fund to the board that oversees any national Sovereign Wealth Fund.
- Consult all landowners on how the money will be disbursed from the sale of the equity.
- Pending the results of audits, deem that either the LLG or DA be responsible for allocating funds to landowners.

Option 2 involves maintaining an equity stake in the Porgera gold mine but reviewing current practices, management structure, and returns.

**Financial Payments** (see Section 8)

- Make payments directly to the EPG rather than through the national government.
- Only make payments directly to other organisations that fully comply with their legal obligations and undertake audits and annual meetings as directed in their constitution.
SECTION 1: OVERVIEW

Background

Gold was discovered in the Porgera region in 1939; however, it was not until some fifty years later that a large-scale mining project began. In the early 1980s, the first joint venture was formed to undertake geological, metallurgical, and economic investigations into the gold deposits. It was not known if the deposit was significant enough to allow for large-scale mining until high-grade ore was discovered six years later.

Before mining began, the Porgera economy was primarily subsistence based, with agriculture and alluvial gold mining the major sources of income. The Ipili people were traditionally mobile and did not live in settlements. The population was low in 1989, with an estimated 2000 living within what is now the Special Mining Lease (SML) area and fewer than 10,000 in the valley as a whole.

The development of the mine brought with it opportunities for work and business as well as direct financial benefits. Work opportunities brought an explosion in the population as people migrated from other districts. A census carried out within the SML in 1993–1994 estimated that 21 percent of the 5,257 people living there were non-landowners. By the end of 1999, the proportion of non-landowners had increased to 47 percent out of a population of 8,710 (PJV 2002a). The population of non-landowners had grown by 265 percent, while that of landowners only grew by 11 percent (see Table 2).

Table 2: Population of Porgera, Paiela-Hewa District, and Enga Province

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porgera District</td>
<td>5,029</td>
<td>10,405</td>
<td>22,809</td>
</tr>
<tr>
<td>Paiela-Hewa District</td>
<td>3,832</td>
<td>6,175</td>
<td>11,084</td>
</tr>
<tr>
<td>Enga Province</td>
<td>165,534</td>
<td>235,561</td>
<td>295,031</td>
</tr>
</tbody>
</table>

The operation of the mine, through until closure, and the distribution of the benefits are guided by a number of agreements which were signed in the late 1980s. These include a Relocation Agreement, Compensation Agreement, Tripartite Agreement (MoA), and the Mining Development Contract (MDC).

After a number of other studies were undertaken, including a socio-economic impact study, the PJV signed the MDC, while the State, EPG, and landowners signed the MoAs. In May 1989 the SML was granted. Construction began approximately twelve months later and the first gold ingot was poured, on schedule, at the end of July 1990. It may be the case that other landowner groups in other mining projects have received more benefits than those received by the Porgera landowners, but it is well recognised that the Porgera Valley landowners provided the beachhead for others to follow.

Production increased sharply, climbing to over one million ounces in 1991 to a peak of 1,485 million ounces in 1992. The mine produced more than a million ounces over the
next two years, but since then production has steadily declined, except when the million-ounces mark was broken again in 2004 (see Chart 3).

Although production has declined in terms of volume, its value has climbed as the world price of gold and silver has risen (see Chart 4). Today gold prices continue to rise. Should they remain high, this will extend the life of the mine until 2024. At 2002 gold prices, the mine was expected to finish processing ore in 2013 and implement its decommissioning and rehabilitation plans over the next two decades.

Prior to the development of the Porgera mine, PNG experienced the Bougainville rebellion, which forced the national government to set a new path in dealing with mineral wealth. Previously, the policy had been to seek to extract as much value as possible from the mine developer without deterring foreign investment (Filer 2005). This changed with the Porgera gold mine, and negotiations between all parties eventually agreed on compensation including access to business opportunities. However, this does not always mean that landowners are happy or that their frustrations are not taken out on the project developer. Where landowner grievances affect mine production, it has fallen to the PDA or the PJV to implement solutions rather than to the national government (ibid. 2005).

In terms of benefits, the local clans focused on maximising the financial benefits of the mine, through business development priority, reducing fly-in fly-out opportunities4, and maximising employment and training opportunities. This was coupled with a focus on minimising the negative effects of mining, particularly mitigating any social disharmony.

4 Fly-in, fly-out arrangements refer to employment contracts where employees do not live in the community but ‘live’ in the community for the period they are working.
In one way, greater local involvement in the community was seen as fostering a closer relationship between the mining developer and the community (Banks 2008).

Ownership of the mine has changed significantly throughout its productive life. Originally Placer Dome, Highlands Gold, and Renison Goldfields each had a 30 percent share, with the remaining 10 percent owned by Mineral Resources Porgera, half of which was owned by SML landowners and the other half by EPG. The mine is now owned 95 percent by Barrick Gold Corporation (Barrick) and five percent by Mineral Resources Enga (which is jointly owned by SML landowners and EPG). Placer operated the mine until 1996, when Barrick took over.

Porgera Study

The aim of the study is to analyse the success of the earliest negotiated outcomes by tracing the financial benefits of the mine. This requires an understanding of how responsibilities have been delegated and managed through various organisational structures and how mine revenues have been used to achieve the outcomes originally sought by the affected mining communities.

The approach at Porgera, for the first time in PNG, was to distribute the financial benefits after appropriate community-based negotiations on how to divide the broader financial benefits of the mine between the parties.

Negotiations took place between various stakeholders before the beginning of mining to help manage some of the aspirations and expectations that come with new mining projects. For the Porgera gold mine, a series of meetings were held between landowners, national and provincial officials, and project developers to lay down a framework in which all parties to the negotiations would be able to state their responsibilities and expectations.

The original signatories to the financial and service agreements expected that, while some compensation for displacement was necessary, economic, health, and education services would be required for the sustainable development of the community. The negotiations created an expectation within the community that great wealth would follow.

All financial benefits are derived from the mine. These benefits are then distributed to various communities for development. Benefits streams include direct payments to clans and individuals, investments, business development, wages, and infrastructure.

To implement the negotiated outcomes, systems and structures were put in place to transform financial benefits in education, health, and infrastructure. Many of the original institutional structures remain in place, although some roles and responsibilities have changed. As one party has been unable to fulfil its commitments, other parties have needed to take on additional responsibilities, and others have grown organically in order to meet the expectations of the landowners.
The institutional structures include government, statutory authorities, women’s groups, and landowners’ trusts. These institutions ensure that both direct and indirect financial benefits are directed to those most affected by the development.

Direct benefits, or compensation, is defined as an amount not greater than the dislocation and inconvenience suffered by those most exposed to the development. This includes occupation fees, general compensation payments, community assets and relocation payments, and environmental payments. Benefits above and beyond direct compensation include employment, business and training opportunities, and additional infrastructure.

Broader benefits, such as education, extend beyond the life of the mining operation and can provide long-term financial sustainability. Landowner businesses that diversify and reduce their reliance on mining contracts may also produce financial benefits after the mine has closed. Infrastructure development often lasts after mine closure. Decisions on issues such as who maintains the infrastructure and how it is maintained determine its longer-term impact. Each part of the process must be undertaken effectively before the benefits can be expected to flow to the directly affected community as well as the broader community (see Figure 1).

**Figure 1: Mining Development Cycle**

Mapping Responsibilities, Finances, Institutions, and Outcomes

**Negotiating Responsibilities and Benefits**

Responsibilities and obligations between governments, landowners, and the project developer were underpinned by a number of negotiated settlements, which are still in force today. These agreements offer an insight into the expectations of the community before mining began and the expectation that government, statutory authorities, and the company could deliver on those promises.

Before Porgera mining benefits became a central government affair, some revenues were distributed around the country or, during the boom times, into the Mineral Resource Stabilisation Fund (MRSF). As more provinces began to host resource
projects, pressure built to capture as much of the benefits within the province and local area as possible. This began the process of dividing the spoils through negotiation.

Negotiations and contracts were seen as the best way to avoid conflict; an idea that has become universally accepted:

Much has been written about the advantages of a negotiation-based approach in avoiding or resolving conflict between developers and Indigenous peoples and in ensuring that the latter share in the benefits associated with resource development. However a negotiation-based approach is only justified if outcomes from negotiated agreements yield advantages to Indigenous people that cannot be obtained through alternative courses of action (such as litigation or political action) (O’Faircheallaigh 2003).

In the case of Porgera, the government implemented a series of negotiations known as the Porgera Development Forum. The Forum produced a series of claims and counterclaims; but at the end of the day, everybody agreed to a position. This position was represented in the MoAs, which outlined how benefits and responsibilities would be distributed between the national and provincial governments, community representatives, and landowners (see Figure 2).

**Figure 2: Mapping of Responsibilities**

The PJV, while not a party to the Porgera MoAs, signed a number of agreements stating its roles and responsibilities in the development process. The PJV signed an MDC with the national government, a Fly-in Fly-out Agreement (between itself, the national and Enga governments, the PDA, and the PLoA), and fourteen other agreements.

Through these negotiations, landowners and the EPG secured financial benefits that were greater than those under any other agreement at the time. The EPG also secured the right to reopen negotiations should a new resource project offer SSGs greater than those contained in the Porgera MoA.


**Finances**

There are many different models for financial payments to landowners, including a single up-front payment, fixed annual payments, royalties based on output, royalties based on the value of the minerals output, profit-based royalties, and equity (O’Faircheallaigh 2003). Financial payments in the case of the Porgera gold mine included a single up-front payment for infrastructure development, annual compensation payments (as per the Compensation Agreement, which sets the rate plus the Consumer Price Index), royalties based on value of the minerals output (quarterly), and equity (annually). The state also agreed to implement an infrastructure scheme based on the assessable income of the PJV and SSG based on f.o.b. (free on board) value of the gold for Porgera.

While these types of payments cover most of the negotiated financial stream, they do not cover the broader range of financial benefits that accrue to landowners and governments — for example, business contracts, wages, and taxation. Benefits that are not directly negotiated, including employment and business opportunities, are significant; in fact, they are larger than the negotiated benefit streams such as compensation, equity, and royalties.

At the top of the financial flows chart (see Figure 3) is the PJV, from where all of the compensation and financial benefits from the mining activities are derived. In turn, PJV makes profits on its mining activities after accounting for all other expenditures.

**Figure 3: Financial Flows**

Payments are made to different government institutions including the state, the EPG, and the PDA. Other payments are made to landowner groups — such as the PLoA, SML Children’s Fund, and SML Young Adults Trust — for distribution to individuals or for investment.

Direct benefits include royalties, returns from equity, and compensation payments. Indirect benefits include income tax paid by workers, company taxes and duties paid to
the state, and infrastructure payments made under the Tax Credit Scheme (TCS).
Financial benefits also accrue to individuals through wages and business contacts, and
to the community as a whole through services provided by the company through
donations or community education and health programs.

Some financial benefits, rather than going directly to the ultimate beneficiary, go to the
national government, which then transfers them. This occurs when the EPG receives
funds in the form of SSG and PIP payments from the government. While the national
government receives the initial benefit from the mining project, ultimately the SML
landowners and EPG benefit.

**Institutions**

Institutions act as conduits for transforming financial benefits into infrastructure and
services. The structures in place must help achieve the aspirations of landowners as
laid out in the MoAs. Capacity and other constraints within these institutions can, at
each stage, chip away at promised benefits. The ability of these institutions to
implement their part of the agreements is vital in garnering trust between landowners
and mining companies.

Communities have also worked toward their goals through various umbrella groups,
landowner associations, and women's and youth associations. These groups provide a
portal for various community interests to be represented in concert with investment and
business groups. The umbrella groups specify in their constitutions their roles and
responsibilities to the communities they represent.

Institutional structures are regulated by the government, for example through the
Investment Promotion Authority (IPA), and are subject to national laws that govern their
operation. How well an organisation adheres to its legal responsibilities can determine
how effective it is in achieving its objectives (see Figure 4).

**Figure 4: Institutional Structures**
Outcomes

As the finances flow through different institutional structures — including those of the government, landowners, special purpose authorities, and the PJV — the financial resources, if not delivered as cash payments, must be transformed into services, and if delivered as cash, must be either saved or consumed by the recipient.

Ideally, revenues from all sources should be possible to track. The cost of implementing programs should be readily available for the scrutiny of the community. The objectives of the institutions should be closely aligned to those of the community. Any expenditure should focus on achieving the outcomes that reflect the expectations of the original signatories to the agreement.

Once the project developer has negotiated a fair return on the capital invested, it is the wishes of the landowners that are negotiated. The residual benefits are taken by the national and provincial governments. Therefore, the success of the outcomes for parties other than landowners can be more easily measured in financial terms (see Figure 5).

Figure 5: Outcomes

Methodology

This study was undertaken to find the relationships between the original MoAs, the financial flows, institutional structures, and outcomes. It covers twenty years of mining development in PNG, during which time a number of agreements have been replaced as new ones have come into force, development partners have changed, government institutions have been reorganised or disappeared, new institutions have arisen, institutions have changed their objectives and procedures to keep pace with the times and circumstances, and landowners have changed their priorities.
Information was sourced from a wide range of national institutions and landowner groups, as well as the provincial government and the project developer. Where possible, quantitative information was gathered in order to allow more robust conclusions to be drawn. Data regarding financial flows were collected from the PJV and the EPG. Other institutions, such as the Department of Planning and Monitoring, MRDC, PLoA, and PDA, were unable or unwilling to provide data. The data provided were not audited by the author.

Documents such as the Tripartite Agreement and the Fly-in Fly-out Agreement from the MRA were analysed, as were documents relating to agreements signed by the PJV, including the MDC. These provided some insight into the expectations of landowners and the responsibilities of different levels of government and the PJV.

The author also undertook a number of interviews with members of government departments, the PJV, and landowner institutions, to seek additional information about how the organisation operates and what it has achieved relative to agreements and expectations.

This study has been a data-intensive exercise. This, coupled with changes of ownership and the length of the study period, has meant that some time series and distribution data required estimation. If data were only available as a total or stock, they were pro-rated through time, forming a uniform distribution in the worst case. Some series enabled a distribution to be assumed from other information. Contracts data made up one series in which no other underlying time series distribution could be used and which therefore was uniformly distributed across time. However, the data were very well distributed between groups, for example, Porgerans, Engans, PNG nationals, and international firms; therefore, no transformation of the data was required (see Appendix A).

**Structure of the Review**

The remainder of this paper is organised into eight sections. Section 2 reviews the MoAs and MDC, and Section 3 discusses the legal framework in PNG. Section 4 presents the financial flows from the Porgera mine, Section 5 estimates particular institutions’ and parties’ income from the mine, Section 6 summarizes expenditure by sector, and Section 7 analyses the real per capita cash income from the mine. Section 8 offers general observations, and Section 9 provides the main results and conclusions.
SECTION 2: NEGOTIATED RESPONSIBILITIES

Three parties negotiated the MoA commitments for the Porgera gold mine: the national and provincial governments and landowners. The MoA documented the desires of the Porgerans to benefit from a world-class mining operation. Twelve clauses out of a total of twenty in the agreement signed between the state and landowners have to do with bringing changes to the remote society, in both physical infrastructure and social services (Talepakai1999).

National Government

**National Government and Enga Provincial Government**

In clause 3 of the MoA, the national government undertook to allocate to the EPG, through the national budget, an SSG equal to one percent of the value of annual f.o.b. revenue from the sale of products from the Porgera gold mine. The SSG arrangement was to be reviewed after ten years.

The EPG and SML landowners were given the option (clause 6) to take up to 49 percent of the national government’s 10 percent interest in the Porgera mining project. They also had the option (clause 6, option 3) to purchase the remaining 51 percent after five years.

The national government undertook to distribute royalties from the mine products as follows (clause 10): eight percent to the SML landowners, five percent to PDA, 10 percent to children of SML landowners, and the rest, 77 percent, to the EPG.

Many of the arrangements agreed to in the MoA did not involve direct financial benefits to landowners. However, they increased the indirect benefits to landowners, including the following:

- Purchase 106 hectares of land for the township of Paiam within 12 months of the Agreement entering into force (clause 4).
- Ensure that fly-in fly-out arrangements are minimized (clause 5).
- Undertake to have the Valuer-General carry out on-site revaluation of all land within the SML and any leases for mining purposes to determine an appropriate occupation fee (clause 8).
- Establish an international primary school (clause 9).
- Provide office space for twelve additional public servants (clause 11).
- Increase passage and cargo flights (clause 12).
- Increase the number of officers and reserve police, and upgrade the Mulitaka police station (clause 14).
- Provide a consultant to work on a long-term economic development plan.
- Upgrade the Porgera Health Centre to a major health centre (clause 15).
- The establishment of the Enga Public Company to help local’s access business development opportunities (clause 16).
- Give preference in business contracts to Porgerans and Engans (clause 17).
- Provide training (clause 18).
**National Government and Landowners**

The State and the landowners signed an agreement (as part of the tripartite agreement) in May 1989. This MoA commits the state to provide basic infrastructure in lieu of the landowners taking up equity in the PJV. It recognises the importance of the PJV projects at Porgera and Mt. Kare to the economy of PNG and Enga Province.

Financial benefits include the option to take up to 50 percent of the national government’s 10 percent equity stake in the Porgera Mining Project (clause 6). This is the same option that is presented to the EPG.

Landowners are to receive royalty payments, with 23 percent of royalties going to SML landowners, the PDA, and SML landowners’ children.

The national government also agreed to direct the PJV to make equal quarterly payments to the PDA for projects regarded as appropriate from the Community Facilities Grant (CFG) (clause 21).

National government infrastructure projects included the following:

- Build a town for the accommodation of PJV employees at Suyan, 42 months after the execution of the agreement (clause 31(a)).
- Purchase 106 hectares of land for the township of Paiam, within 12 months of the execution of the agreement (clause 3.2).
- Ensure that the PJV encourages mine operational personnel to reside in the Porgera area (clause 4.1).
- Ensure that fly-in fly-out operations are minimized (clause 4.3).
- Revalue land (clause 5).
- Fund housing and office space for additional public servants to be based in the Porgera District (clause 9).
- Provide a consultant to work on a long-term economic development plan with the PDA and provincial government (clause 10).
- Station an officer or rank inspector at Porgera (clause 11(a)).
- Increase reserve police to a number sufficient to provide effective support to full-time police stationed at Porgera (clause 11(b)).
- Upgrade the Mulitaka police station (clause (d)).
- Ensure that Porgerans have preferential access to business opportunities (clause 13).
- Improve postal and telecommunications services (clause 16).
- Upgrade the electricity infrastructure (clause 18).
- Upgrade the Porgera district hospital, with assistance from the PJV (clause 19).
- Establish an international primary school and a college of external studies, to be funded by the PJV (clause 20.1).
- Investigate an alternative road route through the Southern Highlands Province from Porgera and, subject to satisfying normal Department of Transport requirements, include this road project in the national government road program (clause 22).
Enga Provincial Government

Enga Provincial Government and the State

The EPG accepted the terms and conditions for the SSG, although it maintained the right to reopen negotiations if the national government entered into a more advantageous arrangement with any other provincial government in relation to a major mineral project (clause 19).

The EPG also agreed to make an annual unconditional grant to the PDA of K0.5 million (clause 20.3), as well as to pay at least K50 000 annually for the construction and maintenance of the Porgera-to-Paiela road (clause 22(a)).

The EPG would also be responsible for making funds available to enable the construction, upgrading, and maintenance of all major feeder roads in the Porgera District through the annual provincial budget (clause 22(b)).

Royalties were agreed to be paid out as follows (clause 21): eight percent to SML landowners, five percent to the PDA for community development, and 10 percent to an investment fund for the benefit of the children of SML. The EPG also agreed to a range of other financial responsibilities, including the following:

- establishing the PDA as a statutory authority (clause 20).
- creating a third economic zone covering the Porgera District for the purpose of improving administrative procedures (clause 23(a)).
- allowing the PDA to administer the CFG (clause 23(c)).
- planning for a high school, with enrolment to commence in 1994 (clause 23(b)).
- completing long-term economic development plans (clause 23(e)).

Enga Provincial Government and Landowners

The Enga Provincial Government’s (EPG) commitment to landowners is very similar to that agreed to by other parties. Elements included the following:

- establishment of the Porgera Development Authority;
- payment of an unconditional grant of K0.5 million (clause 3.1/3.3), in addition to funds normally provided through the annual budget and money received as a share of royalties(clause 3.4);
- royalty payments of eight percent to SML landowners, five percent to the PDA, and 10 percent to an investment fund for the benefit of the children of the SML landowners (clause 4);
- that the community grant be spent for community facilities in the Porgera District (clause 5);
- creation of a third economic zone in the Department of Enga, based on the Porgera District and known as the Porgera Zone (clause 6.1);
- creation of twelve new positions within the Porgera Zone (clause 6.3);
• responsibility of the PDA, subject to the jurisdiction of the Enga Provincial Town Planning and Building Boards, for the development, administration, and management of all township facilities (clause 7.1);
• payment to the PDA of K50,000 annually for the construction and maintenance of the Porgera-to-Paiela road and responsibility for all feeder roads (clause 9.1/9.2);
• implementation of a long-term development plan (clause 11);
• upgrading of the Porgera Health Centre to a major health centre (clause 12); and
• establishment of a provincial high school and college of external studies in Porgera District commencing 1994 (clause 13.1 and 13.2).

Landowners

In return for development, income opportunities, and social services, landowners agreed to use all possible means to ensure that the project went ahead, and to use non-violent means to settle disputes:

• landowners’ committed to working with the national and provincial governments and the PJV to ensure that the mine is constructed (clause 24);
• landowners’ agreed not to disrupt the operations of the Porgera Mine Project at any time during the lifetime of the mine, should any problems arise that require resolution (clause 25.1); and
• landowners’ agreed to explore all avenues of consultation with the PJV and the national and provincial governments to resolve difficulties (clause 25.2).

Summary

Landowners appeared to be seeking three objectives that went beyond direct compensation: development, income-generating opportunities, and government services. Development was sought from the mining project through improvements in infrastructure (electricity, roads, and telecommunications), income generation through access to business opportunities and employment, and improvements in social services (security, education, and health) through SSG and other revenue streams.

The overriding factor driving negotiations was that each party had a strong focus on ensuring that the structure of the agreed package would maximise its financial benefit from the mine. At the end of the negotiation process, landowners would have access to services and financial resources beyond that of most PNG citizens.

The agreements do not address, in detail, the future after the mine closes. An exception is the mention of the landowners’ children’s fund; a young adults’ fund came about later in the negotiation process. This has been put down to the role which disenchanted youth played in the rebellion over the revenues from the Bougainville Copper Mine.

While business opportunities that are tied to the mining project can offer significant financial benefits, they may not offer a sustainable long-term solution once the mine has closed. It appears that other mining agreements contain many of the clauses in the MoA (if not more) to maximise the benefit to local landowners. Therefore, business
experience, in the long term, may not count for much when the preference for local business development is negotiated into other mining agreements.

Increasing direct financial benefits, at least from royalties, did not occur until later in the mine's life. The additional revenue was distributed to the youth to address intergenerational issues when landowners increased their share of royalties from 23 percent to 50 percent. The youth felt left out of the process and were becoming concerned that the older generation was squandering the benefits.

In the original Tripartite Agreement, very little responsibility lays with the landowners. There are clauses that explicitly state the role of landowners as allowing the mining to go ahead, finding solutions to problems by using all necessary avenues, and contributing to the security of the community. However, landowners do have other responsibilities which are implicit in their demands.

For example, requiring preference in employment and business opportunities, but only where they are qualified, implies that Porgerans would undertake training and education to become competitive for contracts and employment. However, it was also expected that training and business development would be provided and paid for by the PJV rather than by the community; that is, Porgerans wanted to participate in the benefits as well as receive support to access the opportunities. The combination of access and training would lead to a higher share of the financial benefits for the landowners.

Porgera Joint Venture

Mining Development Contract

The Mining Development Contract (MDC) sets out the obligations for the operation and development of the mine. It also forms the basis of the relationship between the PJV and the national government. The mining company committed to minimise the practice of commuter mining and build a mining town at Porgera. Representatives of the local community were determined to gain the development benefits of urbanisation (Filer and Imbun, 2003).

PJV and the State

The MDC lays out the expectations of the State and the obligations of the mining operator in terms of how it conducts its operations. Those obligations include the following:

- applying for the SML and all licences, permits, rights, easements and grants;
- providing compensation to the owners of private land located within the boundaries of the SML; and
- using their best efforts to accommodate traditional land uses to the degree that such uses are consistent with efficient and safe mining practices and are compatible with PJV's obligations under the contract.

The State wishes that the project be of major economic significance to PNG and secure social and economic benefits for PNG and people within the vicinity of the mine. It also
wishes to encourage the development of the mining and processing operations under terms and conditions that will secure the maximum benefits to the people of PNG and secure appropriate returns on investment commensurate with the risks involved.

**Training and Localisation Program**

The training and localisation program was designed to maximise training and benefits to Papua New Guineans. This also included a special clause that additional efforts should be made to employ and train women for the project and project-related activities.

**Supply, Procurement, and Local Business Development**

The MDC also states that the PJV shall invite businesses in PNG, particularly in Enga Province and the project area, to notify the PJV of their capabilities of supplying materials, equipment, and services to the project.

Clause 14 of the MDC states that if such a business meets the specifications of the invitations order, is competitive in cost to international sources, and meets the delivery requirements of the project, then first preference will go to businesses operated by Porgerans located within the Porgera District and second preference to businesses operated by Engans located in Enga Province.5

The PJV is also responsible for devising a business development program to encourage people from Enga Province, with preference to Porgerans, to establish businesses. This would involve the following steps:

- assisting Papua New Guineans who wish to set up a business;
- assisting in the implementation of business development programs; and
- providing advice and assistance in the development and implementation of enterprises that can continue after the project has finished.

Business development and opportunities to supply the mine were key conditions laid down by the landowners and national government in determining if the project would proceed.

The PJV also agreed to provide business advice to Ipili Porgera Investments.

**Community Facilities**

The PJV also agreed to meet a number of conditions regarding community facilities that would be paid for and developed by the project manager, including the following:

- constructing the airstrip at Kairik;
- consulting with the government to upgrade the Porgera Health Centre;
- providing accommodation and wages for up to eight reserve police officers;
- constructing an international primary school and teachers’ residence;

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5 Clause 13 states the same intention regarding the procurement of supplies, materials, and services.
• contributing K4.3 million towards construction and sealing of the national highway between Tomba and Wapenamanda;
• carrying out and funding any future upgrade of the national highway between Wabag and Porgera;
• providing a board member for the PDA;
• providing electricity to the housing clusters Kalapi, Yarik, and Timorope; and
• undertaking measures to reduce employees commuting by air.

**Fly-in Fly-out Agreement (Paiam Town Development)**

On 1 September 1998, the PJV, the Independent State of Papua New Guinea, the EPG, the PDA, and the PLoA signed the Fly-in Fly-out Agreement (Paiam Town Development) and related agreements.

Part B addresses the development of Paiam township in accordance with the Paiam Town Plan. The opening statement of the agreement acknowledges the following:

• the PJV had (as of September 1998) fulfilled its obligations under the MDC with respect to minimizing the number of employees that work at the Porgera mine on a fly-in fly-out basis;
• the PJV had established a township at Suyan, and the State was in the process of establishing a township at Paiam;
• the PJV assisted in the development of the Paiam township by allocating a proportion of the IDP funds towards the construction of community infrastructure and houses;
• K24 million from the Infrastructure Development Program (IDP) or Tax Credit Scheme (TCS) sources would be used to assist in developing Paiam; and
• the State recognised that the PJV, through training and funding of reserve and ancillary police, had contributed more than its share towards reducing lawlessness in the Porgera Valley.

**Paiam Township Development**

The development of Paiam township was laid out in four stages, with each of the signatories agreeing to ensure that the township was developed:

**State’s Undertakings**

The State agreed to carry out the following:

• support and strengthen PDA’s staff structures to ensure that PDA has adequate capacity to carry out its development and management responsibilities in respect of Paiam township (clause 5(a));
• use its best efforts to assist each of the other parties to promote and ensure the controlled development of Paiam (clause 5(b));
• provide annual maintenance funding to PDA for Paiam in accordance with the rate set for an equivalent urban council (clause 5(c));
• develop a scheme to have the amount of any government funds (such as SSGs) due to PDA paid directly to PDA (clause 8);
• establish a reserve constabulary with a minimum of 40 personnel, and increase the number of regular police officers stationed at Porgera to a minimum of 30 and to maintain that number for the remainder of the life of the Porgera Mine (clause 9); and
• work to reduce lawlessness and improve law and order on the Highlands Highway within Enga and the Porgera Valley.

To finance the Paiam Township project, the State agreed to provide SSG and Mining Agreement Funding (MAF) through the PDA prior to all parties proceeding with any stage of the township development. The State also agreed to provide an interest-free loan of K650 000 per year for four consecutive years to the Paiam Accommodation and Development Company (clause 6(a)).

**Provincial Government’s Undertakings**

The provincial government agreed to do the following:

• support and strengthen PDA’s staff structures to ensure PDA has capacity to carry out its development and management responsibilities in respect of Paiam township (clause 17(a)(1));
• use its best efforts to assist each of the other parties to the agreement to promote and ensure the controlled development of Paiam township (clause 17(a)(2));
• support all obligations of the State under the agreement (clause 17(a)(3));
• provide, for five consecutive years, K500 000 per year as interest-free loans to the Paiam Accommodation and Development Company to build accommodation (clause 18(a)).
• initiate a process for the establishment of an urban council (clause 19); and
• implement village courts and appoint auxiliary police (clause 21).

**PJV Undertakings**

The PJV agreed to do the following:

• reduce the number of commuting employees and long-term contractors on strength on 1 January 1998 by 50 percent by accommodating them in the Porgera District (clause 25);
• bear the cost of constructing 60 houses (clause 30); and
• supply full management services at cost to the Paiam Management Company for five years (clause 31).

**Porgera Development Authority**

The PDA has responsibility for building Paiam township and for providing services, a clean environment, and a sense of security. Early efforts included the following:

• identifying sufficient land (clause 38(a));
• arranging geotechnical survey reports (clause 38(b));
• surveying housing blocks (clause 38(c));
• providing management and expertise for planning, developing, and administering the town (clause 38); and
• ensuring the establishment by the Paiam Management Company of a town management office (clause 39).

The PDA also agreed to do the following:

• provide financial assistance to the Police Department and other law agencies such as village courts, and help them to become more effective (clause 37);
• provide various forms of infrastructure, including off-road parking signage and footpaths from Paiam to the Porgera mine (clause 37(d));
• provide two staff, at its cost, to the Paiam Management Company to be trained as town administrators, and ensure that funding to meet expenditure commitments under an annual budget approved by PDA is available; and
• actively promote the reduction of lawlessness, and seek to improve law and order on the Highlands Highway within Enga and in the Porgera Valley.

Landowner Undertakings

The landowners, who are the primary beneficiaries of the project, also have a number of responsibilities, including the following:

• operate law and order control committees in each village of the Porgera Valley (clause 32(a));
• provide financial and physical assistance to the auxiliary police units (clause 32(b)); and
• promote the reduction of lawlessness, and seek to improve law and order on the Highlands Highway within Enga and in the Porgera Valley (clause 32(d)).

Porgera Sales Agreement

On 13 September 1996, the PJV participants executed the Porgera Sales Agreement, whereby the three major participants each agreed to sell a five percent interest in the project to Orogen Minerals Ltd. In accordance with s.16 of the Agreement, the participants have agreed to use their best efforts to ensure that the PJV makes available a total of K50 million. Of this, K10 million was to be spent on maintenance of the Highway between Lae and Porgera, and K40 million, over eight years, commencing 1 March 1995, on other community infrastructure. Expenditure under the Infrastructure IDP, as at 31 December 2009, was approximately K48 million.

Summary

Through a process of business development and skills training, Porgerans were expected to eventually replace other competitors for contracts and employment; this has increasingly occurred. It is difficult to gauge how quickly this process was expected to take, or what proportion of business contractors Porgerans were expecting to receive,
would mean for the community. Given that initially the level of education within the community was extremely low and mining is relatively capital intensive, it is difficult to see how such a gap could be closed within twenty years.

There are other intangible conditions in the agreements, such as the development of a town with a community spirit. Landowners were expected to be more active participants than under the previous MoAs. They were expected to contribute to law and order, not only through tangible assistance (assistance to the auxiliary police units), but also through more intangible measures such as the promotion of law and order.

However, many of the financial resources would be directed towards law and order (this is intertwined with community spirit), infrastructure (both social and physical), and development objectives that could be more objectively assessed.
SECTION 3: LEGAL FRAMEWORK

Legal Obligations

A number of responsibilities are laid down — not in the MoA — but in legislation.

**Mining Act 1992**

Although the Porgera agreements were negotiated under the previous *Mining Act*, some parts of the current Act are similar and were influenced by developments at Porgera. The principal legislation in Papua New Guinea that regulates mining activities today is the *Mining Act* 1992 and the *Mining Safety Act* (Chapter 195A).

Section 5(1) of the *Mining Act* grants the state “all minerals existing on, in, or below the surface of any land in Papua New Guinea.” This begins the process of distributing the benefits from and responsibilities to the mining project between the company, the government (at all levels), and landowners.

According to s.17(1) of the Act, the state may enter into an agreement or MDC where any such agreement may contain provisions relating to the following:

(a) the circumstances or the manner in which the Minister or the Director shall exercise any discretion conferred by this Act; and
(b) the settlement of disputes arising out of or relating to the agreement or the administration of this Act, including provisions relating to the settlement of any such dispute by international arbitration; and
(c) the acquisition by the State either directly or indirectly of a participating interest in a mining development; and
(d) any other matter connected therewith as the parties to the agreement may consider necessary.

The principles of compensation for landowners are contained in s.154 of the *Mining Act*. Compensation is required to be paid by the holder of the mining lease in respect of his entry or occupation of land … for all loss or damage suffered or foreseen to be suffered by them (*Mining Act* 1992, s.154(1)).

Compensation to landowners as set out in the *Mining Act* must cover the following (*ibid.* s.154(2)(a–h)):

i. being deprived of the possession or use of the natural surface of the land; and
ii. damage to the natural surface of the land; and
iii. severance of land or any part thereof from other land held by the landholder; and
iv. any loss or restriction of a right of way, easement or other right; and
v. the loss of, or damage to, improvements; and
vi. in the case of land under cultivation, loss of earnings; and
vii. disruption of agricultural activities on the land; and
viii. social disruption.
Furthermore, the Act calls for compensation for the loss of economic trees (ibid. s.154(3)). Compensation will also be paid where “any land or improvements, adjoining or in the vicinity of the land the subject of a tenement, is or are injured or depreciated in value by the exploration or mining of the tenement, the landholders of that land are entitled to compensation for all loss or damage sustained” (ibid. s.154(6)).

The Mining Act excludes elements for which compensation may not be granted, including the following:

1. in consideration of permitting entry on to the land for exploration or mining purposes; or
2. in respect of the value of any mineral which is or may be on the land; or
3. by reference to any rent, royalty or other amount assessed in respect of the mining of the mineral, other than as provided for in this Act.

Compensation claims are validated under s.156, whereby the holder of tenement submits a copy of the proposed compensation agreement to the chief warden. The chief warden will give written notice to the parties that:

1. he is prepared to recommend to the Registrar registration of the agreement once it has been executed; or
2. he requests the parties to consider certain amendments specified in the notice (ibid. s.156).

Section 173(5) of the Act states the amount of royalties payable under s.107(2) of the Mining Act (Chapter 195) (repealed), shall be equal to 20 percent of the amount of royalties (ibid. s.173(5)) for owners of private land, and that miners shall pay the landowners directly and pay the balance to the state. In the case of Porgera, royalties are paid to the state and distributed to landowners and provincial governments.

Organic Law on Provincial Governments and Local-level Governments 1995

Section 98 of the Organic Law on Provincial Governments and Local-level Governments 1995 allocates the “benefits derived from natural resources”, at the resource developers own cost, to the provincial and local-level government in the form of:

1. infrastructural development levies; and
2. economic development and land use follow-up levies; and
3. community and social development levies; and
4. any other levies as are from time to time determined by national law or by agreement.

The Act notes that all levies will be controlled through a trust account which shall be managed and administered with an Act of the Parliament (ibid. s.98(3)).

The Act also directs the developer to provide to the national, provincial, and local-level governments, expertise and professional support as to the use of the development levies (ibid. s.98(4)).
The terms for negotiations and consultation between the national, provincial, and local governments and landowners are laid out in s.115 and s.116. The Act also stipulates that the National Economic Fiscal Commission will carry out a cost-benefit analysis in relation to the natural resource development (ibid. s.115 and s.116).

**Income Tax Act**

**Tax Credit Scheme**

A tax credit is an allowable tax deduction for funding a project pursuant to s.219C of the *Income Tax Act*. A developer can claim tax deductions of 0.75 percent for expenditures incurred during the year of income. The maximum amount of credit that can be claimed is limited to the lesser of the amount actually spent and the amount of tax payable or 0.75 percent of assessable income for the year (PricewaterhouseCoopers, 2009).

Prescribed infrastructure development includes schools, aid posts, hospitals, roads, and other capital assets as well as the maintenance of such assets owned by the state. The Department of National Planning and Monitoring has the authority to accept or veto proposals made under the TCS.

TCS payments are payments forgone by the government and allocated through institutions other than the central departments, although the Department of National Planning and Monitoring does hold veto rights. Benefits from the TCS are, for the purposes of this study, a negative to the state in terms of the financial benefits stream when spent in Porgera District and Enga Province, and, conversely, a positive to Porgera and Enga Province, which would not have benefited to such an extent if a mining operation was not located within the area. TCS payments spent outside of Porgera and Enga are classed as positive benefits from the mine to the state.

**Local Level Governments Administrative Act 1997**

The *Local Level Governments Administrative Act 1997* sets out the administrative responsibilities of LLGs. It directs LLGs to undertake key administrative tasks including the following:

- i. preparing corporate plans and estimates; and
- ii. preparing a rolling five year development plan taking into account rolling five year development plans for the wards as prepared by the elected ward members; and
- iii. preparing an annual plan taking into account the rolling five year development plan; and
- iv. preparing annual budgets based on the annual plans, to which shall be applied the:
  - a. Organic Law grants to be paid directly to the Local-level Government; and
  - b. Local-level Government’s own resources; and
  - c. revenues from any other sources; and
- v. keeping or causing to be kept proper accounts and records of its transactions and affairs as required by s.102 of the *Organic Law*; and
vi. constructing and maintaining infrastructure and facilities that are the responsibility of a Local-level Government (Local Level Government Administrative Act 1997, s.38).

Section 40 identifies compliance with the Act in relation to:

i. financial matters, be in accordance with the Public Finances (Management) Act 1995; and
ii. auditing matters, be in accordance with the Audit Act 1989; and
iii. personnel, support services and other staff matters, be in accordance with the Public Services (Management) Act 1995; and
iv. other matters, be in accordance with the appropriate law (ibid. s.40).

Special Purpose Authorities

Section 42 of the Local-Level Governments Administration Act allows for the establishment of a Special Purpose Authority (SPA) to assist with the implementation of local government functions in an area including one or more LLGs (ibid. s.42(1)). The Head of State, acting on advice from the National Executive Council or a group of LLGs, may recommend to the minister (Minister of Provincial and Local Government Affairs) that an SPA be formed.

The power and function of an SPA include any of the powers of local government excluding:

(i) the power to make local-level laws; or
(ii) the power to impose or levy rates, taxes, charges or fees; or
(iii) executive powers; or
(iv) a power, which any other law may forbid an Authority from exercising (ibid. s.48(1)).

The SPA is required to present a yearly report on its operations to the LLG and the minister (Minister of Provincial and Local Government Affairs), who can determine what information the report should contain (ibid. s.50(1–2)).

Association Incorporation Act

The constitution of any association must comply with s.16(2) of the Act and s.8 of the Association Incorporation Regulation, where s.16(2) of the Act requires the Constitution to state the following:

- sources from which the funds of the associations are to be or may be derived;
- manner in which the funds of the association are to be managed and, in particular, the mode of drawing, signing cheques, drafts, bills of exchange, promissory notes and other documents for and on behalf of the association; and
- making audition requirements for the accounts of the association (either annually or more frequently), the manner of appointing and removing auditors and power and duties of auditors.
Section 8 of the *Regulation* requires that provisions are included for the keeping of accounts.

**Institutional Responsibilities**

**Enga Provincial Government (EPG)**

The EPG’s role in the Porgera Valley is undertaken by the Porgera District Administration (DA). The DA’s activities include management and planning, budgeting, health, education, agriculture, women’s issues, justice, lands, and community development. Specific activities it performs for the EPG include paying salaries (excluding the Police and Judiciary), construction and maintenance of all non-national roads, supply of material for health and education services, appointment of teachers and all school staff, maintenance of government buildings, development of provincial plans based on district plans, development of primary industries, and promotion of business development.

**Porgera Development Authority**

The 1989 MoA between the state and provincial government specified that a statutory authority be set up for the following purposes:

- maintenance of the airstrip at Kairik;
- receipt of royalties;
- administration and spending of any funds made to it by the CFG;
- advising the provincial government on lifting the liquor ban in Porgera District;
- assisting the provincial town planning board in planning the township at Porgera and controlling and monitoring that planning; and
- any other matters assigned to it by the enacting legislation.

In 1998, the PDA was officially transformed into the Porgera-Paiela Local-level Government Special Purposes Authority. The MoA that changed the status of the PDA specified the following functions for it:

- implement the construction of infrastructure on behalf of the national government, provincial government, and LLGs within the Porgera District;
- help the Porgera and Paiela-Hewa LLGs to implement their administrative functions;
- manage the construction and operation of facilities in Paiam, Porgera, and Kairik towns;
- manage the payment of royalties and other mine-related income in the Porgera District;
- manage and operate the Porgera District Hospital;
- advise the landowners and LLGs on natural resource project agreements;
- implement the functions of the Tenders Board, Building Board, and Physical Planning Board and other functions delegated to it by the national government, provincial government, or LLGs; and
- receive funds on behalf of the Porgera and Paiela-Hewa rural LLGs and make payments as directed by them.
Its structure was determined by the MoA to include the following members:

- two people appointed by the Porgera Local Government Council;
- two people appointed by the SML landowners;
- the Provincial Minister for Finance;
- the Provincial Member for Porgera;
- the Secretary of the Department of Enga or his nominee;
- the zone coordinator of the Porgera Zone;
- a person appointed by the Secretary of the Department of Finance and Planning;
- a person appointed by the PJV; and
- two people from the Porgera District with professional or managerial skills and experience.

Its financial affairs were made subject to the provincial Treasury Act or any succeeding legislation.

**Investment Promotion Authority**

The Business Registration & Regulation Division of the IPA provides registration services and a publicly accessible repository of information on registered organisations to ensure the integrity of corporate services. It is also responsible for maintaining a list of incorporated associations. It manages the administration of Papua New Guinea’s key business laws: the *Companies Act 1997*, *Business Names Act* Chapter 145, *Business Groups Incorporation Act* Chapter 144, and *Associations Incorporation Act* Chapter 142.

The IPA’s responsibilities include ensuring that all landowner groups comply with the law and keep up-to-date records on various associations and their operations.

**Mineral Resources Development Company Pty Ltd (Privatisation) Act 1996**

Under the *Mineral Resource Development Company Pty Ltd (Privatisation) Act 1996* (Schedule 1), the State had a policy to participate in the resources sector by acquiring a 30 percent interest in the mining development project. However, this no longer applies. The State has the right to take up to 30 percent of a mining project when it is granted an SML or Mining Lease by funding its share of start up and ongoing costs of the mining project. MRDC now only holds landowner and provincial government equity, and Petromin (an independent company holding the State’s assets) or the state can take up the remainder of any equity purchased by the PNG government.

All of the State’s interests in the mining development project that are not required for provincial government or landowner equity are held and managed by the MRDC. MRDC manages funds for both the government and landowners from equity stakes in various mining projects around PNG, including Porgera. The MRDC’s mission statement includes providing an efficient management of equity interests in fully integrated mining and petroleum activities for the state and the landowners.

The MRDC’s corporate objectives include the following:
ensure Papua New Guineans get the best possible return both from the MRDC’s investments in resources industries and from the employment and business opportunities that resource projects provide; and
ensure the return to the stakeholders in each new venture is optimized and is in proportion to the equity held.

To enable full participation in management of mining and petroleum development, the MDC states:

A joint venture may market and export without reference to the state its own share of all products and shall have sole control and management of sales of such mine products (including the forward selling of all products), and shall assume all risk (Mining Development Contract, clause 9).

Furthermore, as laid out in the MoA between the state and the landowners, “no dividends will be paid by the subsidiary until these loans and interest and charges have been fully repaid” (Memorandum of Agreement 1989, Part B, s.6(iv)(c)). Furthermore, “so long as any loans . . . remain outstanding, the control of the board and management of the subsidiary shall remain with MRDC” (ibid. part B, section 6(iv)(d)).

**Mineral Resources Authority Act 2005**

Under the *Mineral Resources Authority Act 2005*, the MRA has the following functions:

- negotiate mining development contracts under the *Mining Act* 1992 as agent for the state (s.5(d));
- receive and collect, on its own account and on behalf of the state, any fee, levy, rent, security, deposit, compensation, royalty, cost, penalty, or other money or other account payable under the *Mining Act* 1992 (s.5(f)); and
- on behalf of the state, to administer and be responsible for the administration of any public investment programme relating to mining (ibid. s.5(h)).

**Porgera SML Landowners Association (PLoA)**

The PLoA is an incorporated association of seven indigenous landowning clans that represent 25 agent committees from the PJV gold mine. Information required by law to be held by the IPA on the PLoA was not available. Frequent trips to the SML Landowners Office in Porgera during a two-week stay did not result in any contact.

**Enga Public Company**

The EPG was to set up a company that would form joint ventures with leading engineering, construction, and other businesses to tender for and carry out activities created as a result of the Porgera mine project. The purpose of doing this was to enable Engans and Engan businesses to participate in business opportunities created by the mine during the construction and operational phases.
The company was to be wholly owned by Engans, Engan businesses, Engan LLG councils, and the EPG. The transfer of shares was to be restricted to ensure that control of this public company remained in the hands of Engans.

The company was to issue 250,000 shares valued at K1 each within three months of the SML being granted, with purchase open for 30 days. The number of shares allocated to individuals and businesses was capped; individuals had a maximum of 100 shares and minimum of 50, while businesses were allocated a maximum of 1000 shares and a minimum of 500 shares. Five percent of shares were reserved for the LLG and 16 percent for the EPG. Ipili (the landowner company) was given the option to take up to 10 percent of shares. The state was to advance a loan of K500,000 to the EPG, with repayments in quarterly instalments of K25,000 or K100,000 per year.

However, such a company was never set up by the EPG.

A range of legislation and national institutions interact to maximise the benefits from PNG’s mineral wealth (see Figures 6 and 7).
Figure 6: Legal Responsibilities

- **Mining Act**
  - s.5 (1) Property of the State
  - s.154 Principles of Compensation
    - s.156 Compensations Agreements
    - s.157 Determination by the Warden
  - s.15 Registration of Tenements
  - s.173 Royalties
  - s.17 (1) Mining Development Contract

- **Associations Incorporation Act**
  - s.16 Constitution

- **Income Tax Act**
  - Company Tax
  - Income
  - Levies / Duties
  - Customs

- **Organic Provincial and Local-level Governments**
  - s.98 Benefits Derived from Natural Resources
  - s.42 Special Purpose Authority
  - s.115/s.116 Cost Benefit Analysis

- **MRDC Pty Ltd (Privatisation) Act**
  - Negotiating Agent for the State
  - Collection of Fees and Levies
  - Public Investment
Figure 7: Institutional Responsibilities
SECTION 4: FINANCIAL FLOWS

The Porgera gold mine creates a plethora of benefits streams, starting with compensation and royalty payments to five separate accounts. Other types of benefits include donations from the company to local and non-local organisations as well as wages, business contracts, and equity. Infrastructure programs such as the TCS, CFG, and IDP, as well as dedicated infrastructure projects, and four different types of state taxation all come from wealth created within the mine. Indirect benefits include SSG and PIP payments, which are designed to help the state uphold its part of the MoA.

Payments from the mine are summarised as follows:

- compensation payments to local communities are for access to the land and to offset reductions in living standards and inconveniences from the mine;
- royalties are for the mineral resources beneath the land. They consist of cash payments to the landowners and government institutions;
- infrastructure payments are generally allocated to improve the living standards of the population by bringing education, health care, roads, and other services to the community; and
- financial payments are divided into two categories: direct financial payments (compensation and royalties) and indirect payments (wages, business contracts, taxes, and equity payments).

This paper reviews 14 different types of benefits streams and estimates how those benefits are distributed throughout the community. Given the period of study and the numerous changes in ownership and responsibility, combined with the inability of the PNG government and its institutions to maintain records, some estimates of payments have had to be made. Where data were unavailable in the correct format (time series or by distribution by group), alternative methods were used to estimate when and to whom the benefits flowed. In these cases, the assumptions and methodologies are clearly laid out in the paper.

That being said, data on a large proportion of the total benefits were readily available, including the totals for royalties, compensation, business contracts, donations, TCS, IDP, CFG, education, SSG, PIP, and taxation. The data were distributed either though time or by group; that is, to various points in time or to either Porgera, Enga, or national or international stakeholders.

Compensation Payments

The case for and definition of resource compensation are contained in the *Mining Act*. In a subsequent memorandum addressed to the Law Reform Commission, the Chairman of the Association, Mark Soipang, defined compensation as “the state of equilibrium reached when [the] forces of destruction and impact must [be] equal to the forces of compensation . . . [so that] the Landowners are forever happy and accept the losses and impact they will suffer” (Filer, 1997).
It could be argued that compensation payments from mining are not necessarily benefits, as they are payments to offset various impacts. These payments can be very large and fluctuate throughout the life of the mine.

The PJV currently pays several different types of compensation each year: occupational, general, community assets and relocation, and environmental compensation (see Figure 8). Over the past 20 years, compensation payments have totalled approximately K190 million to those affected by the mine (see Chart 5). Compensation is paid to various groups including the SML landowners, Lease for Mining Purposes (LMP) landowners, and those downstream from the mining operation.

**Figure 8: PJV Compensation Payments**

<table>
<thead>
<tr>
<th>Category</th>
<th>Compensation Payments</th>
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<tbody>
<tr>
<td>Occupational</td>
<td></td>
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<tr>
<td>General</td>
<td></td>
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<tr>
<td>Community Assets &amp; Relocation</td>
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<tr>
<td>Environmental</td>
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<tr>
<td>• Lower Porgera</td>
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<tr>
<td>• Kaiya River</td>
<td></td>
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<tr>
<td>Donations</td>
<td></td>
</tr>
</tbody>
</table>

**Chart 5: Total Compensation (millions of kina)**

Source: PJV 2009.

Work undertaken previously on tracing compensation payments estimated that 65–75 percent of the compensation money had been consumed directly, redistributed and consumed, or redistributed out of Porgera. Overall, 5–10 percent of compensation money was used for investment and 20–25 percent for investment in local businesses. While a 25–35 percent savings rate is high, the quality of investment, particularly in local businesses, is considered low (Jackson and Banks, 2002).

**Occupation Fees**

Occupation fees are paid to customary landowners once-- year as a rental or lease fee for specific areas of mining operations — including the SML area, LMPs, Special Mining Easements, and a mining lease for use by PJV for the various categories of land. Annual occupation fees are linked to the Consumer Price Index. Occupation fees have totalled approximately K12.3 million over the past 20 years (see Chart 6).


**Chart 6: Occupation Fees (millions of kina)**

Occupation fees represent approximately 6.5 percent of total compensation paid to landowners since the mine opened. They have remained fairly constant as a proportion of total compensation, except for a short period between 2000 and 2003 when they rose to between 12 and 14 percent of total compensation.

*Source: PJV 2009.*

**General Compensation**

General compensation consists of broad-based compensation payments to customary landowners for damage to bush, established gardens or garden areas, and other socially significant features, such as footpaths and river crossings. General compensation has totalled K38.6 million since 1990, making it the second largest compensation benefit (see Chart 7).

**Chart 7: General Compensation (millions of kina)**

General compensation represents approximately 20 percent of total compensation. This has fluctuated throughout the life of the mine, representing almost one third of compensation until 2002. More recently, the importance of general compensation has declined relative to other compensation streams.

*Source: PJV 2009.*
**Community Assets and Relocation**

Community assets and relocation costs represent the relocation or construction and transfer of miscellaneous community assets, such as roads and buildings, to the local community. The ongoing customary landowner relocation program forms a significant part of the payments in this category. This is the largest category of compensation, totalling K115 million since 1990 (see Chart 8).

**Chart 8: Community Assets and Relocation (millions of kina)**

Community assets and relocation payments are by far the largest form of compensation. They tended to be very large at the beginning and have declined in importance since. Large payments were made in 2001 as part of the Anawe North Dump, when 90 houses were relocated.

From 2007 to 2009 almost K36 million was paid out, equal to the value of the second largest compensation stream.

*Source: PJV 2009.*

In 2001 compensation payments jumped from K3.8 million to K15.3 million due to payments for the Anawe North LMP. Community assets and relocation payments accounted for K8.7 million of the overall increase. The Anawe North Dump Agreement changed compensation payments by offering three options for landowners entitled to housing relocation:

- a relocation house at an alternative site (K70 000);
- payment of K7 000 for the landowner to build his or her own house and K63 000 deposited in an investment trust (a portfolio of investments including different types of assets); and
- payment of K7 000 and K63 000 used to purchase an investment property.

**Landowners Trusts**

In 2001, PJV was appointed a trustee for a landowner investment trust that also provides an advisory service to landowners wanting to invest in real estate. Almost K10 million in real estate, K1.2 million in semi-permanent housing, and K2.2 million has been invested by 229 Anawe South LMP residents in trusts. A further K2.8 million remains as families make decisions on which option to choose.
Previously landowners would receive a relocation house and immediately sell it to convert their investment into cash, sometimes at a fraction of the value. The PJV has recently attempted to stop the practice of ‘flipping’ houses for cash and is implementing a new investment vehicle in cooperation with Nasfund.

A third option currently under negotiation is a managed fund for landowners. This recognises the need to improve savings options in the community and produce a longer-term, sustainable stream of revenue.

**Environmental Compensation**

Environmental compensation includes a one-off payment for loss of potential alluvial gold (paid at the commencement of mining operations) and ongoing payments for the Riverine disposal of sediment and tailings at a rate determined by the PNG national government. Riverine compensation payments are regulated by the national government and paid according to a framework known as the Ministerial Determination on Riverine Environmental Compensation. The PJV pays compensation on the Lower Porgera and Kaiya River. Since mining operation began, payments have totalled K19.7 million for the Lower Porgera and K4.2 million for the Kaiya River (see Chart 9).

*Chart 9: Environment Compensation Payments (millions of kina)*

Source: PJV 2009.

**Royalties**

The primary type of royalty is net smelter return, which is calculated as the royalty percentage multiplied by the value of gold production at market gold prices less third-party smelting, refining, and transportation costs (Barrick Gold, 2009). Royalties are collected by the state and passed on to the provincial governments and landowners in the SML where the mine is located. Royalties for the Porgera gold mine were initially
Financial Flows

valued at 1.25 percent of sales minus expenses; on 1 July 1996 this increased to 2.0 percent. This change occurred a year after the distribution of mining royalties was changed.

Royalty payments are passed on as cash to landowners living within the SML. These payments are then either consumed or saved by the recipient. It is difficult to trace where the money goes without undertaking an income and expenditure survey of the population. Payments that go to the Children’s Fund, PLoA, and Young Adults’ Fund are all for the benefit of the SML landowners but are allocated to different uses.

After initially receiving 23 percent of mine royalties, Porgera landowners and local institutions negotiated an increase in 1995, to 50 percent, and the same percentage was agreed by the Lihir landowners and LLG (Banks, 2001). Two new funds were created: the Porgera Landowners Association and Young Adults’ Fund, receiving 12 and eight percent of royalties respectively (see Table 3).

<table>
<thead>
<tr>
<th>Table 3: Distribution of Royalties by Group</th>
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<tr>
<td>To July 1995 (%)</td>
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<tr>
<td>------------------</td>
</tr>
<tr>
<td>Provincial Government</td>
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<tr>
<td>PDA</td>
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<tr>
<td>SML landowners</td>
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<tr>
<td>Children’s Fund</td>
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<tr>
<td>Porgera Landowners Association</td>
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<tr>
<td>Young Adults’ Fund</td>
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The total amount of royalties paid by the PJV to Porgera and Enga Province since 1990 is approximately K280 million (see Chart 10). The largest receipt of royalty payments has been the EPG, receiving K146 million from 1990 to 2009. The five other recipients of royalties have over the same period received appropriately K133 million from the mine (see Chart 11).
Enga Provincial Government

Originally the EPG received 77 percent of royalties from the Porgera mine. This fell to 50 percent in 1995. However, this only led to a temporary reduction in income, and since 1996 growth in royalty payments has been strong due to a strong gold price and the exchange rate between the kina and US dollar.

The provincial government has been paid approximately K147 million (see Chart 12) out of a total royalty stream of almost K280 million, or 52 percent since 1990. This revenue goes into the consolidated budget of the provincial government, and therefore it is impossible to track exactly who derives the benefit. However, it is clear that Enga Province is the ultimate beneficiary.

The reduction in royalty payments from 77 percent to 50 percent has cost the EPG approximately K68.8 million over the past 15 years (see Chart 13).
**Special Mining Lease Landowners**

Porgera SML landowners originally agreed to eight percent of the royalty payments; however, as other landowners received better terms with development partners, Porgera landowners wanted a larger share. In 1995, the percentage of royalties flowing to landowners increased from eight percent to 15 percent. Royalties are paid to the 23 clan agencies, which distribute the money among the landowners.

Since 1990 SML landowners have received K40.2 million in royalties (see Chart 14) with the changes in royalty payments in 1995 benefiting them by K17.8 million (see Chart 15). This represents approximately 25 percent of the 1995 changes being captured by the SML landowners.
The SML Children’s Fund was established to receive, manage, and disburse funds to promote educational opportunities for the children of SML landowners. The Trust seeks to improve high school attendance, provide assistance for technical and tertiary education, and provide programs for students to help them overcome social changes caused by mining activities.

The Children’s Fund was established by an agreement between the national government, the EPG, the SML landowners, and the trustees. Ten percent of the royalty payments from the Porgera gold mine are transferred into the Trust each year.

The Trust is managed by a board of trustees, which includes SML landowners and representatives of the National Department of Treasury, PDA, and PJV. Since 1990 the Trust has received K27.9 million (see Chart 16). Each year an audited financial statement of the funds, the report of the trustees, the report of the manager, and the revised list of children of SML landowners should be presented to the PDA.

Schedule 1 of the original investment program was broken into four phases (State et al., 1992):

1. a rapid saving, no spending phase that was to end on 31 December 1994;
2. a 50 percent saving, 50 percent spending phase that was to end on 31 December 1999;
3. a slow saving, big spending phase that ends when the mine closes; and
4. time to decide how to invest savings so that the objects of the fund can continue to be fulfilled
There were to be three funds: a capital account for long-term savings, a fund to receive royalty payments from 1 January 1995 and hold them for placement into the long-term capital account at the end of the year, and an account for distribution of funds.

Fund A would distribute funds to parents at the minimum benefit for children aged 7 to 10, at 150 percent of the minimum for children aged 11 to 14, and at 200 percent of the minimum for children aged 15 to 18 years. Fund B is for the benefit of ages 19 to 21 years. It can be used for loans up to K1000 for business purposes, with the provision that the applicant contributes at least 25 percent of funds sought, and for community projects for the benefit of ages 19- to 21-years.

This agreement was changed on 8 December 1995. Changes included 70 percent of funds from the holding account going to Fund A and 30 percent to Fund B. Up to three-quarters of Fund A, called the School Facilities Fund, was to be allocated to capital works, with the remainder going to a School Fees Fund.

Changes to Fund B included spending the fund on capital works to improve post-secondary vocational training schools and calling it the Vocational Facilities Fund. The School Fees Fund will not grant more than 90 percent of the school fee applied for. For the international primary and secondary schools, payments will only be made directly to the school. Total fees cannot exceed the amount available in the School Fees Fund, and any remaining funds will be allocated to Fund A in the following year.

From 2002–2009, the Children’s Fund maintained a consistent balance between inflows and withdrawals (see Chart 17).

![Chart 16: Allocation of Benefits to Children's Fund (millions of kina)](chart16.png)

![Chart 17: Trust Fund Investment Capital (millions of kina)](chart17.png)

Source: PJV 2009.

Source: PJV unpublished data.

Note: Difference between balance, inflows, and outflows is FX (gains/losses), interest payments, and withholding taxes.
SML Young Adults

SML young adults were previously left out of royalty payments, and only began to receive part of the benefits stream in 1995. Since then they have received K20.4 million in royalty payments (see Chart 18). This new stream of benefits represents approximately 30 percent of the additional benefits received by landowners from changes to the royalty payments in 1995.

There is no information on how financial payments are distributed to the community or how these funds are used to improve the life of the Porgera youth.

Disenfranchised youth represented one of the reasons that a substantial change to the allocation of royalty payments was undertaken. The lack of transparency makes it difficult to say if removing some of the royalties received by the EPG into the community has effectively solved the original problem. It is only possible to say that the institution set up for the benefit of the youth is receiving money. It is not possible to say if anything has really changed from the youths’ perspective.

Chart 18: Allocation of Benefits to SML Young Adults (millions of kina)

Source: PJV 2009.

Porgera SML Landowners Association

The PLoA is an organization registered under the Association Incorporation Act with the IPA. It was established in 1992 and represents 23 agents from the seven major clans who own the SML land.

The PLoA was not part of the royalty agreement until 1995; it now receives 12 percent of all royalties. Over the past 15 years it has received more than K30.6 million to undertake and fulfil its objectives and obligations (see Chart 19). Revenue for 2008 and 2009 jumped substantially from K2.5 million to K3.5 million and K3.6 million respectively. Changes to the benefit stream meant that the PLoA became the largest
beneficiary, capturing approximately 45 percent of the additional royalty payments to SML landowners.

**Chart 19: Allocation of Benefits to Porgera SML Landowners Association**

In a similar situation to the young adults’ trust, it was extremely difficult to obtain information on how the money has been disbursed to the benefit of the landowners. No document of incorporation could be found. There is no record of the objectives of the association or how they intend to spend the money. The author was also unable to contact the organisation either in person, when travelling to Porgera, or through email.

Source: PJV 2009.

During discussions with the IPA regarding the provision of legally required documents and information relating to the operation of PLoA, it was made clear that it has no legal authority to compel associations to undertake audits or make those audits accessible to the people the association purports to help.

**Other Financial Benefits**

Compensation payments represented only a small proportion of the financial benefits of mining. Most financial benefits are derived from wages, at least at the individual level, where compensation, royalties, equity stakes, and wages are all paid to the benefit of individuals rather than providing better social services to the community.

TCS, donations, education opportunities, and business development opportunities provide broad-based community benefits rather than individual benefits. The national government also takes a proportion of the mining benefits through taxes and other fees.

**Landowners’ Benefits**

**Donations**

Donations are made to diverse local and national projects, including health facilities, schools, sporting clubs, and youth groups. Since the beginning of mining operations, the PJV has released K34.0 million in donations to these organisations (see Chart 20). In value of payments, this form of benefit is second only to compensation for community assets and relocation; it is equal to general compensation.
The financial impact of donations depends on their location and from where the goods and services are purchased. In an earlier examination of the data, donations were considered to offer few financial benefits and were considered to provide a better community and public relations investment than an economic one (Banks 1999).

In terms of geographical location, the majority of donations are in areas such as the Porgera District, Enga Province, Tari District, and the Stickland/Lake Murry region (PJV 2008).

**Business Contracts**

In the original MoA, preference was given to Porgeran contractors who: (1) meet the specifications of the invitation to tender; (2) “are competitive in cost with international sources”, and (3) “meet the delivery requirements of the project”. For members of a previously agricultural community, it is difficult to compete against international businesses, even with the understanding that the PJV will devise a business development program.6

The system had inbuilt mechanisms for review and monitoring, with quarterly reports including a list of all successful and unsuccessful tenders with explanations of the company’s reasoning. This, coupled with full-time staff to assist in the setting up and managing of business enterprises, was supposed to offer Porgerans first, and Engans second, the best opportunity to profit from business opportunities from the mine.

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6The figures discussed in this section reflect the estimated value of all operational contracts awarded; construction contracts are not included.
A large part of the benefits associated with the mine are derived from business contracts. The contracts are split between Porgerans, Engans, and national and international contacts. From 1990 to 2009, the mine has signed K1.8 billion in business contracts, with approximately 70 percent of this amount going to domestic sources (see Chart 21).

Overall, business contracts have been reasonably well distributed between the various groups. The two largest groups are the national contractors (30 percent) and international contractors (29 percent), followed by Porgerans (22 percent) and Engans (17 percent). Approximately 90 percent of the international contracts by both value and volume were for services.

Business contracts are broken down into six different types: bus hire (supplying personnel transport to the mine); field (supplying local residents for minor works in and around the mine site); freight (mainly for services between Lae and the mine site); plant hire (equipment rentals); services (specialist labour at the mine site); and works (for construction projects).

The majority of contracts won by the Porgeran contractors are for services, although this total is approximately half of the value of that won by international suppliers. Most business contracts for Engans (approximately half of total contracts by value) are for the supply of freight services (see Chart 22). However, overall, the average size of the contacts for Porgerans is K33,800, which is the smallest of the four categories.

**Chart 21: Business Contracts by Group (millions of kina)**

![Chart 21: Business Contracts by Group](chart.png)

**Chart 22: Total Contracts by Group**

![Chart 22: Total Contracts by Group](chart.png)

**Source:** PJV 2009, domestic excludes Porgeran and Engan contracts

Previously, contract calculations had been questioned due to differences between expected contract values and the actual amount paid to date. Also, PJV calculated the
full value of a contract as going to a Porgeran even when it involved a joint venture between a Porgeran and non-Porgeran (Banks1999).

There is also a distinction between a contract value and its value to the Porgeran or the Porgeran economy. Many inputs for the business contracts are purchased elsewhere rather than in or near the SML. It is difficult to ascertain if contracted businesses are making a profit or just breaking even.

Profits are not the only measure of community benefit from business contractors, as many local, Engan, national, and international contractors employ local people. Data on contractors and subcontractors are not kept by the PJV. While business profitability is marginal, wages from contracts make up the majority of the community benefit. Business opportunities were not necessarily considered to be part of a long-term sustainability package; rather, they were seen as maximising income during the period the mine was being developed. New businesses that begin in a sheltered environment have had difficulty growing and expanding beyond the mine site. Once the project’s support is withdrawn, most businesses are unable to compete. This outcome is not particular to PNG; many small businesses do not survive more than four or five years, and being located in a remote part of PNG that is entirely reliant on employment from a mine does not increase a business’s chances of surviving once the mine has closed down.

Therefore, aside from the direct financial benefits such as size of contracts related to the mine, it is also the ability of these businesses to grow and survive in a more competitive market that will determine landowner benefits. Landowners elsewhere place similar restraints on business opportunities for outsiders as the Porgerans do; this makes expanding into other mining sites difficult, particularly where the business expertise is based on unskilled contracts (bus services) or mining-specific skills, when other local communities want training and employment opportunities of their own.

**Ipili Porgera Investment Ltd**

Ipili Porgera Investment Ltd (iPi) is the largest private sector entity in Enga Province aside from the PJV. It has several subsidiaries and joint ventures located in Porgera, Mt. Hagen, and Lae. Its strategic focus is to reduce dependency on mining operations by adding value to local production and expanding commercial activities outside of Porgera Valley (PJV 2008). Ownership is restricted to Porgerans, with more than 2000 shareholders in 2003.

IPi is the second biggest business in Enga Province after PJV. It has been very successful in diversifying its clientele. It now has contracts and business elsewhere in PNG, including Lae, Madang, Port Moresby, and Australia. From 2007 to 2009, iPi’s

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7 An exception is field contracts, which are short-term contracts that have only a labour component; for these almost all of the value is retained within the community.
annual revenue averaged US$27 million, including more than A$1 million earned in Australia. At the end of 2009 its assets were valued at US$13.3 million, and its contract revenue sourced from PJV made up just 40 percent of its revenue. It now employs more than 1000 people. It is expected to remain sustainable and provide benefits to its shareholders after the closure of the Porgera mine.

Employment

Production from the Porgera mine has been decreasing slowly since 1994, apart from 2004, when once again more than one million ounces of gold was produced. However, the total number of workers employed by the mine has continued to increase. Moreover, the number of international workers has declined over this period, meaning a greater proportion of PNG nationals are responsible for operating the mine.9

There has also been a clear shift away from employing people of Engan origin and towards employing workers of Porgeran origin (see Chart 23). This shift has affected all types of workers, particularly Engans and expatriates and to a lesser extent, national employees (Kanaparo 2010). As part of the negotiations, fly-in fly-out arrangements were kept to a minimum with the expectation that the majority of employees, including expatriates and their families, would be housed in the community.

While the percentage of Porgerans employed has increased, of more importance is the growth in wages as a percentage of all wages (see Chart 24 for estimates of total wages); that is, has the share of wages from the mining project grown in combination with the employment share? At the very least, wages paid out to the various geographic groups helps to estimate the distribution of benefits to various stakeholders.

Wages may represent a sizable and increasing share of the overall benefits from the mining project, particularly as other benefits, such as compensation fall, overtime. It is true that Porgeran wages are more likely to stay in the community. Expenditure on items outside of the Porgera region that improve the well-being of the individual should not necessarily be considered as a leakage of benefits. After all, the expectation for development cannot be fulfilled entirely from local produce. Other employees such as national and international expatriates are more likely to spend money outside the region.

Some previous data are available on the wages paid to Porgeran employees from 1989 to 1992, showing that approximately K12 million was paid during that period (Banks 1999b). Other information provided by Placer Dome indicated that for the years 1997 and 1998, the PJV paid more than K100 million; these data are not broken down by origin (PJV, 1999).

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9 PJV records based on employees self assessing origin.
Wages estimated for all groups, shown in Chart 25, are based on actual data for 2002–2009; for 1993–2002, they are estimates calculated by the author based on changes in employment share for 1993–2002. Total wages in kina were derived from various PJV publications. The PJV has paid approximately K1.8 billion in wages during its operational life. Data provided by the PJV show that from 2003 to 2009 the mine paid K914.4 million in wages. Of this, K487.7 million (53 percent) went to international employees, while K255.0 million (27 percent) went to PNG nationals from outside of Enga Province and K171.6 million (19 percent) to Porgeran and Engan employees (see Chart 25).

Wages paid by the PJV between 1990 and 2002 were estimated at K895.8 million. Of this, K605.1 million (68 percent) went to international employees, K151.1 million (17 percent) to national employees, K27.6 million (three percent) to Engans, and K111.8 million (12 percent) to Porgerans.
Training and Education Costs

Training can provide new options for local residents and the community. Training includes apprenticeships, on-the-job training, and skills accreditation.

PJV has an external sponsorship program for degree students at PNG universities, secondary schools, and colleges (see Chart 26). These sponsorship programs are taken by Porgerans, Engans, and other PNG nationals. Since 1990, 826 positions have been offered to PJV employees and their dependants. The PJV has offered internal training through apprenticeships, trade assistantships, and graduate employment. The PJV apprenticeship scheme ended in 2000, but has been more than offset by the growth in Porgeran trades assistance positions. Since 1994, more than 3400 such positions have been created; however, there is no estimate of the financial benefit of this type of training.

The PJV also brings in consultants and has a number of training officers on site. It estimates that expenditure on internal education has been approximately K75.0 million since 1991. Almost half of this total is taken up by the salaries of training officers, including international trainers (see Chart 27).
Data on the distribution of the benefits from training and education were not available from PJV. As such, education benefits were distributed to various groups (Porgerans, Engans and nationals) on a pro-rata basis. Charts 28 and 29 summarize the education and training benefits received by different groups.

**Community Facilities Grant**

The CFG was based on an agreement between the PDA and PJV for use by PDA projects that the PDA board had agreed upon. The amount totalled K4.0 million in 1989. The funds were paid out in equal quarterly instalments and were used on 46 projects in Paiam, Porgera, Tipinni, and Yuyan; the projects included schools, roads, water supply facilities, and aid posts (see Chart 30). The 1990 amount adjusted for inflation is more than K17.0 million in today’s money.
Company Taxation

Company taxation is tax paid by the various PJV partners to the state; it flows through to general revenue. The total amount paid since the mine opened is K1.17 billion. This includes some years of very low tax collection (including K37 million in 2006) during a
period where revenues rose substantially. However, from 2003–2009 the state received an average of K100 million per annum (see Chart 31).

**Chart 31: Company Taxes (millions of kina)**

Overall company taxation is the most important source of revenue, accounting for approximately 60 percent of the State’s benefit. (Other benefits to the state include income tax, customs and duties, and fuel excise tax.) Company tax is placed into general revenue for redistribution throughout PNG.

Source: PJV 2009.

**Income Taxation**

The national government also benefits from taxes on mining wages, having received an estimated K466 million since 1990 (see Chart 32). Income tax is the second most important benefit stream from the Porgera mine for the state, accounting for almost a quarter of all revenue. Income tax collection is a function of the number and average wage of employees. The mine has doubled the size of its workforce, from 1148 in 1990 to 2427 in 2009. At the same time, average wages have risen.

**Customs Duties and Fuel Excise Tax (Including Mining Levy)**

Equipment imported by PJV for operating the mine is subject to a customs duty. Customs duties have totalled approximately K250 million since the beginning of mining operations (see Chart 33). Revenue derived from 1999 to 2007 accounts for K190 million or 75 percent of the total. From 2008 to 2009, the national government has only collected K7.7 million.

Fuel excise taxes have totalled K49.3 million since the beginning of mining operations. Although they are a smaller source of national government revenue than customs duties, they provide a steady revenue stream as the quantity of fuel used annually has remained stable (see Chart 34).
Chart 32: Taxes deducted from Employees' Wages (millions of kina)

Source: PJV 2009.

Chart 33: Customs Duties (millions of kina)

Chart 34: Fuel Excise Tax (millions of kina)

Source: PJV 2009.

State Costs

Tax Credit Scheme

The Tax Credit Scheme (TCS) was a PJV initiative developed in conjunction with the PNG national government. It allows PJV and other resource companies to fund infrastructure projects of a capital nature from a proportion of their tax bill. Under it, the
state essentially gives up future revenue from the mine. The scheme was introduced in 1992 and set at 0.75 of assessable income; this was raised to 2.0 percent in 1997.

TCS projects are divided into four main categories:

1. infrastructure (roads, airstrips, and bridges);
2. education (construction of classrooms and dormitories, electricity and water supply, and fencing);
3. health (hospital wards, health centres, and hospital housing); and
4. miscellaneous (libraries, sports fields, fencing, fishing cooperatives, police barracks, and water supply facilities).

In 2000, a review of the tax system introduced some modifications to the scheme. The allowable tax credit was reduced to 0.75 of assessable income (this occurred in the 2001 budget); the carry forward of excess credits was reduced to two years; and maintenance of government infrastructure was allowed as a tax credit (Government of PNG 2010). Although the review did not look to improve the institutional and administrative aspects of the scheme, this led to some criticisms:

The TCS is a vital tool in establishing rapport with affected communities. A difficulty has arisen, however, in that there appear to be no firm guidelines for developers to follow when preparing proposals. Lengthy delays are incurred obtaining approvals. Often communities are aware that proposals have been submitted and become impatient when projects do not proceed. There is an urgent need to have this situation examined. Clear and firm policies and guidelines must be established in order for the TCS to function (Lava 2007).

In 2010, the Department of Planning released its Infrastructure Tax Credit Scheme Guidelines in order to improve the administration and accountability of both financial and development outcomes.

The objective of the scheme remains the same: “to extend by way of capital works and maintenance of Government’s infrastructure on the national development priority sectors, the beneficial impacts of mining, petroleum and primary industry developments to the population of the host province and other parts of PNG” (ibid. 2007). While the objective of the scheme is to showcase the benefits of mining, developers are encouraged to undertake projects outside of the affected development area.

Under the guidelines, the Department of National Planning and Monitoring will be responsible for undertaking technical, policy, and cost screening functions before projects are sent to the Project Appraisal Committee. This committee is composed of the Secretary of the Department of National Planning and Monitoring (chair), the Commissioner General of Internal Revenue Commission, and the secretaries of the Departments of Works, Treasury, Mining, Petroleum and Energy, and Agriculture and Livestock.

The guidelines set out a number of performance standards for the TCS, including: that all project proposals should be screened and appraised within fifteen working days from
the day they were received; communications on project approvals or rejection should be sent within two working days; and a summary progress report should be submitted to developers at the end of each month.

These guidelines are designed to address some of the weaknesses and concerns experienced by developers and communities in the past. As yet it is too early to determine if the spirit and intention of the guidelines can be fully realised.

As at December 2009, more than K124 million in TCS projects had been committed or spent. During this time, the program completed or was completing almost 650 projects nationally (see Chart 35). The PDA has in the past assisted in implementing TCS projects in the Porgera area. The amount of funds spent in the Porgera District was K23.3 million or 21 percent of the total spent, not including administration costs (see Chart 36).11

Enga Province has captured approximately 23.1 percent of projects by cost, with other provinces in PNG (mainly Southern and Western Provinces) capturing 49.3 percent of TCS funds.

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10 This includes K13 million for the administration of the projects.
11 Porgera data include Paiam and Porgera.
Infrastructure Development Program

Infrastructure Development Program (IDP) funds are for selected infrastructure development, made available by the PJV as part of the Placer Porgera Sales Agreement. The agreement set aside K50 million for infrastructure development, K5 million per year over the decade beginning 1 March 1993. As part of the package, K10 million was set aside for work on the Lae-to-Porgera Highway.

As of 2009, the IDP has spent K48.0 million on various infrastructure projects within the Porgera District and Enga Province and on the Lae-Porgera Highway (see Chart 37). It has spent almost equal amounts in the Porgera District and Enga Province, K18.3 million and K17.8 million respectively.\(^{12}\) The program has also spent K8.0 million on the Lae-Porgera Highway and K2.5 million on administration.\(^{13}\)

One project, the EPG provincial headquarters stage 2, cost almost K10 million, or almost 50 percent of IDP funds outside of the Porgera District. The majority of funds spent in the Porgera District, approximately K10.8 million or 60 percent, were allocated to the development of Paiam town.

PJV Infrastructure Expenditure

Since 1997, approximately K92.0 million has been spent by the PJV on maintaining the Porgera-to-Wabag Highway (see Chart 38).

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\(^{12}\) This includes K1 000 000 in counterpart funding to the Asian Development Bank.

\(^{13}\) Not included in these figures is K1.3 (million?) spent in the Western Province.
Equity Stake

Porgera was the first mining operation in PNG (or even the world) where the landowners and provincial government held equity, a practice later followed by other large-scale mining developments in PNG. The original agreement between the state and the landowners laid the foundations for landowners to participate in the profits of the mine. In the Porgera case, equity is not “free” but participatory; that is, not only do the SML landowners and EPG share in the profits of the mine, they also share in the costs. (Subsequent equity agreements offer free equity, rather than a share in the costs.). The MoA states:

The National Government undertakes that the Landowners, by means of a properly constituted and representative body hereinafter referred to as ‘Landowner Company’ will have the option to take up to 50 percent of the National Government’s 10 percent equity participation in the Porgera Mining Project (that is, 5 percent of the total equity). (Memorandum of Agreement 1989, clause 6).

After the formation of a subsidiary company, the MRDC granted three options to the landowner company to acquire shares:

1. within twelve months of the grant of the SML, 2.5 percent of the shares;
2. within six months of commencement of commercial production, 22 percent of the shares; and
3. within one month of the fifth anniversary of the grant of the SML, a further 25.5 percent of the shares.

Under clause 5(c), payment of any loan granted by MRDC to the subsidiary, including all interest and charges incurred by the MRDC in borrowing the money, was to be repaid by the subsidiary to MRDC in absolute priority to all other obligations of the subsidiary. No dividends from the equity stake were to be paid to either party (landowners or EPG) until the loans, interest, and charges were fully repaid.

Under the third option, shares were to be sold to the landowner company at fair market value as determined by an independent expert acceptable to the parties; if the parties cannot agree, an expert would be appointed by the president of the PNG Society of Accountants.

These options also existed in the Enga Provincial and State Agreements.

The first two options were taken up by the landowners and EPG; they cost K35 million each, which was their share of the development costs. As noted in the agreement, these costs had to be paid through dividends, and in 1997, K5 million was still outstanding. This was paid off in 1999, and dividends have been paid since then (PVJ 2002b).

The third option was to purchase the state’s remaining five percent share, bringing both parties to a five percent stake in the mine. This option was sold for K11 million to MRDC to help float 49 percent of the company (Orogen Minerals), and an agreement was
made to increase each of the Porgeran landowner and Enga shares to 2.5 percent of the PJV (Banks 2003).

The landowner equity structure also changed (see Figure 9):

Under the original distribution structure equity was to be spread between: the Porgera Development Authority; the local government councillors from Porgera and surrounding districts; the Porgera Landowners Association; special mining lease landowners; other traditional landowners in Porgera; and, possibly, local business entities.

However, under the Kupiane Yuu Anduane structure equity is restricted to the Porgera Development Authority (10%) and 23 landowners from within the mining lease area as trustees for the landowning subclans within the leasehold. (ibid. 2003).

Figure 9: Equity Structure

Mineral Resource Development Company

The MRDC manages funds for both the government and the landowners from equity stakes in various mining projects around PNG including Porgera. MRDC only manages 2.5 percent for the Porgera Paiela Anduane Association (it manages the equity for SML landowners and EPG). The MRDC mission statement includes providing an efficient management of equity interests in fully integrated mining and petroleum activities for the state and the landowners. Its corporate objectives include the following:

- ensure Papua New Guineans get the best possible return both from the MRDC’s investments in resources industries and from the employment and business opportunities that resource projects provide;
- ensure the return to the stakeholders in each new venture is optimized and is in proportion to the equity held; and
- enable full participation in management of mining and petroleum development.
The landowner and provincial equity stakes in the PJV are unlike those at other mines. They constitute an unincorporated joint venture in which each party is responsible for paying its share of the costs of extracting the resource. In this case, the MRE and MRDC must pay five percent of the operational costs for five percent of the gold. This has been termed a “participatory” stake rather than a passive stake in the mining operation.

The MRDC investment division is:

responsible for providing business development advice, undertaking and managing the investments of the landowner companies under the management of MRDC. The division’s key role is to prudently manage commercial investments of these landowner companies by providing sound commercial advice to the respective boards to undertake strategic investments that will enable sustainable flow of dividend income to the shareholders after the life of the mining or petroleum project.

The division was established after the organisational restructure that was undertaken in 2006. [Subsidiary] companies now have investments based on proper policies and strategies that are geared towards achieving both growth in their portfolios and generating steady flow of income over the long term (MRDC website).

Total investment portfolio (millions) values for MRE from 2005–2009 are as follows:

- 2005: 0.00;
- 2006: 1.30;
- 2007: 0.06;
- 2008: 0.30; and
- 2009: 0.29.

Aside from the above information, there are very few data on how well equity from the mine has been managed.\(^\text{14}\) This should be a major concern to landowners, the PDA, and the EPG, as well as to government officials and ministers. It is recommended that a full audit of MRDC and MRE, including all investment decisions and payments to the board members, be carried out.

**Mineral Resources Enga**

The EPG, along with SML landowners, took up the offer of a 2.5 percent stake in the Porgera gold mine. Payments from MRE are directed toward budget support rather than allocated to particular projects.

Payments to EPG from MRE since 2000 have totalled K13.4 million. Payments did not begin until 2000, as the MoA required that any debts to MRDC for the original stake be

\(^{14}\) A meeting was held with MRDC on 28 October 2010: a request for information was made to MRDC at the meeting and in an email on 2 November 2010. Further requests were made via email on 15 March 2011. As yet no response has been forthcoming, and no data other than those available on the website can be found.
Lode Shedding

paid before dividends were distributed to shareholders. Details of how this money has been managed are not readily available; however, a copy of the MRE financial statement for 2006 did reveal some information. It shows that the fair value of hedging reserves declined approximately K31 million (from K5,602,680 to K37,157,590) during 2005 and 2006. This is a very large reduction in value, particularly given the size of dividends paid out — K8.4 million and K2.2 million respectively. Large losses on hedging have not been uncommon; in fact, Barrick has over the previous two years spent a considerable sum removing hedges from its financial accounts to sell all its gold production at the spot price.

In 2009, we translated our bullish outlook into action, by eliminating all of our remaining Gold Hedges. . . . Despite the multi-billion dollar cost of fully eliminating our Gold Hedges during 2009, we have maintained our ‘A’ rated balance sheet, the only one in our industry. . . . To eliminate the Gold Hedges, we made the difficult decision to issue $4 billion in new equity. . . . As a result of this step and previous initiatives over the last two years, Barrick has eliminated its legacy Gold Hedge position of 9.5 million ounces at a weighted average gold price of approximately $930 per ounce, which is meaningfully below today’s market prices of about $1100 per ounce (as of March 9, 2010) (Barrick Gold 2009).

This may go some way to discovering where the financial returns from the equity stake have gone. However, more information is required before a sound assessment can be made, and it must be the responsibility of the state to ensure that this information is provided to stakeholders. Returns and investment strategies undertaken by MRDC and MRE must be compared with the industry standard (including hedging strategies), and if the equity has been managed in a way that is excessively below the industry benchmark, changes in policy and personnel (directors and other management staff) must be undertaken immediately. A comparison with how the PJV has managed its gold stocks might be a logical place to begin.

The MRE has, on more than three occasions, attempted to acquire an additional five percent interest in the Porgera gold project through offers to purchase made to other partners in the PJV who chose to dispose of their interest. Given that the return from equity in the past has been disappointing, K13.4 million from 817,432 ounces of gold (see Chart 39), it is perhaps more prudent to undertake a full financial and managerial audit of the current stake before purchasing a larger stake.

While poor management of the actual gold stock may be partially responsible for lower returns, other explanations such as rising mine costs and disruptions to production must also be considered.
The state of MRE’s finances, particularly its current debts to MRDC, the PJV, and banks, and its ability to manage the gold, need to be carefully assessed against receiving a lump sum from the sale of its five percent stake in the mine. (The only realistic buyer should be the PJV.) If the latter option is taken, management of the cash component of the fund should not be undertaken by previous MRDC, MRE, or Kupiane managers. Instead, it should be managed overseas, like the Sovereign Wealth Fund, and by the same board members.

Redirected Benefits Streams

Flows not originating from the PJV are transfers between the state and EPG, PDA, LLG, and DA. The state collects revenue from the PJV and redistributes it to key stakeholders closer to the mining site (see Figure 10). It is important to consider these transactions, as any distributional analysis would risk overstatementing the benefits to one group and understating the benefits to other groups.

Special Support Grants

The state agreed to extend to the provincial government a SSG through the national budget in the same way as funding for transferred functions are normally funded under a Minimum Unconditional Grant but subject to satisfaction of requirements for full financial responsibility. Until full financial responsibility is met, this grant will be paid to the provincial government, to be applied by the provincial government to provincial projects and programs submitted annually and agreed to by the national government, which will not unreasonably withhold its agreement, and be subject to quarterly reports.
Under the original MoA, SSG was to be paid by the state to the EPG at a rate equal to one percent of the value of annual f.o.b. revenue from the sale of Porgera mine products. This was compensation for the EPG losing 15 percent of its royalties (which were reduced from 95 to 80 percent), although it eventually lost 18 percent due to a clerical error in the minutes (Jackson and Banks 2002). Despite this small loss, overall SSG payments have been considerably higher (K23.9 million) than the forgone revenue, whether calculated as 15 percent or as 18 percent (see Chart 40).

This arrangement has changed, and now 50 percent of SSG revenue flows directly to the PDA from MRA and 50 percent to the EPG. Based on one percent of the value of annual f.o.b. revenue, the EPG should have received a total of K143 million. Figures provided by the EPG suggest that only K117 million has been received, leaving a shortfall of 25.3 million based on 2009 figures (see Chart 41).

During 1998 the EPG, for reasons unknown, transferred 50 percent of its SSG revenue stream to the PDA, at that time to be directed through the EPG. Therefore, this figure overstates the shortfall to Enga, as 50 percent of the revenues have been directed towards the PDA since 1998.

Furthermore, since 2006 the state has reduced SSG payments to the EPG to 0.25 percent of f.o.b. revenue; the reduction has led to a shortfall in receipts totalling K24.4 million from 2006 to 2009.
Under the MoA, the EPG has the right to review the SSG arrangements at any time to improve its development funding if the national government enters into a better mining or resource development arrangement with any other province:

The Enga Provincial Government accepts the Special Support Grant arrangement, which will be reviewed in ten years from the date of the grant of the Special Mining Lease, as satisfying its requests to increase its financial benefits from the Porgera Mine Project through royalty increases and direct sharing of tax revenue. However, the Provincial Government reserves the right to reopen negotiations on this matter should the national government enter into a more advantageous arrangement for payment of a Special Support Grant, or an equivalent payment, with any other provincial government in relation to a major mineral project (Memorandum of Agreement, 1989, clause 19).

While other landowners have negotiated better rates of SSG payments, this clause should have activated a new round of negotiations.

**Public Investment Programs**

In order to meet its commitments under the MoA, the state allocates funds from its annual budget to build infrastructure that will benefit the people in the region while at the same time fostering good community relations that will allow for smooth mining development. PIP funds have gone to support the following:
• Porgera Health Centre;
• Paiam Management Company via PDA;
• Porgera-Tari Road;
• Paiam High School;
• Paiam Recreational Centre;
• Paiam Hydro Power Project;
• Paiam Road Stage 2;
• Paiam Township maintenance;
• Paiam Development Company management and administration; and
• Grants to the PDA.

The PIP is part of the state’s commitment to providing basic infrastructure in lieu of the landowners taking up equity in the project. The infrastructure facilities constructed under the Porgera/Paiam MoA will be sustained by the PDA and EPG through their recurrent budget in the post-mine era. Currently, the Porgera/Paiam MoA will continue to be funded through annual budgetary appropriations (Treasury 2010). No information on the amount of funds was provided by the Department of National Planning and Monitoring.

**Porgera Development Grant**

Under the 1989 Memorandum of Agreement, the EPG granted the PDA K0.5 million per year in untied grants and K50,000 per year for construction and maintenance of the Porgera-to-Paiela road (see Chart 42). This was in addition to any funds normally provided through the annual budget of the EPG and any money received as a share of royalties.

Neither of these two grants was adjusted for inflation, and their real value has declined significantly over the last twenty years. Maintaining a road for K50,000 is far less achievable now, than it was when the original agreements were signed (see Chart 43).

The PDA noted that the EPG has not paid any of the benefits agreed to in the MoA. The PDA also noted that payments from the Mining Agreement Fund were not being released as agreed. As Charts 42 and 43 demonstrate, in long-lived projects, payments not tied to inflation can decline to the point where it is impossible to effectively implement agreed outcomes.

Financial benefits from the Porgera mine are spread throughout PNG. Outlined below in Figure 11, is a complete map of what financial benefits are derived from the mine and to which institution(s) they accrue.
Chart 42: PDA Infrastructure and Maintenance Funds (thousands of kina)

Chart 43: Real Value of Income Stream from EPG to PDA (thousands of kina, 2009 values)

Source: Author’s calculations.
Figure 11: Financial Benefits Stream from the Porgera Gold Mine

- Business Contracts
  - Landowners
  - Enga Province
  - National
  - International

- Public Investment Program
  - Landowners
  - EP

- Special Support Grants
  - Landowners
  - EP

- Taxes
  - Tax Credit Scheme
    - Landowners
    - EP
    - Nationals
    - Company Income
      - Customs / Fuel Tax
        - National Government

- Wages
  - Employees
    - Landowners/Enga
    - Landowners
  - National Employees
  - Non-residents

- Donations
  - Enga Province
  - Landowners

- Equity Stake
  - Mineral Resources Enga
  - SML Landowners
  - Provincial Government
  - PDA
SECTION 5: ALLOCATION OF FINANCIAL BENEFITS BY INSTITUTION

Financial benefits are dispersed to various stakeholders throughout PNG, Enga Province, the Porgera District, and downstream communities. Some payments are compensation for the loss of amenities experienced during the mining process, while others are part of normal business operations.

Landowners’ expectations included being able to share in the vast wealth which laid beneath the mountain. Negotiations and agreements between all parties have diverted the financial benefits from one party to another in order to continue the mining operation. The MoA and the MDC were signed more than twenty years ago, yet the money has continued to flow in the general direction that was originally intended.

Like much of the landscape around the mine, some bolstering and diverting has occurred where it was deemed necessary. Over time, the composition and importance of the revenue stream have waxed and waned as the relationship between parties changed. For example, both employment opportunities and business contracts have become more important.

Since 1990 the output of the mine, in terms of gold sales, has been valued at K14.4 billion (see Chart 44). The f.o.b. value of the mine does not include silver, as this was never mentioned in negotiations for estimating SSG or royalties. The output of silver over the life of the mine is estimated at 3.0 million ounces, whereas the amount of gold produced is 16.3 million ounces.

Chart 44: Output of the Mine (billions of kina)

Source: PJV 2009, EPG
Note: Does not include silver output.
Porgera Joint Venture

As noted above, all benefits are derived from the PJV gold mining operation. Each stakeholder takes a share of the gold that is mined from Porgera. Payments from the gold at Porgera are shared between the national government, the EPG, landowners, and international contractors (see Figure 12).

Figure 12: Benefit Stream from the Porgera Gold Mine

High up in the PNG highlands lies an internationally valuable commodity, inaccessible to all but the largest and most technically advanced mining companies. The rewards for the PJV are the profits gained from mining the gold, yet these rewards come at a cost to legitimate landowners and require sharing rewards with others in the country from which the rewards are derived. Over the past twenty years, revenue from the mine has totalled approximately K6.4 billion (see Chart 45). The largest financial benefits from the mine come from wages (31.0 percent), taxes (30.5 percent), and business contracts (29.0 percent). These three benefits account for 90.5 percent of all the mine’s financial benefits. The size of each benefit stream, as a proportion of the total, is charted below (see Chart 46).

Chart 45: Revenue from the Porgera Gold Mine (millions of kina)  

![Chart 45: Revenue from the Porgera Gold Mine](image)

Source: PJV 2009; EPG.

Chart 46: Value of Resource Output (% of total)

![Chart 46: Value of Resource Output](image)

Source: PJV; EPG.
Because of the lack of time series data for contracts, it is difficult to track funding from various sources over time or evaluate how their importance to PNG has changed. However, wages and taxes appear to have grown more than other forms of benefits.

National Government

The national government’s stake in the Porgera mine is through the payment of company taxes, income taxes, customs duties and other levies, and fuel taxes. There is however, a distinction between how much the state benefits in taxation and how much the nation benefits in terms of wages and business contracts. Both are presented in Charts 47 and 48.

The national government also allocates money back into the Porgera District and the Enga Province, as part of its commitment to the MoA, in the form of SSGs, PIPs, and TCS. The people of PNG, including those outside of Porgera and Enga, benefit from wages, business contracts, education and training, and infrastructure improvements.

In total, the national government has received K2.2 billion or over a third of total mining benefits. Including transfers, the national government has received approximately K1.7 billion (see Chart 47) with transfer to the Enga Province and Porgera totalling approximately K500 million. PNG nationals living outside of Enga and Porgera have received approximately K1.1 billion in benefits (see Chart 48). Approximately 68 percent of all the benefits from the mine are captured by those living outside the immediate area of impact.

Chart 47: Financial benefit to the National Government (millions of Kina)

Chart 48: Financial benefit to the PNG People (millions of kina)

Source: Data based on PJV (2009) and EPG
Enga Provincial Government and Porgera District Administration

The EPG receives royalties, SSGs, and an equity stake in the mining project. It allocates a proportion of its financial benefits back into the Porgera District through DA funds, Porgera Development Grant, and special grants and project funding.

The people of Enga have benefited from wages, business contracts, education and training, and infrastructure projects.

Measuring increases in the taxation base of the EPG is difficult due to a lack of official data. It is only possible to generalise about the types of financial benefits accruing from the Porgera gold mine. However, in total it is estimated that the Enga Province receives approximately K766 million. This is split between the people of Enga, who receive approximately K424 million, and the EPG, which has received approximately K342 million. Of the K342 million received by the EPG, approximately K226 million represented transfers from the national government.

The funds received by the EPG are in part transferred to the Porgera DA and LLG. These are the implementing arms of the EPG and source revenues from SSG payments, the EPG, and the PDA (see Figures 13 and 14). Chart 49 summarizes benefits to the province as a whole and to the EPG.

Figure 13: Financial Allocation to the Enga Provincial Government

Figure 14: Financial Allocation to the Porgera District Administration

Note: Education and training data were unavailable, by group.

The DA has responsibility to present all plans and budgets to the Joint District Planning and Budget Priorities Committee. So far, the DA performance has been below that required by the Organic Law on Provincial Governments and Local Level Governments. It has suffered from a lack of funding and organisational capacity, and its leadership has previously been painted as weak and ineffectual (Sheldon and Kuper 2002).
The PDA receives a number of revenue streams from the PJV and other sources to fulfill its obligations as laid out in its constitution. In a sense, funds flowing to the PDA are accruing to the landowners, to whom they provide indirect benefits such as health, education, and infrastructure (see Figure 15).

Figure 15: Financial Allocation to the Porgera Development Authority

The PDA is to some extent, the bridge between the expectations for development and the financial payments to achieve that development. However, it is not immune from criticism; for example, it lacks an adequate approach to HIV prevention (Kolo 2009).
This may be due to issues with PDA’s capacity to deal with the disease and to work with external stakeholders. What is apparent is that since the PDA lost its civil engineer and its capacity to implement infrastructure projects, the PJV no longer uses it to undertake TCS infrastructure projects. Funds from the PDA also help finance the Porgera DA office.

The greatest concern for those most affected by the mine is the lack of publicly available information on the expenditure of funds. Based on the information that is available, it is estimated that the PDA received K240 million, although this is likely to be a substantial underestimate since it does not include funds from the public investment program.

Landowners

SML landowners receive the broadest array of benefits from the mine; they are able to participate in both the direct and indirect benefits streams more easily than other parties. Their needs are generally framed more broadly than just cash payments; they also include access to services and opportunities to participate in training and business opportunities brought about by the mine.

In the Porgera case, the landowning community that has shared royalty and compensation benefits is fairly small, made up of perhaps 4000 individuals (see Figure 16) (Banks 2007, 2009).

**Figure 16: Financial Allocation to Landowners**

Landowners have received an estimated K1.1 billion in cash and benefits since the beginning of the mine (see Chart 50). The four highest payments include business contracts worth K402 million, wages of K278.7 million, compensation of K186.8 million, and royalties of K119.2 million (see Chart 51). Data on the financial benefits to landowners from equity were not provided by MRDC and therefore remain unknown.
Landowners also have access to a number of trust accounts including the SML Children’s Fund, the North and South Anawe Trusts, and Kupiane Investments\(^{15}\) (see Chart 52).

\[\text{Source: PJV 2009}\]

\[\text{Note: Totals do not include equity.}\]

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15 Finlayson (2002).
International Benefits

Internationally, the benefits of the mine go to international shareholders in the PJV, shareholders of international contracting companies, and businesses that sell products or services to expatriate mine workers. In addition to PJV profits, benefits include wages, education and training, and business contracts (see Chart 53). In total, international stakeholders received K1.6 billion of the revenue from the mine.

Unfortunately, no complete data were available on profitability of the mine. The limited data from 1997 to 2001 indicate that the PJV made a profit of K723 million. To put this into perspective, total distributions from the mine’s revenues during this period amounted to K1.5 billion (see Chart 54).

Chart 53: Benefits to International Stakeholders (millions of kina)

Chart 54: Earnings before Taxes (millions of US dollars)

Source: PJV (2009)

Note: Estimates are for Placer Dome’s 50 percent interest in the PJV.
SECTION 6: EXPENDITURE OF FINANCIAL BENEFITS BY SECTOR

Over the past twenty years, large amounts of financial resources have flowed into the SML, Porgera District, and Enga Province. How this money is spent and allocated to various projects will determine whether expectations for a better life are fulfilled or the community continues to struggle. In this section, the data are analysed by sector, keeping in mind that there are overlapping benefit streams, particularly where infrastructure spending from TCS, IDP, and CFG occurred in health, education, and other sectors.

Education and Training

Landowners’ expectations included improving the education standard of the community and the next generation. Over the operating life of the mine, almost K62.0 million has been spent on education and training in the Porgera/Paiam area. This includes infrastructure projects for a new school, equipment, and teacher housing as well as the payment of fees.¹⁶

There are five sources of funds for education and training: the PJV (internal and external opportunities for employees and their dependants), TCS (school infrastructure), IDP (school infrastructure), CFG (school infrastructure) and royalty payments to the Children’s Fund (see Chart 55). Funds from the PJV and the SML Children’s Fund account for more than 97 percent of all expenditure on education and training in the region (see Chart 56). Approximately K3.1 million has been spent by the TCS, IDP, and CFG.

Chart 55: Funding for Training and Education in Porgera (millions of kina)

Chart 56: Contribution of Each Revenue Stream to Training and Education (%)

¹⁶ Education expenditure does not include expenditure from the PDA, LLG, or DA.
A significant share of education and training benefits comes from the PJV’s internal and external training programs (see Training and Education, in Section 4). Expenditures for these programs have amounted to K29 million since the mine began operating, with 61 percent going to external education.

A number of schools within the Porgera Valley — including the Porgera Valley International School, Porgera High School, and the Paiam Community Schools — have benefited from TCS, IDP, and CFG programs.

**Infrastructure**

Infrastructure — particularly the development and maintenance of the Paiam township, access to electricity, and roads — were clearly laid out in the MoA as key considerations before the mining project began. There are four main sources of funds for infrastructure: the CFG, the TCS, the IDP, and the Wabag-Porgera Highway Maintenance Fund.17

Expenditure for all six infrastructure programs over the last twenty years totalled K252.4 million, excluding administration, which cost an additional K15.6 million (see Chart 57).

Infrastructure funds were allocated to various areas (Porgera, Enga and the State) based on the cost of work done in the area, including the TCS, IDP, and CFG programs. In the case of road development and maintenance, it is difficult to pinpoint to whom the benefit accrued. For example, the Wabag-Porgera road may not have had any maintenance or development done in either Porgera town or Paiam, but the benefits of a good all-weather road to Wabag would mostly accrue to residents of Porgera and Enga Province. In fact, the largest beneficiary from the project is probably the PJV, because it allows its product to move easily and quickly into and out of the Porgera Valley. Local residents also benefit, as they have access to an all-weather road to the Valley.

For the Lae-Porgera, Wabag-Porgera, and Highlands Highway infrastructure projects (totalling K126.4 million), it is the benefit to the landowners that is of importance, and therefore this paper has allocated the benefits to landowners based on this rather than the PJV; it is also true that the benefits also accrue to the mine operators. Overall, the distribution of benefits remains robust to changes in the distribution to the Wabag-Porgera Highway.

Infrastructure projects were directed towards health, education, physical infrastructure, and community infrastructure. Each group also received different types of infrastructure, as some programs were directed towards specific types of infrastructure, in particular, roads, in the case of highway development.

Two types of infrastructure, hard and soft, are generally identified by the public. Examples of hard infrastructure include roads, bridges, electricity, water, and sewage systems. Other types of public infrastructure, such as public ovals, parks, public fencing,

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17 Infrastructure does not include expenditure from PDA, LLG or the DA.
Expenditure of Financial Benefits by Sector

post offices, cabling, and shared community areas, can be considered soft infrastructure. For the Porgera District, K13.2 million has been spent on hard infrastructure and K4.0 million on soft infrastructure.

From the six infrastructure programs, Porgerans have received K112 million, which equates to 45 percent of total infrastructure payments. The rest was split between Enga Province (25 percent) and the State (30 percent) (see Charts 57 and 58).

Chart 57: Infrastructure Spending by Group (millions of kina)

<table>
<thead>
<tr>
<th>Year</th>
<th>State</th>
<th>Enga</th>
<th>Porgera</th>
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<tbody>
<tr>
<td>1990</td>
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<td>2008</td>
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</table>

Source: PJV (2009)

Chart 58: Infrastructure Spending by Group (%)

- State: 30%
- Enga: 25%
- Porgera: 45%

Source: PJV (2009)

The only infrastructure program not allocated based on where the project was implemented is the Wabag-Porgera Highway. A lack of data on the actual location of works and the fact that most of the benefit from the infrastructure will accrue to people in the Porgera Valley, particularly given that it opens up the Valley to trade nationally, benefits are assumed to most accrue to Porgerans.

How one assesses the benefits of infrastructure spending depends on how one distributes the benefits from the Lae-Porgera Highway. For example, the assumption that the benefits from the project accrue 75 percent to Enga (25 percent to Porgera) would change the distribution of infrastructure benefits from 45 percent to 26 percent for Porgera and 25 percent to 43 percent for Enga. (the State’s benefits remain at 30 percent of expenditure.)

TCS, IDP, and CFG expenditures in Porgera have focused on roads, accounting for 28.9 percent of expenditures. The second largest expenditure item is public administration; that is, building of infrastructure for public servants (18.9 percent),

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18 This does not include expenditure on the Wabag-Porgera Highway, Lae-Porgera Highway or the Highlands Highway.
followed by water and sewage (13.9 percent). These are the types of expenditure one would expect when building a new town (see Chart 59).

Chart 59: Expenditure in Porgera by Type

Source PJV (2009)

Income and Savings

Aside from the financial benefits of investments in health, education, and infrastructure, landowners receive income from the project from royalties, equity, business opportunities, and wages. It is difficult to estimate incomes from business opportunities, as data on the profitability of firms, at least for the majority of contracts, are difficult to ascertain, and wages paid to Porgerans were not collected separately by the PJV, until 2001.

The lack of wage data is particularly troublesome, as wages could be expected to account for the largest part of income from the mining operations. However, there are forms of benefits that produce income that are more easily tracked, including royalties, compensation, and equity payments (see Chart 60).¹⁹ Compensation and royalty payments totalled K29.6 million in 2009.

Royalty and compensation payments have totalled K305.0 million since 1990, and have been rising steadily, in nominal terms, since mining began. However, the population has also been rising steadily, meaning larger payments are being spread among more people. Cash income based on author estimations derived from the mine in the form of wages, estimated at K305 million since 1990 (see Chart 60).

¹⁹ Royalties include payments to SML landowners, the Children’s Fund, the PLoA, and the Young Adults’ Trust. Compensation does not include the Lower Porgera or Kaiya River.
Estimating savings is more difficult than estimating income, and would require a detailed household survey. However, there are estimates that Kupiane Investments totalled K10 million in 2001, and the SML Children’s Fund contained almost K6.8 million in 2009.

There are other programs in place to increase savings, including real estate investments, which totalled K10 million in 2001.

Given the growth in Port Moresby real estate values, considerable sums of money may be housed in investment portfolios. However, no data were provided on the status of either Kupiane Investments or the PJV real estate advisory service.

Lack of Data

All payments from the TFC, IDP, CFC, and road projects have been allocated, but a large hole in the data collection process for outcomes still remains. The lack of data from the PDA, LLG, PLoA, and DA leads to questions about how effectively revenue from the Porgera mine is being spent by the various institutions whose role it is to translate these revenues into benefits. While collecting data on revenue received has mostly been successful, what happens to the money after it enters these institutions is far from clear.

Although we can estimate now how much is received by the PDA, it is unclear just how and where it spends that money. No details are available on the internal process it uses to distribute money or how contracts to third parties are tendered. In fact, these organisations may not have the technical skills to track their own financial expenditures. This highlights concerns with not only overseeing how funds are distributed but also with the organisation achieving value of money.

Furthermore, the Department of Planning and Monitoring did not provide details on PIPs in Porgera. This information would have considerably increased understanding of the Porgera benefit stream.
SECTION 7: ADJUSTED BENEFITS

Per Capita

Population growth has two obvious effects on the wellbeing of landowners. Firstly, basic resources such as land, water, and gardens become scarce; and secondly, benefit payments such as compensation, royalties, and wages are distributed amongst more people, leaving less per capita to attain the basic necessities.

Population growth has been well documented throughout the life of the mine:

Estimates of the migrant population of the valley vary, made all the more difficult by the daily movement of larger number of people into and out of Porgera, particularly during the fortnightly pay weeks. As early as 1991 a PJV survey found 1400 “squatters” in one of the new relocation areas, all of whom had moved in within the last 12 months. Johathan Paraia, wearing his hat as the President of Porgera Local Government Council, estimated in 1994 that the “indigenous” population was at least 12 000, while “the immigration population, attracted by the gold mine, is estimated to be between fifteen and twenty thousand.” Fritz Robertson estimated at the start of 1994 that there were “3000 or more new arrivals since 1989” living at Porgera on “an almost permanent basis.” One of the current authors (Banks) found that, in different localities in the valley, between 17 percent and 43 percent of respondents to surveys at Porgera were not from Porgera and based on this an estimate that at any one time up to 40 percent of the non-mine population of the valley were not Porgeran. The SML census figures given above give a similar result, and mean that out of the current population of 22 000 in the Porgera Valley, somewhere around 10 000 of them have moved to Porgera as a result of the mine operations since 1990 (Jackson and Banks 2002).

The high level of population growth, well in excess of the growth of the Porgeran labour force at the mine, reduces the amount of compensation and royalty payments available to each family and person. It also means that wages are spread more thinly over larger families and wantoks. The size of this reduction depends on the growth in population and in the number of people accessing royalty and compensation payments.

The list of SML landowners who are eligible to SML royalty payments is kept by the PDA, and the author does not have access to that information. However, given that there are some estimates of growth in the SML landowner population, we can use these as a proxy of the official list.

Gold Volumes and Prices

Gold prices and volume determine the amount of royalty and SSG payments. As shown in Chart 4, gold prices remained relatively stable during the first four to five years of production and then dropped from 1995 to 2001. During this period production remained stable at around 800 000 ounces. Since 2001 gold prices have recovered strongly in US dollar terms, followed by growth in royalties from about 2003 onwards.
For landowners, royalties and SSG have never been the largest form of benefit from the mine, although they are perhaps the most visible. Wages from mining were more important as a source of income, although compensation, particularly in the early years, was the largest source of PJV-derived benefit.

While gold prices are without doubt an important contributor to income, a depreciating US$/K exchange rate can also increase wealth: when gold is paid for in US dollars, which are then converted to kina, the seller receives more money due to the lower price of the kina relative to the dollar.

From 1995 until 2006, the kina was depreciating against the dollar; in fact, the large depreciation in 1996 was responsible for an additional K176.0 million in f.o.b. revenue, while since 2002 US$ gold prices have made a positive contribution to revenues. However, during this same period the quantity and the exchange rate have worked in the opposite direction to lower the kina value of the gold.

Overall movements in f.o.b. revenue have been driven by gold prices (a positive contribution of $US353.0 million), movements in the exchange rate (a positive contribution of K162.0 million) while changes in the volume of gold have contributed $US98.0 million (see Chart 61).

**Chart 61: Contribution to growth in F.O.B. Revenue from Changes in Price, Quantity and Exchange Rate**

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**Source:** Calculation based on data provided by EPG.

**Note:** The total contribution of gold prices and quantity changes are measured in US dollars, while the exchange rates contribution is measured in kina. Therefore, the components do not sum to total Kina f.o.b. movements.
Real Benefits

The benefits streams calculated in this paper are in nominal terms; that is, they are not adjusted for inflation. Two separate payments that are nominally the same but that are received at different times are not of the same value if inflation has occurred between the first and second payment, because it would reduce the value of the second payment.

Since many benefits are not adjusted for inflation, but are tied to gold prices, output volumes, and exchange rates, the real value of the benefit stream can potentially fall over time. Inflation, in this section, relates to payments of royalties, compensation, and wages rather than infrastructure development. Real income could be estimated for spending on health, education, and law and order if expenditure data were available.

Inflation-adjusted (in economics terms, “constant”) dollar or kina values indicate, at least in the case of royalties, that payments have increased in real terms (see Charts 62 and 63). That is, after adjustment for inflation, payments are still higher than in previous years.²⁰

Chart 62: Current and Nominal Royalty Benefits from Porgera Gold Mine (millions of kina)

Chart 63: Current and Nominal Compensation Benefits from Porgera Gold Mine (millions of kina)

Source: Based on data from Bank of PNG (Goroka) CPI (2009).

In real terms, benefits from both royalties and compensation have grown slightly more than inflation.

Conclusion

While benefits from mining projects can be substantial, this may not always be the case. As a proportion of the benefits are not tied to inflation or the number of people within a household unit, payments are spread more thinly as the population increases. Financial literacy based on household budgets rather than business development has not had a formal role in the MoA or in subsequent landowner programs. Mining communities that have gone through rapid industrialisation due to resource revenues are likely to experience many unexpected social-cultural impacts, such as rising consumerism, alcoholism, and domestic violence (Aube and Laidlaw 2010).

Landowners should be informed early in the process of the risks to benefit streams over time and within family units. There needs to be a greater understanding of the role of savings within the community and how consumption-versus-saving decisions today will affect opportunities tomorrow. Programs have so far focused on business development, without any associated information on the family unit and how individual payments can be consumed or invested differently to produce substantially different results. That is, while business development services offer one benefit to the landowners without more general financial literacy programs for the general population, financial payments are less likely to be sustainable.

PJV has introduced a household financial management course in the last two years; however, for any new mining development, it is important that community members understand not only their household finances but also where those finances are derived and what they are reliant upon. World markets play a large role in determining some benefits.

Training women in financial literacy may have a very large effect on the wellbeing of families. There is certainly a case for further studies to ascertain if greater access to financial information is related to household wellbeing. The greatest effect on household wellbeing from improvements in financial literacy may be during the early phase of the benefit stream, when benefits may be larger and the Net Present Value is highest.

Financial advice for lottery winners is considered a key to their successfully maintaining their wealth. Landowners in resource project areas very much need similar advice.
SECTION 8: GENERAL OBSERVATIONS

Importance of Tracking Responsibilities

The roles and responsibilities of institutions must be carefully monitored to ensure that all links in the chain are strong. This responsibility falls to the IPA, which has in some sense failed to ensure that each party is compliant with its legal responsibilities and that information that is critical to community perceptions is released in a timely and proper manner. The financial records of these institutions play a vital role in monitoring and evaluating the output of all parties against any agreed responsibility.

Furthermore, it can help to remove allegations and innuendo. This is particularly helpful as any perceived deficiencies in the system are ultimately laid at the feet of the developer. This does not create an environment conducive to investment but perpetuates the stereotype that mining in PNG is extremely difficult. Ensuring all parties’ performance is closely monitored fosters transparency.

Investment Promotion Authority

The role of the Investment Promotion Authority (IPA) is to oversee and ensure businesses’ compliance with their legal obligations, and through this process it addresses its other role, to encourage businesses to invest in PNG. If IPA fails to achieve its first role, then it will fail to achieve its second, particularly where the benefits from international investment are not being clearly shown or communicated to the local population.

In discussions with many local residents there has been a sense that large amounts of money are being received by local institutions but that there is nothing to show for it. The sense of mistrust and disappointment can be overcome by increasing transparency. Lack of transparency in public institutions and the resultant problems on the ground make international firms less willing to invest.

IPA’s powers only extend to information collection, not to ensuring that audits or general meetings are held or that associations adhere to their own rules. For example, the IPA only has to hold information on the PLoA but has no legal backing to follow up on whether the information is correct or the finances are being properly and legally disbursed.

This leaves large amounts of royalties, in the PLoA case, K40.2 million that is untraceable and unaccountable to anybody but a very small number of people.

Recommendation: Legislation should be enacted to extend IPA’s powers beyond information collection to ensure landowner associations are legally required to report in line with the requirements of the Associations Incorporation Act.

Porgera Development Authority

There is a complete lack of transparency and accountability in many of the institutions associated with the Porgera mine. Comments by the PJV, MRA, EPG and the
Department for Provincial Affairs, indicates that the PDA does not produce the required financial reports, the board is no longer functioning properly, and the legally required annual reports to the minister are not being made. Furthermore, the financial affairs of the PDA are subject to the provincial *Treasury Act*. This may not have always been the case, but at present there is no accountability, transparency, or adherence to legal requirements.

A Special-Purpose Authority (including the PDA) must present to the LLG and the Minister a report reviewing the operations of the Authority during the period since the last report (if any) has not been provided. A lack of sanctions (such as withholding of funding) makes it almost impossible to provide transparency and accountability on landowner and government institutions.

**Recommendations:** The MoA agreement stipulates that the PDA cannot be abolished except by the wish of the landowners, funding arrangements such as payments of SSG should be changed until it can be determined with confidence that the money is being spent properly. Other recommendations include the following:

- SSG payments should go directly to the EPG and to the PDA.
- The EPG should review its informal arrangement with the PDA.
- PIP payments should be subject to greater scrutiny.
- Project costing for infrastructure development should be provided by third parties.
- A third party should provide independent costing for the responsibilities of the PDA — for example, the cost of running the hospital and maintaining the airstrip.

**Extractive Industries Transparency Initiative**

3.5 billion people live in countries rich in oil, gas and minerals. With good governance, the exploitation of these resources can generate large revenues to foster growth and reduce poverty. However, when governance is weak, it may result in poverty, corruption, and conflict. The Extractive Industries Transparency Initiative (EITI) aims to strengthen governance by improving transparency and accountability in the extractives sector (EITI 2009b).

The benefits of greater transparency accrue not only to governments but to landowners. Landowners are not necessarily best served by their associations. This is particularly true when the associations are not bound by conditions of openness or, if bound by such conditions, fail to adhere to them.

The Implementation of Extractive Industries Transparency Initiative (EITI) must be consistent with the criteria below (EITI 2009a):

- Regular publication of all material oil, gas, and mining payments by companies to governments (‘payments’) and all material revenues received by governments from oil, gas, and mining companies (‘revenues’) are distributed to a wide audience in a publicly accessible, comprehensive, and comprehensible manner.
Where such audits do not already exist, payments and revenues are the subject of a credible, independent audit, applying international auditing standards.

Payments and revenues are reconciled by a credible, independent administrator, applying international auditing standards and with publication of the administrator’s opinion regarding that reconciliation, including discrepancies, should any be identified.

This approach is extended to all companies including state-owned enterprises.

Civil society is actively engaged as a participant in the design, monitoring, and evaluation of this process and contributes towards public debate.

A public, financially sustainable work plan for all the above is developed by the host government, with assistance from international financial institutions where required, including measurable targets, a timetable for implementation, and an assessment of potential capacity constraints.

PNG has, in place, some rules for transparency and accountability, although for incorporated associations, there is little oversight and implementation of such rules, which are broken without consequence. There is no penalty for failure to comply with legislation; furthermore, the distribution of information does not occur. Information is tightly held by government departments including MRDC and MRE as well as the PDA and incorporated associations such as the PLoA.

**Recommendations:** Given the mistrust and desire for information, a full audit of the PDA, DA, and LLG should be undertaken by the IPA and EPG and the results widely distributed. This will help develop more trust within the community, benefit PDA, DA, and the LLG, and help to dispel any misconceptions. Furthermore, it will provide data to inform negotiations on the next MoA.

Further recommendations include the following:

- Undertake a full audit of the service delivery arm of government in Porgera (PDA, LLG, and DA).
- Undertake an audit of the landowners associations.
- Undertake an audit of equity managers such as MRDC, MRE, and Kupiane.
- Change the *Associations Incorporations Act* to ensure that IPA has the power to undertake reviews and audits of incorporated associations.
- Implement the EITI to increase future transparency.

**Business Opportunities**

**Limitations of Data**

While the number of business contracts awarded by the PJV to Porgerans appears to be large, the aggregate numbers may hide the real story. It is impossible without a larger and more detailed study to fully explore how much money from business contracts remains within the community (Banks 1999b).

As mentioned previously, leakages of the revenue from business contracts, including sourcing of inputs from outside the region, as well as PJV’s methodology for calculating
the actual value to a Porgeran of a contract and measuring business profitability, are all critical elements of how financial benefits of business contracts eventually trickle down to the community.

Running and developing a business takes a substantial degree of skill and experience. It is very likely that some businesses with PJV contracts are unable to make a profit and therefore are unable to take full advantage of the contracts. This will lessen the financial benefits of business contracts on the local community, and lead to an overestimation of the benefits from the mine. Therefore the value of contracts is not a reliable estimate of total benefits and should be seen as an upper bound rather than the average case.

**Business Sustainability**

Business opportunities were not necessarily considered to be part of a long-term sustainability package, but rather a way to maximise income while the mine was operational. New businesses that begin in a sheltered environment often have difficulty growing and expanding beyond the mine site. Once the project’s support is withdrawn, many businesses are unable to compete. This outcome is not particular to PNG; many small businesses do not survive more than four or five years, and being located in a remote part of PNG that is entirely reliant on employment from a mine does not increase a business’s chances of surviving once the mine has closed down.

The MoA signed by the landowners and government focused on the setting up of businesses and access to the project’s contacts; however, it was never stated as part of the negotiations whether these businesses were to survive beyond the life of the mine. Even in the best of times, many businesses do not survive, with or without the help of outside expertise. It needs to be recognised that business opportunities are, for the most part, only a way of maximising access to financial benefits, not a long-term sustainable source of income.

**Distribution of Wealth**

For twenty years, large sums of money have flowed from the mining operation to the SML landowners of Porgera. This has caused friction between landowners inside and outside the SML. It was certainly the expectation of SML landowners to develop and prosper from the mine. Landowners outside the SML may have had the same expectations. This inequality has led to resentment between the Porgeran communities (Jackson and Banks 2002).

Other inequalities exist between individuals within the group and between the sexes. Individuals within some clans received large sums of royalty money while others received far smaller payments. This inequality is exacerbated by the difference in payments between men and women (Banks 1999a; Bonnell 1999).

A more tangible example of how inequality can reduce the expectations of the community relates to intergenerational inequality. This type of inequality was seen early in the process, and changes in royalty payments were put into place to address it.
The significant inequality in the distribution of mining wealth may be an important underlying driver of mineral wealth’s failure to fulfil the expectations of the communities. All SML landowners could be assumed to have the right to expect the same level of development and financial resources from the mine.

Inequity can reduce the benefits from mining without affecting the amount of payments. It is possible that payments of K1 million distributed evenly among 1000 people will more closely match community expectations than the same amount being distributed at K500 000 to one person, K250 000 to the second person, K175 000 to the third person and so on.

The extent to which inequality along geographic, social, and intergenerational lines affects landowner dissatisfaction will require further research. However, if it reduces the perceived benefits of the mine, then payment structures may need to take it into account.

Financial Literacy

Improving the financial decisions of landowners through better information on the financial options available to each household could help align the expectations of landowners with the realities of the various revenue streams from the mine. It is important that landowners understand their consumption and savings options and how their choices will affect their wealth after the mine has closed.

Financial literacy is not only about access to financial services or how to open a bank account, but also about the fact that money in a bank account may need to be split between various needs and wants, how such choices affect future consumption, how inflation over time can reduce their payments from the mine, and how increasing family size reduces the amount of money each person receives.

In educating landowners, greater emphasis also needs to be placed on how revenue from the mine — such as royalties, equity, wages, and compensation payments — is subject to risk and how payments vary for numerous reasons. The PJV has in the past been used as a scapegoat escape for poor financial decisions by government institutions. While adherence to EITI principles may help reduce this practice, landowners will need help in understanding where they fit into the financial payments system.

Recommendations: The following steps should be taken to improve financial literacy among landowners:

- Place greater emphasis on informing landowners about the various benefit streams.
- Increase all landowners’ knowledge of what determines the amount of money they receive.
- Provide financial counselling to all landowners.
- Place greater emphasis on educating landowners to become financially literate.
Equity Stake

Sharing the lode (sharing in the benefits from the gold and silver mined at Porgera) is a notion that has been embraced by Porgerans in the form of an equity stake. Other landowners have taken a similar approach, but Porgerans’ equity stake is different in some ways. Landowners are taking a stake not only in the revenues but also in the costs of running the mine. This has large ramifications for landowner returns and expectations.

Pulling the gold from the ground is difficult; however, managing the financial side of gold once it has been extracted is just as difficult and perhaps even more so. Some gold mining companies have in the past been caught with poor hedging and selling strategies, particularly as the price of gold goes down and costs of extraction go up. This has ultimately cost the company and landowners money.

Managing gold is a skilled business in itself; it could be argued that MRDC and MRE do not have the necessary technical skills to manage the product once it has been extracted. Therefore, the question is how to best turn an equity stake into a revenue stream for the benefit of landowners and the provincial government. Two options are to sell the equity stake and to retain it but with better oversight and management.

**Option 1** is perhaps the most obvious and radical answer: sell the stake in the PJV and use the money as a trust account managed to produce a future revenue stream, for either consumption today or saving for tomorrow. There is certainly a financial argument in favour of selling, based on risk and return: diversifying from a purely gold-based portfolio to one that includes other financial assets and instruments could reduce the risk of bad returns and increase the average return at the same time.

This argument is reinforced by the lack within these organisations, at least in the MRDC, of the financial skills needed to undertake the selling and investment of the equity stake. If the PJV and the landowners are willing to negotiate a price for the outstanding equity, then it is clear that any notions of a ‘social licence to operate’ are misplaced. A well managed pool of funds that is more transparent than the current arrangements would appear to be a superior option to the ‘participatory’ model that is now in place.

Oversight and management of funds should be undertaken by the Bank of PNG. This will make use of the bank’s experience with managing money and open and accountable structures. The State’s Sovereign Wealth Fund could also be used to manage the money, and its board could provide information on how well that money was managed.

**Option 2** is how to improve both the oversight of the landowner equity stake and the returns using the current structure.

**Recommendations:** Steps to improve management of the equity stake could include the following:
• Sell the landowners’ and EPG’s equity stake in the Porgera gold mine.
• Manage the equity stake under the same process as that of the State’s Sovereign Wealth Fund.
• Give responsibility for oversight of the fund to the board that oversees the State’s Sovereign Wealth Fund.
• Consult all landowners on how the money from the sale of the equity will be disbursed.
• Pending the results of audits, make either the LLG or DA responsible for allocating the funds to landowners.
• Any social or infrastructure expenditure should be undertaken by the EPG.

The Largest Benefits are not Negotiated

Control over the financial benefits through the negotiation process may be the ideal, yet it does not in itself guarantee wealth. Wages, for example, represent a substantial component of landowner benefits, yet even with the provision of preferential employment clauses, actual control of corporate hiring decisions ultimately (and rightly) lies with the project operator. Furthermore, the wages of employees are set (and rightly) by the project operator, therefore, a large workforce may not control a large proportion of the benefits simply due to lack of skills and education.

Royalty payments, while in some sense negotiable, are influenced by external factors such as resource prices, exchange rates, and quality of the ore body. Furthermore, the benefits streams relationship to the real economy (particularly for royalties, less so for wages) means landowners do hold some risks in the extraction process.

As mentioned previously, business contracts, while large in absolute value, may not provide the income originally expected by landowners due to cultural factors, business management skills, and work ethics. The profitability of contractors may be determined more by the above factors than by preferential treatment clauses.

Analysing and documenting the types of risks held by landowners under various compensation regimes would help landowners understand just how the resources are transformed into financial and social benefits. For example, landowners competing for business contracts while lacking business management, planning, supply chain management, and accounting skills will not result in the expected flood of revenue.

Unilateral Changes to Contracts

Unilateral changes in MoAs place considerable strain on trust and goodwill when the parties to it next enter into a negotiating process, and reduce the ability of the counterparty to achieve its objectives. They may also considerably reduce the benefits of a mining project to the people most affected by it and therefore increase tensions within the mine-affected community.

During discussions held with the EPG, it was noted that for SSG payments the state sought to adjust rates at which the SSG is calculated. The state purportedly, through a unilateral National Economic Commission decision in 2001, sought to reduce the SSGs
from one percent to 0.5 percent. From 2002 to 2005, the state paid SSGs at 0.5 percent of f.o.b. revenue. In 2005, the state further decreased the SSG rate to 0.25 percent of f.o.b. revenue, and continued to pay at that rate from 2006 to 2010.

This is a deliberate unilateral change to the SSG provisions in the MoA, and it contravenes the spirit of the SSG clauses to increase financial benefits to the province. It also represents a large reduction in benefits to the province from hosting the mining project.

Recommendations: Payments should be made directly to the EPG rather than through the national government. In addition, payments should only be made directly to other organisations that comply with their legal obligations and undertake audits and annual meetings as directed in their constitution.

MoA Review

The MoA contains only two clauses for review. The state and EPG agreed that SSG payments were to be reviewed, firstly, ten years after the date of the grant of the SML, and secondly, if the state entered into a more advantageous arrangement for payments of a SSG with any other provincial government. Both the MoAs and the MDC were supposed to last for the life of the mine. There is no requirement for reviews to be undertaken in the original agreements, which could be considered a substantial oversight by the EPG and landowners.

Recommendation: The MoA should be reviewed immediately, and the review should take into account the findings from reviews of service delivery institutions as previously recommended.

Enormous Wealth, Enormous Cost

This study represents a preliminary analysis of the institutional and financial flows of the Porgera gold mine; it does not attempt to detail the full picture.

The fact remains that, from a financial perspective, large quantities of money continue to flow into the region, yet it is difficult to understand how that money is transformed into services and infrastructure. Such an understanding is made difficult, if not impossible, by the complete lack of transparency and accountability and disregard for financial openness and legal responsibilities of some of the entities involved.
SECTION 9: CONCLUSION

While this paper attempts to link a number of processes and ideas, ultimately the question is whether or not the system has worked. Have the financial and development expectations of landowners, developers, and the various governments been achieved? Is there a sense that there has been some development for the Ipili people and the original inhabitants of the Porgera Valley? Or is there a feeling that times are no better today than they were prior to the mine and that development has not increased the possibilities and choices of the original inhabitants?

It is certainly difficult from a purely financial perspective to come to any firm conclusions about the expectations of landowners. However, from previous agreements it appears that many of the development objectives laid forth in the original MoA have been achieved. From a purely financial perspective, a lot of financial resources have been put in the hands of landowners, and expectations — not only for cash but also for a real financial stake in the mine through wages and business contracts — have been achieved.

However, there have also been failures, particularly to meet the expectation that equity payments would give landowners access to the wealth enjoyed by other parties. Overall, the financial story does not match expectations. In particular, there is a clear feeling that some money has not been appropriately allocated. However, each institution casts blame on different actors.

In that sense, this paper has helped to illustrate just what financial benefit streams have been available to each party. However, it has not been able to illustrate how the money has been turned into services and infrastructure. While the contribution of infrastructure payments are clearly laid out, outcomes from the services arm of the government — the PDA, DA, and LLG — did not eventuate.

Given the mistrust and desire for more information, this paper recommends that a full audit of the PDA, DA, and LLG be undertaken and the results widely distributed in the community. This will help develop more trust within the community, will benefit the PDA, DA, and LLG, and will help to dispel any misconceptions. It will provide data on which to base negotiations for the next MoA. It would be ill advised to settle on a new agreement without full knowledge of the financial outcomes from the current system.

This paper is framed around the financial benefits and the development that those benefits have brought, including training and education, health services, employment, infrastructure (including electricity, roads, and water), and large sums of money. All this has been brought to a remote people that twenty years ago were living lives that could not be more different.

There certainly has been progress in many of the areas that were important to landowners; but in some cases, it is difficult to imagine that all of the money was spent as effectively as it could have been and that all institutions have operated as envisaged by legislation and by community stakeholders.
Finally, until there is greater transparency in how resource finances are distributed both in terms of individual and community benefits, PNG will remain resource rich and its people poor.
BIBLIOGRAPHY


Government of PNG, 2010. ‘Infrastructure Tax Credit Scheme Guidelines’, Department of National Planning and Monitoring, Port Moresby: Government of PNG.


## Appendix A: Data Transformations and Scale

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Landowners based on Finlayson (2002) and EPG payments.

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### Appendix B: Total Payments from the Porgera Gold Mine

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<th>Donations</th>
<th>Wages</th>
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*Infrastructure expenditure includes Tax Concession Scheme (TCS), IDP, Highlands Highway; Porgera-Wabag Highway and Lae-Wabag Highway.

Source: PJV (2009), EPG
Appendix C: Benefits Stream from the Porgera Gold Mine to the National Government (Kina)

<table>
<thead>
<tr>
<th>Year</th>
<th>Income Tax</th>
<th>Company Tax</th>
<th>TCS / IDP / Highlands Highway / L-P Highway</th>
<th>Customs</th>
<th>Fuel Levy</th>
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<th>Total Benefits</th>
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* Financial flows are uniformly distributed up to 1993.
* Excludes project developed in Enga Province and the Porgera District; includes Highland highway and Lae-Porgera Highway.
* Assumes PDA has received the same distribution payments are EPG
* IDP was equity held by the state and transferred through infrastructure to Enga and Porgera District.

Source: PJV (2009), EPG
## Appendix D: Benefits Stream from the Porgera Gold Mine to Enga Province and the Provincial Government (Kina)

<table>
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<th>Equity</th>
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<th>Wages</th>
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*Royalties include those paid to SML landowners and the Children’s fund, Porgera Landowners Association, and Young Adults’ Trust.

Source: PJV (2009), EPG
### Appendix E: Benefits Stream from the Porgera Gold Mine to the Porgera Development Authority (Kina)

<table>
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**Source:** PJV (2009), EPG
## Appendix F: Benefits Stream from the Porgera Gold Mine to Landowners (Kina)

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<th>Compensation (other)*</th>
<th>Donations</th>
<th>Royalties*</th>
<th>Equity</th>
<th>Wages</th>
<th>Education</th>
<th>Training</th>
<th>Benefits (Porgera)</th>
<th>TCS / IDP / W-P highway / CFG</th>
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* Includes Lower Porgera

b Royalties include those paid to SML Landowners, Children’s fund, Porgera Landowner Association and Young Adults

Source: PJV (2009), EPG
## Appendix G: Benefits Stream from the Porgera Gold Mine to the International Community (Kina)

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<td>81,566,653</td>
<td>26,374,495</td>
<td>797,497</td>
<td>112,900,000</td>
<td>108,728,645</td>
</tr>
<tr>
<td>2000</td>
<td>79,962,438</td>
<td>26,374,495</td>
<td>657,078</td>
<td>242,900,000</td>
<td>106,994,010</td>
</tr>
<tr>
<td>2001</td>
<td>77,349,628</td>
<td>26,374,495</td>
<td>604,558</td>
<td>141,800,000</td>
<td>104,328,681</td>
</tr>
<tr>
<td>2002</td>
<td>89,769,225</td>
<td>26,374,495</td>
<td>822,766</td>
<td>0</td>
<td>116,666,486</td>
</tr>
<tr>
<td>2003</td>
<td>62,629,446</td>
<td>26,374,495</td>
<td>925,206</td>
<td>0</td>
<td>89,929,146</td>
</tr>
<tr>
<td>2004</td>
<td>70,169,909</td>
<td>26,374,495</td>
<td>632,876</td>
<td>0</td>
<td>97,177,280</td>
</tr>
<tr>
<td>2005</td>
<td>72,148,263</td>
<td>26,374,495</td>
<td>924,030</td>
<td>0</td>
<td>99,446,788</td>
</tr>
<tr>
<td>2006</td>
<td>60,413,466</td>
<td>26,374,495</td>
<td>858,161</td>
<td>0</td>
<td>93,464,122</td>
</tr>
<tr>
<td>2007</td>
<td>77,430,193</td>
<td>26,374,495</td>
<td>566,501</td>
<td>0</td>
<td>104,371,189</td>
</tr>
<tr>
<td>2008</td>
<td>67,115,052</td>
<td>26,374,495</td>
<td>784,309</td>
<td>0</td>
<td>94,273,856</td>
</tr>
<tr>
<td>2009</td>
<td>71,831,155</td>
<td>26,374,495</td>
<td>978,179</td>
<td>0</td>
<td>99,183,829</td>
</tr>
</tbody>
</table>

| Total | 1,092,893,532 | 527,489,903 | 14,708,394 | 723,400,000 | 1,635,091,829 |

Source: PJV (2009)
### Appendix H: Contribution of Changes to Gold Price, Quantity Produced, and Exchange Rate on the Amount of SSG Payments (Kina)

<table>
<thead>
<tr>
<th>Year</th>
<th>Change in Gold Price ($US)</th>
<th>Change in Gold Quantity ($US)</th>
<th>Change in $US/K</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>-K26 340 783</td>
<td>K375 408 272</td>
<td>K0</td>
</tr>
<tr>
<td>1992</td>
<td>-K27 105 363</td>
<td>K90 925 625</td>
<td>K0</td>
</tr>
<tr>
<td>1993</td>
<td>K18 515 067</td>
<td>-K110 420 526</td>
<td>K0</td>
</tr>
<tr>
<td>1994</td>
<td>K24 929 775</td>
<td>-K47 467 582</td>
<td>K0</td>
</tr>
<tr>
<td>1995</td>
<td>-K176 348</td>
<td>-K69 524 745</td>
<td>-K69 620 260</td>
</tr>
<tr>
<td>1996</td>
<td>K3 458 385</td>
<td>K4 949 559</td>
<td>K176 107 603</td>
</tr>
<tr>
<td>1997</td>
<td>-K40 558 256</td>
<td>-K56 831 014</td>
<td>K24 973 213</td>
</tr>
<tr>
<td>1998</td>
<td>-K26 667 075</td>
<td>K3 595 963</td>
<td>K135 083 836</td>
</tr>
<tr>
<td>1999</td>
<td>-K11 315 364</td>
<td>K4 843 800</td>
<td>K100 829 151</td>
</tr>
<tr>
<td>2000</td>
<td>K118 633</td>
<td>K47 722 052</td>
<td>K46 665 403</td>
</tr>
<tr>
<td>2001</td>
<td>-K6 253 192</td>
<td>-K38 432 048</td>
<td>K120 820 902</td>
</tr>
<tr>
<td>2002</td>
<td>K24 824 107</td>
<td>-K36 116 989</td>
<td>K102 851 350</td>
</tr>
<tr>
<td>2003</td>
<td>K45 836 871</td>
<td>K65 895 967</td>
<td>-K108 237 020</td>
</tr>
<tr>
<td>2004</td>
<td>K46 702 609</td>
<td>K55 783 006</td>
<td>-K106 127 479</td>
</tr>
<tr>
<td>2005</td>
<td>K30 405 348</td>
<td>-K57 195 626</td>
<td>-K69 776 388</td>
</tr>
<tr>
<td>2006</td>
<td>K80 562 304</td>
<td>-K160 396 864</td>
<td>-K51 286 293</td>
</tr>
<tr>
<td>2007</td>
<td>K47 897 486</td>
<td>K4 730 928</td>
<td>-K17 144 857</td>
</tr>
<tr>
<td>2008</td>
<td>K111 927 748</td>
<td>K85 026 429</td>
<td>-K127 584 723</td>
</tr>
<tr>
<td>2009</td>
<td>K56 597 944</td>
<td>-K64 289 582</td>
<td>K5 035 748</td>
</tr>
</tbody>
</table>

Source: Based on EPG data
## Appendix I: Distribution of Infrastructure Funds, by Group

<table>
<thead>
<tr>
<th>Program</th>
<th>Porgera (%)</th>
<th>Enga (%)</th>
<th>National (%)</th>
<th>Total (kina)$^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Credit Scheme</td>
<td>27.6</td>
<td>23.1</td>
<td>49.3</td>
<td>K84.5 million</td>
</tr>
<tr>
<td>Infrastructure Development Program</td>
<td>48.9</td>
<td>47.0</td>
<td>4.1</td>
<td>K37.4 million</td>
</tr>
<tr>
<td>Community Facilities Grant</td>
<td>49.0</td>
<td>51.0</td>
<td>-</td>
<td>K4.0 million</td>
</tr>
<tr>
<td>Lae-Porgera Highway</td>
<td>-</td>
<td>14.6</td>
<td>85.4</td>
<td>K8.0 million</td>
</tr>
<tr>
<td>Wabag-Porgera Highway</td>
<td>75.0</td>
<td>25.0</td>
<td>-</td>
<td>K91.8 million</td>
</tr>
<tr>
<td>Highlands Highway</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>K26.4 million</td>
</tr>
</tbody>
</table>

$^a$ Includes general programs only.

$^b$ Totals do not include administration costs.

**Source:** PJV (2009)
## Appendix J: Annual Gold Production, Average Yearly Price, Annual f.o.b. Revenue and Average Exchange Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Gold Production (oz)</th>
<th>Average Yearly Price of Gold (US$)</th>
<th>Annual f.o.b. Revenue (US$)</th>
<th>Average Exchange Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>265 890.0</td>
<td>383.5</td>
<td>101 971 473.9</td>
<td>1.0</td>
</tr>
<tr>
<td>1991</td>
<td>1 216 101.0</td>
<td>362.1</td>
<td>440 362 333.1</td>
<td>1.0</td>
</tr>
<tr>
<td>1992</td>
<td>1 485 077.0</td>
<td>343.8</td>
<td>510 599 174.1</td>
<td>1.0</td>
</tr>
<tr>
<td>1993</td>
<td>1 156 670.0</td>
<td>359.8</td>
<td>416 135 165.9</td>
<td>1.0</td>
</tr>
<tr>
<td>1994</td>
<td>1 032 768.0</td>
<td>384.0</td>
<td>396 582 912.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1995</td>
<td>848 870.0</td>
<td>383.8</td>
<td>325 789 515.0</td>
<td>1.3</td>
</tr>
<tr>
<td>1996</td>
<td>854 822.0</td>
<td>387.8</td>
<td>331 508 519.8</td>
<td>0.8</td>
</tr>
<tr>
<td>1997</td>
<td>712 693.0</td>
<td>331.0</td>
<td>235 915 636.9</td>
<td>0.7</td>
</tr>
<tr>
<td>1998</td>
<td>726 806.0</td>
<td>294.2</td>
<td>213 855 397.4</td>
<td>0.5</td>
</tr>
<tr>
<td>1999</td>
<td>754 754.0</td>
<td>279.0</td>
<td>210 561 270.9</td>
<td>0.4</td>
</tr>
<tr>
<td>2000</td>
<td>910 434.0</td>
<td>279.1</td>
<td>254 111 233.7</td>
<td>0.4</td>
</tr>
<tr>
<td>2001</td>
<td>760 622.0</td>
<td>271.0</td>
<td>206 158 986.9</td>
<td>0.3</td>
</tr>
<tr>
<td>2002</td>
<td>641 811.0</td>
<td>309.7</td>
<td>198 788 121.0</td>
<td>0.3</td>
</tr>
<tr>
<td>2003</td>
<td>851 920.0</td>
<td>363.4</td>
<td>309 570 689.6</td>
<td>0.3</td>
</tr>
<tr>
<td>2004</td>
<td>1 019 746.0</td>
<td>409.7</td>
<td>417 810 331.1</td>
<td>0.3</td>
</tr>
<tr>
<td>2005</td>
<td>867 925.0</td>
<td>444.7</td>
<td>386 000 964.5</td>
<td>0.3</td>
</tr>
<tr>
<td>2006</td>
<td>523 358.0</td>
<td>603.5</td>
<td>315 825 618.7</td>
<td>0.3</td>
</tr>
<tr>
<td>2007</td>
<td>513 177.0</td>
<td>696.4</td>
<td>357 371 331.0</td>
<td>0.4</td>
</tr>
<tr>
<td>2008</td>
<td>632 603.0</td>
<td>872.0</td>
<td>551 604 511.9</td>
<td>0.4</td>
</tr>
<tr>
<td>2009</td>
<td>572 595.0</td>
<td>972.4</td>
<td>556 762 748.3</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16 348 642.0</strong></td>
<td><strong>8 730.9</strong></td>
<td><strong>6 737 285 935.8</strong></td>
<td></td>
</tr>
</tbody>
</table>