

MOBILE TRANSPARENCY?

FINANCIAL INCLUSION,
MOBILE MONEY &
PAPUA NEW GUINEA'S
RESOURCES SECTOR



I. ABOUT THIS REPORT

Purpose

This report outlines the results of a research study that was conducted on financial inclusion, mobile money and the resources sector in Papua New Guinea (PNG).

The report is intended to promote discussion about the way in which resources companies, financial regulators, banks, telecommunications companies, mobile phone service providers, aid donors and civil society can collaborate to strengthen the distribution of compensation and benefits payments from resource projects; improve social license for resources companies; and more broadly, enhance financial inclusion efforts and development outcomes in PNG. As such the report has been written for both 'non-financial inclusion' and 'non-resources sector' audiences.

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International Mining for Development Centre

In partnership with the Australian Government through an Australian Aid initiative, The University of Western Australia and The University of Queensland have established the International Mining for Development Centre (IM4DC) to assist in lifting the quality of life in developing nations through a more sustainable use of mineral and energy resources.



Centre for Social Responsibility in Mining

The Centre for Social Responsibility in Mining (CSRSM) is a part of the Sustainable Minerals Institute (SMI) at The University of Queensland. SMI has a long track record of working to understand and apply the principles of sustainable development within the global resources industry.



JKTech

As the commercialisation arm of SMI, JKTech delivers economic and social value to the global resources industry through empirically-grounded technology, products and methods. Our expertise in technology based consulting, laboratory services, software, specialist equipment, safety and sustainability and professional development is implemented to improve the profitability, sustainability, social responsibility and safety culture of resource operations globally.

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Mobile Transparency? Financial inclusion, mobile money and Papua New Guinea's resources sector.

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THIS STUDY
INVESTIGATED WHETHER
STRENGTHENING

MOBILE
MONEY
ECOSYSTEMS AROUND

PAPUA NEW
GUINEA'S
RESOURCES PROJECTS CAN

improve

THE DISTRIBUTION OF
COMPENSATION PAYMENTS
for local communities;

enhance

SOCIAL LICENSE for
resources companies; &

catalyse

FINANCIAL INCLUSION
in PNG's resource regions.

1.0 EXECUTIVE SUMMARY - PROJECT OVERVIEW

Financial Inclusion in Papua New Guinea

Approximately 2 billion adults—more than half of the worldwide adult population—do not have a registered account at a financial institution¹. As a result of this ‘financial exclusion’ from the formal economy, most people living in poor households live their financial lives exclusively within the cash and barter economy; restricted in their ability to save and protect themselves and their families from hunger, theft, unforeseen health expenses and the economic displacement caused by natural disasters².

Papua New Guinea (PNG) has some of the highest unbanked rates in the world owing to a set of interrelated challenges including geographically dispersed communities; low population density; low financial literacy; relatively underdeveloped telecommunication and banking infrastructure; and diverse cultural and language groups³.

Yet PNG’s efforts towards financial inclusion are gaining momentum. In December 2013, PNG launched its National Financial Inclusion and Financial Literacy Strategy 2014-2015, forming its commitments under the Maya Declaration—a global and measurable set of commitments by developing and emerging country governments.

The Centre for Financial Inclusion (CEFI) has been established to coordinate, advocate and monitor financial inclusion activities in PNG, including shaping stakeholder dialogue towards responsible finance and service quality; encouraging innovation; and strengthening industry development.

Together with a broad range of public and private stakeholder partners—including regulators, banks, telcos and civil society groups—CEFI is working to define industry standards for financial inclusion in PNG; promote client protection; and provide financial institutions with technical assistance for training, market research and new product development.

Mobile Money in Papua New Guinea

Increasing access to ‘mobile money’—services that allow electronic money transactions over a mobile phone—is a key pillar of the financial inclusion efforts in PNG.

Since the introduction of competition into the mobile phone industry in 2007, the access and breadth of PNG’s mobile network coverage has dramatically improved. PNG now has five mobile money services including Digicel’s Cellmoni and Mibank’s MiCash. Recent data provided by CEFI indicates that an additional 441,396 accounts were opened in 2014; 91,436 (35%) of which were opened by women⁴. This takes the total number of bank accounts in PNG to over 1.5 million. Despite these advances, approximately 80% of PNG’s population remains ‘unbanked’, without reasonable access to formal banking and financial services⁵.

The Resources Sector in Papua New Guinea

Papua New Guinea has substantial oil, gas, copper and gold deposits, as well as a significant number of existing resource projects. Equitable and transparent distribution of payments from resource projects in PNG is a challenge for regulators, companies and communities alike; often causing significant local conflict and leading to a loss of ‘social license to operate’ for resources companies.

This Study

This study investigated whether strengthening mobile money ecosystems around PNG’s resource regions can:

- Improve the distribution of compensation and benefits payments for local communities;
- Enhance social license for resources companies; and
- Catalyse financial inclusion efforts in PNG’s resource regions.

1.1 EXECUTIVE SUMMARY - RESULTS & IMPLICATIONS

Research Methods

This study used a mix of semi-structured interviews ($n=17$) and quantitative surveys ($n=88$) to examine stakeholder attitudes towards financial inclusion, mobile money and the resources sector in PNG. Participants included representatives from government regulators, industry bodies, banks, telcos, civil society and the resources industry.

Research Findings

The research data collected indicates the following:

- **Payments from PNG's resources companies are a mix of cash, cheque and electronic funds transfer**—with differences across project cycle (cash is more common in exploration) and project size (larger companies are likely to have more advanced digital payment systems).
- There was a perception that the **distribution of payments from resource projects is not effective**—for some respondents the distributional breakdown of funds was seen as 'unfair' whereas other respondents felt that payment distribution systems are not effective.
- Overall, respondents felt that **'grassroots people' do not receive their fair share of the benefits from resource projects**—the National Government, men, the Provincial Government and landowners were the groups perceived to benefit the most from resource projects; whereas youth, the broader community, women and families were perceived to benefit the least.
- A concern that **payments from resource projects are not paid directly to the bank accounts of 'rightful recipients'** was also expressed. There was a perception that **local people do not use the payments that they receive from resource projects 'effectively'** and opinion about **whether resources companies encourage local people to open up bank accounts was relatively mixed**.
- However, participants almost unanimously agreed that **a greater use of mobile money can improve the distribution of payments from resource projects** and that **greater financial literacy would improve development outcomes for PNG's resource regions**.
- Overall, the **resources industry in PNG received a mixed-scorecard** when it came to **general acceptance, support and trust**. However, the more respondents felt that **resources companies encouraged local people to open up bank accounts, the greater their levels of support and acceptance** for the resources industry in PNG.

Resource Projects as a Catalyst for Financial Inclusion

To better realise the development promise of resource projects in PNG, greater collaboration is required between the resources industry and the broad range of stakeholders working on the financial inclusion agenda.

The results of this study suggest that **strengthening mobile money ecosystems around PNG's resource projects can improve the distribution of payments to local communities; strengthen 'social license to operate' for resources companies; and enhance financial inclusion efforts in PNG's mining, oil and gas regions**.

Collectively, these development and commercial outcomes can be realised through a structured financial inclusion program for each of PNG's major resource projects. Financial inclusion programs for resource projects should: be governed by **multi-stakeholder working groups** with the roles of resources companies, banks, telcos and regulators clearly defined; take into account the project's **social context** and the results of the **social and economic impact assessment**, which itself should adopt a financial inclusion lens; match broader financial inclusion strategies to the **project size and project life-cycle**; adopt a **human rights** lens with a particular focus on gender equality; and incorporate **financial literacy programs** to better equip local people for the transition from cash to digital payments over the life of the resource project. With the financial inclusion programs and mobile money services that are now available in PNG, there is also an opportunity for resources companies, the Mineral Resource Authority (MRA) as the regulator, and the Chamber of Mines as the industry body to work with financial inclusion and mobile money providers to develop a **new 'payment architecture'** for resource projects that **greatly improves payment transparency and efficiency**.

More broadly, the results of this study suggest that **resource projects can be used as a catalyst for global financial inclusion efforts**, particularly in developing countries where geographically remote oil, gas and mineral deposits often neighbour unbanked communities.

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RESOURCE PROJECTS

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“Approximately 2 billion adults—more than half of the worldwide adult population—do not have a registered account at a financial institution”

Consultative Group to Assist the Poor, 2015



PICTURE: Children of an Asmat tribe
in a small forest village in West Papua,
Indonesia, PNG's closest neighbour

2.0 INTRODUCTION TO FINANCIAL INCLUSION

What is Financial Inclusion?

There is an emerging consensus that ‘financial inclusion’—increasing poor households’ access to and use of financial services—is linked to overcoming poverty, reducing income disparities, and increasing economic growth⁶.

In contrast to wealthy households who live their financial lives with regular access to electronic financial systems such as ATMs and online payment systems, it is both more costly and riskier for poor households living outside of the formal economy to perform basic financial activities. To compound the problem, transacting with poor households whose financial lives are outside of the formal economy is often prohibitively costly for utility companies, banks, insurance companies, and other institutions.

Financial inclusion, on the other hand, is ‘...a state in which all people who can use them have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients’⁷.

The Centre for Financial Inclusion offers four core dimensions in their financial inclusion framework:

- **What is provided:** a full range of services, including a basic product in each of the four main areas: savings, credit, insurance, and payments.
- **How it is provided:** with quality—e.g., convenience, affordability, safety, and dignity of treatment—and with client protections operating.
- **Who receives:** everyone who can use the services, including the poor, rural, informal, and groups who are often discriminated against (women, ethnic minorities, disabled); and
- **Who provides:** a range of providers led by mainstream financial institutions, but also including organisations from the private, social, and government sectors.

Global Financial Inclusion

Significant multi-lateral and cross-sectoral effort is underway to ‘bank the unbanked’¹.

The World Bank has developed ‘Findex’, a global financial inclusion database that measures the use of financial services worldwide¹. G20 member countries have established the Global Partnership for Financial Inclusion, and the G20’s Financial Inclusion Experts Group (FIEG) has released the “Principles for Innovative Financial Inclusion”⁸.

The Alliance for Financial Inclusion have developed the ‘Maya Declaration’, a global and measurable set of commitments by developing and emerging country governments to “...unlock the economic and social potential of the 2 billion ‘unbanked’ people through greater financial inclusion”⁹. The Better than Cash Alliance—founded by the U.N. Capital Development Fund (UNCDF), U.S. Agency for International Development (USAID), The Bill & Melinda Gates Foundation, Citi, Ford Foundation, Omidyar Network, and Visa—has been established to provide expertise on the transition to digital payments to bring about greater financial empowerment in emerging economies.

Collectively, these efforts are designed to increase access and lower the cost of financial services to un- or under-served markets through fit-for-purpose legislative regimes; savings and credit products; payment and money transfer services; and new mobile money technologies.

And recent data from the World Bank’s 2014 Global Findex database suggests that these multi-stakeholder efforts are working. Three years ago, 2.5 billion adults were unbanked. Today, 2 billion adults—38% of the world’s adult population—remain without an account.

2.1 ALLIANCE FOR FINANCIAL INCLUSION

Alliance for Financial Inclusion

Global and regional alliances have been formed to coordinate the significant programs of work that are required from public and private sector actors to meet financial inclusion targets.

The Alliance for Financial Inclusion (AFI) is one such alliance committed to building a global knowledge sharing network for financial inclusion policymakers from developing countries.

AFI was founded in 2008 as a Bill & Melinda Gates Foundation-funded project with funding also provided by AusAid (now the Australian Department of Foreign Affairs and Trade) to support the development of smart financial inclusion policy in developing and emerging countries¹⁰.

Utilising a peer-to-peer learning model, the AFI network enables financial policymakers to interact and exchange knowledge on policy initiatives so that they can identify and implement effective policy solutions in their home countries.

AFI's regional approach to knowledge exchange among policy makers has been particularly strong in the Pacific Islands, Africa and Latin America.

AFI's investment partners are the Bill & Melinda Gates Foundation and the German Ministry for Economic Cooperation and Development (BMZ). AFI's broader partner network includes CGAP (Consultative Group to Assist the Poor), G-20 (The Group of Twenty), Global Partnership for Financial Inclusion (GPFI), International Association of Deposit Insurers, International Finance Corporation, Omidyar Network, UNCDF (United Nations Capital Development Fund) and The World Bank.



2.2 THE MAYA DECLARATION

The Maya Declaration

Progress towards global financial inclusion has its foundations in AFI's Maya Declaration, the first global and measurable set of commitments by developing and emerging countries to unlock the economic and social potential of the 2 billion 'unbanked'.

Signatories to the Maya Declaration agree to make measurable commitments in four key areas, which are also aligned with the G20 Principles for Innovative Financial Inclusion¹¹:

- **Creating an enabling environment** to harness new technology that increases access and lowers the cost of financial services;
- **Implementing a proportional framework** that achieves the complementary goals of financial inclusion and financial stability;
- **Integrating consumer protection and financial literacy** as key pillars of financial inclusion; and
- **Collecting and utilising data** to promote evidence-based policymaking and measurable progress in monitoring and evaluation.

In 2013 the AFI network adopted the Sasana Accord, where AFI members committed to setting quantifiable national goals as well as measuring and reporting progress based on the core set of indicators identified by AFI's Financial Inclusion Data Working Group (FIDWG)¹².



The Maya Declaration

Commitments
you can bank on

“The Maya Declaration builds positive peer pressure to ensure that at national level, financial-inclusion initiatives are achieved. It enables cross-sector identification of a common national goal. This enables relevant key stakeholders to focus on the common goal. It boosts co-operation and open dialogue to devise financial inclusion initiatives to meet the target.”

Benno Ndulu, Governor of Bank of Tanzania (BOT) on financial inclusion progress in Tanzania, April 2014



2.3 FINANCIAL INCLUSION IN THE PACIFIC

Pacific Financial Inclusion Program

The Pacific is one of the least-banked regions in the world; in some Pacific countries, fewer than ten percent of the population is estimated to have access to basic financial services¹³.

Barriers to financial inclusion in the Pacific include challenging geography, poor infrastructure, natural disasters, persistent poverty, subsistence livelihoods and relatively low levels of financial competency¹⁴.

The Pacific Financial Inclusion Program is a Pacific-wide program helping low-income households gain access to quality and affordable financial services and financial education¹⁵. Managed by the UN Capital Development Fund (UNCDF) and the United Nations Development Programme (UNDP)—with funding from the Australian Government, the European Union and the New Zealand Government—PFIP currently covers Fiji, Papua New Guinea (PNG), Samoa, Solomon Islands (SOI), Tonga and Vanuatu, with Kiribati and Tuvalu potentially covered before the end of July 2019.

By 2019 PFIP aims to have one million low-income people in the Pacific—with at least 50% women—gain access to appropriate and affordable financial services (687,000 achieved by 2014).



Key Achievements in Phase 1 include¹⁶:

- Providing financial access to nearly 600,000 previously unbanked people, including 250,000 women and 360,000 people who have opened bank accounts with regulated institutions;
- National financial inclusion and financial literacy strategies developed for PNG, Fiji, Solomon Islands and Vanuatu and a national financial literacy strategy developed for Samoa;
- Establishing national finance inclusion task force in PNG, Solomon Islands, Vanuatu and Fiji;
- Established financial competency baselines for PNG, Fiji, Samoa, Solomon Islands;
- Mainstreaming financial education program into the core curriculum in schools (Fiji and Samoa); and
- Effective dissemination of information to scale through training, workshops and publications.

Phase 2 Expected Outcomes¹⁶:

- Additional 500,000 people, including at least 50% women gain access to an appropriate, affordable financial service;
- Additional 150,000 previously unbanked people with at least 50% women gain access to a formal savings account;
- 15 per cent of PFIP supported branchless banking clients are active;
- An average savings balance of USD10 in active savings accounts/mobile accounts;
- 4 additional PICs have national financial inclusion strategies; and
- 3 additional PICs offer financial education through core curricula in schools.

“ **THE PACIFIC IS ONE OF THE LEAST-BANKED REGIONS IN THE WORLD.**

Barriers to financial inclusion in the Pacific include challenging geography, poor infrastructure, natural disasters, persistent poverty, subsistence livelihoods and relatively low levels of financial competency.

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2.4 FINANCIAL INCLUSION IN PAPUA NEW GUINEA

Barriers to Financial Inclusion in PNG

Papua New Guinea (PNG) has a population of approximately 7 million people, most of whom live in rural areas. It is estimated that 85% of PNG's total population do not have bank accounts¹⁷.

Barriers to financial inclusion in PNG are similar to the barriers experienced in other Pacific nations. Additional challenges that are unique to PNG—or at least experienced to a greater degree than other Pacific nations—include PNG's cultural and language diversity¹⁸ and the high costs of building a distribution system in a country that is geographically diverse with under-developed infrastructure¹⁹.

PNG Financial Inclusion Strategy 2014-2015

To advance the objectives of wealth creation and poverty reduction in its 2050 Vision, PNG has recently launched its National Financial Inclusion Strategy 2014-2015. The objectives of the Strategy form the basis of PNG's commitments to financial inclusion, constituted in PNG's Maya Declaration.

Centre for Financial Inclusion

The Centre for Financial Inclusion was launched in 2013 to promote PNG's financial inclusion agenda; to facilitate improvement of financial services delivery; to establish mechanisms for enhanced information exchange; and to promote gender equity in financial services and financial education.

CEFI is endorsed by PNG's National Executive Council (NEC) as the industry apex organisation for coordinating, advocating and monitoring all financial inclusion activities in PNG.

PNG's Progress Towards Financial Inclusion

PNG's multi-stakeholder financial inclusion efforts have resulted in much tangible progress towards improving financial inclusion in the country²⁰:

- Together, the five mobile money providers claim over 300,000 registered users since the opening of the mobile money market in 2011. Growing at an annual rate of 202 percent since 2008, the number of financial services agents now surpasses bank branches in the country;
- Established financial inclusion and financial literacy working groups on Inclusive Insurance, Electronic Banking, FinEd & Financial Literacy, Consumer Protection, Data & Measurement, and Government Coordination in 2014;
- Member of the Alliance for Financial Inclusion's Pacific Island Working Group;
- Mainstreamed financial inclusion in GoPNG priorities, resulting in the launch of the informal Economy Policy 2011-2015 in which access to finance is one of the two pillars for those in the informal economy;
- Facilitated Government to People (G2P) learning visit for GoPNG, including from Department of Treasury, Department of Finance and Department of Planning & Monitoring on digitising G2P payments; and
- Financial Diaries research study showed that respondents typically travelled large distances to interact with banks and deposited and withdrew large sums of money.

PNG's progress towards financial inclusion is gaining momentum. Recent data provided by CEFI indicates that an additional 441,396 accounts were opened in 2014; 91,436 (35%) of which were opened by women, taking the total number of bank accounts in PNG to over 1.5 million⁴. However there is much work to be done for a country whose citizens still live in some of the highest unbanked regions in the world.

3.0 INTRODUCTION TO MOBILE MONEY

Mobile Money

Mobile money services are perhaps the most promising way to deliver financial services profitably and at scale to the poor²¹.

The definition of mobile money varies across the industry as it covers a wide scope of overlapping products, applications and services²². Mobile money is used in this report as an overarching term that describes any service in which a mobile phone is used to access financial services²³. This includes 'mobile financial services', 'mobile banking', 'e-money', 'mobile wallet' and 'mobile payments'.

With 255 mobile money services in operation across 89 countries, mobile money services are now available in over 60% of developing markets²⁴.

Mobile money provides significant potential advantages to the world's poor including²⁵:

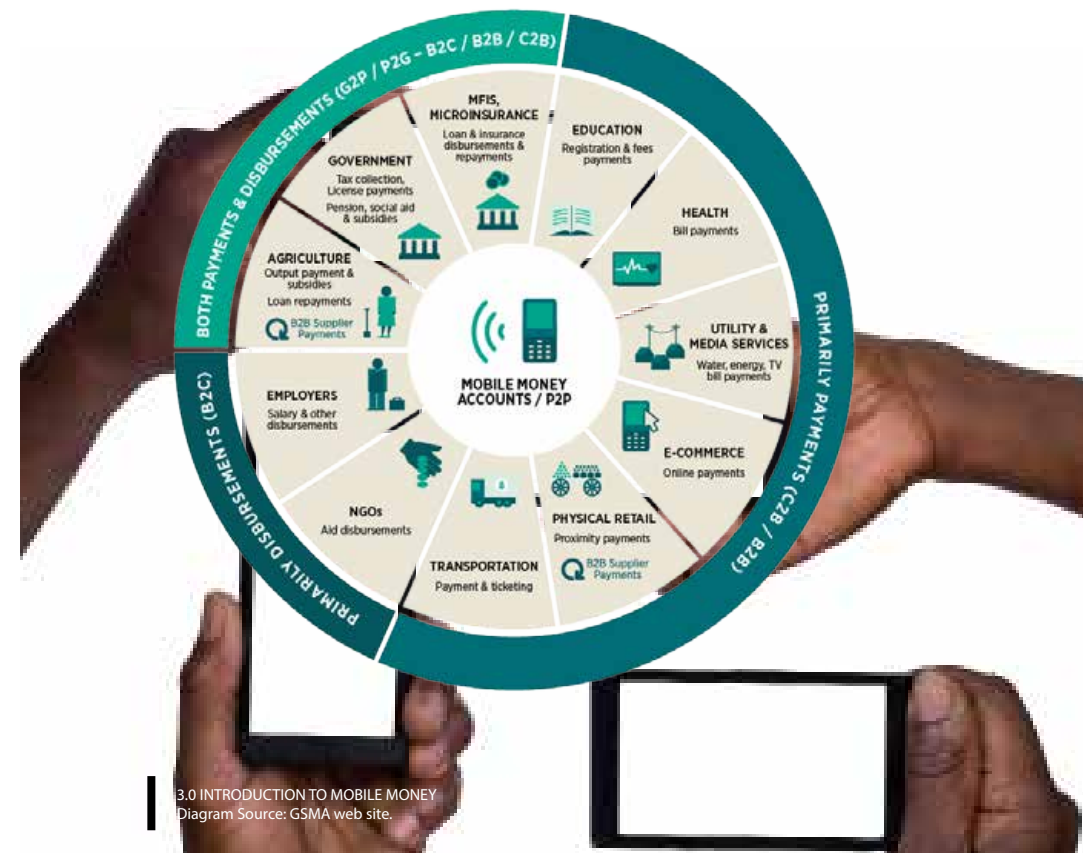
- Increased access to basic financial services leading to enhanced economic activity;
- Reduced risk of money theft and increased personal control over financial resources;
- Increased speed of payments both to and from consumers, businesses, and government;
- Improved convenience and reducing the cash in the economy;
- Lower transaction costs and improved transparency and auditability; and
- Improved competition through reduced barriers to entry for fee-for-service business models.

Mobile Money Ecosystems

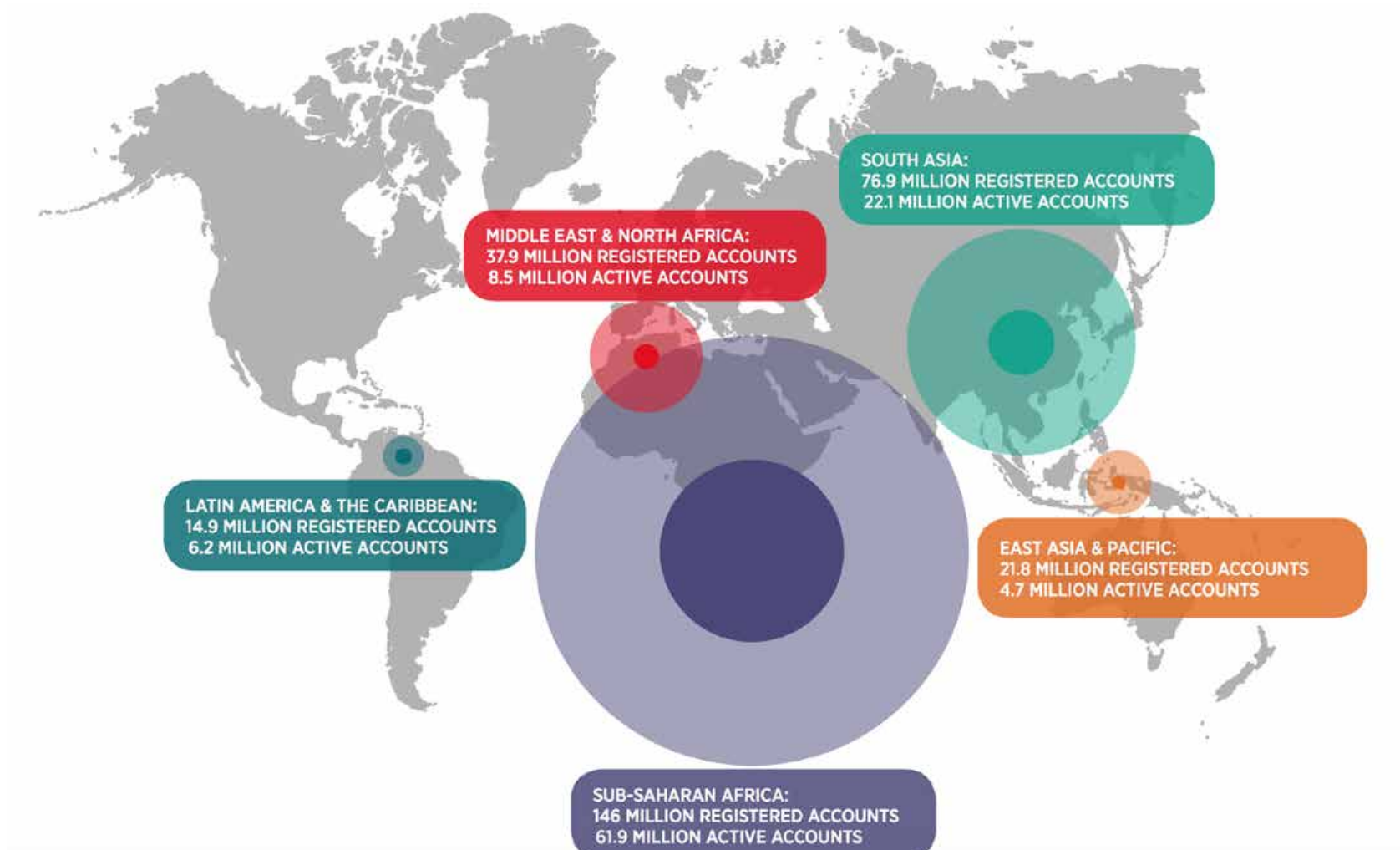
Although mobile money is often described as a product or service, the broader network of actors, infrastructure and services required to deliver mobile money services at scale is more akin to an ecosystem.

As illustrated in Figure 1 below produced by GSMA (Groupe Speciale Mobile Association)²⁶, mobile money is "...in fact a network infrastructure for storing and moving money that facilitates the exchange of cash and electronic value between various actors including clients, businesses, the government, and financial service providers"²⁷.

Figure 1. GSMA's Mobile Money Ecosystem



3.1 MOBILE MONEY IN THE DEVELOPING WORLD



299 Million
REGISTERED
MOBILE MONEY
ACCOUNTS
GLOBALLY
AT END
OF DECEMBER
2014

GSMA, STATE OF THE
INDUSTRY 2014:
MOBILE FINANCIAL
SERVICES FOR
THE UNBANKED

Figure 2. GSMA's Map of Accounts

3.2 MOBILE MONEY IN PNG

Mobile Phones in PNG

In the early 2000's, telecommunication services in PNG were limited to urban centres under the then monopoly operator, Telikom PNG²⁸. At that time, Bemobile, a Telikom subsidiary, had 160,000 mobile phone subscribers, mostly based in the capital, Port Moresby²⁹.

PNG's mobile phone landscape dramatically changed in 2007 when the Independent Consumer and Competition Commission (ICCC) opened up the market to additional providers³⁰. Following Digicel's entry to the PNG market, signal coverage was rapidly extended across the country—particularly to towns and rural areas.

There are now three mobile phone operators in PNG—Digicel PNG, Bemobile and Citifon (Telikom PNG subsidiaries)—resulting in an increase of mobile phone subscribers to 1,800,000 subscribers in 2012³¹. Average prices for mobile phone calls have also dropped by 60 percent³². As of 2014, the mobile penetration rate in PNG was reported as 41%³³ representing a dramatic increase in usage rates, although still relatively low by world standards.

Most Papua New Guineans in rural areas use basic mobile phone handsets which are easy to use and have a long battery life, although the availability of smartphones with Internet access is increasing³⁴.

Mobile Money in PNG

PNG has four formal banks which service major centres within the country. However, with approximately 80% of the total population unbanked or without reasonable access to formal banking and financial services³⁴, and with mobile penetration increasing, mobile money represents a strong opportunity to increase financial inclusion in Papua New Guinea.

As identified by van der Vlies and Watson³⁰ and shown in the table below, there are two mobile money service models in PNG: the bank-led model and the non-bank-led model.

	Bank-led	Non-Bank-led
Providers & Products	BSP (Wantok Moni), ANZ (goMoney), Westpac and MiBank (MiCash)	Digicel (Cellmoni), Post PNG (Salim Moni Kwik)
Focus	Improving banking efficiency, including moving customers from branches to mobile money and increasing mobile money transaction volumes in order to increase economies of scale, thereby driving down costs	Domestic remittances and increasing the volume of mobile transactions
Services across carriers	View balance, transaction history, mobile top-ups, transfer funds, utility bill payments, text message (SMS) alerts and account management, cash-in and cash-out services at agents, and cash-out at Automatic Teller Machines (ATMs) and Electronic Funds Transfer at Point of Sale (EFTPOS) terminals	

Post's Mobile SMK, Nationwide Microbank's MiCash and Digicel's Cellmoni are all on the same Telepin DMM platform³⁵. All mobile money service providers offer an Unstructured Supplementary Service Data (USSD)³⁰, a protocol used by Global System for Mobiles (GSM) phones to communicate with the network operator's computer. Interoperability for provision of mobile money services has not yet been regulated through the central bank³⁰, however all mobile money providers operate under PNG's Prudential Standard for Mobile Money and Mobile Payment Services. Legislation and planning is also in place for a National Payment Switch that will be overseen by the Bank of PNG³⁶.

3.3 CASE STUDY: DIGICEL'S CELLMONI

What is it?

In August 2011, Digicel PNG launched Cellmoni, a domestic mobile money services to support financial inclusion efforts for the unbanked in PNG. Cellmoni's product portfolio includes cash-in and cash-out, selected bill payments, domestic money transfers and top-up services. Cellmoni is regulated by the Bank of PNG and managed by Digicel Financial Services Ltd.

Coverage

Since launching Cellmoni, Digicel has built an agent network of 100 mobile money agents in select population centers, giving Digicel the widest coverage of financial service agents across PNG. 2G Digicel network coverage is now at 94.5% of PNG's population with 68.2% geographic coverage; 3G network is in 22 provinces covering 35.7% of PNG's population with 18.6% geographic coverage.

Customer Services

Customer services include deposits, withdrawals, buying and sending top-up credits, paying for prepaid and post-power, Digicel Mobile bills, person-to-person transfers and bill payments (PNG Power EasiPay, Online South Pacific, Digicel Post-paid Bill Pay).

Enterprise Services

Cellmoni provides salary disbursements for a number of organisations that employ casual staff and have traditionally paid their employees in cash. Other enterprise services include cash disbursements, bill payment collections, supplier payments and transfers.

Users

	2012	2013	2014
Registered subscribers	4,461	60,000	95,000
Transaction value	8,856,703	12,592,820	83,436.00
Transaction count	67,898	96,334	NA

Agent Network



Figure 3. Digicel Agent Network

4.0 FINANCIAL INCLUSION & THE RESOURCES SECTOR



Resources Sector and the Unbanked

Resource projects are often in geographically isolated regions—so are many of the world's unbanked. Moreover, the unbanked poor and the world's undeveloped oil, gas and mineral deposits have a number of things in common: they are often in the same locale; and they are often 'unreached' by mobile money service providers and resources companies for similar reasons—including geographical isolation and sovereign risks.

Yet there is a distinct lack of research on the role that resource projects can play as a catalyst for improving financial inclusion within resource regions. This is particularly surprising given that payments made from resources companies to

local communities and landowners are often significant and diverse, including compensation for land, royalties, resettlement payments, community investment funds and payments to local businesses. Payments from resource projects have the potential to penetrate deeply into local economies, often resulting in an in-flux of cash and electronic payments in resource regions.

Moreover, although the global resources industry still has significant social and environmental performance challenges³⁷, there is an increasing emphasis on social and environmental performance across the sector³⁸. The increased emphasis on social performance in particular means that, in many cases, resources companies and those working on the global

financial inclusion agenda will have shared objectives in a resource region.

However, little is known about the specific contextual issues that influence financial inclusion in the resources sector (such as land rights, the 'politics of distribution' and legislative regimes); the extent to which resources companies promote financial inclusion through the use of digital payment systems (branch and mobile); the legislative, institutional, organisational, attitudinal and cultural barriers and enablers for strengthening mobile money ecosystems in resource regions; or the extent to which mobile money can improve the efficiency and transparency of company payments and therefore enhance social license and development outcomes.

4.1 PNG'S RESOURCES SECTOR

PNG's Resources Sector

Papua New Guinea is a developing country with substantial oil and gas, copper and gold deposits—as well as a significant number of existing resource projects. PNG's minerals revenue (mining and petroleum tax and dividends paid to the State) is a significant contributor to the national economy. As shown in Figure 4, PNG's resources revenue peaked in 2008 when global commodity prices were historically high, but plunged in 2009 when commodity prices dropped.

2014 saw the completion of ExxonMobil's 6.9 million tonne per annum Liquefied Natural Gas (LNG) project, with an initial investment of US\$19 billion for the first phase of the project. The PNG LNG project includes the Hides, Angore and Juha gas fields and the Kutubu, Agogo, Moran and Gobe Main oil fields.

Gold, copper and silver are the main mineral resources in PNG, which hosts some of the largest copper-gold ore bodies in the world. Existing projects include Lihir (Newcrest Mining Limited), Porgera (Barrick Gold), Ok Tedi (State Owned Enterprise), Hidden Valley (Newcrest-Harmony JV), Ramu Nickel (Highlands Pacific), and Simberi (St Barbara). Proposed future projects of significance include Freida River (PanAust), Wafi-Golpu (Newcrest-Harmony), the possible reopening of the Bougainville Mine, and the proposed Solwara project (Nautilus), the world's first deep-sea mining project.

The Social Context of Resource Projects in PNG

The social context of resource projects in PNG has been well documented³⁹. PNG has had more than its fair share of social and environmental flashpoints, including closure of the Panguna Mine in Bougainville due to civil war and the exit of BHP Billiton from Ok Tedi due to the environmental damage caused to the Fly River.

What is perhaps less understood by those outside of the industry—although universally understood within PNG—is the day-to-day influence that landowners exert over resource projects. The vast majority of land in PNG is owned through traditional land tenure systems, which means that as the customary owners of the land and resources being developed, “landowners” wield significant influence over the daily operation of resource projects, including the distribution of economic benefits⁴⁰. Or, as described by Filer⁴¹, there appears to be a ‘Melanesian Way of Menacing the Mining Industry’. If the PNG State has historically lacked sufficient capacity to closely regulate the activities of multinational companies⁴⁰, the power of local landowners has in many ways counterbalanced relations between multi-national mining companies and local communities⁴².

For these and other reasons, distribution of payments from PNG's resource projects is a significant challenge for regulators, companies and communities alike.

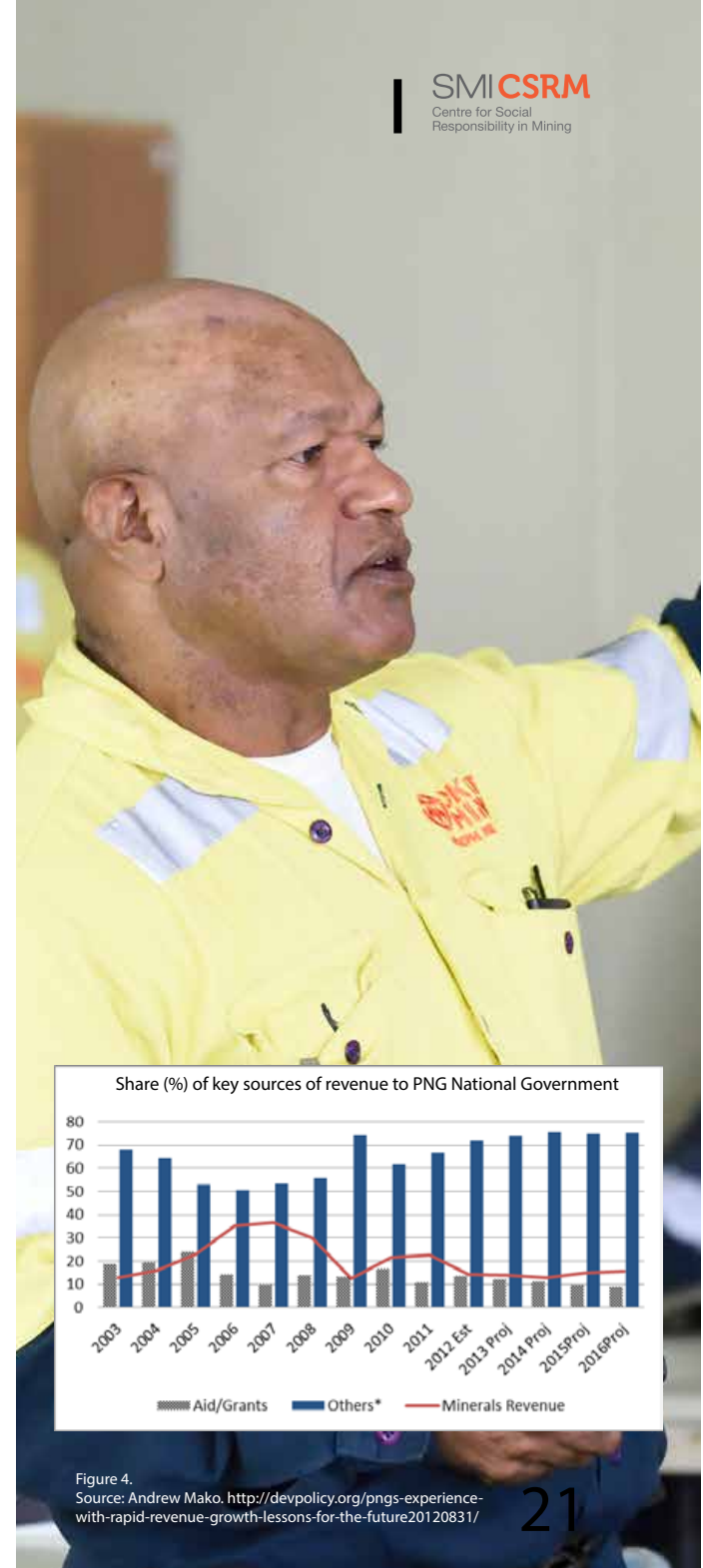


Figure 4.
Source: Andrew Mako, <http://devpolicy.org/pngs-experience-with-rapid-revenue-growth-lessons-for-the-future20120831/>

4.2 PNG CADASTRAL MAP

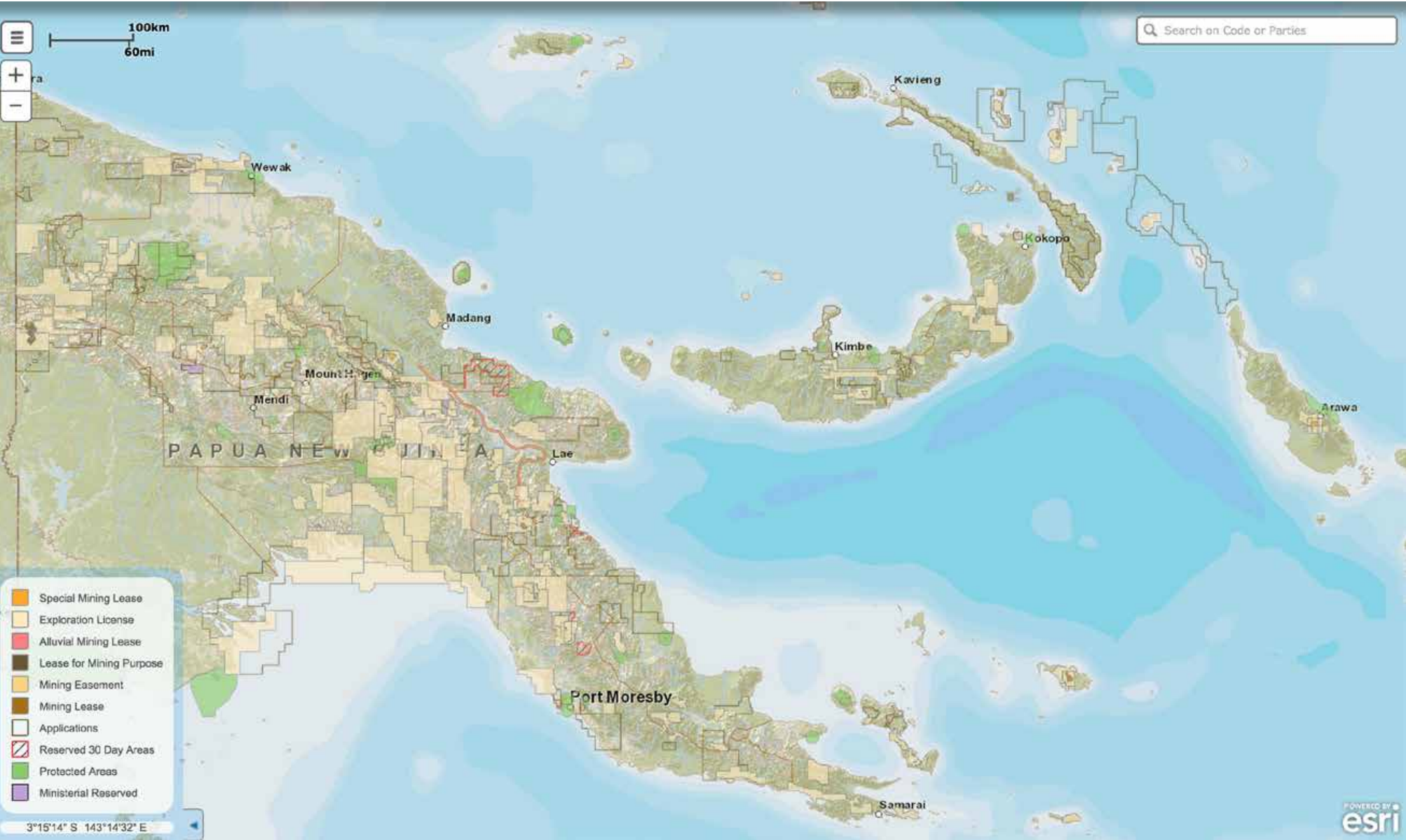


Figure 5. PNG Cadastral Map

4.3 PNG MINING PROJECTS

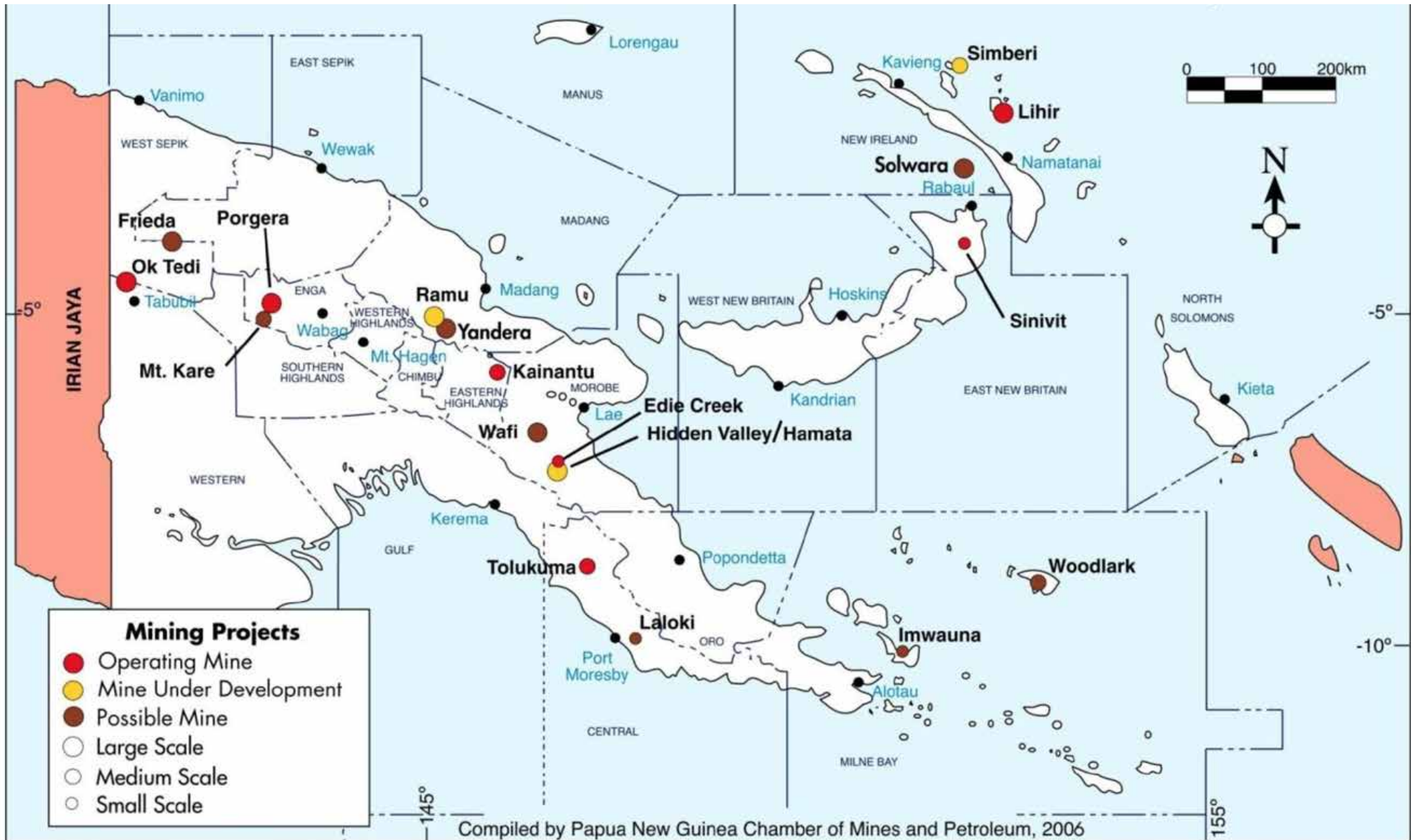


Figure 6. PNG's Mining Projects

5.0 RESEARCH STUDY

Research Questions

The primary research question of this study was whether strengthening mobile money ecosystems around PNG's resource regions can:

- Improve the distribution of compensation and benefits payments for local communities;
- Enhance social license for resources companies; and
- Catalyse inclusion efforts in PNG's resource regions.

Secondary Research Questions

Secondary research questions included:

- What payment methods do resources companies currently use to make compensation and benefits payments to local landowners and community members?
- What are the perceptions around current payments from resources companies to local, provincial and national stakeholders?
- What are the broader perceptions around the resources industry in PNG?

5.1 RESEARCH METHODS

Method

This study used a mixed-method research design including an online survey, company surveys and semi-structured interviews.

Online Survey

A quantitative survey ($n=88$) was conducted to examine stakeholder attitudes towards financial inclusion, mobile money and the resources sector in PNG. The survey was hosted online and measured participants' responses to a range of questions measuring perceptions about financial inclusion, mobile money and the resources industry. The survey was advertised through social networks, mailing lists and in 'public spaces' in PNG. Participation was voluntary and anonymous.

Company Survey

A company survey ($n=9$) was also conducted to assess the payment methods used by resources companies to make payments to local communities and landowners. All mining and gas companies in PNG were contacted to participate in the survey on a voluntary and anonymous basis.

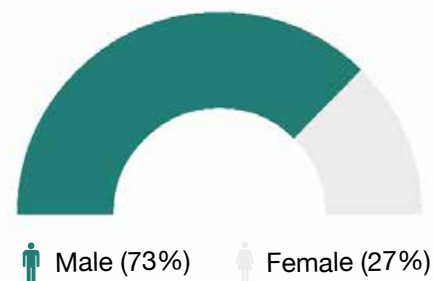
Interviews

Finally, semi-structured interviews ($n=17$) were conducted to explore stakeholder views towards financial inclusion, mobile money and Papua New Guinea's resources sector in more depth. Participants included representatives from government regulators, industry bodies, banks, telcos, civil society and the resources industry.

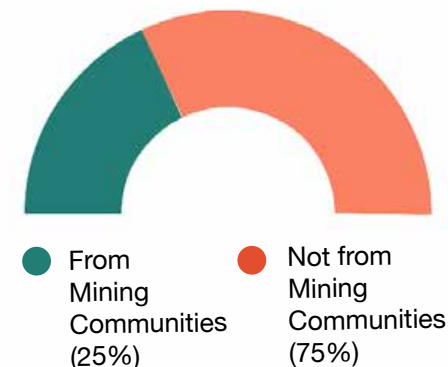
Online Survey Sample

Demographic information of respondents who participated in the online survey:

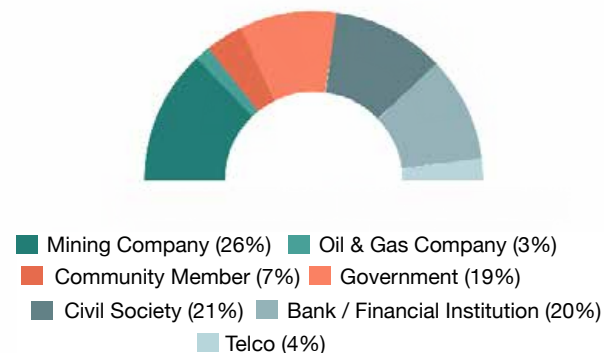
Graph 1. Gender



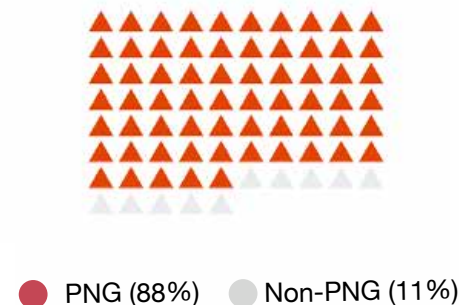
Graph 2. Community Status



Graph 3. Stakeholder Group



Graph 4. Nationality



5.2 RESULTS: COMPANY PAYMENT METHODS

Finding 1. Payments from PNG's resources companies are a mix of cash, cheque and electronic funds transfer—with differences across project cycle (cash is more common in exploration) and project size (larger companies are more likely to have more advanced digital payment systems)

Payment Methods

- As seen in Graph 7, the three payment methods used by resources companies to make payments to local communities and landowners were cash, cheque and electronic funds transfer (companies used multiple payment methods and not all companies made certain payment types); and
- Companies who were in the exploration stage of the project and smaller companies were more likely to use cash than larger companies with developed projects.

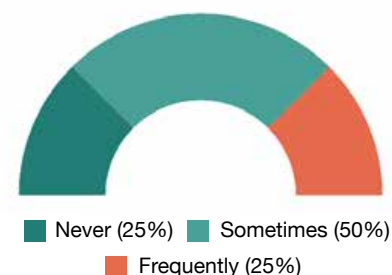
Cash—When and Why

- Cash was used for land use payments, compensation payments, investment funds and meeting sitting fees (see Graphs 5 and 6);
- The reasons given for using cash was that the recipient didn't have a bank account (57%); the recipient asks for cash (29%); and convenience (14%); and
- Respondents also reported that trust was an issue for community members and landowners—trust in the financial system (specifically opening bank accounts) and trust that they would receive payments 'indirectly' from their community and landowner representatives.

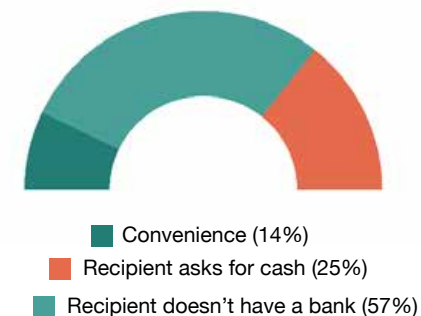
Financial Inclusion

- None of the companies surveyed reported having a Financial Inclusion Strategy for their project impact area (or being part of a shared stakeholder strategy for the region or province in which they operated);
- None of the companies surveyed were partnering with mobile money providers to provide mobile phone notifications of payments received and only two of the companies surveyed reported that they 'actively promoted mobile money as a way for community members to access payments from the company'; however
- 50% of companies surveyed reported partnering with financial institutions to provide financial literacy programs.

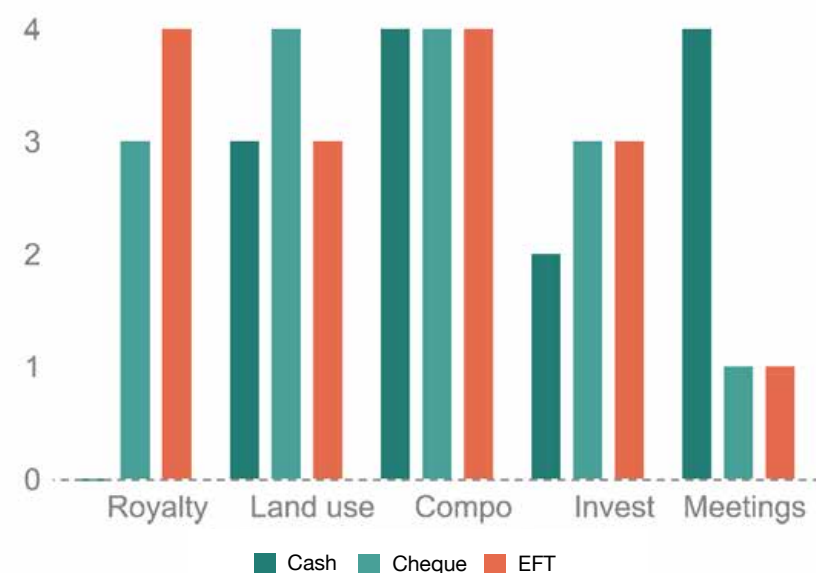
Graph 5. Do you sometimes make cash payments?



Graph 6. For what reasons do you use cash payments?



Graph 7. Payment Methods by Payment Type



“ONE OF THE GREATEST ISSUES THAT REMAINS IS **WOMEN'S ACCESS TO FUNDS**, where men are the signatories to accounts for landowner groups (including women and youth).”

Sustainable Development Manager of Mining Company

“IT IS **HARD TO GET PEOPLE HERE TO ACCEPT BANK ACCOUNTS, LET ALONE MOBILE MONEY**. They are very distrustful of others handling their money. This is because they see the clan leaders setting a bad example (not giving them money, spending it himself).”

Community Relations Manager for an Oil and Gas Company

“WITH THE CURRENT DEVELOPMENT IN THE TECHNOLOGY AND WITH THE RESOURCES INDUSTRY IN OUR COUNTRY, **THE COMMUNITY LIAISON OFFICER** must teach the communities more about the financial benefit and how they can improve the lives of people living around that community. Meaning getting them to participate in the mobile money industry. This should be one of the CR profession's core functions.”

Community Relations Officer, Mining Company

5.3 OK TEDI CASE STUDY

Ok Tedi Mining Limited Overview

Ok Tedi Mining Limited (OTML) is a state owned company that operates an open pit copper, gold and silver mine located in the Star Mountains of the Western Province, PNG. Since the start of operations in 1981, OTML has produced 4.5 million tonnes of copper, 13.9 million ounces of gold and 28.8 million ounces of silver. In 2014 OTML reported a profit of PGK360M (USD 135 MILLION) and a dividend of PGK 123.8 million (USD 50 million)⁴³.

Over the last 34 years, OTML has made a significant contribution to development in the Western Province through direct and indirect employment, royalties and taxes, compensation payments and business opportunities. It is also well documented that OTML has been responsible for deleterious environmental and social impacts including sediment aggradation in the Ok Tedi and Fly River systems^{44 45}—and that in 2002 these impacts resulted in the then majority owner and operator, BHP Billiton, handing majority ownership to the PNG Sustainable Development Program (PNGSDP). In 2013, the PNG Government legislated to directly assume the shareholding of PNGSDP.

As an independent and commercially operated State Owned Enterprise (SOE), OTML's efforts are now directed towards increasing its contribution to the economic and social development of PNG, particularly the Western Province. Environmental impacts are monitored and reported to the communities and the State⁴³. OTML's continued operation is dependent upon consent by the local communities and the PNG Government.

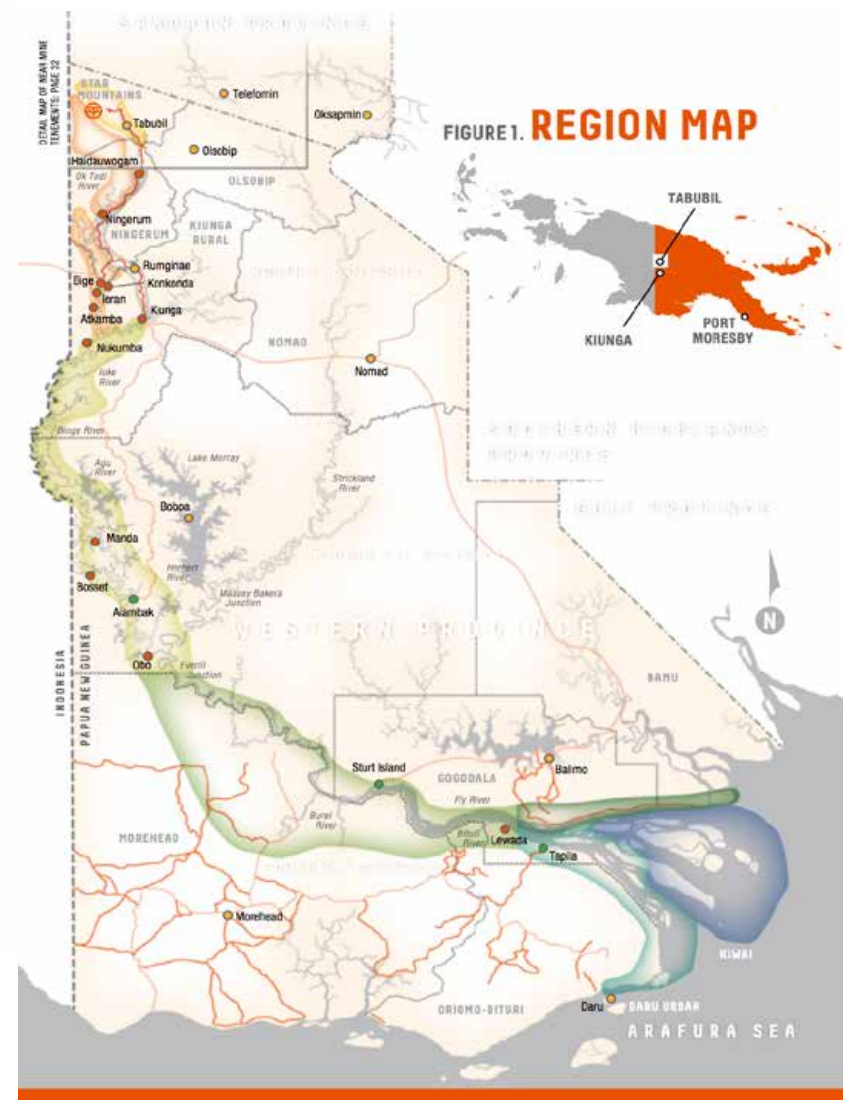
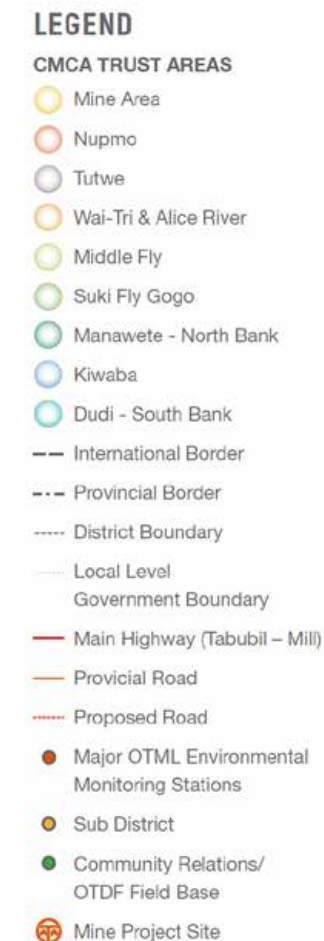


Figure 7. Wester Province Regional Map

5.4 OK TEDI PAYMENTS



Figure 8. 2014 Ok Tedi Payments



5.5 OK TEDI IMPACT AREA POPULATION & ACCOUNTS

Compensation and Benefits Payments

Compensation and benefits from OTML are directed as dividend streams to Western Province communities, specifically the Community Mine Continuation Agreement (CMCA) communities, the Fly River Provincial Government (FRPG) and the State of PNG.

OTML's impact area includes 57 villages with a population of 134,083. There are 14,076 families with 12,992 bank accounts.

Region	Access	Number of Villages	Population	Families	Family Accounts
Mine Village	Land	6	3,293	800	1,038
North Ok Tedi	Land	18	4,766	1,001	952
Lower Ok Tedi	Land	20	11,334	1,600	1,451
Highway	Land	29	15,628	2,490	2,193
Middle Fly	River	18	15,048	2,399	2,014
Suki Fly Gogo	River	16	14,518	2,107	1,933
Manawete	River	20	26,173	3,408	2,441
Kiwaba	River	14	18,864	2,265	1,207
Dudi	River	16	24,459	3,014	1,696
Total		157	134,083	14,076	12,992

5.6 OTML–BSP BANKING AWARENESS PROGRAM

OTML Partnership with Bank South Pacific

OTML have entered into a partnership with Bank South Pacific to provide banking education awareness to impact communities surrounding the mine and along the Fly River.

The objectives of the program include:

- Providing banking education awareness to OTML communities;
- Opening bank accounts at villages via branchless banking; and
- Visiting and conducting refresher training for BSP agents and selected BSP Merchants.

Results

The reported results of the initial phase of the program include:

- Over 10,000 participants attended the accumulated banking education presentations;
- Over 4,000 new accounts opened; and
- Increase in access points including BSP Agents and EFTPOS Merchants.



Challenges

Challenges of the initial phase of the program included network coverage, weather and travelling the long distances from the vessel to the villages.

Areas for Future Collaboration

Areas identified for possible future collaboration between BSP and OTML include:

- BSP agent training and refresher training for both existing and new mobile money agents;
- 'Smart Business' banking awareness programs for existing and potential business owners;
- BSP Capital to run investment programs conducted by professional stock brokers, stock researchers, and financial advisors;
- Follow-up on over 500 participants whose parents showed interest in opening a savings account for their children;
- Future investments collaborations via future CMCA payments; and
- Control and improve financial lifestyles through financial literacy programs.



Finding 2. Overall, there was a perception that the distribution of payments from resources companies is not effective—for some respondents the distributional breakdown of funds was seen as ‘unfair’ whereas other respondents felt that payment distribution systems are not effective.

As seen in Graph 8, only 11% of respondents agreed that compensation and benefits are distributed fairly, while 63% of respondents strongly disagreed or disagreed with this statement. When asked specifically about economic benefits a similar pattern was observed: 75% of respondents strongly disagreed or disagreed that the economic benefits from resource projects are distributed fairly (see Graph 9).

Thematic analysis of open questions and interviews also highlighted a perception that payment distribution systems are not effective for various institutional and socio-cultural reasons, including corruption; politics; incorrect or incomplete identification of rightful recipients; and intra- and inter-clan conflict.



Interviews & Open Questions

“The money is felt at a broader economic level but not always at an individual household level and there is not always a fair distribution of royalties to all stakeholders”.

“More percentage in ownership and compensation benefits to landowners and affected communities as opposed to Government having most of the share/ownership”.

“Resources sector in PNG has boosted over the years but funds and benefits are unevenly distributed. The Rich become Richer and the Poor become Poorer!”

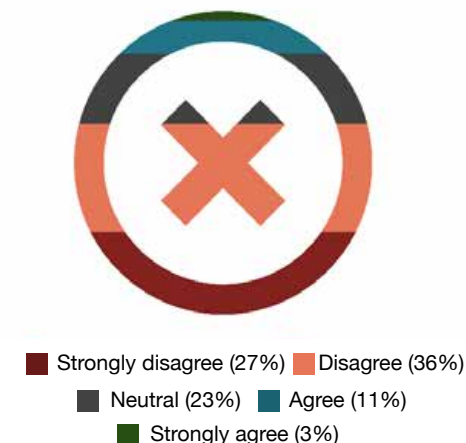
“The resources sector must make sure every recipient receive funds into their account. And everyone to have some form of financial literacy and signed up for mobile money”.

“I think the processes and procedures put in place are not followed to ensure the benefits from the extractive industries drip down and impact on the lives of the people”.

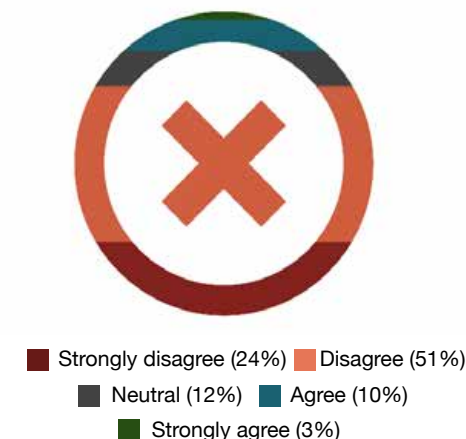
“Be mindful in signing any-kinds of agreements because distributions of benefits is totally unfair for those who are in the areas classified as ‘not affected’”.

Survey Questions

Graph 8. The distribution of compensation and benefits from resource projects in PNG is fair



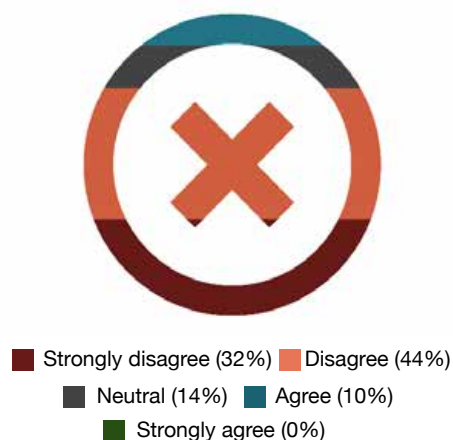
Graph 9. Generally speaking, the economic benefits from resource projects are distributed fairly



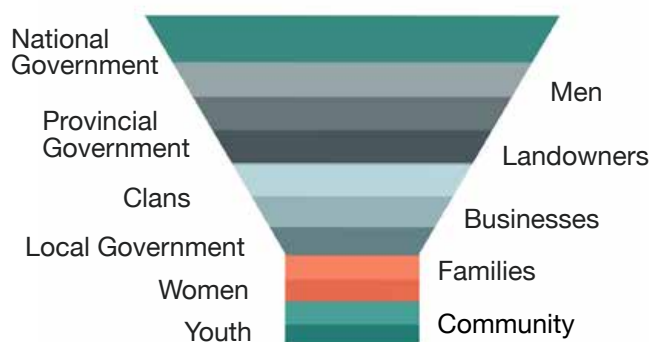
5.8 RESULTS: TRICKLE DOWN TO THE 'GRASSROOTS'?

Survey Questions

Graph 10. Grassroots people receive a fair share of the benefits from resource projects



Graph 11. To what extent do compensation and benefits payments from resources companies in PNG go to:



Interviews & Open Questions

"One of the greatest issues that remains is women's access to funds, where men are the signatories to accounts for landowner groups (including women and youth)".

Women and youth are the biggest group that have not been a recipient, for instance if you go up to Southern Highlands where the big LNG project is happening, the women are mainly household items – they just look after the homes – the men are the ones running around in POM with thousands of Kina. Women have generally not been given the right recognition. And that applies to youths as well".

"In PNG we always have this 'big men' attitude, especially in the resource areas. Big men get their millions of Kina and often come and squander it in POM".

"Resources sector in PNG must divert its attention to increasing household income generating activities. Funding supposedly given to Government must be tied in to infrastructure development of communities such as building roads, bridges, schools and health facilities. Government should not be made recipient of these funds as track record suggests abuse of funds which are also diverted to non-infrastructure development purposes".

Finding 3. There was also a perception that 'grassroots people' do not receive their fair share of the benefits from resource projects—the National Government, men, the Provincial Government and landowners were the groups perceived to benefit the most from resource projects; whereas youth, the broader community, women and families were perceived to benefit the least.

As seen in Graph 10, 76% of people either strongly disagreed or agreed that grassroots people receive a fair share of the benefits from resource projects, whereas 14% of respondents were neutral and 10% of respondents agreed with this statement (no respondents strongly agreed). Graph 11 ranks the responses of participants when asked to assess the extent to which various groups receive compensation and benefits payments from resources companies. The categories are not 'mutually exclusive' but rather overlapping groups within the PNG social structure.



5.9 RESULTS: RESOURCES COMPANIES AND PAYMENTS

Finding 4. There was a perception that compensation payments from resources companies are not paid directly to the bank accounts of the rightful recipients—respondents did not feel that local people use the payments that they receive from resource projects ‘effectively’ (in a way that improves their lives) and opinion about whether resources companies encourage local people to open up bank accounts was relatively mixed.

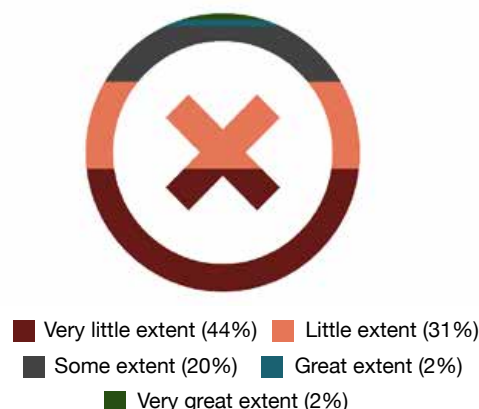
75% of respondents disagreed that compensation payments from resources companies are paid directly to the bank accounts of the rightful recipients (see Graph 12).

Respondents were somewhat mixed or negative about whether resources companies encourage local people to open up bank accounts (Graph 14) and educate people about financial literacy (Graph 13). There was also a perception that local people (landowners and community members) do not use payments that they receive from resources companies ‘effectively’ (Graph 15).

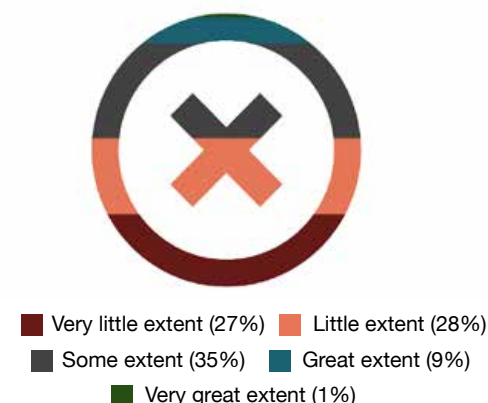


Survey Questions

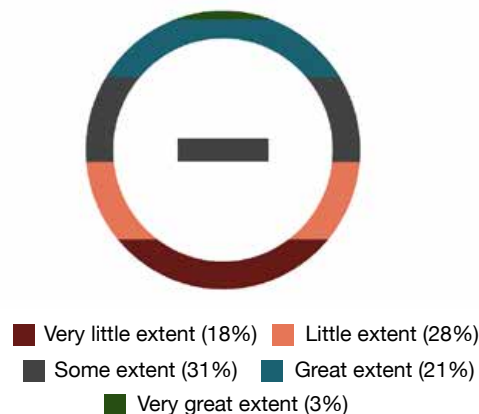
Graph 12. Compensation payments from resources companies are paid directly to the bank accounts of the rightful recipients.



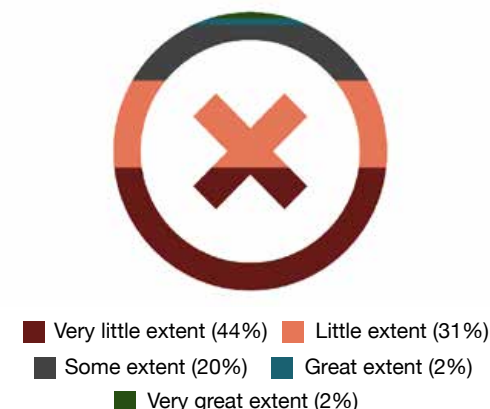
Graph 13. Do resources companies educate local people about ‘financial literacy’?



Graph 14. To what extent do resources companies encourage local people to open up bank accounts?



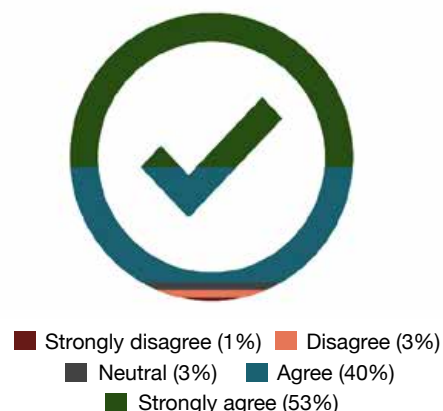
Graph 15. To what extent do local people use the payments that they receive from resources companies ‘effectively’ (i.e., in a way that improves their lives)?



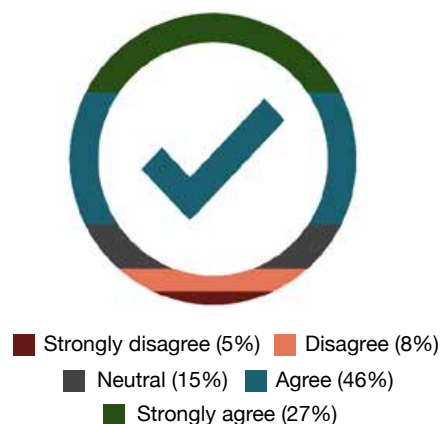
5.10 RESULTS: IMPROVING OUTCOMES

Survey Questions

Graph 16. Greater financial literacy would improve development outcomes in resource communities in PNG



Graph 17. A greater use of 'mobile money' (using a phone or mobile device to perform banking transactions) would improve the distribution of payments from resources companies



Interviews & Open Questions

"Financial inclusion and mobile money will greatly improve the transparency and visibility in the distribution of royalties, compensations, etc to beneficiaries and reduce the mistrust there is among the beneficiaries themselves and the resources industry".

"It has not adequately supported the community in terms of financial literacy advice among the so called (mining communities) and it should come up with a solution that really identifies and fixes these financial and social problems we are currently facing such as ...the improper disbursements of royalties to landowner groups across the country".

"Mobile money is an important area, especially for remote communities such as around Frieda. But requires partnering with mobile companies".

"Going cashless would be the way going forward for PNG but this in itself would be a challenge as the majority of PNGuineans are illiterate and most of the extracting projects are in villages/communities that are remote with a few to nil schools. Mobile money in itself would be a challenge for our people in this areas. It would in my personal opinion take some years to master this but for our old people the feeling of security would be better suited to having an account in the bank. Although mobile money would be a better and convenient approach to benefit and compensation payments it is still an alien approach in some of the extracting projects in PNG".

Finding 5. Participants agreed that greater financial literacy would improve development outcomes in resource communities and a greater use of mobile money would improve the distribution of payments from resources companies.

Participants almost unanimously agreed that greater financial literacy would improve development outcomes in resource communities in PNG and that a greater use of mobile money would improve the distribution of payments from resource projects

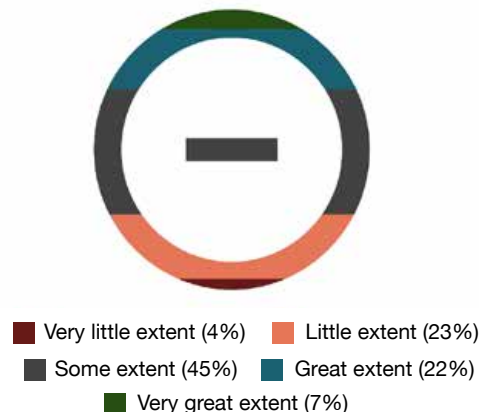
Responses from the interviews and open questions were mixed about 'readiness to adopt' mobile money technology in mining communities. For some, literacy and education levels—together with concerns about security and ability to adopt new technologies—were a significant concern. Others, on the other hand, viewed the active use of mobile money technologies as a current reality and well within the capability of their impacted communities.



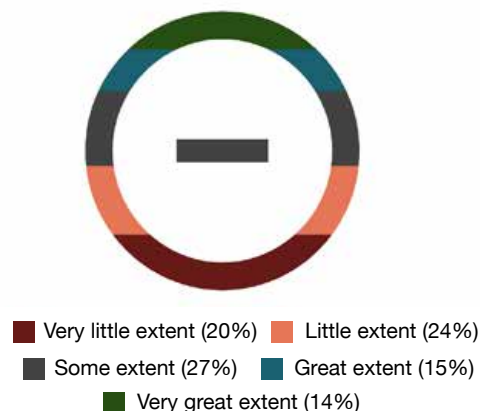
5.11 RESULTS: VIEWS ABOUT THE RESOURCES SECTOR

Survey Questions

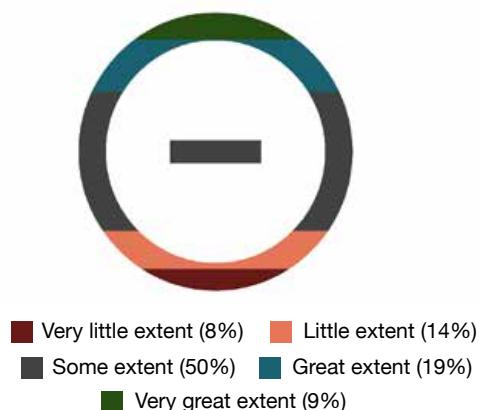
Graph 18. To what extent do you accept the resources industry in Papua New Guinea?



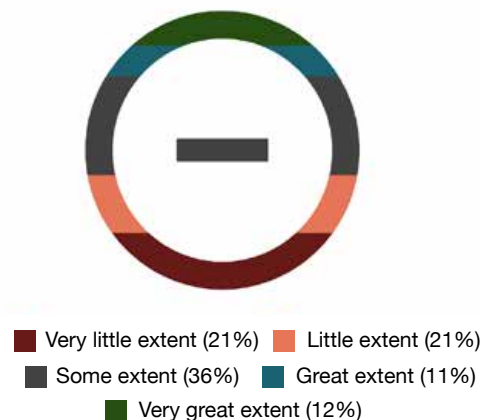
Graph 19. To what extent do you trust the resources industry in PNG to act in the best interests of society?



Graph 20. To what extent do you support the resources industry in Papua New Guinea?



Graph 21. To what extent do you trust the resources industry in PNG to act responsibly?



Finding 6. Overall, the resources industry in PNG received a mixed-scorecard when it came to general acceptance, support and trust. However, the more respondents felt that resources companies encouraged local people to open up bank accounts, the greater their levels of support and acceptance for the resources industry in PNG.

As illustrated in Graphs 18-21, when asked about the extent to which they accepted and trusted the resources industry in PNG, respondents gave mixed responses. Thematic analysis of interviews revealed that for many respondents the sector is viewed as a 'mixed blessing'—with an acute understanding of the social and economic impacts of resource projects, both positive and negative.

Multiple regression analyses were conducted to assess whether perceptions about financial inclusion behaviours from resources companies predicted acceptance and support for the industry⁴⁶. The results revealed that—above and beyond the variance that can be accounted for by general perceptions about development effectiveness—perceptions about whether resources companies encourage local people to open up bank accounts were positively related to acceptance of and support for the resources industry in PNG.

“ **A MIXED BLESSING... WITH MOST OF THE BENEFITS AT THE TOP AND INEQUITABLY DISTRIBUTED,** opportunism rules the distribution and family benefits are generally poor. Transportation, education and healthcare are the exceptions). ”

“ **LANDOWNERS, COMMUNITIES, LOCAL LEVEL GOVERNMENTS AND CLANS NEED TO BE EDUCATED ABOUT THE HIGHS AND LOWS OF THE RESOURCES SECTOR,** benefits and risks for an extractive company to set up on their land must be made aware to everyone in the community, whether or not you are a landowner. Sudden engagement of this sector has left people hungry for more money, causing social disorder (family ties and traditional values) and many other problems in the community most of them avoidable but people just have a lot of money to throw around. ”

“ **IT APPEARS.. THE RESOURCES SECTOR IS ASKED AGAIN,** and again for more and more compensation because the landowners have blown it - greedy people just won't give the sector a chance - resources sector should pull out and let the people have their land for agricultural crops and let them fight amongst themselves over whose vegetables they are. ”

“ **THE RESOURCES SECTOR IN PNG... HAS HAD A TREMENDOUS DEVELOPMENT IMPACT, ESPECIALLY IN THE REMOTE AREAS,** however, corruption by our politicians and top executives who control the finance of PNG had misused a lot of monies which could have brought PNG to another level of development at this time ”

“ **O BVIOUSLY... THEY COME TO MAKE MONEY,** but do they have the heart to give something back to the place where they make money? ”

“ **EXTRACTIVE SECTOR IN PNG.. MUST DIVERT ITS ATTENTION TO INCREASING HOUSEHOLD INCOME GENERATING ACTIVITIES,** funding supposedly given to Government must be tied in to infrastructure development of communities such as building roads, bridges, schools and health facilities. Government should not be made recipient of these funds as track record suggests abuse of funds which are also diverted to non-infrastructure development purposes. ”

6.0 ALLIANCES FOR RESOURCE REGIONS

Greater Collaboration

Collectively, the results of this study suggest that greater collaboration between resources companies, financial regulators, banks, telcos, mobile phone service providers and civil society can strengthen the distribution of compensation and benefits payments from resource projects; improve social license for resources companies; and more broadly enhance financial inclusion efforts and development outcomes in PNG.

Alliances involving the resources industry in financial inclusion efforts can be structured at both the national level as well as around specific resource projects.

National-level Alliances for Financial Inclusion

Existing financial inclusion efforts at the national level led by the Centre for Financial Inclusion and the Bank of PNG can be strengthened by enhancing links to the resources industry.

For instance, a strategic working group for the resources sector could be considered in the program roll-out of PNG's National Financial Inclusion Strategy 2014-2015. Stakeholders already working on financial inclusion programs could also usefully integrate into relevant programs underway in the resources sector, including the Extractive Industries Transparency

Initiative and Chamber of Mines led initiatives such as Community Relations conferences and resource guides.

Project-level Alliances for Financial Inclusion

At a project level it is suggested that financial inclusion working groups are established for all major resource projects. Working groups should include representatives from the resources company; local stakeholders; and those representing financial inclusion and mobile money efforts (including telcos and banks with commercial interests).

For new projects, working groups should be established during the early stages of the project life-cycle so that financial inclusion strategies can be developed as part of the compensation and benefits agreements required by the PNG Mining Act.

For existing projects, working groups should be established to collate and share data to assess the state of play for financial inclusion in the impact area. Strategies can then be developed to improve financial inclusion and the distribution of company payments.

Project working groups could report back to the Mineral Resource Authority through the quarterly reporting process and to CEFI as part of the planning and monitoring meetings for the National Financial Inclusion Strategy.



6.1 FINANCIAL INCLUSION FOR RESOURCE PROJECTS

Financial Inclusion Strategies for Resource Projects

This study found that none of the resource projects in PNG had a financial inclusion strategy (or were part of a shared stakeholder strategy for the region or province in which they operated).

This is not particularly surprising, given that the financial inclusion and mobile money sector is still relatively new (particularly in PNG).

For major resource projects, a structured financial inclusion strategy can help to improve the distribution of company payments over the life of the project thereby reducing social risk and improving social performance.

Financial inclusion strategies for resource projects should:

- Be governed by a multi-stakeholder working group with the roles of resources companies, banks, telcos and regulators clearly defined;
- Take into account the project's social context and the results of the social and economic impact assessment, which itself should adopt a financial inclusion lens;
- Map banking and mobile money infrastructure and agents—and identify commercial partners who may seek to invest in additional infrastructure;
- Comprehensively map the different types of project benefits and compensation payments at the local level including royalties, land use payments, other compensation, trust funds, investment and business development grants;
- Select payment methods based on existing infrastructure and an informed understanding of the social and cultural context of the project;
- Match broader financial inclusion strategies to the project size and project life-cycle, with a plan to equip local people for the transition from cash to digital payments;
- Incorporate a human rights lens with a particular focus on gender equality;
- Implement stakeholder-led financial literacy programs that manage expectations—the objective is not merely to open bank accounts but to educate local people about the financial opportunities and risks that the resource project will bring and the financial tools and support that is available to them; and
- Articulate clear project management, governance and reporting structures.



6.2 A NEW PAYMENT ARCHITECTURE

A New Architecture for Payments

Finally, the study found much discontent regarding the distribution and payment of monies from resource projects. With the financial inclusion programs and mobile money services that are now available in PNG, there is an opportunity for resources companies, the MRA as the regulator, and the Chamber of Mines as the industry body to work with the financial inclusion and mobile money industry to develop a new 'payment architecture' for resource projects.

Benefits of Mobile Money for Resource Company Payments

Mobile money technology offers new possibilities for payment transparency:

- Once landowner groups are identified, payments can be made to the lowest level of the social structure with minimal transaction costs;
- Payment receipt notifications can be received on mobile phones in the village so that the recipient doesn't have to travel to town;
- Cash in the economy is minimised, which brings security benefits and potentially increases peoples' ability to save;
- There are transparent records of all payments;
- Mobile money can be a vehicle for greater financial literacy for landowners and community members who are impacted by resource projects.

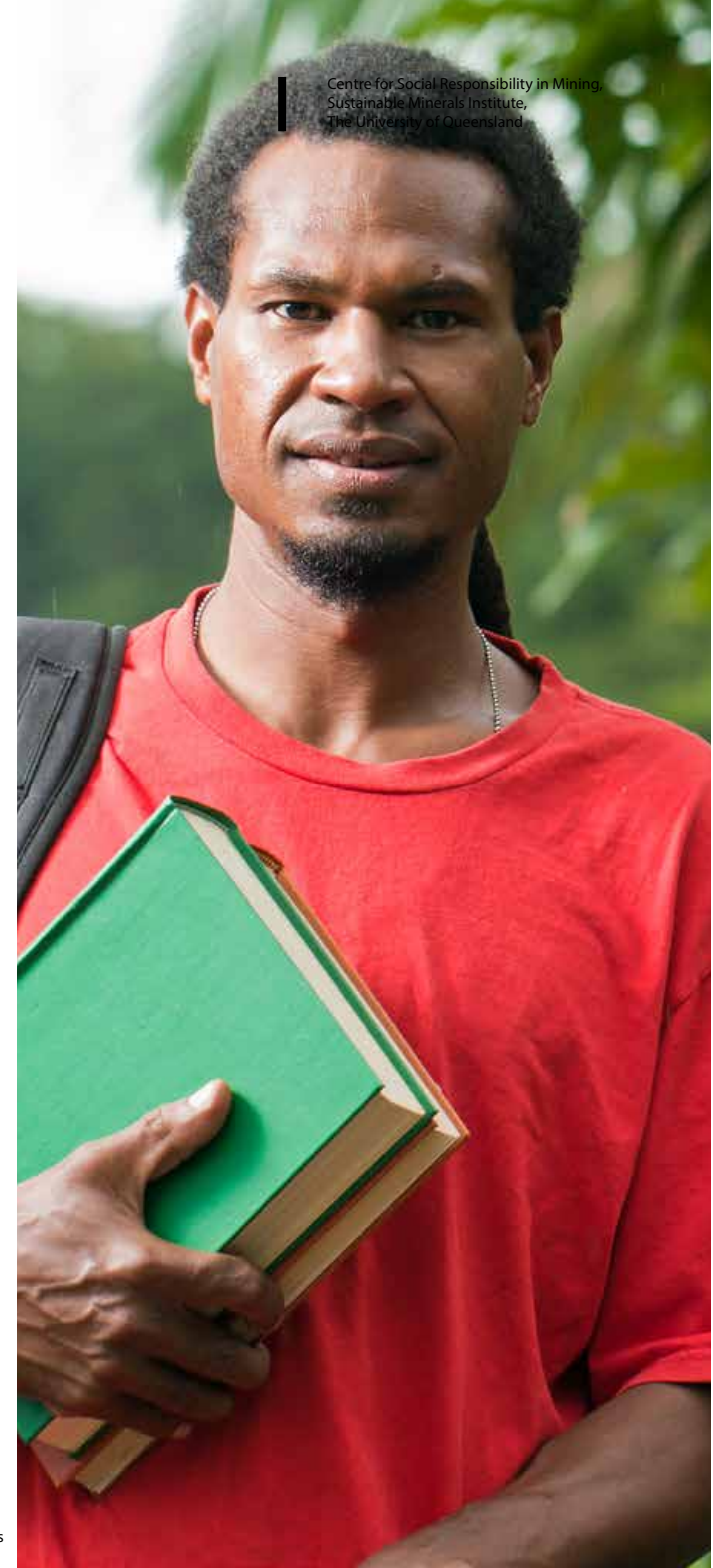
These direct, efficient and low-cost payment mechanisms can be established not only for 'primary payments' direct from resources companies, but also for 'secondary payments' from trust funds, business dividends and investments.

Let People Make Their Own Choices

Mobile money brings new possibilities to develop more transparent payment processes with landowners and community members. However, clearly no technology solution is a panacea for the social issues and development challenges that come with a resource project in a developing context. The design of payment disbursement architecture begins with the social context in which the resource project finds itself. This includes conducting detailed landowner identification as is currently practiced in many resources projects in PNG.

The key principle is that landowners and community members are given the opportunity to choose the level within the social structure to which resource-derived payments are made. Technology or convenience should not be a limiter but rather—with the support given by landowner associations, MRA representatives and financial institutions—people can make their own financial choices about how they wish to manage compensation and benefits funds.

Centre for Social Responsibility in Mining,
Sustainable Minerals Institute,
The University of Queensland



6.3 LIMITATIONS AND FUTURE RESEARCH

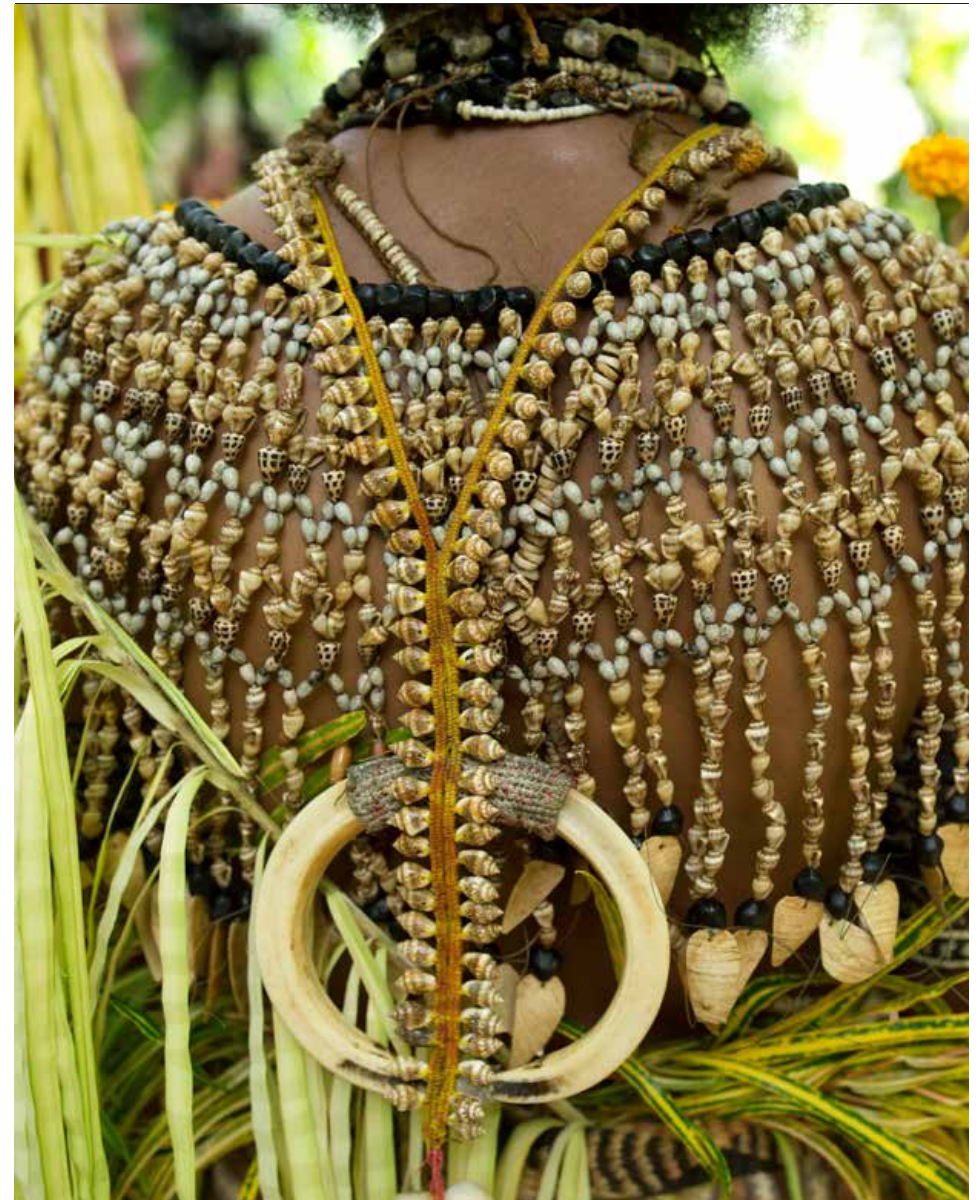
Limitations of Study and Future Research

This study was limited to stakeholder interviews and online survey methodology. It was not possible to make site visits or to conduct in-depth assessments of financial inclusion and mobile money ecosystems at resource project sites. Case study methodologies would serve to better identify the project-level issues that influence financial inclusion and mobile money in the resources context. Longitudinal research would also help to inform understanding on the impact of financial inclusion and mobile money in the resources context over time.

Furthermore, the study took a broad brush approach to the intersection of financial inclusion, mobile money and the resources sector in PNG. There is a rich anthropological literature on money in PNG⁴⁸ and an equally rich literature on the social context of the resources industry⁴⁹. These approaches could usefully be applied to examine the positive and negative social impacts of mobile money in PNG—where commercial interests are intertwined with the development agenda.

It is also important to acknowledge the broader cultural and national context in which the study was conducted: Papua New Guinea. Future research in other developing countries with resource projects would help to create a better understanding of the potentially mutually beneficial alliances that can be formed between resources companies and mobile money providers.

Finally, a more practically oriented toolkit for financial inclusion and mobile money in the resources sector would help practitioners in resources companies and mobile money providers alike.



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46. Perceptions about development were significantly positively related to acceptance of the resources industry $R^2_{adj} = .09$, $F(1,69) = 5.29$, $p < .01$; $\beta = .30$ and support for the industry $R^2_{adj} = .14$, $F(6,108) = 10.99$, $p < .01$; $\beta = .37$. In the subsequent regressions, when perceptions about whether resources companies encourage local people to open up bank accounts and run financial literacy programs were entered into the equation, bank accounts remained positively related to both acceptance of the industry $R^2_{adj} = .30$, $F(1,68) = 6.20$, $p < .01$; $\beta = .28$ and support for the industry $R^2_{adj} = .21$, $F(2,67) = 8.86$, $p < .05$; $\beta = .29$.
47. Multiple regression analyses were conducted to assess whether perceptions about financial inclusion behaviours from resources companies predicted acceptance and support for the industry⁴⁵. The results revealed that—above and beyond the variance that can be accounted for by general perceptions about development effectiveness—perceptions about whether resources companies encourage local people to open up bank accounts were positively related to acceptance of and support for the resources industry in PNG. A similar multiple regression analyses was also conducted with Financial Literacy as the mediating variable however in this case Financial Literacy did not predict variance in the dependent variables above and beyond the variance accounted for by the independent variable of development effectiveness.
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International Mining for Development Centre. In partnership with the Australian Government through an Australian Aid initiative, The University of Western Australia and The University of Queensland have established the International Mining for Development Centre (IM4DC) to assist in lifting the quality of life in developing nations through a more sustainable use of mineral and energy resources.



The Sustainable Minerals Institute

The Sustainable Minerals Institute at The University of Queensland (UQ) is a world leading research institute dedicated to finding knowledge-based solutions to the sustainability challenges of the global minerals industry.



Centre for Social Responsibility in Mining

The Centre for Social Responsibility in Mining (CSRM) is a part of the Sustainable Minerals Institute (SMI) at The University of Queensland. SMI has a long track record of working to understand and apply the principles of sustainable development within the global resources industry.



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As the technology transfer arm of SMI, JKTech delivers economic and social value to the global resources industry through empirically-grounded technology, products and training. Our expertise in technology based consulting, laboratory services, software, specialist equipment, safety and sustainability is implemented to improve the profitability and sustainability of resource operations globally.

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