

Systematic Country Diagnostic

The Independent State of Papua New Guinea

Abbreviations

ADB	Asian Development Bank
AFF	Agriculture, forestry and fishing
AtoN	Aids to Navigation
BPNG	Bank of Papua New Guinea
CPIA	Country Policy and Institutional Assessment
DALY	Disability-Adjusted Life Years
DDA	District Development Authority
DoW	Department of Works
DSIP	District Services Improvement Program
DSP	Development Strategic Plan 2010-30
DTA	Double Tax Agreements
EAP	East Asia and Pacific
ED-DPE	Energy Division of the Department of Petroleum and Energy
FDI	Foreign Direct Investment
FSV	Family and Sexual Violence
G7	Group of 7
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GST	Goods and Services Tax
HDI	Human Development Index
HIES	Household Income and Expenditure Survey
HOI	Human Opportunity Index
ICCC	Independent Consumer & Competition Commission
IDA	International Development Association
IFMS	Integrated Financial Management System
IMF	International Monetary Fund
INA	Institute of National Affairs
IPP	Independent Power Producer
IRC	Internal Revenue Commission
ITC	Infrastructure Tax Credits
KFR	Kina Facility Rate
kWh	Kilowatt-hour
LNG	Liquefied Natural Gas
MDG	Millennium Development Goal
MP	Members of Parliament
MPI	Multidimensional Poverty Index
MRSF	Mineral Resources Stabilization Fund
MTDS	Medium Term Development Strategy
MW	Megawatts
NCD	National Capital District
NCDs	Non-Communicable Diseases
NER	Net Enrollment Rate
NEROP	National Electrification Rollout Plan
NGO	Non-Government Organizations
NRA	National Roads Authority
NRPB	Non-Resource Primary Balance
OECD	Organisation for Economic Co-operation and Development
O&M	Operations and Maintenance

PEFA	Public Expenditure and Financial Accountability Assessment
PFM	Public Financial Management
PGK	Papua New Guinea Kina
PNG	Independent State of Papua New Guinea
PNGTPA	PNG Tourism Promotion Authority
PPAP	Productive Partnerships in Agriculture Project
PPL	PNG Power Limited
PPP	Purchasing Power Parity
PSIP	Provincial Services Improvement Program
PTR	Pupil-Teacher Ratio
RAL	Reserved Activity List
RTA	Road Traffic Authority
SIP	Service Improvement Program
SME	Small and Medium Enterprise
SOE	State-Owned Enterprises
SWF	Sovereign Wealth Fund
TB	Tuberculosis
TFF	Tuition Fee-Free
THE	Total Health Expenditure
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USD	United States Dollar
WaSH	Water supply, Sanitation and Hygiene
WGI	World Governance Indicators
WHO	World Health Organisation
WTTC	World Travel & Tourism Council

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Executive Summary

This Systematic Country Diagnostic (SCD) identifies the main constraints and opportunities that Papua New Guinea faces in achieving the twin goals of ending extreme poverty and boosting shared prosperity. In line with the World Bank Group’s new country engagement model, the findings of the SCD will provide inputs for the preparation of the Country Partnership Framework, which will outline the WBG’s engagement with Papua New Guinea to achieve the twin goals.

This SCD is divided into three parts:

- *Setting the scene.* The SCD sets the scene by outlining past trends in economic structure and performance, providing a snapshot on the state of service delivery, highlighting key issues of particular relevance for youth and women, and analyzing poverty incidence and inequality.
- *Identifying pathways for poverty reduction.* Second, the SCD looks at the most potent pathways for eradicating poverty and boosting shared prosperity, drawing attention to untapped opportunities and key constraints that must be overcome.
- *Summarizing reform priorities.* Finally, the SCD identifies priorities for policy and reform to accelerate progress toward the twin goals.

This diagnostic exercise was conducted in consultation with national authorities and other stakeholders in Papua New Guinea, and is based on the current available body of knowledge.

Setting the scene

Papua New Guinea has one of the richest natural resource endowments in the world, encompassing a wide array of geographic, ethnographic and natural resource diversity. Few countries in the world share such a range of natural landscape features, languages, plant and animal species, and natural resource wealth. Papua New Guinea is a major global producer of several agricultural products and is a significant exporter of petrochemicals and minerals. However, PNG’s vast and dispersed highland, coastal and island geography, often rugged and densely forested, renders interior travel challenging and has induced communities to remain small in size and disconnected from each other.

A relatively stable democracy, PNG routinely conducts elections without major disruptions and with political contestability. Scheduled elections have been carried out since 1975 and transitions of power have taken place without major disruptions. PNG outperforms both lower and upper middle-income countries as well as developing East Asia and the Pacific with respect to indicators of civil and political rights, democracy, and press freedom. The dynamic and robust political climate in the country is demonstrated by the fact that a significant proportion of incumbent Members of Parliament (MPs) lose their seats at each election.

The country’s record on economic performance is, overall, relatively poor. Whilst the economy has more than tripled in size since independence in 1975, with real growth in gross domestic product (GDP) averaging 3.4 percent over the period, real GDP *per capita* has increased by only 0.8 percent per year – a low growth rate in comparison to other lower middle-income resource exporters. Economic growth has been and continues to be subject to significant upward and downward swings, reflecting an acute

vulnerability to international commodity price changes, and these swings tend to be magnified rather than dampened by the economic policies of successive governments.

The inclusivity of PNG’s recent growth performance has been limited by the relatively high capital intensity of the resource sector and the lower performance of the non-resource sector. The country is dependent on two sector groups – the resource sector (minerals and petroleum) and the agricultural, forestry and fishing sector – which collectively account for 46 percent of GDP. Until recently, PNG had been benefiting from over a decade of robust growth, driven primarily by resource sector development and spending on key infrastructure by government. The resource sector, in particular, has historically been key source of economic growth, foreign direct investment and foreign exchange, but it is highly capital intensive and has limited linkages with the rest of the economy. Despite several decades of major extraction activities, the significant benefits that the extractive sector has delivered have not filtered through to many in PNG. With the sector only directly accounting for around 1 percent of total employment, most Papua New Guineans ultimately rely on income-generating opportunities in the (informal) non-resource sector – especially informal activities linked to agriculture. As such, it is growth in the non-resource sector that has the greatest potential to boost shared prosperity and reduce extreme poverty.

Limited opportunities for youth and women

Papua New Guinea has a large and growing youth cohort for which it has been unable to provide adequate opportunities. There is not enough formal sector job creation or places in education and training institutions to cater for the vast majority of annual new entrants into the working-age population. Unable to find formal work or enter into further study, most school leavers enter into the informal economy – often in the agricultural sector, where underemployment and both low and unpaid work is common. The informal rural employment available to youth is primarily in traditional subsistence and semi-subsistence agriculture on customary land. Alternative employment opportunities in the rural areas are limited. Youth are increasingly being drawn to PNG’s urban centers in search of opportunity. However, once there, circumstances are not much better. Young people make up a disproportionate share of the urban poor and new arrivals are faced with the prospect that their new lives in informal settlements on the urban periphery could be even more destitute than the lives they left behind.

Women face considerable exclusion from economic opportunities. Access to economic opportunities for women is severely restricted by cultural institutions, legal impediments, and personal safety risks. Culturally-embedded perceptions of the role of women in society and in the family, can limit women’s opportunities to engage in employment that is at a distance from home or within professions traditionally considered the preserve of males. Opportunities are also constrained by women’s relatively higher vulnerability to serious sexual assault, robbery, beatings, intimidation, and so on. PNG also has legislative restrictions on women’s access to work that (i) involves night-time hours, (ii) is considered too physically arduous, or (iii) entails working underground. Consequently, they find themselves excluded from opportunities in highly paid industries such as mining or manufacturing. At the same time, they are underrepresented in key formal employment contexts, especially at higher levels of seniority.

Significant infrastructure and services delivery challenges

The provision of connectivity infrastructure in PNG faces numerous challenges that hinder related service delivery. The World Bank’s Logistics Performance Index ranks the quality of trade and transport-related infrastructure in PNG at 105 out of 160 countries. Despite the criticality of better connectivity in a

country with such rugged terrain and a highly dispersed population, road access is often limited to lower lying coastal areas and major towns. Most road planning is focused on the country's national priority roads and their condition has been improving. Nonetheless, rural accessibility is low, with one third of the population living more than 2 kilometers from an all-season road. It is therefore notable that the poorest parts of the country are also the most poorly served by the road network. Availability of air and maritime connectivity services is also poor, even though it is not possible to reach certain parts of the country by road. Digital connectivity has improved markedly in recent years, but still lags international peers, not least due to poor electricity availability that hinders technology adoption.

Rates of electricity access for households are among the lowest in the world. Despite having abundant and underutilized hydropower potential in addition to solar, natural gas, geothermal and other energy resources, PNG has been unable to ensure electricity access for the vast majority of households and businesses, or reliable service for those few who do have access. The country has one of the lowest per capita consumption ratios of electricity in the world and only 12.4 percent of the population has access to on-grid electricity, skewed heavily in favor of urban centers.

Papua New Guinea has a shortage in the provision of safe water and improved sanitation facilities, with dire consequences for child mortality and morbidity. According to 2015 data, access to safe drinking water and improved sanitation was at 40 percent and 19 percent respectively. A rural-urban divide exists with urban areas enjoying substantially higher access than rural areas, with 88 percent versus 33 percent for clean water, and 56 percent versus 13 percent for improved sanitation, respectively. In the twenty-five years since 1990, access to safe drinking water has increased only very slowly, while improved sanitation coverage recorded a slight drop. Contaminated water and poor sanitation is a common cause of diarrhea and dysentery. Diarrhea is among the top reasons for hospitalization of children and the most common cause of child death. Dysentery is also a leading contributor to child undernutrition. In 2011, 49.5 percent of children were stunted and 27.9 percent were underweight – this is the fourth highest rate of child stunting in the world. Child undernutrition reduces the benefits of schooling and, in turn, curtails subsequent labor market prospects.

There have been long-run improvements in a number of health indicators, but outcomes still compare poorly with international benchmarks, and significant shortfalls in the delivery of primary and maternal care are evident. The reach of primary health services is inadequate everywhere, and severely limited outside urban areas owing to a shortage of trained professionals and appropriately resourced facilities. The quality and reach of health services directed towards women is a concern with only a third of women having access to modern contraceptive methods, only 66 percent of pregnant women attending four or more antenatal care visits, and only 37 percent of women delivering with the assistance of a skilled birth attendant. The incidence of non-communicable diseases (NCDs) is rising, placing additional pressure on the health system, while the rising rates of tuberculosis and, in particular, outbreaks of multidrug-resistant and extensively drug-resistant strains, poses a serious public health challenge.

Too many school-aged children are not enrolled. Net enrolment rates in primary school have been lower than regional and peer country averages, and the situation is worse at the secondary level. Completion rates are low, with attrition between primary and secondary school higher among girls. The government has responded in recent years with a nationwide policy guaranteeing free tuition for all primary and secondary schooling, and this has led to a significant surge in enrollments.

Education outcomes are poor reflecting the low quality of services rendered. A majority of students are not achieving the basics of literacy and numeracy at school. Pupil teacher ratios were on the rise between 1998 and 2012, and the government's tuition fee free policy will have exacerbated this as enrolments will have been increasing faster than commensurate resourcing for schools. Graduates from

secondary school and higher levels of education and training are ill prepared for the job market, signaling a mismatch between what is being taught and the needs of employers.

Papua New Guinea has an unfortunate reputation for crime and violence. Law enforcement and the protection of people and their property are crucial for community development, the proper functioning of markets, and the attraction of tourists and foreign investment. However, the corresponding public services and institutions in PNG are stretched and under-resourced. There is a poor track record of responding to incidents and apprehending perpetrators, and the under-reporting of crime is understood to be substantial. The homicide rate is among the highest in the region. Rates of crime and violence are high, particularly in the urban centers of Lae and the National Capital District, New Britain, and in certain Highlands provinces. There is some evidence that crime rates may have decreased in Port Moresby between 2004 and 2010.

High levels of poverty and inequality

Whilst recognizing significant data gaps, it is clear that PNG still has a considerable level of poverty and suffers from poor development outcomes. While household data on poverty levels is dated, a lack of improvement since 2010 in measures such as the Human Development Index (HDI) suggests that poverty remains high by both regional and peer group standards. Analysis of the most recent household income and expenditure survey (HIES 2010) reveals that 38 percent of the population lived below the internationally recognized extreme poverty line of \$1.90 per day (2011 USD PPP) in 2009, about the same proportion as in 1996. This is higher than the average for lower middle-income countries. A lack of progress since the last poverty survey is suggested by PNG's Human Development Index rank, which in 2010 was 155 and in 2015 154, the second lowest in the Pacific region, with PNG's HDI score improving by less than 1 percent a year over the period. Additionally, 38 percent of the non-poor population are vulnerable to falling into poverty.

Most of the poor reside in rural Papua New Guinea, but conditions have been deteriorating faster in urban areas. Between 1996 and 2010, the incidence of poverty rose slightly faster in urban areas (up 5 percentage points) than in rural areas (up 3 percentage points) but, at the end of the period, poverty in rural areas (42 percent) was still markedly higher than in urban areas (30 percent). Almost 90 percent of the poor live in rural areas and Papua New Guineans engaged in agricultural activities are much more likely to be poorer than the rest. The incidence of poverty outside urban areas is not markedly different across regions and provinces; a rural household from the highlands is about as likely to be poor as one from the islands. In contrast, there are wide disparities in living conditions between urban and rural areas. Whilst the Port Moresby of today would be unrecognizable to those celebrating independence in 1975, life in the rural villages where over 80 percent of the population live has changed little. The higher incidence of consumption-based poverty in the rural areas is compounded and reinforced by their relatively lower access to services and facilities.

The level of consumption inequality, as measured by the Gini coefficient, remains relatively high at 0.42. This is similar to other countries in East Asia and the Pacific, and other lower middle-income commodity exporters. Comparing rural and urban PNG, inequality is similar and has been broadly stable. In both 1996 and 2010, the Gini coefficient for rural and urban centers was 0.41 and 0.42, respectively. Alternatively, there is some evidence to suggest more significant differences between and within certain regions of the country. For instance, inequality is considerably higher in Rural Momase than in the region comprising Papua excluding the National Capital District. Within regions consumption inequality is driven by the interaction of two factors: (i) the educational attainment of the household head; and (ii) the formal-informal employment divide of the household head.

Gender inequality and gender violence remain a major barrier to human development in PNG. In 2015, PNG had a value of 0.595 for the UNDP’s Gender Inequality Index, ranking it 143rd out of 159 countries. Women in PNG suffer from gender inequity in terms of their (i) access to endowments such as education and health, (ii) access to economic opportunities, and (iii) voice and agency. At school, for instance, females exhibit lower literacy, enrolment, and completion rates than male counterparts, placing them at a relative disadvantage early in life. Gender-based violence is also highly prevalent, with survey estimates finding that 70 percent of women have experienced some degree of physical or sexual assault in their lifetime.

Household circumstances are associated with inequalities in children’s access to facilities, health care and education. Nationwide average rates of access can mask significant disparities between population subgroups. In PNG, there is considerable variation in access to secondary education, sanitation facilities and safe water on the basis of household attributes such as regional location, economic status, and the education level of the household head.

Pathways for poverty reduction and shared prosperity: An analytical framework

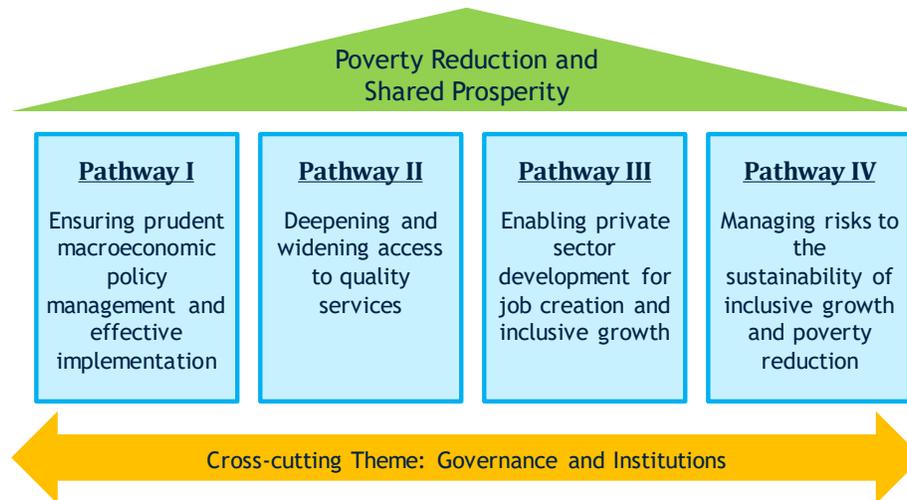
Papua New Guinea has many avenues through which to achieve progress toward the twin goals, but efforts should be focused on the most binding constraints and potent opportunities. This SCD therefore sets out a simple, coherent analytical framework that focuses on those critical areas where policy and reform efforts will have the greatest impact on achieving the twin goals. The framework is informed by a thorough assessment of PNG’s challenges and opportunities, drawing on the existing body of research and evidence, and complemented by extensive consultation with a broad range of stakeholders such as government, development partners, think tanks and civil society.

The most pressing areas of focus are closely associated with the issues and context laid out above. PNG’s overall growth performance has not been very inclusive, and the economy is subject to frequent bouts of macroeconomic and fiscal turbulence. This is linked to the country’s heavy resource dependence, but is also attributable to the need for a more robust and internally consistent policy framework combined with better implementation. Service delivery, a fundamental driver of economic and human development, exhibits major shortfalls across all sectors – raising poverty and hardship, and depriving the economy of the necessary enabling conditions for a vibrant private sector. Boosting the inclusiveness of growth and establishing a sustainable basis for long-run prosperity will require a turnaround in the prospects of PNG’s ailing non-resource economy, through a revitalization of the private sector and a more attractive environment for foreign direct investment. Tackling the leading constraints to private sector development will be essential if businesses are to create much-needed jobs for the poor and vulnerable, including for marginalized women and the burgeoning youth cohort. More generally, PNG’s fragile context entails that progress toward the twin goals is susceptible to a complex array of risks. Whether it is commodity-price volatility, natural disasters, poorly managed urbanization, or resource-driven conflicts, government needs to be actively engaged in monitoring and mitigation, and be well-prepared to intervene with adaptive or corrective efforts, if progress toward the twin goals is to be sustained in the long run.

Moreover, Papua New Guinea also has a reputation for relatively weak governance and institutions – presenting obstacles to implementation and success of even the best-laid plans and policies. Strengthening governance and institutions is therefore essential to ensure that politics, government and other institutional structures that underpin a well-functioning society are appropriately aligned with the broader interests of all Papua New Guineans. These considerations cut across all sectors, as they are

fundamentally about the reliability of rules, processes and systems to operate in ways that good policymaking sets out.

The SCD’s analytical framework posits that reducing poverty and promoting shared prosperity in PNG rests largely on four key pathways and one cross-cutting theme (Figure 36). The four pathways are: (i) *ensuring prudent macroeconomic policy management and effective implementation*; (ii) *deepening and widening access to quality services*; (iii) *enabling private sector development for job creation and inclusive growth*; and (iv) *managing risks to the sustainability of inclusive growth and poverty reduction*. In addition, recognition is given to the important cross-cutting theme of *governance and institutions*.



Pathway I: Ensuring prudent macroeconomic policy management and effective implementation

Papua New Guinea faces a broad range of macroeconomic challenges. These include relatively slow trend growth (particularly in the non-resource sector), commodity-price-induced volatility, procyclical fiscal expenditure combined with limited revenue mobilization, rising debt, a misaligned exchange rate, and a monetary policy framework with limited effectiveness. In part, these are a consequence of the country’s prevailing circumstances such as challenging economic geography, resource dependence, natural disaster vulnerability, limited data availability, and low public sector capacity, but they can also be attributed to macroeconomic policymaking that has not always been well-coordinated, sufficiently risk-mitigating, adequately forward-looking, and wholly consistent with longer-term objectives for the economy. These challenges can impede Papua New Guinea’s economic development and harm the poor. Slower growth typically translates into slower progress on poverty reduction, while elevated volatility in growth makes it difficult to adequately plan and deliver public services – raising uncertainty and discouraging investment. Unsustainable spending can generate large debt burdens that act as a drag on growth for years to come, while fiscal procyclicality has the potential to overheat the economy during upturns and exacerbate downturns. Monetary policy ineffectiveness limits the ability to manage inflation, which can lead to higher costs of essential goods and services, with a disproportionate impact on the poor. A misaligned exchange rate and associated foreign exchange controls can limit the availability of imported goods and capital inputs, stifling business growth and lowering job creation.

Improved macroeconomic management and effective implementation in Papua New Guinea is a prerequisite for delivering the twin goals. Getting the settings right, and ensuring implementation, will go a long way to ensuring that the economy is appropriately insulated from commodity-price-induced

volatility, that public services are adequately funded, that the private sector and international capital can count on stability and growth, and that, more generally, a broad range of risks (such as in debt, balance of payments, and inflation) are well under control. To this end, Pathway I draws attention to the most pressing structural weaknesses in macroeconomic policy that warrant attention: (i) limited macroeconomic management of resource cycle flows; (ii) low revenue mobilization; (iii) rising debt and debt servicing costs; and (iv) limited effectiveness of the monetary policy framework and an imbalance in the foreign exchange market.

Improving the management of mineral resource flows is vital. The existing fiscal policy anchor based on a debt-to-GDP ratio ceiling does not adequately delink government spending from volatile revenue originating from the resource sector. This history of pro-cyclical booms and busts in government spending has undermined the delivery of public services. There is a repeated pattern, whereby commodity revenues surge, government spending increases, the boom comes to an end, and government struggles to make ends meet. This can be addressed through linking fiscal policy to a non-resource primary balance rule so as to discourage pro-cyclical spending. Complementing this, a sovereign wealth fund, which has been in the pipeline for several years, will act to absorb volatile resource flows and provide a predictable stream of financing to the annual budget. When operationalizing the fund, a sound governance and technical base will be required that draws upon international good practice.

Strengthening revenue performance is needed to support inclusive fiscal policy and reduce the need for quick and poorly-planned cuts to spending during downturns in the cycle. Revenue mobilization is low by international standards and highly correlated with volatile commodity prices. Improving administration of the tax system is crucial to the government's efforts to increase revenue mobilization. Support should build upon the progress government has already made on identifying and addressing revenue policy issues, introducing new IT systems, and increasing resources to revenue administration. However significant challenges remain including continued taxpayer non-compliance, tax avoidance by foreign contractors, and the extensive use of tax incentives and discretionary tax treatment at the firm level.

A sustainable debt and liability management strategy is needed to help lower borrowing costs, and reduce macroeconomic risks. To fill the hole left by low revenue collections, government is implementing fiscal consolidation, resorting to ever more expensive borrowing, and increasingly 'printing money'. Once arrears to a superannuation fund and liabilities of public enterprises are accounted for, public debt has already breached the 30 percent of GDP threshold set previously in the Fiscal Responsibility Act. Debt servicing costs more than doubled (as a share of total expenditure) between 2013 and 2016. The authorities have stated their intention to reorient the debt portfolio to reduce interest costs, lengthen average debt maturities, and lower rollover and foreign exchange risks. Going forward, to improve debt management, the authorities should seek to place more weight on addressing noted shortcomings in debt management including improving information on expenditure arrears. Along with measures to increase the depth of the domestic financial market, a broader strategy to guide public debt management could also contribute to reducing the cost of government borrowing.

Improving the effectiveness of the monetary policy framework is required. The central bank's official interest rate - the Kina Facility Rate – was introduced to indicate the monetary policy stance, but has been ineffective in influencing lending rates in the commercial banking sector. This is due to banks holding excess liquidity and has resulted in the authorities resorting to exchange rate interventions, in practice, to control inflation. Rectifying the situation will require a number of coordinated efforts including: the central bank absorbing excess Kina liquidity in the economy for instance by increasing the cash reserve requirement; reinforcing the policy-signaling and market-setting role of the Kina Facility Rate; improving the coordination between the Treasury and BPNG on fiscal and monetary policies; ensuring that the

independence of the central bank is maintained; and, over time, gradually transitioning to an inflation targeting framework to anchor inflation expectations.

A more flexible exchange rate regime would help to take the pressure off currency reserves and improve the private sector’s access to foreign exchange. The downturn in resource prices, the impact of El Niño, and the fact that the PNG LNG project has not yielded significant foreign exchange inflows has led to downward pressure on the exchange rate. In response, authorities introduced a tight foreign exchange trading band and began rationing access, prioritizing fuel and food imports. This has hampered business activity and run-down reserves of foreign currency. Given the structural constraints in the foreign exchange market, an instantaneous shift to a completely free-floating exchange rate mechanism may not be appropriate. However, there are a number of steps that can be undertaken to improve the functioning of the foreign exchange market, including reducing the central bank’s market-making role, increasing foreign exchange market information, regularly undertaking foreign exchange risk management audits, and introducing a transparent foreign exchange auction. Additionally, as discussed above, since currently the effectiveness of monetary policy is constrained by excess liquidity, monetary policy needs to be strengthened along with improvements to the functioning of the foreign exchange market so as to manage the potential inflationary consequences of a more flexible exchange rate regime.

Pathway II: Deepening and widening access to quality services

Significant improvements in the reach and quality of services will be key to achieving the twin goals. Service delivery is fundamental to economic and human development, and better access is associated with lower poverty in Papua New Guinea. Effective service delivery boosts the poor’s resilience to a range of shocks, given their heavy dependence on public services and low precautionary savings, while also promoting job creation through support for a healthy and enabling business environment.

Despite enormous challenges, Papua New Guinea manages to deliver a range of public services, but widespread gaps remain. The country has working hospitals, schools, judicial and law enforcement bodies, and a functioning set of institutions for public policy and administration that is capable of delivering outcomes. A major road network and key logistical ports (air and sea) are operational, while both internet and electricity are at least available to those in the urban centers. These are accomplishments given the country’s highly rurally-dispersed population, connectivity-constraining geography, low public sector capacity, frequent fiscal challenges, and poor governance track-record. At the same time, as outlined earlier, there are significant gaps across all sectors and overall performance is mixed at best.

An overarching strategy that identifies and tackles key tractable constraints that are common across most sectors, is imperative. In this vein, Pathway II considers four broad avenues to improve service delivery in PNG: (i) increasing the quantity and quality of spending; (ii) mitigating capacity constraints; (iii) improving planning, monitoring and evaluation; and (iv) improving the functioning of the decentralized institutional service delivery mechanism.

Ensuring adequate spending on maintenance of infrastructure, utilities and related services, and improving the quality of expenditure as outlined in PNG’s 2015 Public Expenditure and Financial Accountability (PEFA) self-assessment would support improved service delivery. There needs to be additional spending directed towards rural service delivery given significant urban-rural disparities in rates of access. Alternative models of service delivery, including co-delivery of public services with partners from the private and non-profit sectors, should be more frequently considered, as it can lead to quality improvements alongside a lighter fiscal burden. Disrupted cashflows mean that regular activities, including outreach beyond urban areas, are not funded. Improvements to the public financial management system constitute one avenue for improving the quality of public spending. The PEFA (2015) states that

improvements need to be undertaken in four key areas: (i) *the credibility of the fiscal strategy and budget*; (ii) *the comprehensiveness and transparency of recording and reporting in the budget*; (iii) *the control of budget execution*; and (iv) *external scrutiny and corrective measures in financial management*.

Capacity constraints hinder service delivery at the national level and the problem is even more severe at lower levels of government. The challenges are myriad, including human resource constraints (e.g. inadequate staffing levels and an inability to source appropriate skills), technical difficulties, unavailability of supplies, and shortages of ancillary services to enable service delivery. Conditions vary across provinces, and between rural and urban areas, with rural capacity especially constrained due to difficulties in both hiring (and keeping) employees and maintaining infrastructure in rural PNG. Basic supplies for schools and healthcare facilities can often end up mismanaged and poorly distributed, making it difficult for corresponding services to be provided. Slow and laborious public procurement processes need to be reformed (streamlined, but with transparency and accountability improvements) to encourage greater private sector support for service delivery, from supplying inventory to maintaining infrastructure.

Planning, monitoring and evaluation, although improved in recent years, continue to be constrained by a lack of data. These activities are hampered by: data fragmentation; the old age and low quality of data; lack of data sharing between government entities; and inconsistencies between different data sources and between national and international data. Basic questions such as whether national sector expenditure, workforce or infrastructure have increased or decreased in recent years, cannot be answered. This can significantly change the narrative around particular issues and therefore affect the ability to adequately plan, budget and implement policy. The NSO should be supported to expand its capacity so that major gaps in collection and availability of national statistics are addressed, and steps taken to encourage and streamline information and data sharing across government.

The pace of decentralization and devolution of service delivery responsibilities to the district and provincial levels has exceeded the speed at which subnational systems are able to adapt. PNG's 2015 PEFA self-assessment recorded poor performance in a number of areas crucial to decentralization. Cashflow and accountability issues continue to hinder provincial service delivery. Better institutional arrangements need to be implemented to overcome ineffective integration within and between agencies at different tiers of government. Funds directed to the district level, such as the District Services Improvement Program (DSIP) funds, have delivered services where none were before, but have also had mixed results: successes have been idiosyncratic with many projects established but not staffed or maintained because DSIP grants are not linked to recurrent budgets. Improvements are needed in public investment management, to ensure delivery and ongoing maintenance of essential infrastructure, and public financial management, for improved credibility and execution of the overall public budget.

Pathway III: Enabling private sector development for job creation and inclusive growth

Boosting development of the private sector will be essential to meet the employment needs of a growing working-age population, increase economic diversification, reduce fiscal dependence on resource sector revenues, and ensure more inclusive growth. However, slow non-resource sector growth, persistently low net inflows of foreign direct investment (FDI), high levels of informality, and small firm size all point to a constrictive business environment. While the resource sector stands in contrast to the rest of the economy – generating robust average growth, attracting FDI and participation by large foreign firms, and supporting job creation – the sector is too small a share of the economy, and too capital intensive an activity, to meet the significant job creation challenge that PNG faces. Setting the non-resource economy on a more robust growth trajectory will require addressing impediments to the business environment. More specific efforts should also be focused on agriculture, fisheries and tourism – sectors

that are labor intensive, leverage PNG's geographic and cultural advantages, and present ample opportunity for women and youth.

Doing business in Papua New Guinea is particularly challenging. The country ranked 119th among 190 countries in the 2017 Doing Business survey, situating it about midway among lower middle-income and peer countries, though broader business conditions in PNG might be considerably worse than suggested by this largely de-jure-based review of conditions in Port Moresby. Direct surveys of the pain points faced by firms identify the following major constraints to business, investment and growth: (i) infrastructure and related services; (ii) access to finance; (iii) access to land; (iv) law and order; (v) corruption; (vi) skills shortages; and (vii) political uncertainty and instability of rules. Raising the performance and dynamism of PNG's private sector will require substantive long-run efforts aimed at addressing these issues.

Agriculture is the bedrock of the economy and holds the most potential for generating private-sector-led balanced and inclusive growth. Agriculture is highly labor intensive, supports the livelihoods of a majority of households, and provides significant opportunity for women and youth. It has the potential to promote key linkages between rural and urban economies, and plays a crucial role in supporting food security in local communities. Over recent decades, the sector has experienced only moderate growth and its international competitiveness has waned. It is largely made up of smallholder producers with poor techniques and low productivity. There are several avenues to raise productivity and growth. Among the most critical will be addressing inadequate transport and logistical service infrastructure, and the challenge of accessing markets, so that less food wastes away in difficult-to-access rural locations or on the long, poorly refrigerated journey to market. Improvements in access to land and credit are needed. Agricultural extension services need to be deployed in innovative and cost-effective ways – such as under the highly successful Productive Partnerships in Agriculture Project (PPAP) – to help producers by increasing their knowledge of agronomy; upgrading their techniques in practice; and introducing modern inputs, including improved fertilizers. Improvements are also needed in the sector's institutional support structures.

Fisheries are an important source of coastal livelihoods and can be better leveraged to boost job creation and inclusive growth. Most fisheries production is undertaken by foreign-owned fleets operating in PNG's offshore fisheries, generating public revenues through access licensing fees, and some employment through onshore processing obligations. However, coastal and inland fisheries and associated small-scale economic activities have been more important direct contributors to local livelihoods. The small size of coastal communities usually results in catch and production volumes that do not financially justify investment in processing and other facilities that are crucial to supporting commercial activities and promoting greater small and medium enterprise involvement. Coastal resource management is constrained by skills and capacity shortfalls in, and limited accountability of, provincial and local administrations. Sector development will require supporting both offshore and coastal activities, while ensuring the long-run sustainability of corresponding ecosystems. Small market players need access to viable processing facilities and appropriate marketing and distribution networks for their output. Where this requires new investment, it should only proceed where it jointly leverages business from larger operators in offshore and coastal fisheries so as to reach production volumes that can significantly improve efficiencies and cost competitiveness. Stronger regional cooperation around offshore tuna fisheries is necessary, as are enhancements in the flexibility and value of tuna fishery access rights, upskilling of fishery managers, better branding and marketing of local tuna, and support for regional processing clusters.

A high-performing sustainable tourism sector has the potential to create considerable employment, especially among women and youth, and bring economic activity to remote parts of the country. The sector's skills profile is well-suited to PNG's relatively unskilled and semi-skilled labor force. Despite steady growth in visitor numbers, tourism's contribution to the PNG economy and employment is well

below its potential, and small when compared to other Pacific island countries. High prices, limited product offerings and low-quality services, combine with personal safety concerns to hinder the country's attractiveness to potential tourists. Going forward, efforts should focus on leveraging the country's incredible geographic, ecological and ethnographic endowments to promote niche experiences for special interest tourists. PNG should also seek to exploit the increasing popularity of cruise tourism in the region, while monitoring developments in the small but rapidly growing Chinese visitor market. Transforming the tourism sector will also require: (i) improving perceived as well as actual safety and security; (ii) improving access to, and within, PNG; (iii) improving infrastructure, products and experiences to allow for entry of both tourism-related services and other ancillary businesses; (v) increasing participation of local communities; and (iv) strengthening the institutional and policy frameworks for tourism development across all tiers of government.

Pathway IV: Managing risks to the sustainability of inclusive growth and poverty reduction

Threats to PNG's ability to deliver opportunity, stability and services to its diverse, dispersed population, and guarantee prosperity for future generations, arise from a number of sources. Resource dependence has underpinned elevated macroeconomic volatility and challenges in maintaining the fiscal space for services. Institutions have been weakened by the resource-dominated economy, undermining accountability and service delivery, and blunting the incentives for the political class to deliver inclusive development. High political fragmentation and the emergence of perverse patronage arrangements exacerbate these challenges. Modernization and rising urbanization are placing stress on traditional institutions and, combined with a burgeoning underemployed youth cohort, create conditions for social strife. Endemic gender-based violence and women's economic exclusion threaten the long-run prospects of half the PNG's population. The country is susceptible to a range of environmental, climate change and natural disaster hazards, while growing economic and population pressures pose risks for crucial natural environments and ecosystems.

The principal economic risks in PNG relate to the country's resource dependency. Elevated macroeconomic volatility disproportionately hurts the poor, increases inequality, and is associated with lower average growth. Fiscal management comes under pressure when resources-related revenues constitute a large share of total public revenues. PNG is currently confronted with the risk that a sustained commodity price downturn will continue to erode public finances and require a further scaling back of essential services. There is a risk that Papua New Guinea's resource endowments will contribute negligibly to long-run development goals, and that they will be depleted before a broader basis for long-run growth is established. The presence of extractable resources increases pressure on land tenure systems and regulation, creating disputes within and between communities, and generating public discontent over perceived inequities in the sharing of benefits. Key mitigating steps include many of the reforms outlined in earlier pathways. Macroeconomic and fiscal reforms need to reduce growth volatility and delink fiscal outcomes from the commodity cycle. Promotion of the non-resource economy and greater economic diversification will reduce dependence on resource revenues and increase the inclusiveness of growth. Better provision of infrastructure and public services will help ease landowner and community tensions over the central government's share of extractive rents.

Pervasive threats to the personal safety of women and wide-ranging obstacles to their participation in the economy pose a risk to the achievement of poverty reduction and shared prosperity. If not systematically confronted and mitigated, inequality of opportunity between the genders may widen further, with women held back and increasingly unable to take advantage of the opportunities that future growth and development have to offer. This risks undoing progress made to date. Progress is, however, being

made by the private and public sectors to include women in the economy and eliminate barriers to their full participation. More generally, the government has recognized the need to address gender-based violence.

PNG youth find themselves at a crossroads, increasingly frustrated with traditional decision-making processes that exclude them, and unable to take full advantage of the opportunities offered by a growing economy. Youth are typically unable to secure gainful employment and are largely engaged within the informal economy, where remuneration is low and their activities can be subject to intense competition and violence. It would constitute an extraordinary waste of human capital if this large demographic cohort is not empowered to achieve its full social and economic potential. It could also lead to entrenched disadvantage and considerable community discontent. Limited opportunity for youth in the rural economy has driven large flows of rural-urban migration, increasing their social and economic vulnerability. Participation in gangs and their criminal activities can present an attractive avenue for income generation for many young economically inactive males living in urban settlements. However, urban youth do make considerable contributions to family economies, especially through informal marketing. Efforts to boost school outcomes, improve the job-market appropriateness of vocational education and training services, and promote job creation, as outlined in Pathways II and III, will also have particular relevance here.

Urbanization has created new and rapidly evolving pressures on PNG's political, economic and social structures. Rural-to-urban migration, together with limited availability of land and economic opportunity, have pushed a large share of the urban population into high-density informal settlements along the urban peripheries, where living conditions and vulnerability can be severe. These multi-ethnic urban settlements have been sites of acute communal violence, though it is not always the case. Reflecting all these pressures, urban crime rates are very high. Local institutional adaptation in urban law and justice has had a role in making urban settlements safer. Support for emerging forms of institutions and leadership requires careful and selective engagement to avoid inadvertent disruption or delegitimization. Urbanization will continue and, if well managed, will be an important source of resilience for the economy and society in the long run.

Natural environments and ecosystems provide a crucial basis for long-run prospects in key economic sectors¹, but their sustainability is at risk. Population growth, urbanization, resource extraction and poor agricultural practices are all responsible for increasing pressures on these endowments. Prudent management of the environment, giving regard to the dividends that these assets have to offer in future years and for future generations, will help ensure the sustainability of the economic activities described above and help lock-in progress toward the twin goals.

The country is highly vulnerable to natural hazards and the impacts of climate change. Floods, droughts, earthquakes and landslides have a high incidence in PNG, with impacts on economic livelihoods and food security, and resulting in fatalities. Rising sea-levels have been inundating coastal wetlands and bleaching corals, and could eventually result in displacement of communities. Natural disasters and climate variability severely affect the agriculture and fisheries sectors, leading to lower economic growth and affecting vulnerable populations. Going forward, adaptation and mitigation efforts will be essential.

PNG is politically diverse and fragmented with thousands of tribal groups represented by local and national government structures, creating challenges for representation and stability. Such fragmentation has generated regular political instability. The winners in political contests rarely represent a majority of voters. As a result, the distribution of patronage that being elected typically enables, tends to benefit the few rather than the many, paving the way for widespread political disenfranchisement and fragility. Only two governments have managed to complete a full elected term since independence.

¹ Such as agriculture, forestry, fisheries and tourism.

Political alliances and pacts have been increasingly effected through the provisioning of rents and patronage. Limited accountability in the use and distribution of public funds may lead to corruption, loss of legitimacy, and violence. Contests over patronage are intensely political and can degenerate into acts of physical violence, which can quickly escalate if local kin and tribal allegiances come into play.

Cross-cutting theme: Governance and institutions

Governance and institutional weaknesses are a source of challenges for Papua New Guinea's economy and society, and they cut across all four pathways of the SCD. Ensuring effective governance and the quality and inclusiveness of institutions is important for the long-run development of a country.² This is especially the case in the presence of high political or social fragmentation, as well as in economies that are highly dependent on natural resources – and Papua New Guinea satisfies both of these characterizations. While there are a number of important areas of institutional strength in PNG, the country nonetheless ranks poorly on key indicators of institutions and governance – such as the Country Policy and Institutional Assessments and the World Governance Indicators – when compared with resource-rich lower middle-income countries and other common country-group benchmarks. Assessments typically point to the presence of, inter alia, weak and fractious political party structures, shallow policy commitments, PFM and PIM shortcomings, misaligned personal and public incentives, clientelism, widespread rent seeking, and weaknesses in the governance structures of PNG's resource sector. These significantly impede government's capacity for effective economic management, policymaking and service delivery, while holding back private sector development through higher costs, elevated uncertainty, and the discouragement of investment.

The country's governance arrangements are, as a whole, best understood as attempts (and some failings) to deal with the institutional impact of resource dependence and political fragmentation. While all developing countries are beset by shortcomings in governance and institutions, in PNG these are compounded by the forces of heavy resource dependence and political fragmentation which play a heavy role in shaping the rules of the game under which political actors, policymakers and other agents must operate every day in order to achieve their objectives. For instance, the country's resource endowments have been the basis for its rise into lower middle-income status, but if not managed very carefully, the emergence of large sources of wealth and income can have dramatic (and potentially perverse) impacts on local incentives, social and political power structures, and the demands on public administration. Likewise, PNG's extraordinary ethnic diversity has given rise to a highly fragmented political landscape which, combined with a Westminster parliamentary system (that has often left governments susceptible to votes of no-confidence), creates incentives for political actors to secure their interests in ways³ that present an obstacle to overall political stability, policy predictability and coherence, and the delivery of public services.

Most prominently, resource dependence has been a key source of challenges. The country exhibits many of the institutional challenges common to resource dependent economies and these were amplified by the recent 2003-2012 commodities 'super-cycle'. These include resource-driven regional inequities, boom and bust cycles of public revenue flows, political instability linked to resource rent capture, and increasingly fragmented, verticalized subnational funding arrangements that are not institutionalized in recurrent expenditure budgets. Associated institutional and governance weaknesses have become especially evident in PNG's subnational public investment management and service delivery. Moreover, the fiscal volatility linked to resource dependence has weakened the integrity of institutions that rely on stable public expenditure to pay staff, develop quality services, and retain public support.

² Acemoglu and Robinson (2005).

³ Short-lived alliances; patronage; policy plans spanning only short horizons; etc.

PNG's fractious political environment has led to pragmatic responses by political actors to try and achieve stability and control, however, these have been responsible for a number of developments with negative consequences for institutions and governance. The most concerning of these pragmatic responses are: (i) the proliferation of political pacts underpinned by rent-based provisioning, (ii) centralization without coordination, and (iii) the institutionalization of the significant funding and autonomy of Open MPs⁴ without corresponding accountability for decentralized service delivery. Intense political fragmentation and competition have created a need for pacts and alliances in order to form government, thereby providing a degree of political stability. These pacts (which are employed within constituency, party and national government contexts) have been increasingly achieved through institutionalization of rent distribution with limited transparency and accountability. This has encouraged personalized patronage relationships and the mixing of public money with private investments in ways that do not necessarily benefit the broader public interest. In PNG, power and patronage possibilities have come to depend heavily on being part of the government, as well as on access to both the resources and discretion that membership of the National Executive Council (NEC) brings. This centralizing force has seen the NEC and cabinet gradually expanded, with coalition partners brought into the fold, and the proliferation of SOEs and statutory authorities whose leadership are often selected on the basis of personal connections to central government actors. Despite these centralizing tendencies, however, coordination has not improved across government. At the same time, recent decades have also witnessed forces for greater decentralization in the responsibility for the delivery of public services. Significant funding has been provided to elected MPs, with the aim of empowering their respective subnational government administrations to be more locally responsive. However, without adequate transparency and oversight over the use of these funds, and accountability for outcomes, this has opened a door to misappropriation, poor investment choices, and large gaps in service delivery.

Papua New Guinea will need better governance and institutions to achieve significant and sustainable progress toward the twin goals. Given the pervasiveness of these challenges, efforts are required on multiple fronts. Opportunities to align incentives, performance, accountability, and policy commitments, and establish better governance arrangements, should be especially harnessed where they catalyze reforms under the transformative pathways of this SCD. This will help ensure that PNG's endowments are exploited responsibly, that the returns are shared equitably, and that benefits also accrue to future generations. It will be essential to establishing appropriate long-run incentives that deter rent-seeking and encourage productive investments in physical and human capital. Implementation of more effective public sector institutional arrangements (particularly PFM) can boost service delivery outcomes and, if designed appropriately, can also raise transparency and accountability to the general public, thereby boosting pressure on the political class for better outcomes.

The good news is that there are elements of success evident across the country, that provide resilience to institutions and are helping to create momentum for improved service delivery. Service delivery may be fragmented, but there are functioning local hospitals, clinics and schools, alongside quality provincial, urban, district and local-level government structures. There is also capable leadership in departments, the private sector, civil society, churches and social services, and in law and justice in urban settlements. Roles of the province, district, local level government and ward are being redefined following a 2015 review of the country's Organic Law on Provincial Governments and Local-level Governments, and city authorities are emerging with much-needed greater capacity. The rollout of the Integrated Financial

⁴ Of the 111 members of parliament, 89 are chosen from single-member 'open' electorates, while the remaining 22 are chosen from single-member provincial electorates. Under the District Services Improvement Program and Provincial Services Improvement Program, members of parliament receive annual funding designations with limited monitoring and accountability for how this is spent. Open and Provincial MPs are each entitled to PGK 10 million and PGK 5 million, respectively.

Management System at subnational levels will raise prospects of both visibility and accountability for public finances, while likely exposing the ill effects of poor cashflow management in PFM. While more should be done to strengthen institutions and governance in the resource sector, PNG’s participation in the Extractive Industries Transparency Initiative, which seeks to improve sector transparency and accountability, is a step in the right direction. These factors could see PNG emerge with more effective governance over time.

Priorities

Having laid out the major challenges and opportunities confronting PNG on its path to poverty eradication and shared prosperity, the Systematic Country Diagnostic proposes a set of priorities to focus development efforts and scarce public resources on achieving the greatest impact. The priorities have been selected on the basis of three criteria:

- i. *Demonstrated impact on the twin goals:* Based on the available evidence, the extent to which an issue poses an impassable constraint or extraordinary opportunity for the achievement of the twin goals.
- ii. *Complementarities and synergies:* The degree to which reforms addressing the most binding constraints are associated with more than one pathway, and especially where they magnify the impact of other prioritized efforts. Significance is also placed on reforms which may be key prerequisites for, or which can be expected to have key synergies with, other prioritized efforts.
- iii. *Feasibility:* Consideration of feasibility is essential if prioritized efforts are to deliver results. Some reforms are not feasible until other prerequisite or complementary steps are accomplished, while other reforms might simply lack the minimum political support required to proceed with implementation.

Consultation was also undertaken with internal and external stakeholders – adding a further layer of scrutiny – to ensure that the priorities received broad support. The priorities are laid out in the table below, categorized under the pathways of the analytical framework. Priorities relating to the ‘cross-cutting’ theme of governance and institutions, owing to their interrelated nature, are also captured under the four pathways. The priorities are intended to be concise and focused, and will therefore not attend to many of the issues that may be considered important by academics, other stakeholders, or the extensive literature on PNG. The full set of priorities together with an indicative assessment against each of the above three criteria, are presented in the table below.

Summary table of priorities

Key Areas		Final Stage Priorities	Prioritization Criteria		
			Demonstrated impact on the twin goals	Complementarities and synergies	Feasibility
Pathway I – Ensuring prudent macroeconomic policy management and effective implementation					
Fiscal	• De-linking economic growth and public expenditure from resource sector volatility		●	●	●
	• Raising domestic resource mobilization		●	●	●
Debt	• Improving the management of the public debt portfolio		●	●	●
Monetary and external sectors	• Establishing and strengthening the necessary mechanisms for an effective monetary police regime, and transitioning toward an exchange rate regime where price determination is more closely aligned with market forces		●	●	●
Pathway II – Deepening and widening access to quality services					
Focus on underserved areas	• Improving service delivery in rural communities and urban informal settlements		●	●	●
Planning and monitoring	• Strengthening NSO statistical services and both the management and sharing of data by public sector agencies		●	●	●
Public investment and financial management	• Improving public investment management by ensuring that operational budgets and maintenance are factored into plans for infrastructure and capital projects		●	●	●
	• Strengthening public financial management to improve credibility and execution of the budget		●	●	●
Devolution of responsibilities	• Improving basic institutional arrangements within subnational governments, as well as between national and subnational levels of government		●	●	●
Alternative delivery models	• Exploring alternative models, such as in partnership with the private and non-profit sectors, to ease the fiscal burden of expanded service delivery and raise performance		●	●	●
Sectors	Health	• Increasing access to medication	●	●	●
		• Improving primary health facilities to support preventative health care and early disease detection	●	●	●
		• Addressing child undernutrition and adult malnutrition	●	●	●
		• Combating tuberculosis	●	●	●
	Education	• Raising the quality of school education	●	●	●
		• Expanding the vocational training system and improving alignment with market needs	●	●	●
	Law and order	• Strengthening law enforcement and judicial institutions	●	●	●
	Energy	• Expanding electricity access across the country and improving performance of PNG Power Limited	●	●	●
	Water and sanitation	• Addressing institutional shortfalls in water and sanitation services delivery	●	●	●
	Transport & ICT	• Improving connectivity within PNG	●	●	●

Key:

Very High	High	Moderate	Low
●	●	●	●

Pathway III – Enabling private sector development for job creation and inclusive growth					
General		• Improving key trade corridors			
		• Expanding access to credit			
		• Promoting access to commercially viable land with secure tenure and boosting the capacity of PNG’s land administration institutions			
		• Ensuring stability of rules, regulations and policies, and effectively implementation of commitments			
		• Implementing active labor market policies			
		• Ensuring policies on foreign firm participation are balanced and do not unduly discourage international capital and entrepreneurship			
Sectors	Agriculture	• Raising productivity by extending PPAP-type programs to more districts and regions, and other crop types			
	Fisheries	• Boosting economic dividends from offshore fisheries and supporting the commercial viability of smaller coastal fishing activities			
	Tourism	• Focusing on the cruise market and niche segments of tourist demand			
Pathway IV – Managing risks to the sustainability of inclusive growth and poverty reduction					
Economic risks		• Ensuring that benefit-sharing agreements in the extractives sector are fairly constructed and implemented			
Social risks		• Better integrating and supporting urban informal settlements to mitigate the risks of entrenched poverty and clusters of deprivation			
		• Providing opportunities to PNG’s large cohort of inactive and underemployed youth			
		• Addressing the ongoing disadvantage and economic exclusion of women			
Environment, natural hazard and climate change risks		• Mitigating the impacts of climate change through better preparation and adaptation			

Key:

Very High	High	Moderate	Low

PART 1: Setting the scene

1. A robust democracy with a diverse culture and geography

1.1 Unparalleled and remarkable biodiversity and ethnographic diversity

1. **The Independent State of Papua New Guinea (PNG) borders Indonesia by land, and Australia, Micronesia, New Caledonia and the Solomon Islands by sea.** The country occupies the eastern half of the West Pacific island of New Guinea, together with the smaller islands of New Britain, New Ireland and Bougainville, and another 600 or so smaller and mostly uninhabited islands and atolls. Its interior is carved up by the steep slopes and jagged peaks of mountain ranges, interspersed by fertile valleys and over a dozen active volcanoes, while tropical rainforests cover around 75 percent of the country's surface.

2. **PNG's varied and captivating geography endows the country with a remarkable degree of biodiversity.** PNG is among the most biodiverse countries in the world (Figure 1) and is host to over 5 percent of the world's plant and animal species, much of it endemic to the island of New Guinea. The country's biodiversity is supported by waterways that crisscross the country, providing important ecosystem lifelines.

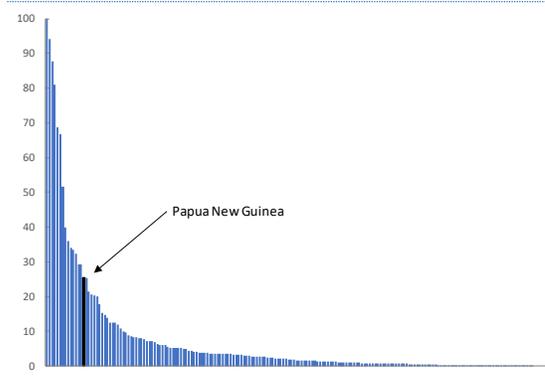
3. **Its geography also provides for a wide array of natural resources both on land and sea, comprising of fish, forestry, minerals and petroleum.**

Demonstrating this rich natural endowment, PNG is a

major global producer of a number of agricultural products such as coffee, cocoa, coconut (copra), and oil palm, with recent data establishing it as the 17th, 17th, 7th and 9th-largest global producer, respectively. The country is ranked 2nd in the world for the export of tropical logs and its maritime exclusive economic zone is the source of over 10 percent of the global tuna harvest. The country also has a wealth of exhaustible natural resources, with production and export of petrochemicals and minerals. For instance, PNG's exports of liquefied natural gas (LNG) ranked 10th in the world in 2015 and its exports of gold ranked 13th in 2014 (Figure 2).

4. **PNG's vast and dispersed highland, coastal and island geography creates an unparalleled range of ethnographic diversity.** The rugged and densely-forested geography renders interior travel challenging and has induced communities to remain small in size and disconnected from each other. It has produced one of the most linguistically diverse countries in the world. PNG is estimated to have 850 distinct cultural-linguistic groups⁶ spoken among a widely dispersed, scattered⁷ and poorly connected population of 7.9 million people spread over a land mass of 452,860 km². The population is predominantly rural, with 87 percent living outside of urban areas – the third highest rate in the world in 2015. The prevailing socioeconomic structures range from hunting and gathering to slash-and-burn agriculture, subsistence

Figure 1: Benefits index for biodiversity⁵



Source: Global Environment Facility, 2008

⁵ The GEF Benefits Index for Biodiversity is a composite index of relative biodiversity potential based on the species represented in each country, their threat status, and the diversity of habitat types in each country.

⁶ Anere (2004) and Ketan (2007).

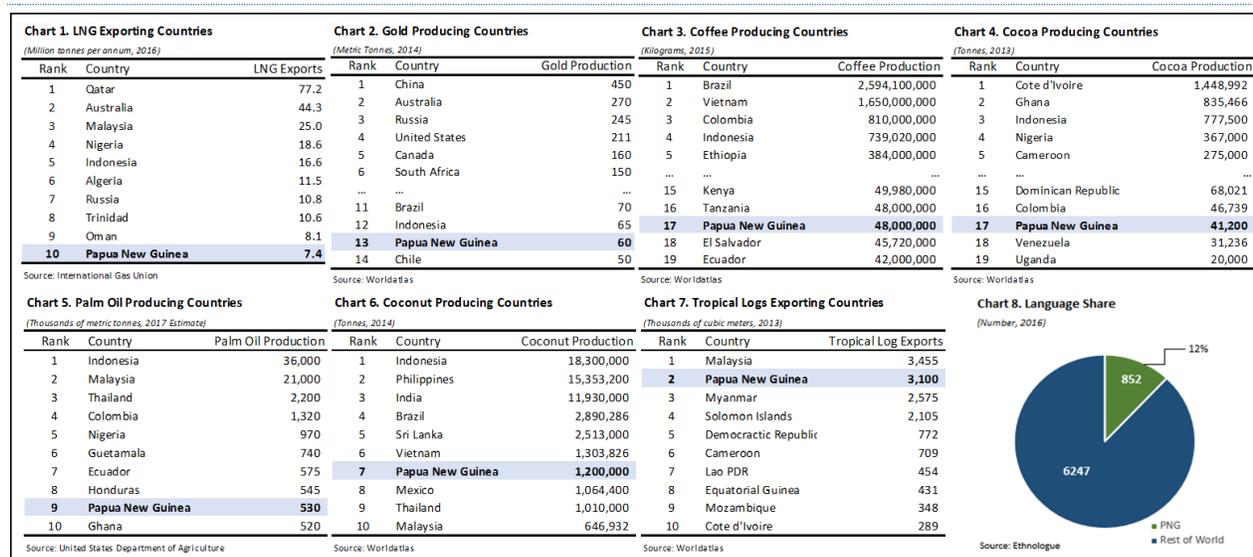
⁷ The population density of just 15 persons per km².

farming, and mariculture. Currently, 80 percent of the population is directly or indirectly involved in agriculture.

5. **The implication of the significant ethnographic and geographic diversity is the development of a segmentary society, similar to experiences in other Melanesian countries.**⁸ At its core, this segmentary society has a system of social organization known as ‘Wantokism’, a term deriving from the phrase ‘one talk’ and meaning those who speak the same language. The connections that this social construct refers to are, however, complex and adaptive, and can therefore extend beyond kin and those who speak the same language, to friends, business colleagues, and close political allies. Particularly in urban contexts, it has the flexibility to accommodate new opportunities for affiliation and cooperation within a locality. This affiliation and cooperation creates a social safety net for those who are members of a ‘wantok’.

6. **Despite the existence of wantokism, cooperation between diverse groups does take place.** Relations within and between neighbouring groups have been regulated for millennia, especially in conflict and disputes, and these arrangements have proved highly adaptive. ‘*Pasin lo ples*’ (village based legal custom) is an adaptive institution, involving authority roles and rules of engagement, which like wantokism has translated to district, national and urban contexts.⁹ Even weak formal local authority structures are recognized, invoked and contested as bases for rural and urban settlement development.

Figure 2: Abundant natural resources and ethnographic diversity



Note: Figure is based on a similar panel from Nakatani (2017)

⁸ See Sigrist (1984). A segmentary society is a “social system comprising numerous relatively small autonomous groups who generally regulate their own affairs, but who periodically come together to form larger groups and ... may collectively appear to be a single large community.” *Oxford Dictionary of Archeology*.

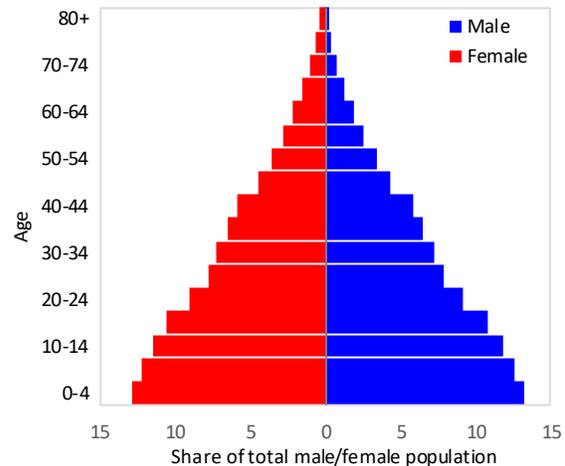
⁹ May (2009); Craig, Porter & Hukula (2016).

1.2 A young society with a broadly free, robust and vibrant media and political system

7. **Papua New Guinea has a relatively young and growing population.** Almost 50 percent of the country was born during the last two decades, with 38 percent of the population below the age of 15 years and 50 percent of the population under the age of 20 years (Figure 3). With the national population growing at about 2.3 per cent per annum,¹⁰ PNG can expect its younger cohorts to expand significantly over the next twenty years.

8. **Indicators of democratic freedoms, and political and civil rights, shine a positive light on the country.** PNG outperforms lower- and upper-middle-income countries as well as developing East Asia and Pacific on indicators of democracy, press freedom, and both civil and political rights (Figure 4 to Figure 7). In PNG, the press has considerable freedom to report on political developments, taking its place as an important transparency and accountability mechanism for the country’s political institutions.

Figure 3: PNG’s youth bulge



Source: Department of Economic and Social Affairs, UN Secretariat

Figure 4: Press Freedom Score, 2016

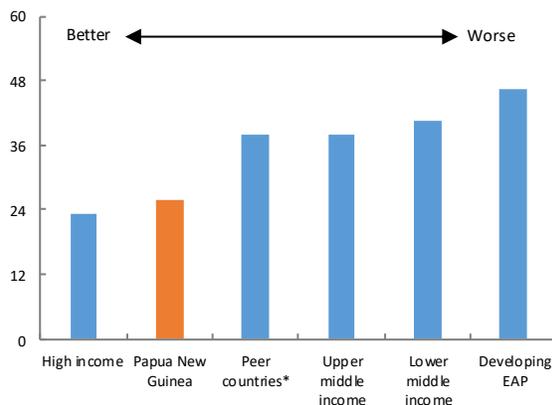
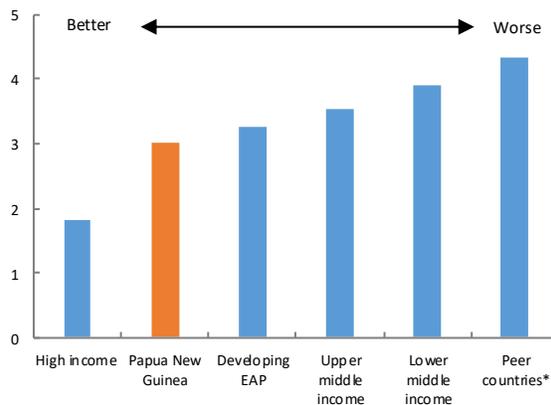


Figure 5: Civil Rights Index, 2016



* Peer countries include Bolivia, Republic of Congo, Ghana, Lao PDR, Mauritania, Mongolia, Nigeria, Uzbekistan and Zambia (see Box 1).

Source: Freedom House; Reporters Without Borders

9. **PNG is a relatively stable democracy.** Scheduled elections have been carried out without fail since 1975 and transitions of power have taken place without major disruption. Members of Parliament (MPs) are elected from very large fields of candidates by means of a limited preferential voting system. A manifestation of the dynamic and robust political climate in the country is borne by the fact a significant proportion of incumbent MPs lose their seats. This occurs through robustly contested elections that are held at the end of constitutionally defined terms, as well as following frequent votes of no-confidence in

¹⁰ United Nations and Government of Papua New Guinea. (n.d.).

parliament. Political parties engage in creating pacts to reduce the probability of votes of no-confidence, though such pacts have a long history of sudden shifts and re-negotiation.

Figure 6: Democracy Index, 2016

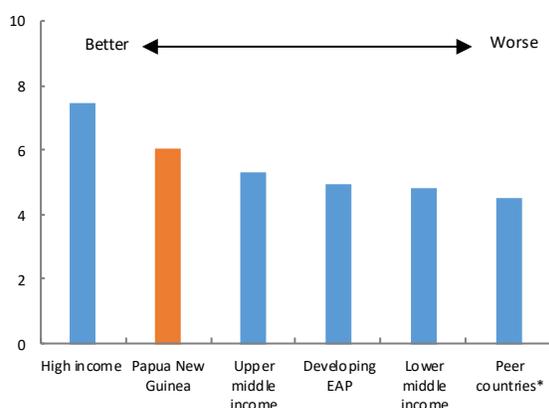
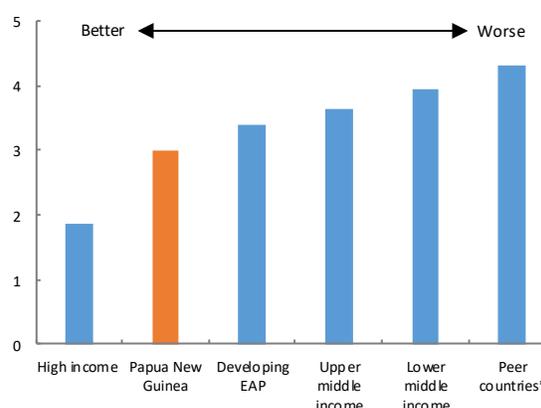


Figure 7: Political Rights Index, 2016



* Peer countries include Bolivia, Republic of Congo, Ghana, Lao PDR, Mauritania, Mongolia, Nigeria, Uzbekistan and Zambia (see Box 1).

Source: Economist Intelligence Unit; Freedom House

10. **There are active policy processes at work within PNG and political fortunes are sometimes linked to policy positions.** Delivering services to even the most remote places is seen as fundamental to the performance of institutions and political actors. Where state service provision does not meet expectations, people express their disappointment in non-delivery at elections. Since 2000, political pacts and alliances have become more closely linked with policy commitments, and to supporting political consolidation and stability.¹¹ Between 2012 and 2017, policy platforms have included support for expanded education access, local infrastructure and village courts.

Spotlight 1

Papua New Guinea has a varied and captivating geography which engenders a remarkable degree of biodiversity, natural resource abundance and an unparalleled range of ethnographic diversity amongst its relatively young population. When compared to developing East Asia and Pacific, and middle income countries, Papua New Guinea outperforms these country-group averages across four dimensions – democracy, press freedom, civil and political rights. This is borne out by the free, robust and vibrant civil society engagement, media and political system.

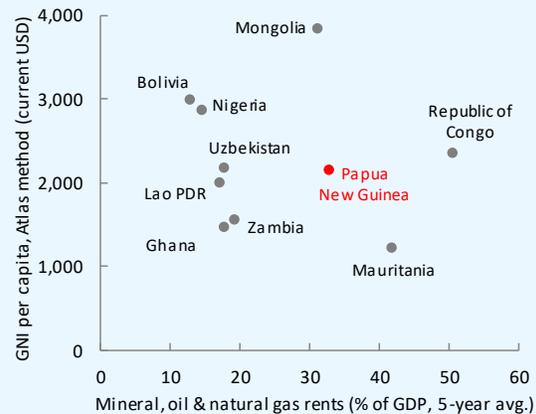
¹¹ Adaptation (such as the 2003 Organic Law on the Integrity of Political Parties and Candidates) is designed to expand constituency bases, has had also had some effect in making pacts more durable.

Box 1: Find my friends
Defining a set of comparator countries for PNG

Whilst PNG is situated in the Pacific, the country is not typical of the region. The country shares some Pacific traits such as high costs of providing services to dispersed populations, but PNG has a much larger landmass and population than other Pacific states. Comparing it to other East and Southeast Asian countries is also unsatisfactory. PNG is more dependent on exporting mineral resources than much of East and Southeast Asia. This SCD benchmarks PNG against other lower middle-income countries with significant endowments of mineral and/or petroleum resources. According to the World Bank's definition for 2017, lower middle-income economies are those with a GNI per capita between USD 1,026 and USD 4,035, calculated using the World Bank Atlas method. Countries with a significant amount of mineral and/or petroleum resources are categorized as those countries where the ratio of mineral and petroleum rents to gross domestic product (GDP) are greater than or equal to 10 percent. This classification yields the following set of comparator 'peer' countries which will be frequently referred to in this SCD: Bolivia, Republic of Congo, Ghana, Lao PDR, Mauritania, Mongolia, Nigeria, Uzbekistan and Zambia (Figure 8).

Figure 8: Defining a set of comparator countries

Countries with similar per capita incomes and resource rents, 2014



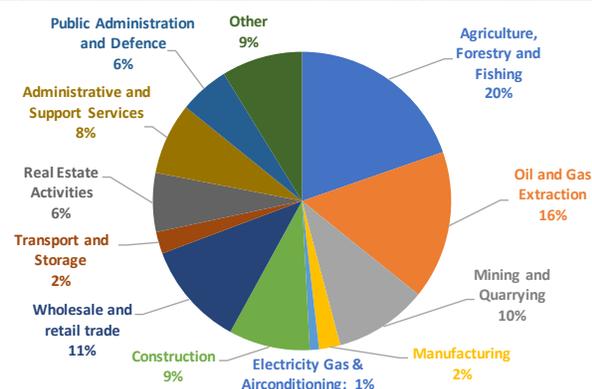
Source: World Development Indicators

2. Economic landscape, employment and the state of service delivery

2.1 Resource versus the non-resource economy: A dichotomy

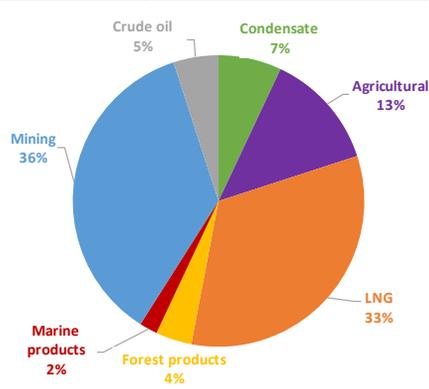
11. **Papua New Guinea, with a per capita GDP of USD 2,688 in 2016, is a lower middle-income, resource-dependent economy.** It is a country dependent on two sector groups – the resource sector (minerals and petroleum) and the agricultural, forestry and fishing (AFF) sector.¹² Combined, these account for 46 percent of GDP, with the mining and petroleum sectors estimated to account for 26 percent of GDP and AFF making up the remainder (Figure 9). The resource sector accounts for the majority of exports (81 percent) followed by AFF (19 percent) (Figure 10).

Figure 9: Composition of the PNG economy, 2016



Source: PNG Treasury

Figure 10: Composition of exports, 2016



Source: PNG Treasury

12. **The resource sector has established a legacy as a key source of PNG's economic opportunities and challenges.** Discoveries of gold and copper resources in the 1970s, followed by natural gas and crude oil in the 1980s, saw the sector increase from a negligible share of the economy around the time of independence to about 30 percent of GDP in the early 1990s.¹³ The sector has ebbed and flowed since then, but has remained a substantive and characteristic part of the PNG economy. An important source of economic growth, foreign direct investment and foreign exchange, the resource sector has at times been a significant boon for many governments and specific local communities (e.g. those with ownership rights over extraction sites). However, it has also been a source of grievances such as over environmental degradation (e.g. disposal of mining tailings) and benefit sharing arrangements, and has likely contributed to deterioration of political, public sector and community institutions. The significant benefits that the sector has delivered have not filtered through to many in PNG and, despite several decades of major extraction activities, the country may arguably have limited development results to show for it. Moreover, unlike in many other resource rich countries, PNG's secondary sector has not subsequently expanded over time – an indication of the enclave-like geographical distribution of resource extraction activities in PNG and their limited linkages to the rest of the economy.¹⁴

¹² Strictly, the resource sector consists of two groups of resources – extractives (mineral and petroleum) and non-extractives (agricultural, forestry and fishing). However, for the purpose of the SCD, the 'resource sector' is defined as the mineral and petroleum sector while the non-resource sector will include all the other remaining sectors of the economy.

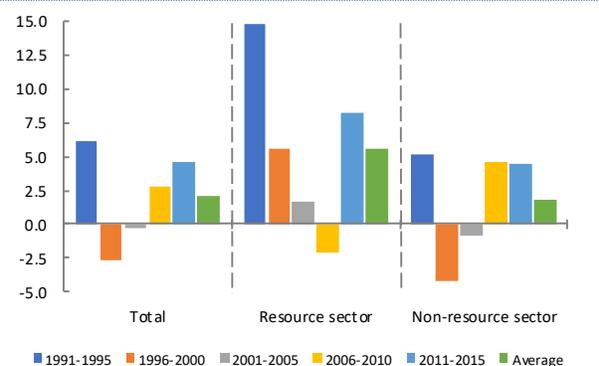
¹³ Faal (2006).

¹⁴ Ibid.

13. **Papua New Guinea has experienced robust growth in the recent past.**¹⁵ Over the last 16 years, GDP growth has averaged almost 5 percent per annum, driven primarily by resource sector development and spending on key infrastructure by government. In addition, PNG's largest liquefied natural gas project, the USD 19 billion PNG LNG project that launched in 2008, has driven the most recent episode of growth acceleration. Associated plant construction led to increasing growth particularly in the construction and service sectors whilst the commencement of gas production and shipments at the end of 2014:Q1 (and a full year of production in 2015) pushed average growth to above 10 percent per annum over these two years.¹⁶

14. **Performance in the non-resource economy has been less impressive than in the resource sector.** **Figure 11: Per capita real GDP growth (%)**

In per capita terms, recent evidence suggests that growth in the non-resource sector is more subdued (Figure 11). The average per capita growth rate between 1990 and 2015 in the non-resource sector (1.8 percent) trails that for the resource sector (5.6 percent). Within the non-resource sector more recently, agriculture experienced relatively slower growth (3.9 percent per annum over 2008-2014) on average vis-à-vis either of the two other large sectors – construction (11.3 percent) and services (5.7 percent).



Source: National Statistics Office, World Bank staff calculations

15. **Despite accounting for a major share of both output and exports, PNG's resource sector accounts for a disproportionately small share of employment.** While mineral and petroleum industries have grown rapidly and contribute significantly to GDP and exports, the sector only accounts for around 1 percent of total employment. In contrast, 84 percent of economically active Papua New Guineans are employed in the informal sector, primarily engaged in traditional subsistence and semi-subsistence agriculture. This dichotomy is driven by the fact that the resource sector comprises enclave, capital-intensive industries (mineral and petroleum) whose direct employment contribution is limited. This implies that the relatively strong (though volatile) growth of the resource sectors relative to the non-resource sectors does not generate sufficient employment opportunities to reduce poverty and boost shared prosperity. Moreover, the relatively lower growth performance of the non-resource sector limits the inclusivity of PNG's recent growth performance, given that most Papua New Guineans rely on income-generating opportunities in the (informal) non-resource (agriculture) sector.

Spotlight 2

In the recent past, GDP growth in PNG has been driven by volatile, though on average strong, growth in the resource sector. Performance in the non-resource (primarily agriculture) sector, which is the largest employer of the labor force, has been less impressive.

¹⁵ This SCD uses GDP estimates for 2014 and 2015 that were prepared prior to the 2018 release of updated GDP data by the National Statistics Office.

¹⁶ Resource GDP, which includes mining, quarrying, and the extraction of crude petroleum and natural gas is estimated to have increased by over 150 percent in real terms between 2013 and 2016 and in current prices the sector has jumped by K7.2 billion over the period.

2.2 Limited opportunities for the youth leading to a growing urban informal economy

16. **The overall unemployment rate is relatively low at around 3 percent, but this masks systematically poorer employment prospects for youth.** The unemployment rate for youth is 5.5 percent, and those with jobs are often engaged in relatively unproductive activities, primarily in the informal economy.

17. **Growth in formal private sector employment has failed to keep pace with the rapid expansion in the working-age population.**

The youth bulge (see Section 1.2) has been fueling rapid increases in the working-age population which has increased from 55.7 to 58 percent of the population between 1990 and 2014. Of the 80,000 school leavers (about 1 percent of the population) entering the labor force each year, more than 15,000 new enrollments¹⁷ are admitted each year into colleges, universities, and other higher education and training institutions. The remaining 65,000 or so school leavers are left to compete over the few available opportunities for gainful employment. Increasingly, they must compete with foreign-recruited workers too. By one estimate,¹⁸ fewer than 10,000 jobs are created annually within the formal sector, potentially forcing up to 55,000 young job market entrants to seek out alternatives. This is borne out by the fact that, as of 2014, formal employment accounts for only 16 percent of total employment (Table 1) and is situated in and around the National Capital District and mining hotspots.¹⁹

18. **Unable to find formal work or enter into further study, the vast majority of school leavers have little choice but to enter into the informal economy.** The young often end up working as farm hands or in informal rural and urban businesses. The labor force participation rate for 15- to 24-year-olds of 54 percent is lower than that for the total population, partly owing to young people undertaking education and training, but also because many young adults may drop out of the labor force as they give up actively seeking work. Moreover, unpaid work and underemployment within the informal economy is widespread, particularly among the younger cohorts.

19. **The informal rural employment available to youth is primarily in traditional subsistence and semi-subsistence agriculture on customary land, which is relatively low paying.** More elaborate activities with a greater commercial orientation include cash cropping and fishing approaches that utilize purchased inputs and non-traditional technologies to varying degrees.²⁰ Generally low and fairly stagnant labor productivity in the agriculture sector, and an oversupply of labor, combine to keep wages down. Legislated worker protections relating to wages, hours, leave and contracts are unlikely to act as safeguards in the informal sector. Alternate employment opportunities in rural PNG are limited.

20. **With economic development primarily focused on urban areas and a dearth of gainful employment opportunities in rural areas, youth are increasingly being drawn to PNG's urban centers.** Young people make up a disproportionate share of the urban poor and new arrivals are faced with

Table 1: Estimate of the labor force in 2014

	Total	Percentage
Total population	7,958,925	
Working age population (WAP) (15-64 years)	4,584,341	58% (of total population)
Labor force (LF)	3,071,509	67% (of WAP)
Number employed	2,979,363	97% (of LF)
Formal employment	465,000	16% (of employed)
Informal employment (including subsistence)	2,514,363	84% (of employed)
Number unemployed	92,145	3% (of LF)

Source: Jones and McGavin (2015)

¹⁷ National Strategic Plan Taskforce, Government of Papua New Guinea (2011).

¹⁸ Kanaparo, Rayel, Imbun, and Jacka (2014).

¹⁹ Jones and McGavin (2015).

²⁰ Conroy (2010).

the prospect that their new lives in informal settlements on the urban periphery may be even more destitute than what was left behind.²¹ Youth gravitate towards earning a livelihood predominantly in general retailing, including the sale of betel nut.²² Other urban informal sector activities include making handicrafts, transport services and construction.^{23,24}

Spotlight 3

PNG has a young and growing working-age population. Youth unemployment is higher than the average. Unable to find formal work or enter into further study, the vast majority of school leavers have little choice but to enter into the informal economy, where they remain underemployed and their activities relatively unproductive. Youth are gravitating to urban centers in pursuit of better jobs and higher standards of living. However, opportunities are limited there too, and youth constitute a disproportionate share of the urban poor.

2.3 Limited opportunities for women in the economy

21. **Women are underrepresented in formal employment.** Although the overall labor force participation rate for both genders is relatively high at about 67 percent, data from the 2010 Household Income and Expenditure Survey (HIES 2010) indicate that the share of women who hold jobs in the formal sector is only a little more than half that for men. A similar gap is evident in both urban and rural areas. Women are underrepresented in key formal sector contexts, such as in the public service, where representation diminishes rapidly at higher levels of seniority: only 18 percent of senior management roles are held by women, and just 7 percent of executive appointments.²⁵ In contrast, a greater share of employed women compared to employed men are in informal employment, at 93.7 percent and 84.6 percent, respectively. Subsistence agriculture and local trading, which primarily take place within the informal sector, are key sustaining elements for women in the economy.

22. **Although women are substantially underrepresented in the formal sector, their contribution to the economy should not be underestimated.** For instance, PNG's annual food production, largely the responsibility of women, has been valued at USD 55 million per year.²⁶ Female labor is concentrated in rural (informal and subsistence) work, primarily in the agriculture sector focused on subsistence crops and petty trade of garden products rather than in large-scale transformation or agro-processing.

23. **Access to economic opportunities for women is severely restricted by cultural institutions, legal impediments, and personal safety risks.** Culturally-embedded perceptions of the role of women in society and in the family, can limit the opportunity for women to engage in employment that is at a distance from home or within professions traditionally considered the preserve of males. This impedes both the demand for such roles by women as well as the willingness of employers to offer such opportunities to them, and may contribute to low formal sector participation. These cultural impediments to work are compounded by employment legislation that limits the types of jobs in which women can work. According to World Bank (2016), among the Pacific countries, PNG has the most gender-based legal differences.

²¹ World Bank (2010).

²² Tebbutt Research (2014).

²³ Conroy (2010).

²⁴ Tebbutt Research (2014).

²⁵ See Haley (2015).

²⁶ IFC (2010).

Legal restrictions exist on women's freedom to engage in work that (i) involves night-time hours, (ii) is considered too physically arduous, or (iii) entails working underground. Consequently, they find themselves excluded from opportunities in highly paid industries such as mining and manufacturing.

24. **Cultural impediments limit women's control over household resources, including over land and housing, reducing the incentives for their full participation in the economy.** For instance, whereby customary law discriminates against women, availing only limited rights over customary lands. Women cannot enforce rights to land and property, nor claim income from cash crops or land leases, such as for extractive and logging activities.²⁷ However, these are crucial for women's economic opportunities, greater self-esteem, respect from other family members, mobility outside of the home, and decision-making power.²⁸

25. **Economic opportunities for women are constrained by their relatively higher vulnerability to serious sexual assault, robbery, beatings, intimidation, and so on.**²⁹ This restricts women's ability to work in public arenas, isolated stalls, or at night time. In practice, these risks generate substantive productivity losses due to related absenteeism, presenteeism, and time taken to provide support for coworkers affected by gender-based violence (GBV).³⁰ Some employers have expressed reluctance to hire women due to the poor security environment.³¹

Spotlight 4

Women play a crucial role in PNG's economy despite the presence of a raft of structural impediments – legal, cultural and personal security – that discriminate against their economic participation. Subsistence agriculture and local trading in both urban and rural contexts are key sustaining elements for women, while they remain underrepresented in the formal sector.

2.4 A snapshot of infrastructure, services and facilities

26. **An appreciation of the state of infrastructure, services and facilities provision is fundamental to understanding PNG's contemporary context and development challenge.** These can include connectivity infrastructure, energy, health and education, water and sanitation facilities, and law and order. Associated outcomes are important indicators of broader human development progress in the country. Communities rely on these, and shortfalls or deficiencies usually entail adverse consequences across the economy, damaging the prospects for inclusive and sustainable growth. This section provides a snapshot of the provision of key infrastructure, services and facilities in PNG. In general, there is significant scope to improve provision of these in PNG and success is particularly important given a close link between access to services and the incidence of poverty (see Section 3).

2.4.1 Infrastructure provision

27. **The provision of infrastructure in PNG, although on par with lower middle-income countries in certain cases, nonetheless faces numerous challenges that hinder related service delivery.** The World Bank's Logistics Performance Index ranks the quality of trade and transport-related

²⁷ World Bank (2017).

²⁸ Klugman et al. (2014).

²⁹ World Bank (2013a).

³⁰ Darko, Smith and Walker (2015).

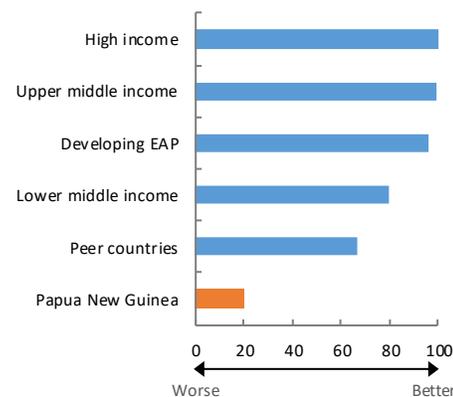
³¹ Lakhani and Willman (2014b).

infrastructure³² in PNG at 105 out of 160 countries. PNG outperforms 5 of its resource-rich, lower middle-income peer countries and stands on par with the average for lower middle-income countries. A closer look at specific areas of infrastructure that are critical to economic development and service delivery – such as electricity, transport and communications as well as water supply, sanitation and hygiene (WaSH) – helps highlight key shortfalls in provision and where priorities may need to be focused.

2.4.1.1 Electricity

28. **Despite significant energy resources, PNG businesses and households have limited access to electricity (Figure 12).** PNG has abundant (and significantly underutilized) hydropower potential in excess of 15,000 megawatts (MW) as well as solar, natural gas, geothermal and other resources.³³ At the same time, the country has one of the lowest per capita consumption levels of electricity in the world. It is estimated that only about 12.4 percent of the population has access to on-grid electricity with another 8 percent having access to off-grid sources. Grid access is concentrated around the main urban centers with very limited access in rural areas. In the rural areas 7.6 percent of rural households are connected to the grid while in urban areas this figure is 63.3 percent.³⁴ Moreover, over the previous 20 years, connection to the grid only increased by 7 and 10 percentage points in the rural and urban areas, respectively. The limited increase in access to electricity is due to the relatively high cost and technical challenges of expanding access, particularly in the rural areas where the population is very thinly spread across large geographical areas with rugged terrain.

Figure 12: Access to electricity (% of population)



Source: World Development Indicators

29. **System reliability and affordability of the grid is a major concern.** Power blackouts are experienced in all local grids and are frequent throughout the year. Power losses via the transmission and distribution network between 2004 and 2013 in the Port Moresby Power System averaged 18 percent. Electricity is expensive due to the frequent use of diesel and heavy fuel oils in generation.³⁵ The highest tariff rate in PNG is USD 0.30/kWh, more than double that in Fiji and Lao.

30. **Lack of access to affordable and reliable power supply is limiting economic growth in urban areas and contributing to poverty in rural areas.** Low levels of access to electricity limits the ability of children to study and access school and health services, and exacerbates personal security problems. More generally, it also hinders economic activities, for example, refrigeration of fish, pumped irrigation, processing of produce, and development of the tourism industry. The development of new copper and gold mines has been constrained to some extent by the lack of reliable and cost-effective power, and the same may be true for other industry that could have been developed in remote areas.

³² This indicator considers the quality of ports, railroads, roads and information technology.

³³ PNG has about 580 MW of installed generation capacity, including hydropower (230 MW), diesel (217 MW), gas fired (82 MW), and geothermal (53 MW).

³⁴ World Development Indicators.

³⁵ In 2011, the electricity generation mix in PNG was 13 percent heavy fuel oils, 29 percent diesel, 58 percent hydro.

2.4.1.2 *Transport*

A. *Road subsector*

31. **Although there has been an improvement in the standard of national priority roads, the road network continues to remain highly fragmented and relatively poorly maintained.**³⁶ Most road planning is focused on the country's national priority roads³⁷ and their condition has been improving. For instance, the share of national roads that are sealed increased from 23 percent in 1998 to 36 percent in 2010, while the share of the national priority road network that is in good condition has increased from 33 percent in 2007 to 48 percent today. Despite these improvements, more than 75 percent of national, provincial, and district roads become impassable at some point during the year. These poor conditions raise transport and logistics costs, and reduce the safety of PNG's roads.

32. **The poorest parts of the country are the most poorly served by the road network, as reflected by the fact that rural accessibility continues to be a challenge.**³⁸ Rural accessibility is low, with just 68 percent of the rural population living within 2 km of access to an all-season road. Additionally, of the 21,000 kilometers of non-urban roads in PNG, around 25 percent were impassable or could not be used for everyday purposes on a year-round basis. PNG has the one of the lowest levels of road density in the region (significantly below 0.5 km of road per square kilometer of land). Road access is often limited to lower-lying coastal areas and major cities or towns unlike the Highlands Region where some people have to walk more than 4 hours to reach the nearest road.

B. *Maritime subsector*

33. **The condition of structures in the maritime subsector is a concern and improvements need to be made to both operations and processing at ports and shipping facilities.** Wharves, jetties, and quay walls, as well as anchorage systems at ports, are in poor condition or missing. Deterioration of the aids to navigation (AtoN)³⁹ together with poorly marked hazards, particularly in remote areas, create dangerous conditions and have contributed to the deaths of an estimated 100 people annually in small vessels. Capital city wharves serving coastal and inter-island trade have been described as *"cramped, lack[ing] adequate cargo sheds and passenger handling facilities, possess[ing] little or nothing in the way of cargo handling facilities and ... poorly maintained"*⁴⁰. Adding to these challenges are poor operations and processing at PNG's ports, as well as a reliance on neighboring-country ports and shipping.

C. *Aviation subsector*

34. **Aviation services provide a critical link for PNG's widely disbursed population, particularly those living in remote areas.** However, many of the country's airstrips are in poor condition, and the majority are earthen (dirt or grass), making it difficult for aircrafts to safely land or take-off during inclement weather. This diminishes the reliability and safety of these services. The cost of air travel is also relatively expensive, both for domestic flights, as well as those between PNG and other countries. The

³⁶ Road transport accounts for 80 percent of the country's passenger and freight demand.

³⁷ PNG contains approximately 30,740 km of roads, consisting of 8,740 km of national roads and around 22,000 km of provincial and district roads. Half of all national roads, both sealed and unsealed, have been designated as national priority roads. Source: Presentation of the Department of Transport and Works, March 2015.

³⁸ World Food Programme (2016).

³⁹ AtoN include lighthouses, channel markers, and buoys.

⁴⁰ AusAid (2004).

country is modernizing its aviation systems, but more will need to be done to improve air accessibility and safety.

2.4.1.3 Communication

35. **The provision and use of information and communications technology has been improving in PNG, but the country still lags much of the region.** Mobile telecommunications have transformed rapidly since the introduction of competition reforms and the entry of Digicel in 2005-2006.⁴¹ This has led to increased network coverage and significantly lower prices, while providing an estimated GDP dividend of about 2.5 percentage points.⁴² These improvements have also facilitated the roll-out of online government services through the ‘PNG Government Portal’. Nonetheless, PNG still compares poorly with its international peers (Figure 13 and Figure 14). In 2013, PNG’s access (for every 100 people) to the internet, fixed wired broad band, fixed-line, and mobile telephones was 6.5, 0.2, 1.9 and 41 persons, respectively. The coverage of telecommunications services is relatively low and the unit cost for accessing some of the services is relatively high. Despite competition in the retail markets for internet services, access and usage costs remain comparatively high, discouraging greater uptake.

Figure 13: Internet users (per 100 people), 2013

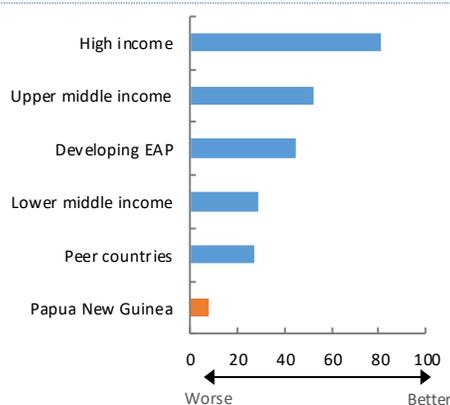
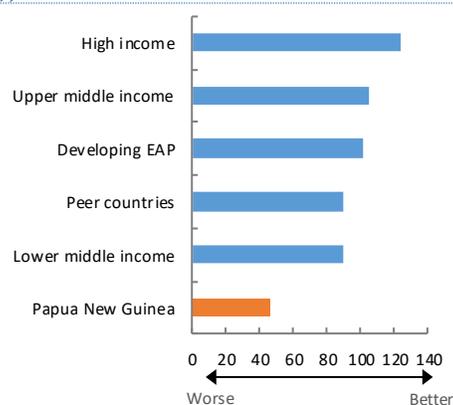


Figure 14: Mobile cellular subscriptions (per 100 people), 2013



Source: World Development Indicators

2.4.1.4 Access to clean water and improved sanitation facilities

36. **Papua New Guinea has a significant shortage in the provision of safe water supply and sanitation, with limited progress since 1990.** Approximately 40 percent of the population has access to safe drinking water while only 19 percent has access to improved sanitation.⁴³ These outcomes compare poorly with other countries in the East Asia and Pacific (EAP) region. In the two decades since 1990, access to safe drinking water has increased only marginally (access in 1990 was 34 percent), while proportionate coverage of improved sanitation fell marginally (access in 1990 was 20 percent).

37. **There is significant disparity in access to water and sanitation between (i) rural and urban households and between (ii) households situated in urban informal settlements and those that are not.** Amongst the rural population, only 33 percent have access to clean water and 16 percent have access to

⁴¹ Digicel’s market entry in 2006 saw access to, efficiency of, and reliability of mobile phone services improve significantly.

⁴² See Papua New Guinea Department of Treasury (2009).

⁴³ Progress on Drinking Water and Sanitation: 2015 Update (with supplemental data from wssinfo.org), from the WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation.

piped water, compared to 88 percent and 74 percent, respectively, in urban areas. The majority of urban households enjoy the convenience of a household or yard connection rather than the communal standpipe facility typically found in rural areas. Similarly, people in rural areas have much less access to improved sanitation facilities (13 percent) and flush toilets (3 percent) compared to urban centers (56 percent and 55 percent, respectively). 13 percent of rural households defecate in the open compared to 2 percent in urban areas.⁴⁴ Papua New Guineans residing in urban informal settlements have less access to clean water and improved sanitation compared to those residing in formal urban dwellings. Poor and unequal access to clean water and hygienic sanitation facilities remains a common cause of diarrhea and dysentery,⁴⁵ and contributes to undernutrition among children. Without clean, running water, households have to spend a significant amount of time collecting water and recovering from waterborne illnesses – time that could otherwise be spent on productive activities.

2.4.2 Human development

38. **Shortfalls in the provision of health care and education detract from PNG’s progress in human development.** The UN’s 2016 Human Development Index (HDI)⁴⁶ ranks PNG 154 out of 188 countries, the second lowest in the Pacific region. This ranking is weighed down by relatively poor performance in the health and education index subcomponents, based on which PNG places 157th and 171st, respectively. For lower middle-income countries such as PNG, poor health and education outcomes are largely a consequence of shortcomings in related public service delivery.

2.4.2.1 Health outcomes

39. **PNG made moderate progress in achieving nationally-defined development targets – many of which are related to health outcomes – but did not meet the relatively more ambitious global Millennium Development Goals (MDGs).** The PNG authorities translated the MDG targets into national objectives in both the Medium-Term Development Strategy 2005-2010 and the Medium-Term Development Plan 2011-2015, and reasonable progress was achieved against these national targets. In particular, the maternal mortality ratio is estimated to have declined from 470 per 100,000 live births in 1990 to 215 per 100,000 live births in 2015, far exceeding the national target of 274. Over the same period, the under-five mortality rate is estimated to have decreased from 89 to 57 per 1,000 live births, and infant mortality is estimated to have declined from 65 to 45 per 1,000 live births – slightly above the targets for each indicator. Although impressive, these achievements did not meet the targets set out by the MDGs.

40. **Notwithstanding these improvements, health outcomes are generally lower than in comparator countries, and rates of stunting and child undernutrition are among the highest in the world.** Life expectancy in PNG has risen considerably since independence – as key mortality indicators have improved (Figure 15) – but at 65.4 years, it remains below the average for lower middle-income countries (67.7 years) and for East Asia & the Pacific (75.3 years). At the same time, maternal, infant, and under-five mortality rates are also worse than the average for lower middle-income countries and what would be expected of a country with PNG’s per capita income (for instance, see Figure 16). Furthermore, child malnutrition has not improved in over a generation. It is estimated that the percentage of children aged under five who are stunted, underweight and wasting are 49.5 percent, 27.9 percent and 14.3 percent,

⁴⁴ Ibid.

⁴⁵ Government of PNG (2010).

⁴⁶ The HDI is a composite measure of life expectancy; educational attainment of the population measured by average of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age; and the standard of living measured by gross national income per capita.

respectively, with only marginal differences between the genders.⁴⁷ This is the fourth highest rate of stunting in the world, and the sixteenth highest rate of children underweight (Figure 17). Children tend to suffer permanent cognitive and physical impairments if they are undernourished for the first 1000 days of life. This limits the child’s education and employment prospects as undernourished children are less likely to get the full benefits of schooling and, consequently, face curtailed earning prospects.⁴⁸ This translates into both lower household incomes and lower national productivity.

Figure 15: Mortality rates have been trending down, while life expectancy has improved

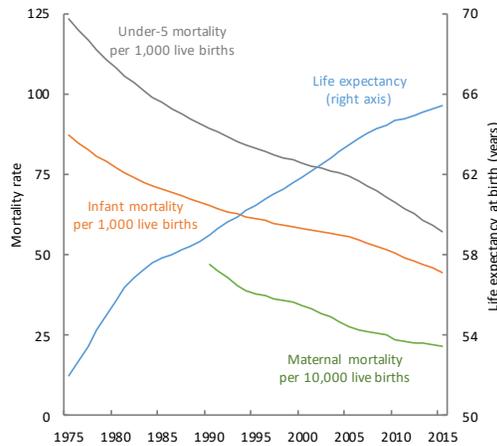
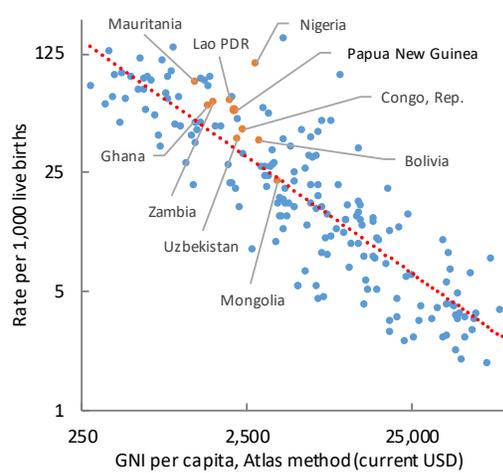
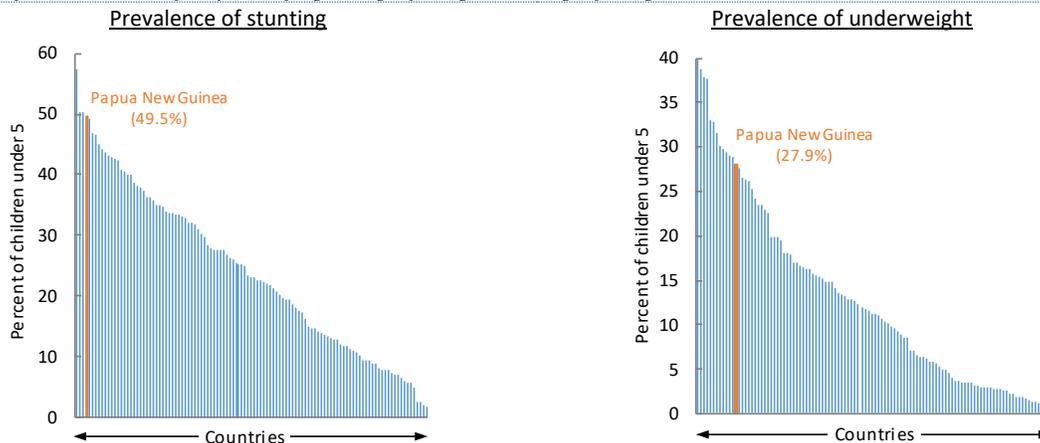


Figure 16: Under-5 mortality rate is above that expected for a country at PNG’s income level



Source: World Development Indicators

Figure 17: The proportions of children that are stunted or underweight are among the highest in the world (Percent of children under five years of age, height for age and weight for age, latest available data 2009 - 2015)



Source: World Development Indicators

41. **The incidence of non-communicable diseases (NCDs) in PNG is rising, placing additional pressure on the health system.** Although communicable diseases are responsible for 62 percent of deaths nationwide, PNG is undergoing an epidemiological transition as the share of NCDs has been rising sharply, particularly for diabetes, heart disease, chronic kidney conditions, and tobacco and alcohol related illnesses

⁴⁷ See Hou (2015).

⁴⁸ The World Bank estimates childhood undernutrition to result in 10 percent lower life-time earnings, while other studies considering undernutrition in the first five years of life place this figure at 20 percent (World Bank, 2006).

– including cancer (especially oral cancer caused by chewing betel and tobacco).⁴⁹ Communicable disease, nonetheless, will also continue to place a major burden on the health system, with lower respiratory infections being largest contributor among these. In particular, tuberculosis (TB) presents an increasingly serious public health issue, as incidence (432 per 100,000 population in 2015) and prevalence (529 per 100,000 population in 2015) remain high. Multidrug-resistant (MDR) (approx. 1100 cases in 2015) and extensively drug-resistant (XDR) TB occurrences have increased significantly in an unprecedented outbreak in several hotspots, including the capital. Treatment times and costs increase significantly with drug resistance.

2.4.2.2 *Education outcomes*

42. **Investments in education and training boost productivity, raise the growth prospects of a country, and are crucial for poverty reduction and shared prosperity.** A good education empowers people, helping them to make better decisions in all aspects of life (including, for instance, in health and personal finances), and raising their labor market prospects. Recognizing these benefits, the government commenced its flagship Tuition Fee-Free (TFF) policy in 2012, providing schools with subsidies to cover student fees and placing strict low ceilings on the fees that schools can charge. There is evidence that the policy has helped to lower education costs for parents and boost school enrolments. However, challenges such as low attendance rates, classroom overcrowding, poor teacher and education quality, and high costs for remote schools remain ongoing concerns.⁵⁰

43. **Too many school-aged children are not in school.** While gross enrollment rates have been increasing, low net enrollment rates (NER) are a cause for concern. The overall gross enrollment rate for primary education improved from 71 percent in 2000 to 96 percent in 2014⁵¹, while the gross primary excluding elementary education enrollment rate is 80.5 percent. The gross enrollment rate for secondary school improved from 12.5 percent in 2000 to 22.5 percent in 2013. These are below the averages for primary and secondary levels across developing EAP of 105.7 percent and 86.5 percent, respectively. Furthermore, PNG's net enrollment rates, which are 47 percent for primary school and 7.4 percent for secondary school, are below the averages for both developing EAP and lower middle-income countries of 87.8 percent and 59 percent, respectively. Between 2009 and 2013 (the most recent years for which data is available), the secondary school NER declined. Mean years of schooling in PNG is lower than in almost⁵² all developing EAP countries and lower middle-income, resource rich peers for which data is available. Conditions are likely to have improved more recently, particularly with ongoing implementation of the TFF policy that has driven large increases in enrollments. Reflecting this, PNG performs relatively better against those same international peers on the forward-looking metric of expected years of schooling.

⁴⁹ For example, the share of disability-adjusted life years (DALYs) attributable to NCDs has risen from 38 percent in 1990 to 54 percent in 2015 (Institute for Health Metrics and Evaluation, 2016). The DALY is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death. Thus, it incorporates losses due to morbidity and mortality into a single metric.

⁵⁰ Walton, Swan and Howes (2014).

⁵¹ PNG's pre-university education system is divided into three years of Elementary (elementary prep or EP, E1 and E2), six years of Primary school (G3 to G8), and four years of secondary.

⁵² The one exception is Mauritania.

44. **The quality of education in PNG's schools is relatively poor.** The government has acknowledged that quality is being compromised.⁵³ Pupil-to-teacher (PTR) ratios have been high and rising, performance in literacy and numeracy is dire, and employers frequently complain about the unpreparedness of graduates for the workforce. The share of classes from grade 3 to grade 8 with more than 45 students has been rising steadily, with levels of crowding worst in the lower primary grades. Nationally, the PTR for primary school increased from 34 to 37 and that for secondary school from 25 to 29, between 1998 and 2012. These increases can be partly (if not largely) attributable to the TFF-related surge in student enrollments and a less-than-proportional increase in teaching staff. PNG's relatively poor quality of education has contributed to low and stagnant rates of youth literacy. For persons aged 15 to 24, literacy rates are 66.8 percent for males and 75.8 percent for females, lagging well behind global benchmarks. A 2012 survey of grade 5 students found that 82 percent of students were not attaining expected levels of literacy while 64 percent were not attaining expected levels of numeracy.⁵⁴

45. **Deficiencies in the quality of education coupled with other socioeconomic circumstances are responsible for a relatively high rate of attrition, particularly in secondary school.** The transition rate of students from grade 8 to grade 9 was 41 percent in 2012, with a decline of 9 percentage points recorded between 2007 and 2012. On the other hand, the grade 10 to grade 11 transition rate increased from 46 percent in 2007 to 47.6 percent in 2012. Children in PNG leave school for a number of reasons, including: (i) parents pulling their children from school if they do not see their child learning due to poor quality instruction and school infrastructure; (ii) children who are not learning are unlikely to do well on exams and be '*pushed out*' of the system; (iii) difficulties in accessing schools; and (iv) economic circumstance due to ancillary costs (such as the cost of uniforms and books). Furthermore, as noted earlier, transition into tertiary and vocational education by those completing secondary school is severely constrained by the limited number of admissions available each year.

46. **Gender disparities are evident at all levels of the education system.** Unlike most countries in the Asia and Pacific region, Papua New Guinea is yet to achieve gender equality in primary schooling. Literacy, enrollment, and completion rates for females remain below that of their male counterparts. For instance, girls face lower transition rates (*vis-à-vis* boys) in Grades 8 and 10 following national examinations. These imbalances translate into skewed enrollment ratios at the tertiary level. These outcomes are reflected in the higher proportion of adult men who have completed secondary education, which is almost double that of women. This is further compounded by educational and training providers often being ill-equipped to cater for the sanitary and security needs of domiciled women.⁵⁵

2.4.3 Law and order

47. **Law enforcement and the protection of people and their property are crucial for the development of communities and the proper functioning of markets.** As a public service, it constitutes an important element of the social compact that government has with its people. However, PNG's institutions of law and order have had limited success in dealing with high levels of crime and disruptions in law and order. As the evidence on violent crimes implies (see below), this has had not only an adverse social impact, but presents a significant obstacle to the business sector and, more generally, to PNG's long-run growth prospects.

⁵³ Education Minister's statement to parliament: <http://www.education.gov.pg/quicklinks/minister.html>

⁵⁴ The Pacific Island Literacy and Numeracy Assessment (2012) was administered to 1,259 Grade 5 students in 40 schools across 18 provinces.

⁵⁵ World Bank (2017a).

48. **When compared to other countries, PNG’s crime rates are at the top end of the distribution.** The national rate of homicides is elevated at 10.4 deaths per 100,000 persons, but this masks considerable variation across provinces, with highs of 66 in Lae and 33 in the National Capital District (NCD) (Figure 18). Rates of crime and violence are high in the urban centers of Lae and the NCD, New Britain, and in certain Highlands provinces.⁵⁶ Crimes are often carried out with violence – 49.7 percent of crimes in 2010 were found to involve violence. Based on available data, most reported crimes in 2010 were robbery, grievous bodily harm and stealing. Victimization survey data find stealing and assault to have leading incidence rates. Other high-incidence crimes include: the use of firearms; vandalism and damage to property; sexual offenses including rape; murder; drug offenses; and arson.

Figure 18: Homicide rates per 100,000

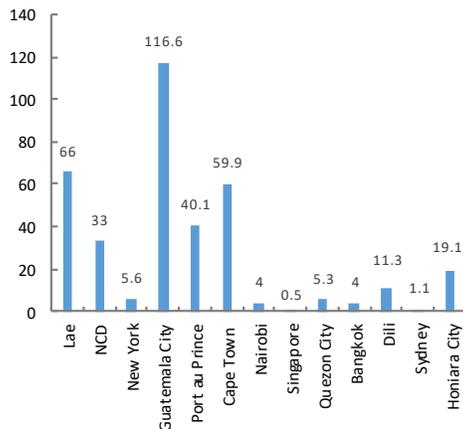
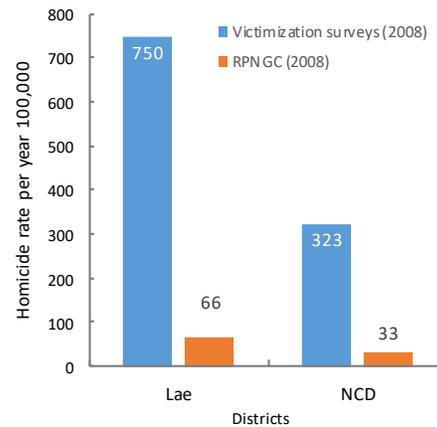


Figure 19: Comparison of murder rates from different data sets



Source: Lakhani and Willman (2014a)

Figure 20: Comparison of official crime statistics and victimization survey estimates, Lae 2005

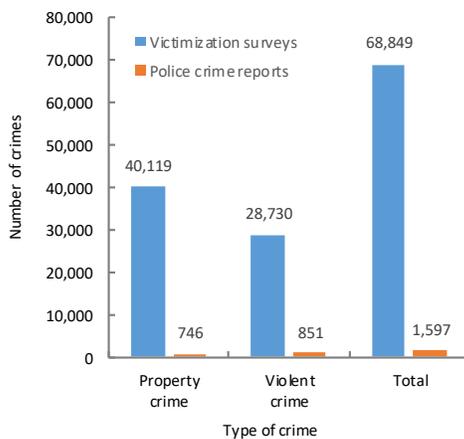
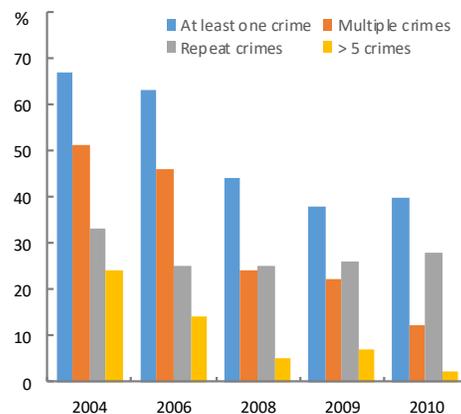


Figure 21: Measures of household crime victimization in NCD



Source: Lakhani and Willman (2014a)

49. **Estimates based on victimization surveys of urban areas suggest a potentially enormous scale of underreporting (Figure 19 and Figure 20).** This may be because of perceived ineffectiveness of

⁵⁶ Lakhani and Willman (2014a).

the police, fear of retribution, and the availability of alternative mechanisms for justice and redress. In this context, it should be noted there is some evidence of an improvement in rates of victimization in Port Moresby during the resource driven growth phase (Figure 21). Only 33 percent of households in the NCD had not experienced any crime in 2004, but this had grown to 60 percent in 2010.⁵⁷ On the other hand, comparable Lae figures showed no such decline. Recent World Bank research in several urban settlements in Port Moresby and Lae revealed a widespread (though also contested) perception that overall safety issues had improved up to 2015, especially in relation to gang related violence.⁵⁸ Perceptions of crime in PNG, both locally and globally, may be exaggerated if crime rates have continued to decline in more recent years. The actual as well as perceived situation present a significant obstacle to the long-run economic development of the country.

Box 2: **Keeping women safe**
Gender-based violence needs urgent and sustained attention

Gender-based violence (GBV) is endemic in Papua New Guinea. As outlined in Section 2.3, this has wide-ranging repercussions on the economy and society at large. It is responsible for some 80-90 percent of injuries treated at health clinics and estimates from Médecins Sans Frontières (MSF) suggest that 70 percent of women in PNG experience some degree of physical or sexual assault in their lifetime.⁵⁹ The prevalence of GBV varies across regions and provinces, ranging from 45 percent in rural Goroka to nearly double that in the Western Highlands. Child trafficking and transactional sex remain common in the country.⁶⁰

Even inside their own homes, women are not safe from harm. Data⁶¹ from the National Capital District indicates that women are five times more likely to be victimized at home than on the street and in almost 50 percent of the most serious crimes, the perpetrator was known to the victim. A more recent study⁶² finds two-thirds of women report having experienced intimate partner violence; in another⁶³, 80 percent of ever-partnered men in Bougainville reported having perpetrated at least one act of physical and/or sexual violence against an intimate partner. Other forms of GBV in PNG include gang rape, violence connected to tribal fighting, and sorcery-related violence. In one survey⁶⁴, 60 percent of men admitted to participating in gang rape, while in another⁶⁵, 41 percent reported having perpetrated rape against a woman who was not their partner.

Several challenges continue to inhibit substantial reduction of GBV. Cultural challenges include the adherence to bride price traditions as well as women's lack of political representation that affects how this issue is dealt with at the highest level of society. Village courts typically apply customary principles, which may discriminate against women, while the formal justice system is often difficult to access, particularly for rural people and especially rural women. Other obstacles include inadequate and biased policing services, and inefficient, sporadic and underfunded support services, as for example, at hospitals and emergency shelters.⁶⁶

⁵⁷ Law and Justice Sector Secretariat Monitoring and Evaluation Unit (2010).

⁵⁸ Craig, Porter and Hukula (2016); Craig and Porter (2017 and Forthcoming).

⁵⁹ Médecins Sans Frontières (2016).

⁶⁰ Fulu (2016).

⁶¹ Cited in Lakhani and Willman (2014a).

⁶² Lakhani and Willman (2014a).

⁶³ Fulu, E., Warner, X., Miedema, S., Jewkes, R., Roselli, T. and J. Lang. (2013).

⁶⁴ Bradley, C. and J. Kesno. 2001.

⁶⁵ Fulu, E., Warner, X., Miedema, S., Jewkes, R., Roselli, T. and J. Lang. (2013).

⁶⁶ Baines (2012).

Spotlight 5

Service delivery in PNG is hampered by gaps in the provision of important infrastructure utilities and related services. Although some areas perform on par with regional comparators, notable gaps exist in electricity, safe drinking water and improved sanitation. Relatively poor performance in health and education outcomes point to deficiencies in the provision of related services. Additionally, the relatively high crime rate suggests that the country's institutions of law and order have been inadequate to achieve the most basic objectives of protecting people and their property.

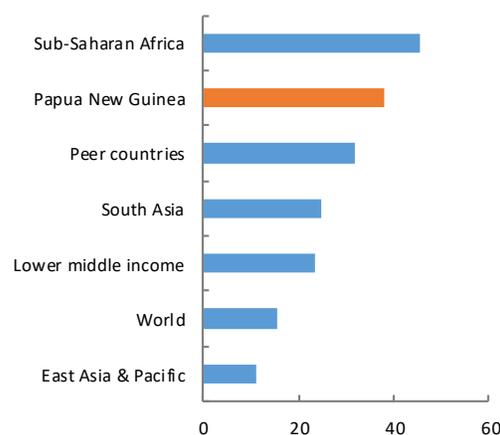
3. An analysis of poverty and inequality

50. **Efforts to deliver the twin goals of poverty elimination and shared prosperity must be informed by the latest available data on these conditions in PNG.** This section provides an overview of poverty and inequality based on the most recent Household Income and Expenditure Survey, conducted over 2009-10. The headline poverty rates discussed, including the national poverty rate, are based on household consumption. For a complementary and more holistic perspective, a multidimensional poverty index (MPI) is also constructed, capturing simultaneous deprivations (and their intensities) in household outcomes relating to economic circumstances (e.g. expenditure and asset ownership), human capital, and access to basic facilities.⁶⁷ Inequalities in access to services such as education, health, sanitation and piped water, are also explicitly examined separately.

3.1 Poverty profile: Who and where are the poor?

51. **From global as well as regional perspectives, prevalence of extreme poverty in PNG is relatively high (Figure 22).** About 38 percent of the population in PNG in 2010 lived under the internationally recognized extreme poverty line of \$1.90 per day (PPP USD 2011). This incidence of poverty significantly exceeds the poverty rate in South Asia (24 percent), is only slightly below that in Sub-Saharan Africa (46 percent), and is one of the highest rates in East Asia and the Pacific. It is also higher than in many of PNG's lower middle-income, resource-rich peer countries.

Figure 22: Extreme poverty rate (% of population living below \$1.90, PPP USD 2011), country groups



Source: World Development Indicators and 2010 HIES

52. **The consumption-based national poverty rate remained largely unchanged between 1996 and 2010.**

At the national level, this poverty rate increased marginally from 37.7 percent in 1996 to 39.9 percent in 2010, while the MPI decreased from 49 percent to 41 percent due to improvements in non-monetary indicators of poverty. In the midst of this 14-year interval between comprehensive household surveys, the national poverty rate likely rose as high as 54 percent in 2003⁶⁸, driven up by an economic downturn between 1997 and 2002, before declining again as GDP growth picked up. Unfortunately, there is insufficient data to draw a reliable inference on the trajectory of poverty since 2010.

53. **High prevalence of poverty, as highlighted by consumption-based data, is strongly corroborated by other non-monetary indicators that reveal a low quality of life for a significant proportion of the country's population.** For instance, there is a considerable divide in terms of access to basic facilities between the poor and the non-poor. According to the 2010 HIES, the poor have considerably lower access to clean water, sanitation, electricity, and communication products such as landline phones or cell phones, compared to the non-poor. Between 1996 and 2010, the contribution of economic factors (consumption poverty and asset poverty) to the MPI increased by 4 percentage points to 40 percent, while

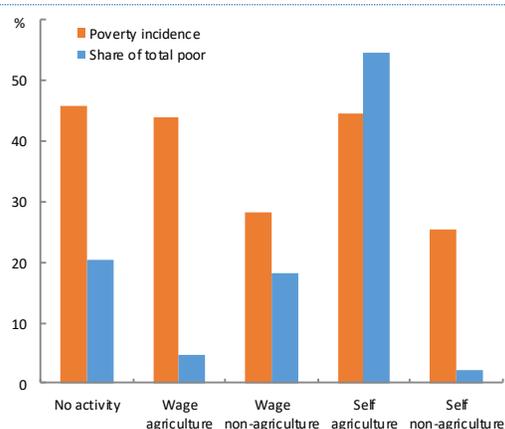
⁶⁷ For methodological details of the multidimensional poverty index, refer to Appendix 1.

⁶⁸ This estimate was calculated without a new HIES by drawing on sectoral GDP data, the 2000 Census, and other sources, and extrapolating from the earlier HIES. See World Bank (2004).

that of human capital decreased by 4 percentage points to 17 percent, and that of basic facilities decreased by 1 percentage point to 42 percent. Access to basic facilities was therefore the primary driver of PNG's multidimensional poverty in 2010.

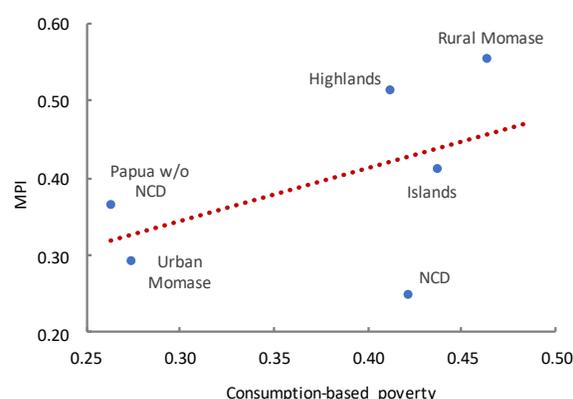
54. **Poverty is overwhelmingly a rural phenomenon in PNG.** Almost 90 percent of PNG's poor reside in rural areas and Papua New Guineans engaged in agricultural activities are much more likely to be poorer than the rest. People living in households headed by those engaged in agriculture, whether self-employed or working for a wage, are more likely to be poorer than others. More than half the poor (55 percent) live in households where the head is self-employed in agriculture, indicating that poverty is intimately tied with low agricultural productivity in a semi-subsistence setting. Households where the household head is engaged in agriculture are, on average, no better off than households headed by the economically inactive (Figure 23).

Figure 23: Poverty and occupation of household head



Source: 2010 HIES

Figure 24: Comparison of poverty measures by region



Source: 2010 HIES

55. **The higher incidence of consumption-based poverty in rural areas is correlated with relatively lower access to facilities outside urban centers.** In PNG's urban areas, and even among its urban poor, more than 75 percent of households have access to clean water, whereas less than a fifth of the rural poor have access to the same. While approximately half of poor urban households have access to basic sanitation and electricity, access for the rural poor is only about 11 percent and 5 percent, respectively. Cellphone ownership among the poor is very high in urban areas (81 percent) compared to the rural areas (29 percent)(Table 2).⁶⁹ Consequently, it is little surprise that the MPI is lowest in the NCD region (25 percent) and urban Momase (29 percent)(Figure 24).

Table 2: Inequality in access to facilities

Percent of households

	All	Poor	Non-poor	Rural poor	Urban poor
Clean water	28%	24%	30%	19%	76%
Improved sanitation	23%	15%	27%	11%	50%
Electricity	15%	8%	19%	5%	48%
Home phone	1%	0%	1%	0%	1%
Cell phone	46%	34%	52%	29%	81%

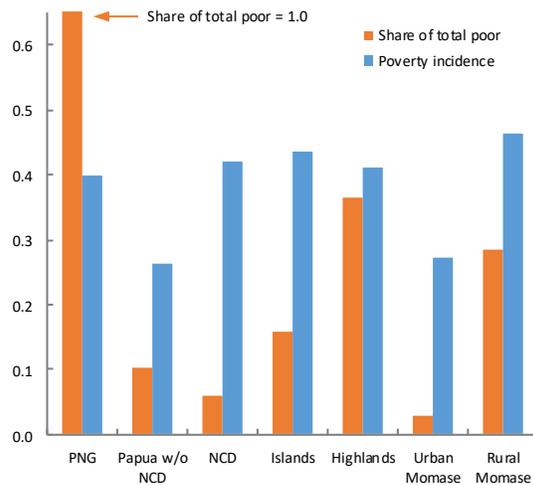
Source: 2010 HIES

56. **The two regions which contribute the most to overall poverty – rural Momase and the Highlands – are both rural, with their inhabitants depending primarily on agriculture for their**

⁶⁹ Cellphone ownership is likely to have increased markedly in rural and urban areas since 2010.

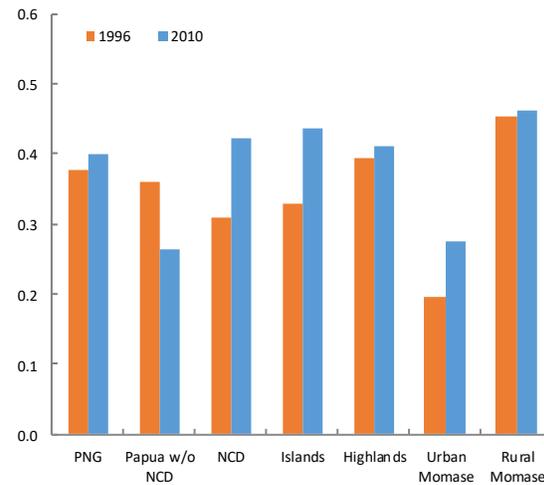
livelihoods. According to the consumption-based poverty measure, 46 percent of people in rural Momase and 41 percent of people in the Highlands, are poor (Figure 25). Combined, they account for about two-thirds of PNG's poor, with the Highlands region contributing the most. In comparison, the multidimensional poverty index in rural Momase and the Highlands is 55 percent and 51 percent, respectively, and together these regions account for just over half of PNG's multidimensional poverty.

Figure 25: Poverty by region, 2010



Source: 2010 HIES

Figure 26: Change in poverty incidence, 1996 to 2010



Source: 1996 HIES and 2010 HIES

57. **Although consumption-based poverty in urban areas (30 percent) was less than that in rural areas (42 percent) in 2010, urban poverty has experienced a larger increase (5 percentage points) than rural poverty (3 percentage points) since 1996.⁷⁰** Over this period, the poverty rate increased most in the (relatively urbanized) NCD (11 percentage points), up from 31 percent in 1996 to 42 percent in 2010 (Figure 26). Although the share of the nation's poor in the NCD remained broadly unchanged at 6 percent, a higher percentage of the poor were now to be found across all urban areas (11 percent in 2010 vis-à-vis 9 percent in 1996). Consistent with the rise in urban poverty incidence, the MPI decreased in all regions except the NCD where it increased by 5 percentage points.

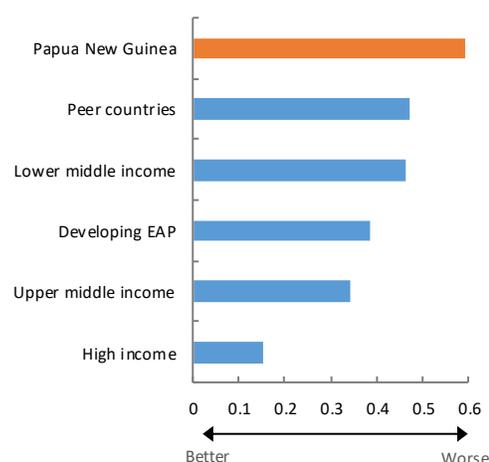
58. **The higher poverty rate amongst urban households is a reflection of rising urbanization coupled with limited availability of gainful employment opportunities for urban entrants.** As indicated in Section 2.2, new (mostly young) arrivals in urban areas are increasingly entering the informal urban economy where they are likely to be employed in low paying jobs and/or be underemployed. They will therefore often have to live with family members or family friends in households where the household head earns a wage income – and there may often be no other wage income earners in the household. This increases the burden on the household wage earners, who now have to provide for a larger household, and in turn raises the likelihood that these urban households will experience poverty. A larger share of the urban poor now resides in households headed by non-agriculture sector wage earners having increased sharply from 12 percent of the urban poor in 1996 to 68 percent in 2010.⁷¹ Moreover, the average size of households in which the household head earns a wage has increased simultaneously with the incidence of poverty.

⁷⁰ Urban and rural poverty rates in 1996 were 25 and 39 percent, respectively.

⁷¹ Anecdotal evidence provides a similar trend for peri-urban areas as well.

59. **Women in PNG must contend with pervasive inequality.** Analysis of the 2010 HIES does not reveal gender-specific bias in the incidence of poverty at the household level, however it is nevertheless well recognized that women in PNG contend with pervasive inequality.⁷² Women in PNG suffer from gender inequity in terms of their (i) access to endowments such as education and health, (ii) access to economic opportunities,⁷³ and (iii) voice and agency.⁷⁴ As discussed in Box 2, they are also victim to among the highest levels of gender-based violence in the world.⁷⁵ Consequently, the UNDP's Gender Inequality Index (GII) placed PNG at 143rd place out of 159 countries in 2015, with a worse score than key comparator country groups (Figure 27).

Figure 27: Gender Inequality Index, 2015



Source: United Nations Development Program

60. **Women do not have sufficient voice and agency to chart their own destiny in Papua New Guinea.** Customary law often discriminates against women – limiting their voice and agency – and such law is legally recognized by the country's Constitution. There is a power imbalance with men (i.e. male family members and, especially, husbands) perceived as having a form of ownership over women.⁷⁶ More broadly, women's relationship with the state is mediated through family and clan, which can silence concerns and make state mechanisms unresponsive to the raft of inequities that they face. The voice of women is further crowded out by the prominence of masculinity and strength in PNG's 'big man' culture.⁷⁷ Politics is generally viewed by society as a man's job and, unsurprisingly, female participation in parliament and lower-level political structures is chronically low.⁷⁸

61. **The least educated are also the poorest.** There is a strong inverse relationship between education level of the head of the household and poverty, with poverty rates declining from 55 percent to 14 percent as the household head attains a higher level of education (Figure 28). Of households with no members that had ever attended school, about 60 percent are poor, compared to 36 percent of households who have had at least one member attend higher secondary education. The lower skill levels of the poor limit their ability to take advantage of many of the opportunities provided by the formal sector. The strong correlation between lower educational attainment and higher poverty incidence suggests that education and training measures for the adult population can be powerful antipoverty interventions.

62. **Children suffer from poverty in PNG.** Poverty incidence is highest among persons aged less than 15 years and they account for over 40 percent of the poor – a little higher than their share of the total population (Figure 29). This is mainly because poor households tend to have more children. Poverty incidence is also high among other age groups, especially persons aged over 50. However, the latter account for just 11 percent of the poor.

⁷² The HIES does not account for the intra-household distribution of resources which may in fact be biased against women and children.

⁷³ See Section 2.3.

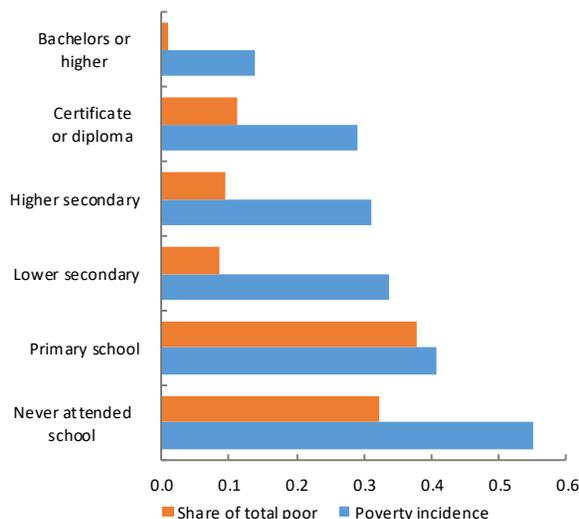
⁷⁴ World Bank (2017).

⁷⁵ See Box 2 on gender-based violence in PNG.

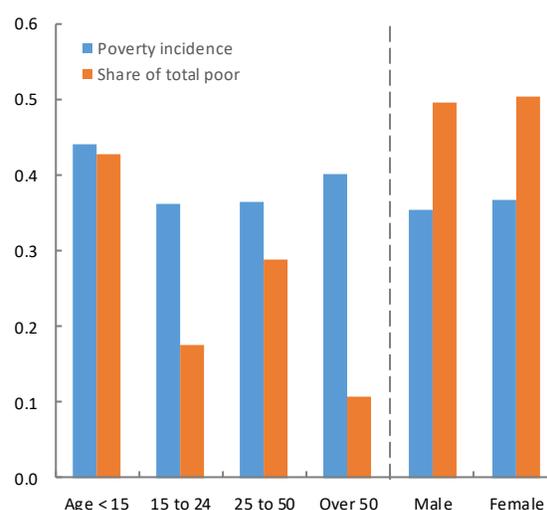
⁷⁶ World Bank (2013a).

⁷⁷ Ibid.

⁷⁸ World Bank (2017).

Figure 28: Poverty by maximum education level of household members

Source: 2010 HIES

Figure 29: Poverty by age and sex of individuals

Source: 2010 HIES

3.2 How safe and secure are households from poverty?

63. **Based on the 2010 HIES, almost two-thirds of PNG's population are either poor or otherwise vulnerable to poverty.** A household is defined as vulnerable to poverty if its consumption levels are above its region's poverty line but below a threshold of 1.5 times that line. On this basis, 38 percent of the non-poor population in PNG are vulnerable in 2010, up 2 percentage points since 1996. The region with the highest incidence of vulnerability is Papua (excluding NCD) with 53 percent of its non-poor households classified as vulnerable. The Highlands region has the largest proportion (almost 40 percent) of PNG's non-poor vulnerable population. All in all, 63 percent of the population are either poor or remain vulnerable to poverty in 2010.

64. **Adverse shocks are one reason for failure to exit poverty and vulnerability.** The high levels of vulnerability outlined above entail that a significant proportion of the non-poor are faced with the risk of being driven into poverty by unexpected shocks.⁷⁹ The sources of such risk include the population's heavy reliance on weather-dependent agriculture for their livelihoods, the high dependence of government spending on volatile resource sector revenues, and the range of natural hazard risks that PNG is subject to (e.g. flooding, earthquakes, cyclones, etc.). Safeguarding against these shocks is one reason to de-link government expenditure from the volatile commodity price cycle (discussed further in Section 8.1) and better prepare for climate change (discussed further in Section 8.3).

65. **Vulnerability of the non-poor is significantly higher in rural settings than in urban settings, but has been increasing in the latter.** 39 percent of the non-poor rural population and 29 percent of the non-poor urban population are vulnerable to poverty. Between 1996 and 2010, the incidence of vulnerability among non-poor urban households increased by 7 percentage points, but was unchanged among the rural non-poor. The increase among the urban non-poor has been primarily amongst households headed by non-agriculture sector wage earners, with the incidence of vulnerability rising from 17 percent to 34 percent for this group. This coincides with strong increases in poverty incidence amongst these same

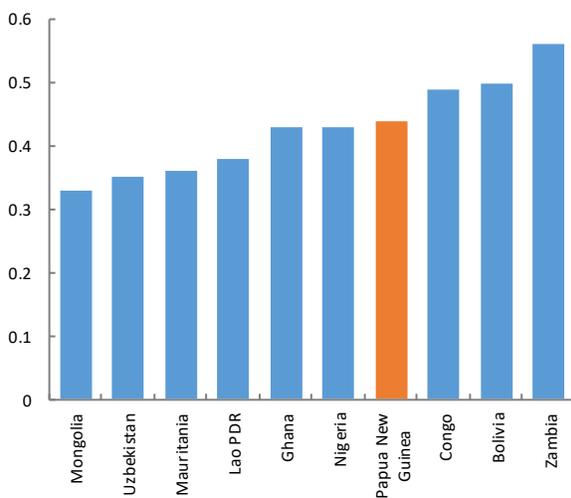
⁷⁹ Of course, for already-poor households, these shocks send them even further into poverty.

households between 1996 and 2010. As noted, these outcomes may be related to rising urbanization, limited gainful urban employment opportunities, increases in urban household sizes, and rising burdens on household heads and sole wage earners.

3.3 Inequality: Variation within and between regions

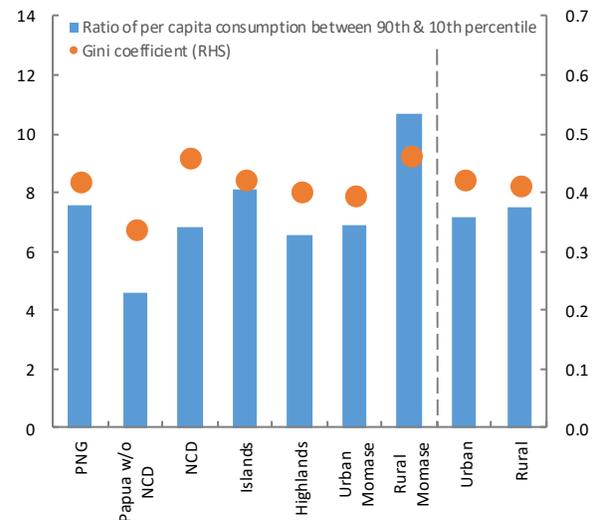
66. **Overall, inequality has been relatively stable and similar to levels seen in other lower middle-income, resource rich countries and in developing East Asia and the Pacific** (Figure 30). The Gini coefficient for PNG increased slightly from 0.41 in 1996 to 0.42 in 2010, with increases recorded in the NCD (up from 0.40 to 0.46) and rural Momase (up from 0.41 to 0.46), respectively.⁸⁰ The ratio of real per capita consumption between households at the 90th and 10th percentile – an alternative measure of inequality – rose more significantly, from 6.4 to 7.6, over the same period.

Figure 30: International comparison⁸¹ of Gini



Source: World Bank World Development Indicators

Figure 31: Inter- and intraregional inequality: Ratio of per capita real consumption (adjusted for cost of living in each region) and Gini coefficient



Source: 2010 HIES

67. **In 2010, overall inequality in PNG is driven by both inter- and intraregional variation** (Figure 31). The Gini coefficient varies between 0.34 (Papua excluding NCD) and 0.46 (NCD and rural Momase). This is mirrored by significant inter-regional variation in the ratio of real per capita consumption between the 90th and 10th percentile: from 4.6 in Papua excluding NCD to 10.7 in rural Momase. That is, in rural Momase, an individual at the 90th percentile spends on average more than 10 times as much one in the 10th percentile. Intraregional inequality is driven by the interaction of two factors: (i) the educational attainment of the household head; and (ii) the formal-informal employment categorization of the household head.

68. **Urban and rural areas have similar levels of inequality.** From 1996 to 2010, the Gini coefficient for rural and urban areas was unchanged at 0.41 and 0.42, respectively. Conversely, the ratio of real per capita consumption between the 90th and 10th percentile rose in rural areas and fell urban areas

⁸⁰ To calculate regional Gini coefficients, an adjustment is made for the difference in cost of living across the regions.

⁸¹ Data based on nearest available year to 2010: Mongolia (2010); Uzbekistan (2003), Mauritania (2008); Lao PDR (2007); Ghana (2005); Nigeria (2009); Papua New Guinea (2010); Republic of Congo (2011); Bolivia (2009); Zambia (2010).

over this period. The ratio rose from 6.3 to 7.5 in rural areas and fell from 7.8 to 7.1 in urban areas. Therefore, according to this measure, while inequality was relatively more severe in urban areas in 1996, it has become relatively more severe in rural areas in 2010.

69. **Children’s household circumstances are associated with inequalities in their access to facilities, health care and education.** A Human Opportunity Index (HOI) analysis has been undertaken to investigate how differences in children’s access to opportunities⁸² are associated with differences across household circumstances that are outside of children’s control, such as geographic location, economic status,⁸³ and characteristics of the household head. The HOI accounts for the fact that population-wide average coverage rates mask important differences between population sub-groups, and it does so by applying a penalty to these rates.⁸⁴ The HOI penalty can be interpreted as how much of current access would need to be reallocated across different population subgroups so that household circumstances are no longer associated with differential access. Figure 32 reveals that the largest absolute penalties arise in access to sanitation facilities (9 percentage points), safe water (8 percentage points) and lower secondary education (7 percentage points), indicating that the largest absolute reallocations would be required in these areas, in order to address the link between access and household circumstances. Alternatively, the largest proportionate redistributions of current opportunities would be required in higher secondary access (41 percent), followed by improved sanitation (38 percent). That is, 41 percent of current opportunities to access higher secondary education would need to be redistributed to others – i.e. although the absolute penalty is small, the total coverage rate is so low that the few available access opportunities must be highly unequally distributed. In contrast, access to adequate nutrition saw the smallest penalty in both absolute and proportionate terms, implying that the proportion of children securing adequate nutrition (or, equivalently, the large proportion who do not have access to it) is somewhat similar across population sub-groups.

70. **In most cases, the largest sources of variation in access to children’s opportunities are geographic location⁸⁵, household economic status, and education level of the household head.** Figure 33 shows how each of the household circumstances contributes to the penalties illustrated in Figure 32. For instance, in the case of child nutrition, a majority of the penalty (54 percent) is due to economic status, 20 percent is due to geographic location, 12 percent is due to urban-versus-rural classification of the household, and 7 percent is due to education level of the household head. In all other areas of opportunity, differences in geographic location were responsible for a majority of the variation in access, and therefore responsible for the majority of the penalty. Access differences associated with the education level of the household head were responsible for the second largest contributions to penalties in areas of higher secondary education, safe water, and improved sanitation. Access differences associated with the household economic status (proxied by expenditure decile) were responsible for the second largest contributions to penalties in areas of lower secondary education and health facilities.

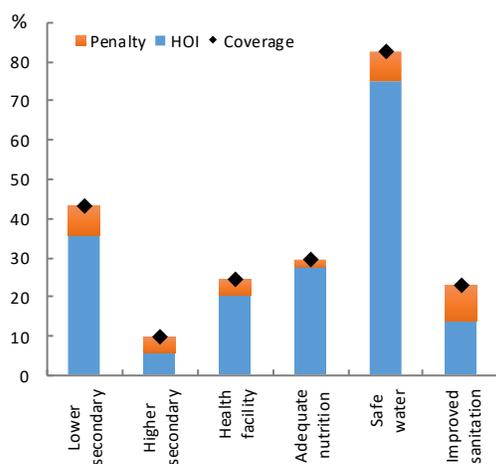
⁸² Opportunities were considered in the following areas: secondary education, adequate nutrition, primary healthcare, safe drinking water, and sanitation facilities. The following definitions of access were used. Adequate nutrition: access implies children are not underweight, stunted or wasted. Primary health: access implies health facilities can be reached within 30 minutes when needed. Secondary education: access means secondary school aged children are attending secondary school. Safe drinking water: availability of piped or protected water sources. Sanitation facilities: access to a flush toilet or ventilated pit latrine.

⁸³ The household’s expenditure decile (based on total expenditure per adult-equivalent) is used to proxy for economic status.

⁸⁴ The more children’s access varies on the basis of the selected circumstances, the larger the penalty applied. See Barros et al. (2009) for further details on HOI concept and measurement.

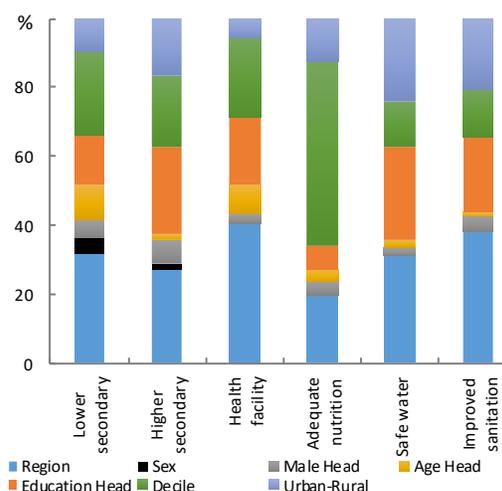
⁸⁵ That is, variation in the region that a household is located in. For the regions considered, see Figure 25. This is distinguished from variation in whether a household is located in an urban or rural area.

Figure 32: Human Opportunity Index versus overall coverage rates



Source: 2010 HIES

Figure 33: Proportionate contribution of each circumstance to penalties in coverage rates⁸⁶



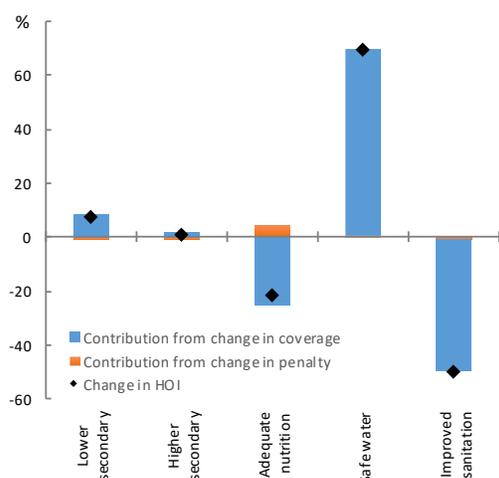
Source: 2010 HIES

71. **Between 1996-2010, the HOI increased for access to lower secondary education, higher secondary education and safe water, while it declined for access to adequate nutrition and improved sanitation.** These changes were primarily driven by shifts in the overall coverages rates, while penalties associated with unequal access saw only relatively minor changes (Figure 34). Overall access to safe water increased dramatically during this period, while access to adequate nutrition and improved sanitation saw large falls. The largest change in penalties was in the area of adequate nutrition, where the penalty decreased by about 4 percentage points, indicating that differences in access to nutrition had become less associated with differences in children's household circumstances by 2010. Moreover, this partially offset the impact on the HOI of the large fall in overall coverage rate in this opportunity.

72. **The contributors to changes in HOI coverage penalties between 1996 and 2010 reveal a mixed story (Figure 35).** With the exception of gender (which contributed to a higher penalty in both lower and higher secondary education), every circumstance contributed to a higher penalty in at least one area of opportunity, and a lower penalty in at least one other area of opportunity. While a household's urban-versus-rural location contributes more to unequal access in lower secondary education, higher secondary education and safe water (in 2010 vis-à-vis 1996), it contributes less to unequal access in adequate nutrition and improved sanitation. Likewise, while more equal access to safe water across different expenditure deciles between 1996 and 2010 contributed to a lower penalty in this opportunity, differences in access to higher secondary education and improve sanitation across expenditure deciles had actually increased over the same period (thereby contributing to a higher penalty in these areas).

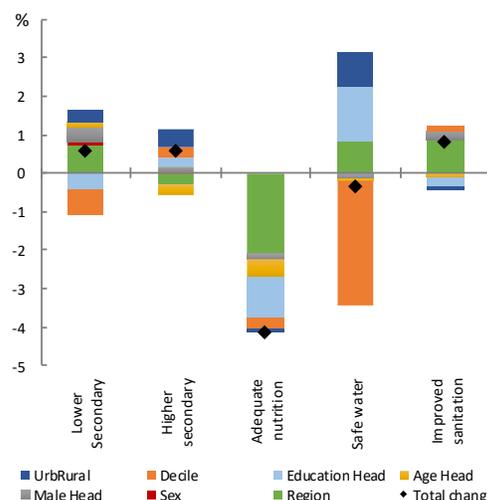
⁸⁶ Urban-Rural relates to whether the household is located in an urban or rural area. Decile relates to deciles of household expenditure per adult equivalent. Education Head, Age Head and Male Head relates respectively to the education level, age, and gender of the household head. Sex relates to the gender of the child beneficiary, and is only used in analysis of access to lower and higher secondary education. Region relates to the HIES-specified region that the household is located in.

Figure 34: Changes in HOI and the contributions from changes in coverage rates and penalties, 1996-2010



Source: 2010 HIES

Figure 35: Changes in coverage penalties and the contributions from household circumstances, 1996-2010



Source: 2010 HIES

73. **Poor transport infrastructure is responsible for lower access to social services such as schools and hospitals.** This has adversely affected school attendance, visits to hospitals and clinics, and rapid response times in emergency situations. The table below shows the average time to get to school, revealing relatively higher averages for those in rural areas. Poor transport infrastructure and long transport times also create a barrier between the poor and key sites of economic opportunity. As reported during the SCD’s consultations, a poor rural family attempting to sell their crops at the provincial town center could spend the majority of their earnings just getting there and back.

Table 3: Travel time to school

Average time in minutes, by rural and urban areas, regions, and sex

	National	Rural	Urban	Metro	Southern	Highlands	Momase	Islands
Male	29	30.8	20.7	22.4	13.5	36.9	34.3	21.8
Female	29.1	30.9	21	19.7	12.6	29.1	50.4	22.7
Total	29	30.9	20.8	21.2	13.1	33.5	40.7	22.2

Source: PNG HIES 2009-2011 Summary Tables, p.50.

Spotlight 6

PNG has relatively high levels of poverty but inequality appears to be on par with comparator countries. Most of the country’s poor reside in rural areas and the incidence of poverty is highest here. The poverty rate has been rising in rural and urban contexts, but more so in the latter. Differences in children’s household circumstances, particularly with respect to geographic location, economic status, and education of the household head, are associated with disparities in access to opportunities in areas such as secondary education, health, adequate nutrition and WaSH.

PART 2: Pathways to support poverty reduction and boost shared prosperity

4. The analytical framework

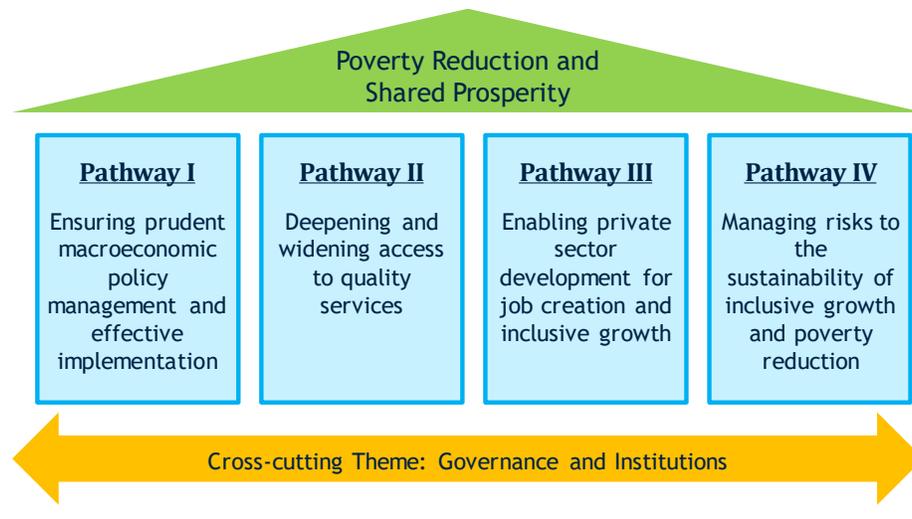
74. **Papua New Guinea has many avenues through which to achieve progress toward the twin goals, but efforts should be focused on the most binding constraints and potent opportunities.** PNG is a country brimming with potential but embattled by relatively high poverty rates and other development challenges. However, as is true of all countries, there is no shortage of urgent issues that require the attention of policymakers and the resources of government. This SCD therefore sets out a simple, coherent analytical framework that focuses on those critical areas where policy and reform efforts will have the greatest impact on achieving the twin goals. The framework is informed by a thorough assessment of PNG's challenges and opportunities, drawing on the existing body of research and evidence, and complemented by extensive consultation with a broad range of stakeholders such as government, development partners, think tanks and civil society.

75. **The most pressing areas of focus are closely associated with the issues and context laid out in Part 1.** PNG's overall growth performance has not been very inclusive, and the economy is subject to frequent bouts of macroeconomic and fiscal turbulence. This is linked to the country's heavy resource dependence, but is also attributable to the need for a more robust and internally consistent policy framework combined with better implementation. Service delivery, a fundamental driver of economic and human development, exhibits major shortfalls across all sectors – raising poverty and hardship, and depriving the economy of the necessary enabling conditions for a vibrant private sector. Boosting the inclusiveness of growth and establishing a sustainable basis for long-run prosperity will require a turnaround in the prospects of PNG's ailing non-resource economy, through a revitalization of the local private sector and a more attractive environment for foreign direct investment. Tackling the leading constraints to private sector development will be essential if businesses are to create much-needed jobs for the poor and vulnerable, including for marginalized women and the burgeoning youth cohort. More generally, PNG's fragile context entails that progress toward the twin goals is susceptible to a complex array of risks. Whether it is commodity-price volatility, natural disasters, poorly managed urbanization, or resource-driven conflicts, government needs to be actively engaged in monitoring and mitigation, and be well-prepared to intervene with adaptive or corrective efforts, if progress toward the twin goals is to be sustained in the long run.

76. **Papua New Guinea also has a reputation for relatively weak governance and institutions – presenting obstacles to implementation and success of even the best-laid plans and policies.** Strengthening governance and institutions is therefore necessary to ensure that politics, government and other institutional structures that underpin a well-functioning society are appropriately aligned with the broader interests of all Papua New Guineans. It will mean, for instance, more responsible and productive exploitation of PNG's endowments and other assets; greater transparency and accountability for public service delivery at all levels of government; and that governments, individuals and firms have strong incentives to base their decisions on longer time horizons and invest in valuable physical and human assets. Considerations of governance and institutions cut across all sectors, as they are fundamentally about the reliability of rules, processes and systems to operate in ways that good policymaking sets out.

77. The SCD's analytical framework posits that reducing poverty and promoting shared prosperity in PNG rests largely on four key pathways and one cross-cutting theme (Figure 36). The four pathways are: (i) *ensuring prudent macroeconomic policy management and effective implementation*; (ii) *deepening and widening access to quality services*; (iii) *enabling private sector development for job creation and inclusive growth*; and (iv) *managing risks to the sustainability of inclusive growth and poverty reduction*. In addition, recognition is given to the important cross-cutting theme of *governance and institutions*.

Figure 36: Analytical framework



5. Pathway I: Ensuring prudent macroeconomic policy management and effective implementation

78. **Papua New Guinea faces a broad range of macroeconomic challenges.** These include relatively slow trend growth (particularly in the non-resource sector), commodity-price-induced volatility, procyclical fiscal expenditure combined with limited revenue mobilization, rising debt, a misaligned exchange rate, and a monetary policy framework with limited effectiveness. In part, these are a consequence of the country's prevailing circumstances such as challenging economic geography, resource dependence, natural disaster vulnerability, limited data availability, and low public sector capacity, but they can also be attributed to macroeconomic policymaking that has not always been well-coordinated, sufficiently risk-mitigating, adequately forward-looking, and wholly consistent with longer-term objectives for the economy.

79. **These challenges can impede Papua New Guinea's economic development and, in particular, harm the poor.** Slower growth typically translates into slower progress on poverty reduction, while elevated volatility in growth makes it difficult to adequately plan and deliver public services – raising uncertainty and discouraging investment. Unsustainable spending can generate large debt burdens that act as a drag on growth for years to come, while fiscal procyclicality has the potential to overheat the economy during upturns and exacerbate downturns. Monetary policy ineffectiveness limits the ability to manage inflation, which can lead to higher costs of essential goods and services, with a disproportionate impact on the poor. A misaligned exchange rate and associated foreign exchange controls can limit the availability of imported goods and capital inputs, stifling business growth and lowering job creation.

80. **Improved macroeconomic management and effective implementation in Papua New Guinea is a prerequisite for delivering the twin goals.** Getting the settings right, and ensuring implementation, will go a long way to ensuring that the economy is appropriately insulated from commodity-price-induced volatility, that public services are adequately funded, that the private sector and international capital can count on stability and growth, and that, more generally, a broad range of risks (such as in debt, balance of payments, and inflation) are well under control. To this end, the most pressing structural weaknesses in macroeconomic policy that warrant attention are: (i) limited macroeconomic management of resource cycle flows; (ii) low revenue mobilization; (iii) rising debt and debt servicing costs; and (iv) limited effectiveness of the monetary policy framework and an imbalance in the foreign exchange market. These are the focus of Pathway I.

5.1 Improving the macroeconomic management of resource flows

81. **Although the PNG economy has been (until recently) riding a wave of robust growth, throughout its history economic growth has been susceptible to the vagaries of the commodity price cycle.** More recently, growth was supported by the fortuitous terms of trade developments arising from the upturn in global commodity prices for its minerals and petroleum (2003-2011).⁸⁷ Formal private sector employment growth in PNG has also been directly and indirectly driven by the resource sector. PNG LNG completed its first full year of production in 2015, but with pressures on the sector from a downturn in commodity prices accumulating (since 2012), GDP growth subsequently receded in 2016. The commodity price downturn also triggered firms in the resource sector to adopt efficiency measures (Box 3).

⁸⁷ Commodity prices declined sharply in 2008/09 during the global financial crisis, and then resumed on its upward trend.

Box 3: Adversity breeds innovation *Adapting to lower prices*

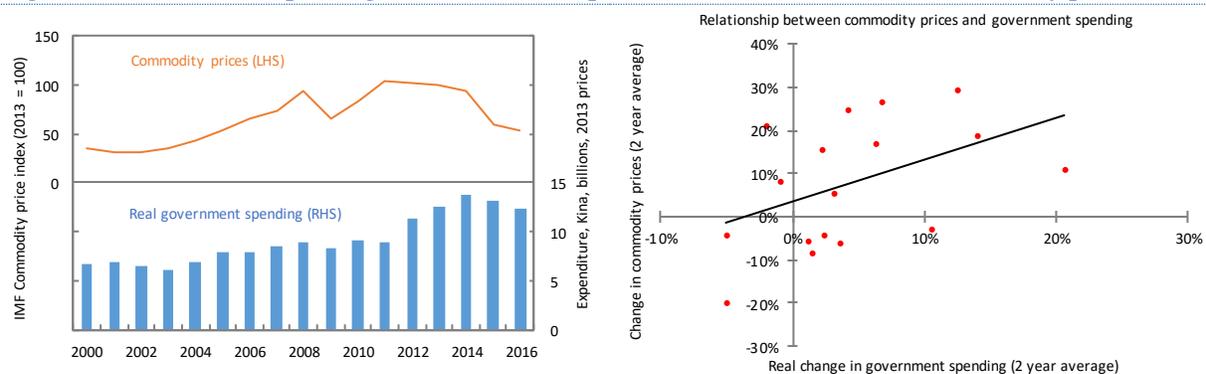
The fall in resource prices is motivating resource firms to their efficiency in order to stay profitable. The Lihir gold mine is one example. Efforts have been made to rationalize the workforce by hiring and training local Papuan managers in lieu of more expensive foreign workers; changing the operation of the plants' ore processing; and focusing on reducing equipment breakdowns. These efforts have lowered the cost of producing an ounce of gold by as much as 31 percent since 2013. In addition, improved output and a pick-up in prices have helped to boost PNG's gold exports by 23 percent in 2016 in local currency terms.



Source: Smyth (2017).

82. **Government has been unable to sufficiently insulate itself from commodity-price driven swings in revenues and its expenditures have thus mirrored this volatility (Figure 37).** In PNG, there has been a history of procyclical 'boom and bust' swings in public expenditure. For instance, real government spending has increased at an average compound rate of 4 percent per year between 2000 and 2016. Over the same period, global commodity prices⁸⁸ increased by 11 percent per year up to their peak in 2011 and subsequently declined at 12 percent per year to 2016 as government has undertaken fiscal consolidation in response to the downturn in commodity prices. The volatility of government spending is illustrated by contractions in real government spending in 7 of the 16 years since 2000. Further, procyclical fiscal policy can lead to inefficient spending and put further upward pressure on wages and prices after positive shocks, but also accentuate downturns in demand and labor markets after negative shocks.⁸⁹ In contrast, countercyclical fiscal policy helps to smooth out the volatility of the business cycle, providing fiscal space for authorities to boost spending and protect vulnerable households during a downturn.

Figure 37: Government spending has followed the ups-and-downs of international commodity prices



Source: Budget documents, IMF World Economic Outlook Commodity Price Index

83. **In the past, PNG's fiscal policy framework has not adequately delinked government spending from volatile revenues associated with swings in global commodity prices.** There are two

⁸⁸ As measured by the IMF primary commodity price index.

⁸⁹ A pro-cyclical fiscal stance has been shown to lead to lower economic growth, higher volatility in output and higher levels of inflation (Van der Ploeg & Poelhekke, 2009; Arezki et al., 2011; McManus & Ozkan, 2015).

broad avenues by which the PNG authorities can dampen the impact of revenue volatility on government spending to support countercyclical fiscal policy:

I. Strengthening the fiscal anchors

84. **A fiscal anchor is a numerical target which guides the medium-term revenue and expenditure policies of government.** Following a change earlier this year, PNG's current fiscal anchor limits the level of public debt to between 30 and 35 percent of GDP. This ceiling discourages running fiscal deficits and accumulating debts. However, it does not break the link between resource revenues and government spending – if revenues are high in one year, they can be spent, while the debt-to-GDP ratio remains unchanged. The rule also does not address the challenge of the economy's absorptive capacity (i.e. the ability of the government to actually spend the allocated funds) and, more importantly, the government's ability to spend well in the short term (i.e. the efficiency of spending).

85. **Here we highlight two possible fiscal anchors which are not mutually exclusive:**

- i. **The non-resource primary balance (NRPB)-to-non-resource GDP rule.** This anchor was recently adopted as part of the 2017 Supplementary Budget and is an appropriate fiscal anchor given the inherent volatility of resource GDP and revenue. This rule will help to remove the link between resource revenue flows and government spending in any year, and instead base the budget on the non-resource economy. Growth in the non-resource economy is more stable and less at risk of sharp accelerations and downturns, and hence should lower the likelihood of large fiscal adjustments in the future. The NRPB rule can thus contribute to a more sustainable fiscal policy framework.⁹⁰ It also ensures consistency in government expenditure for service delivery over the volatile commodity price cycle.
- ii. **An expenditure growth rule.** This rule places limits on expenditure growth to guide the scaling up of public investment in relation to the absorptive capacity of the economy. For instance, authorities could place a limit on the growth rate of expenditure-to-non-resource GDP per annum. This would help to ensure that increases in government spending do not put upward pressure on inflation. Such limits would also help to make certain that any scaling up of government spending can be managed by the relevant government ministries, avoiding budget shortfalls, and lowering the risks of inefficient end-of-year spending.

II. Operationalizing the sovereign wealth fund

86. **Complementing strengthened fiscal anchors, a sovereign wealth fund (SWF) would act to absorb volatile resource flows and provide a predictable stream of financing to the annual budget.** The legislation to establish the SWF is now in place.⁹¹ The country's SWF is expected to support macroeconomic stabilization, intergenerational equity, and the management of assets accrued from mineral and petroleum revenue. Steps should be taken to prepare for the operationalization of the SWF to coincide with expected inflows into the Fund.

⁹⁰ IMF (2012).

⁹¹ A law establishing a SWF was enacted and certified by Parliament in 2016.

87. **Additionally, when operationalizing the SWF, a sound governance and technical base for the SWF is required that draws upon international good practice (Box 4).**⁹² The Santiago Principles⁹³ – which the legislation establishing PNG’s SWF is designed to follow – provide a good base on which to agree the technical operation of the SWF, with transparency, sound governance and risk management being the guiding principles. In addition, the SWF should be fully integrated with the national budget. Precise agreement on what funds will flow into the SWF is needed. This will require a clear and simple definition of what is and what is not a ‘resource revenue’ that can be easily implemented with all sources being properly identified and reported. Additionally, clear and transparent rules on withdrawals are required, and withdrawals should be predictable in size so not to disrupt the annual budgeting process. It is vital that all withdrawals from the SWF go through the annual budget and are approved by Parliament. The SWF’s institutional framework should also determine the investment strategy, and clearly recognize that investment decisions should be independent of short-term monetary and exchange rate considerations.⁹⁴ Finally, the SWF should not be permitted to take out or underwrite loans, nor provide other guarantees.

Box 4: **Diamonds are forever**
Botswana’s sovereign wealth fund experience

The international experience shows that SWFs with robust governance, a sound investment strategy, clear rules regarding deposits and withdrawals, and strong institutional structures can deliver significant benefits for a resource-rich economy. Botswana provides an example of how a well-designed SWF can transform a nation’s natural resources into productive physical and human capital, facilitating sustainable economic growth and avoiding many of the adverse effects to which developing countries with abundant natural resources are often subject. Through its SWF, the country accrued large-scale reserves during commodity booms in the mid-2000s, which they were able to draw upon to finance countercyclical fiscal policies to mitigate the impact of the global financial crisis later in the decade. Consequently, Botswana experienced only a short downturn during 2007, before returning to strong growth in 2008. Further, the nation enjoyed sustained strong growth rates averaging over 4 percent annually over the past two decades, as well as investment rates of around 25 to 30 percent of GDP and low, manageable inflation. However, it is important to recognize that Botswana’s economic success was driven in large part by its strong governance, fiscal restraint, and robust institutions, rather than as an immediate consequence of the nation’s natural resource wealth. The lesson for other resource-rich developing nations such as PNG is that fostering reliable institutions and sound governance is critical to harnessing the development opportunities offered by natural-resource wealth.

Botswana’s Pula Fund combines a SWF with three fiscal rules to help smooth the receipt of volatile diamond revenues and to save resources for future generations. Established in 1994, the Pula Fund is the oldest SWF in sub-Saharan Africa. It has had a broadly successful record, although a lack of transparency and unclear deposit and withdrawal rules have been a source of concern. The Fund operates in tandem with a suite of three fiscal rules that act to limit procyclical spending; a debt rule limiting government debt to 40 percent of GDP, a budget balance rule advocating that the government should balance the budget over the 5-year National Development Plan period, and an expenditure rule limiting spending to 40 percent of GDP. The Fund consists of two parts: the Government Investment Account belonging to the government of Botswana, and the Pula Fund’s foreign reserves, which belong

⁹² In 1974 the Mineral Resources Stabilization Fund (MRSF) was established to smooth resource flows from two large mining operations, and was initially successful in these aims until the mid-1980s when pressures to spend grew and public debt increased. The rules surrounding the fund were subsequently loosened, its funds exhausted, and it eventually closed in 2001. The collapse of the MRSF provides a clear illustration of the importance of sound governance when operationalizing the SWF.

⁹³ The Santiago Principles are a set of generally accepted principles and practices that promote transparency, good governance, accountability and prudent investment practices, as well as a more open dialogue and deeper understanding of SWF activities.

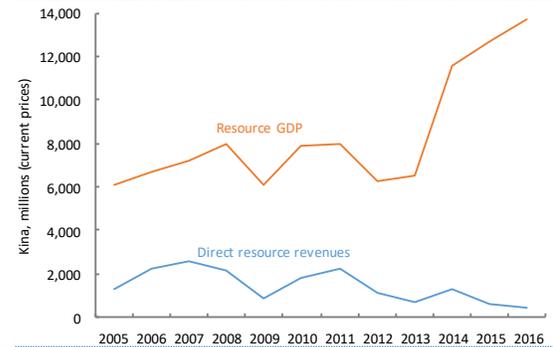
⁹⁴ In general, the objectives of a central bank and a SWF are aligned. For example, a SWF should complement sterilization of foreign exchange inflows by investing its funds offshore. However, a SWF’s design should ensure that investments are made to achieve the medium-term objectives of the SWF, rather than to achieve short-term monetary or exchange rate objectives.

to the Bank of Botswana. The fund is prohibited from making domestic investments, and the portfolio is split between long-term fixed income securities and equity investments in G7 countries.

5.2 Raising revenue mobilization

88. **High resource prices have helped to conceal underlying weaknesses in PNG's tax system.** These weaknesses have become increasingly exposed since the fall in commodity prices. Petroleum and minerals revenues have fallen from 18 percent of resource sector GDP in 2012 to only 2.3 percent in 2016, despite large increases in resource sector GDP over this time (see Figure 38). As a proportion of total revenues, resource revenues have also fallen, from 11.9 percent to 3.8 percent between 2012 and 2016. This decline is the principle driver of the overall decline in Papua New Guinea's revenue to GDP ratios. Non-resource revenues have also fallen from a peak of 24 percent of non-resource sector GDP in 2014, with personal and company tax receipts falling by PGK 780 million between 2014 and 2016. The decline in personal income tax is attributed to falling employment across a range of sectors, whilst the fall in company tax reflects lower profitability in the corporate sector, largely stemming from lower commodity prices and lower government spending. Overall revenue (excluding grants) as a percentage of GDP fell from 19.4 percent in 2014 to 13.5 percent in 2016.

Figure 38: Direct resource revenues have fallen despite rapid growth in the resource sector



Source: Budget documents (various years), National Statistics Office

89. **Tangible steps are being taken by the government to enhance revenue mobilization.** Various efforts at revising government policy are being implemented to both strengthen revenue administration and to update revenue policy and legislation, with the aim to reduce compliance costs and increase collections. At the center of the changes is the upcoming Medium-Term Revenue Strategy (MTRS), expected to be published with the 2018 Budget. Additionally, various policy initiatives and projects have been launched to support these modernization efforts. For example, the government has announced that it will review existing Double Taxation Agreements (DTAs) and suspend the negotiation on new agreements, and revamp the Additional Profits Tax. A large administrative reform is underway computerizing the Internal Revenue Commission (IRC) through introducing the Standard Integrated Government Tax Administration System (SIGTAS). To ensure increased accountability and transparency in the resource sector (as it applies to revenue mobilization), PNG also signed the Extractive Industries Transparency Initiative in 2014, and published its first report in 2017.

90. **Nonetheless, the decline in the tax-to-GDP ratio in recent years is due to a systemic weakness in tax revenue mobilization.** Improving tax revenue performance could be achieved by focusing efforts in two areas: (i) strengthening the capacity of tax administration institutions; and (ii) reversing the erosion of the tax base by addressing policy gaps.

I. Strengthening the capacity of tax administration institutions

91. **Improving administration of the tax system is, and will remain, crucial in the government's efforts to improve revenue mobilization going forward.** PNG's revenue administration capacity has struggled to keep up with the growth in economic activity resulting from the resources boom. This growth

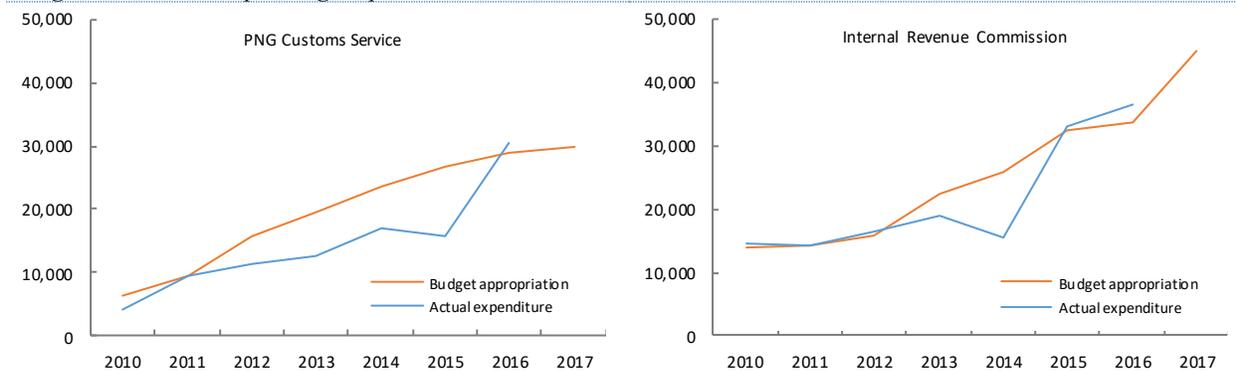
has been accompanied by an increase in both the complexity and the international nature of the business environment – as cross-border trade has been increasingly facilitated by the internet and e-commerce, and the numbers of non-citizens working in PNG and foreign-registered businesses operating in the country have both expanded. The 2015 Taxation Review notes a sustained level of underinvestment in revenue administration that has resulted in the use of outdated systems that are inappropriate for the rapidly-modernizing business environment.

92. **Although efforts have been made to increase both staffing numbers and average salary levels since 2012, further efforts on both may be needed.** Staff numbers in the IRC and Customs have not kept pace with economic growth, and remain low relative to population size. The 2017 Budget document reported that Customs and the IRC have a combined total of 345 unfilled vacancies, a vacancy rate of 25 percent. Staff at the revenue collections agencies also need more training to enhance their technical skills and experience to administer revenue collections.

93. **However, actual expenditures for personnel emoluments by Customs and the IRC are struggling to keep up with increased budget allocations (Figure 39).** Budgets have increased in recent years, yet only in 2015 (IRC) and 2016 (Customs) did each agency manage to spend its enlarged personnel emoluments budget. Clearly ‘throwing money at the problem’ is not enough, especially given that revenue collections (as a ratio of GDP) have been stagnating or falling over the same period. Instead, there is a need for revenue administration to be more results- and less process-orientated. For instance, authorities would do well to strategize and focus on improving compliance with respect to particular tax-payers and types of tax in order to increase collections.

Figure 39: IRC and Customs have often been unable to spend their increased budget for salaries, indicating that more fundamental changes to revenue administration are necessary

Budgeted and actual spending on personnel emoluments, Kina, '000s, 2010-2017



Source: PNG Treasury budget documents, Volume 2, various years.

94. **Improving tax payer compliance through improved tax administration is key.** All types of taxes are prone to taxpayer non-compliance. Chief among these, according to the report of the 2015 Taxation Review Committee, is the goods and services tax (GST) – where “*there appears to be significant non-compliance.*”⁹⁵ In addition, GST collections are particularly hampered by the ‘zero-rating’ of all companies involved in resource extraction (i.e. the GST rate is zero percent for these companies). Over

⁹⁵ Taxation Review Committee (2015, pg. 36).

time, exemptions from GST have been extended further up the supply chain, broadening the scope for non-compliant taxpayer behavior (Box 5).

95. **Significant administrative challenges for taxing foreign contractors are present.** The recent growth in both the resource and the non-resource economy has driven the increase in the numbers of non-citizens working in PNG's labor market. This presents additional challenges for tax enforcement that requires targeted intervention. For example, collecting income tax when salary payments happen entirely off-shore (i.e. between two Australian bank accounts) and the contractor covers living expenses in PNG using his or her foreign ATM card.

96. **Reducing the use of tax incentives across a variety of sectors can alleviate the burden on the administration of such incentives.**⁹⁶ Many of these incentives have been put in place in the hope of making PNG a more favorable investment destination, supporting existing firms, and attracting new ones. Administering tax incentives can entail having to separate income from one activity (manufacturing) from another (construction), or separating imports used in the production process (a car used to visit remote project sites) from other uses (the same type and model of car used for personal journeys in the capital city). Such administrative challenges consume time and resources, and create disputes with tax payers. As such, the benefits of tax incentives need to be weighed against the costs, both from revenue foregone and the additional costs of administering the incentives.

Box 5: Nothing is certain except death and taxes?
Implementation issues with the GST

The GST was originally named the Value-Added Tax, and was introduced in 1998. Despite the change of name, the GST operates as a value-added tax. GST should apply throughout the supply chain, with suppliers charging GST to their customers and claiming refund credits on the GST paid on their supplies. In the end, final consumers pay the tax through a higher price on the finished good or service. Businesses only collect the tax and remit it to government. For this tax to operate smoothly the entire supply chain needs to be charging GST, and refund credits need to operate smoothly so as not to create cash flow problems for businesses.

The GST is levied at a flat 10 percent rate, but is subject to multiple exemptions, zero-ratings, and discretionary treatment. This 'breaks the chain' that is at the heart of efficient GST administration, and gives rise to both a complex and costly administrative regime and multiple opportunities for taxpayer non-compliance. The 2015 Tax Reform Committee notes some examples including: businesses charging customers GST but not remitting collections to the IRC; over-claiming input tax credits and GST refunds; and abuses of GST exemptions, for example in the education sector and housing/office rentals.

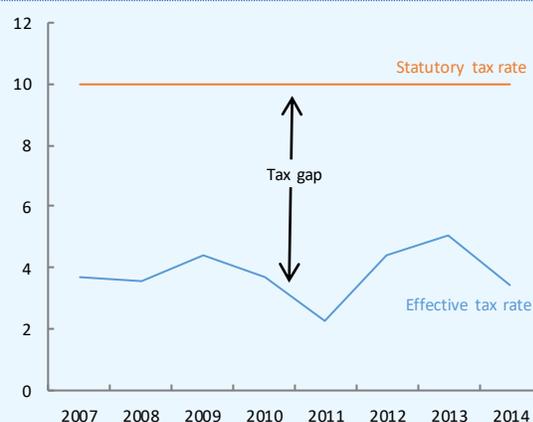
Comparing GST collections to total consumption in the economy shows a 'tax gap' of approximately 50 percent (Figure 40). The untaxed 50 percent includes both exemptions and allowances included as conscious policy choices, and revenue lost due to non-compliance, fraud and other leakages. Refunds of GST have been growing sharply, with refunds in 2011 and 2012 exceeding net collections.

⁹⁶ The Taxation Review identified over 40 separate tax incentives within the PNG tax system. These incentives span across different tax types (income tax, withholding tax, customs duties, stamp duties) and different sectors (agriculture, fishing, financial services, manufacturing, tourism, mining and petroleum). The policy objective behind these incentives has been to promote the development of areas outside the main urban centers.

Resource companies, as exporters, are zero-rated for GST. In 2000 this zero-rating was extended to suppliers of resource companies, so that the administrative costs and cash flow problems of paying refunds could be avoided. Contractors and suppliers do not charge GST when invoicing resource companies, but should charge GST when supplying other businesses. This provides the potential for suppliers to disguise taxable supplies as zero-rated, and hence claim excessive refunds from the IRC. Historically the IRC has had limited resources to undertake audits and it is near impossible to prove under-reporting of GST payments without an audit. The low perceived risk of an audit encourages additional non-compliant behavior that in turn further erodes tax receipts.

To minimize opportunities for non-compliance the GST should aim to have as few exemptions and zero-ratings as possible. The decision to exempt or zero rate certain goods, services or sectors needs to weigh up the social and economic benefits against the additional administrative and compliance costs.

Figure 40: The large number of exemptions, zero-ratings and discretionary treatment means the effective rate of GST is below half the statutory rate
GST statutory vs effective tax rate, 2007-2014



Source: National Statistics Office

II. Reversing the erosion of the tax base by addressing policy gaps

97. **The use of tax incentives has contributed to the erosion of the tax base and, consequently, the decline in the tax-to-GDP ratio.** The government has recognized this and has previously repealed some tax incentives. In 2014, the 150 percent income tax deduction allowable under the Research and Development Incentive was removed after the authorities recognized “*the challenges in administering the highly technical provisions and in obtaining individuals with the necessary skills and experience to effectively assess applications.*”⁹⁷ In 2017, the double deduction provisions for exploration expenditures were repealed.

98. **Streamlining the allocation of Infrastructure Tax Credits (ITCs) – which have contributed to reducing tax collection – should be considered.** ITCs reduce corporate income tax receipts by incentivizing investors to build infrastructure in remote regions. The cost of the investment is then treated as a payment of tax.⁹⁸ This policy has been criticized for allowing investors to inflate the costs (which are not verified by the government) or to claim ITCs on infrastructure the investor was going to build anyway as part of the project.

99. **Taxation of the mining and petroleum sectors is generous compared to other resource-rich countries, and has eroded potential government revenues.** An example of this includes a discretionary 10-year tax exemption for the Ramu-Nickel mine and near zero fiscal revenues from the new PNG LNG investment. The result is the project is not expected to generate significant tax revenues until the mid-2020s, largely due to a profit-based royalty regime and generous capital allowances cancelling out any tax

⁹⁷ Taxation Review Committee (2014b, pg. 6).

⁹⁸ Firms can charge a 100 percent deduction on capital expenditure on infrastructure projects, to a maximum of 0.75 percent of taxable income allowed for each year. However, the full capital cost of the infrastructure can be carried to the next year until the full capital cost is accounted for.

liabilities (see Box 6 and Box 7). Discretionary exemptions granted to specific firms or projects create precedents that in turn build pressure to grant further exemptions to new investors and existing firms who feel they are disadvantaged due to the exemptions enjoyed by their competitors.

100. **Authorities should also address loopholes in Double Taxation Agreements (DTAs) which further erode tax receipts.** These agreements grant lower rates for dividends, interest and royalty payments, and can open the door to lower tax receipts through allowing contractors and foreign workers to maintain non-residency status (see Box 8).

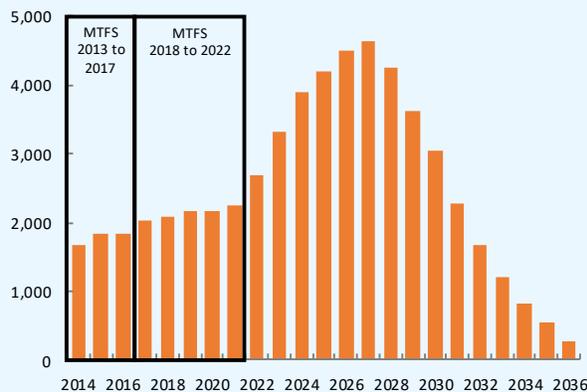
Box 6: Waiting for Godot (and gas revenues)
Government revenues from PNG LNG

The PNG LNG project – both in sheer size and potential to promote greater economic development in PNG – is enormous. The project is founded on the extraction of gas from the Southern Highlands, Hela, Western and Gulf provinces, which is then – via pipeline and ship – liquefied and transported to customers in East Asia under long-term supply contracts. Construction began in 2010 and the first shipment left the LNG terminal just outside Port Moresby in May 2014. Total construction costs were USD 19 billion (compared to PNG’s 2010 GDP of USD 14 billion), and annual output was planned at 6.6 million tons of gas and condensate per year. As of 2017, actual output is running at over 8 million tons per year, with the excess output being sold on the spot market. There is a potential for expansion for the project to include the Elk Antelope gas field, adding 7.6 to 10.6 million tons output per year.

The 2013 National Budget estimated total government revenues from the project of around K2 billion per year between 2014 and 2021 (around 2.6 percent of GDP), rising to an average of over K3.5 billion 2022-2030, and tailing off to zero by 2036 (Figure 41). To put that amount in perspective, expected revenues from the project were greater than the annual average of total GST collections over the past five years (2012-2016), and more than half of the annual average of total personal income tax (Figure 42). Most revenues from the project would be paid in US dollars, helping to alleviate shortages of foreign exchange. At October 2017 exchange rates, K2 billion would cover 3 to 4 months of imports in 2017.

Figure 41: In 2013, authorities expected the project to generate substantial government revenues over the medium term

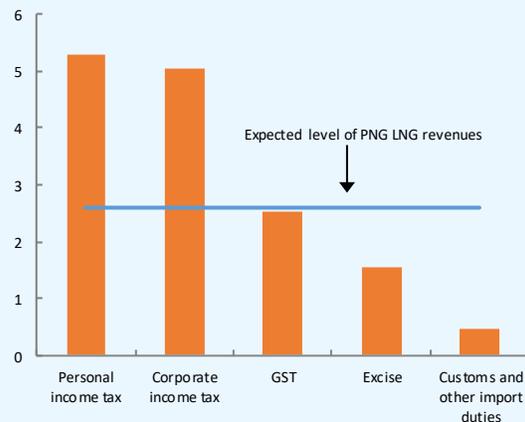
2013 Budget projections of government revenues from PNG LNG for 2014-2036, Kina, millions



Source: 2013 National Budget, Volume 1

Figure 42: The expected revenues were higher than actual GST collections, and about half of personal income tax and corporate income tax

Revenue by tax type, five-year average: 2012-2016, percent of GDP



Source: 2016 Final Budget Outcome & World Bank staff estimates

Revenues to government from the project were anticipated to originate from four principle sources;

- i. Royalties: 2 percent of the well-head value (payable to landowners, and affected provincial and local governments);
- ii. Development levy: 2 percent of the well-head value (payable to affected provincial and local governments);
- iii. Income tax: 30 percent tax on the profits of the project (payable to the central government);
- iv. Dividends: government’s share of profits from its 16.57 percent shareholding through Kumul Petroleum, and 2.8 percent shareholding by the Mineral Resources Development Company, held on behalf of landowners.

However as of September 2017, only K150 million in royalties had been received by government, equivalent to 0.2 percent of GDP. Clearly, the lack of revenues from the project has left a sizeable hole in the government’s finances.

There are several reasons why revenues to government from PNG LNG have been below expectations:

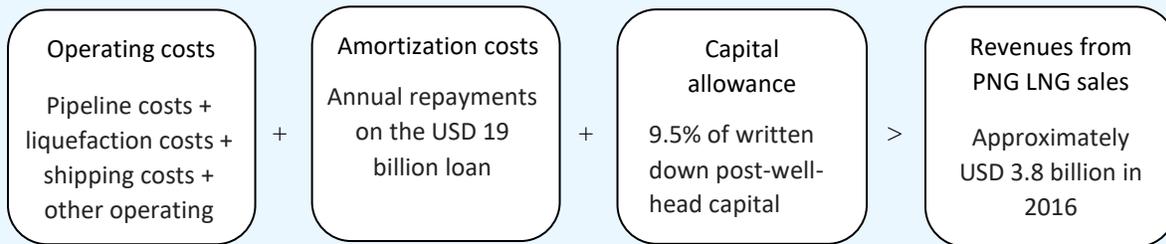
- a) The definition of ‘well-head value’: Paragraph 3(d) of the Petroleum (Determination of well-head value, PNG LNG project) regulation 2008 states:

“The well-head value of petroleum... shall be calculated by deducting the direct costs, amortization, and capital allowance from the sum of revenues and adjustments.”

Hence ‘well-head value’ can be thought of as revenues less operating and capital costs (Figure 43). It is important to note that exploration costs are not included in this calculation, hence well-head value is not equivalent to ‘profits’ for the project as a whole. Rather, it is the profits from extracting the gas and selling it to buyers in East Asia, once the gas has been discovered and tapped. This definition of ‘well-head value’ as revenues less operating and capital costs is also known as the *netback value* in the jargon of the oil and gas industry.

This definition means that in times of low prices the well-head value could be negative, in other words the revenues are less than the costs even if large operating profits are being made. For PNG LNG the costs are substantial, with USD 19 billion in capital investment, in addition to pipeline transport, liquefaction, and shipping costs. Further the capital allowance mentioned in Paragraph 3(d) above is valued at around 9.5 percent of the depreciated post well-head capital costs, making the chances of a negative well-head value greater.

Figure 43: Calculating the negative well-head value in 2016



Source: World Bank staff

For the Kutubu and Gobe oil projects of the 1980s and 1990s, well-head value was set at 93 percent of the ‘Free on board’ value of the petroleum exported, this made the royalty payments easy to measure, and meant that they would always be positive.

- b) Additional contingent tax allowances: Depending on the ratio of cumulative revenues to cumulative expenditure (costs) in 2024, additional tax allowances can be claimed for the next 5 years until 2029. These

tax allowances are in addition to existing tax concessions (special accelerated depreciation rules and exemptions from GST, import duties, and export levies).

- c) Negative royalties and development levies: It would appear that for PNG LNG *negative royalties and development levies* are being accrued which will be used to write-off any future positive royalty payment obligations in much the same way corporate income tax losses can be carried forward. This provision is not explicitly stated in the PNG LNG Gas Agreement 2008.
- d) Royalties are treated as advanced payments of income tax: So for every one USD paid in royalty, one USD less is payable as income tax.
- e) Development levies are tax deductible like any other business expense: So at a 30 percent tax rate, for every one USD in development levies paid by a profitable project, USD 0.30 less is payable as income tax. The tax credit and tax-deductible status of royalties and development levies is consistent with the 2003 Petroleum Policy Handbook.
- f) Infrastructure Tax Credits (ITCs): The cost of infrastructure deemed to be of a benefit to the local community can be treated as payment of tax.⁹⁹ The PNG LNG project is eligible for ITCs, through which mining firms can charge a 100 percent deduction on capital expenditure on infrastructure projects, to a maximum of 2 percent of assessable income each year.

Taken together these six factors create a complex web of exemptions and allowances that effectively mean that little revenue is received by government and landowners, either through taxes, royalties or development levies. In their 2016 Article IV report, the International Monetary Fund (IMF) commented that *“the tax arrangements for PNG’s mining and petroleum sectors are very generous compared to other resource rich countries and do not reflect the maturity of the PNG resource sector”* (pg. 9).

There is also little information on dividends that should be paid to the state. Government should receive dividends from the project from its 16.57 percent shareholding, held by the government owned Kumul Petroleum Holdings Limited (KPHL). However little information is made publicly available as to what dividends KPHL receive.¹⁰⁰

Furthermore, for many resource extraction projects, the government faces challenges in independently verifying and auditing: (i) the information provided by project operators; and (ii) the information needed to calculate royalties, profits, and tax liabilities. Information on export volumes, revenues received, and costs incurred can be impossible for national tax authorities to verify, in particular when these transactions are settled overseas. The PNG LNG project is exempt from the Central Banking Act 2000, meaning that revenues from sales do not have to be brought ‘on-shore’ and hence records of financial transactions relating to the project are not visible to the central bank, nor to the tax authorities. These data challenges are highlighted by the reports of the Extractive Industries Transparency Initiative which note many incidences where production and financial information reported by ExxonMobil, Oil Search and Santos does not match information held by the Department of Petroleum and Energy, which in turn may be substantively different from information provided by the Treasury.

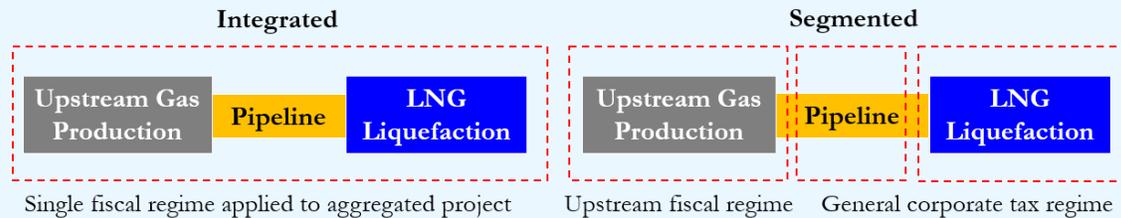
⁹⁹ This can mean that a landing strip or a road necessary for the operations of the project are a legitimate tax-deductible expense, and can also qualify for a tax credit if considered to be beneficial to the local area.

¹⁰⁰ Publicly available information on the project is limited. The principle shareholders, ExxonMobil, Oil Search and Santos are publicly listed companies, however for ExxonMobil, PNG LNG is only a small part of its global operations, and little specific information is made available through the company’s annual report. For Oil Search, listed on the Australian stock exchange, PNG LNG is its largest source of revenue, and the annual reports and half yearly results publications provide the most detail on the project. The Extractive Industries Transparency Initiative is a second source of information. However, lags are present in the publication of reports, with the 2014 report only being published in February 2017.

Box 7: Choose your royalties carefully
Different approaches to royalties' calculations

The PNG LNG is an integrated mega-project. A typical LNG export project can be separated into three parts: (i) upstream gas production; (ii) the pipeline; and (iii) LNG liquefaction (Figure 44). The PNG LNG project combines all three into one project led by ExxonMobil. Other approaches are to segment the project, having the riskier 'upstream' gas production being treated (and perhaps owned) separately from mid- and down-stream facilities.

Figure 44: Alternative structures for an integrated and a segmented project



Source: World Bank staff

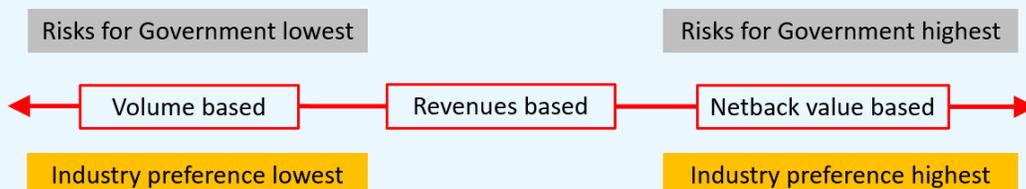
Industry prefers a netback approach to royalties' calculations. As detailed in Box 6, the royalties and development levies received from PNG LNG are linked to the *netback value* of the gas sold, which can be thought of as the *revenues less operating and capital costs* from supplying the gas. Such approaches are favored by the mining and petroleum industries as they ensure that royalties are only paid if and when a project's revenues are higher than costs.

However, royalties that factor in project costs are the most complex for government authorities to administer. This is particularly the case where the resource extractor is foreign-owned, and a significant proportion of costs are incurred overseas (e.g. imports of foreign machinery, foreign technicians and engineers, management overheads, shipping costs, etc.). This is due to the well-known risks of transfer pricing, in particular when the owning corporation purchases these items from itself (this is known as the problem of 'arms-length pricing'). This, in turn, lowers the ability for national tax authorities to collect revenues from a project, including royalties and corporate income taxes.

Further, the level of integration or segmentation of a project influences the cost base of netback value-based royalties. An integrated project has a much larger cost base than the upstream portion of a segmented project, which can lower the netback value, and hence, royalties. A segmented project can, for example, levy royalties on the upstream gas production operations, and treat the lower risk downstream pipeline, liquefaction and shipping operations the same as any other industrial activity (so no royalties, only income taxes).

Easier to administer royalty regimes include, at the simplest: (i) a volume-based royalty, which for LNG would be a fixed sum per ton; or (ii) a revenue-based royalty, which would be a fixed percentage of the *gross revenue* from the sale of the gas (Figure 45). For economies with less-advanced tax administrations, a volume- or revenue-based royalty may ensure that some revenue is received even if the operator is declaring that costs are higher than revenues.

Figure 45: Conceptual approaches to royalties' calculations



Source: World Bank staff

A revenue-based royalty system has a history in PNG. For the Kutubu and Gobe oil projects of the 1980s and 1990s, well-head value was set at 93 percent of the ‘Free on board’ export value, which can be calculated from customs records of exports and international payments data from the central bank, and can even double checked against the import statistics of the purchasing country. For economies with less advanced tax administrations, a volume- or revenue-based royalty may ensure that some revenue is received even if the operator is not declaring any profits.

Negotiations over royalty regimes for future resource extraction projects in PNG should keep these different approaches in mind, to ensure that the most appropriate regime is selected.

Box 8: DTAs: Past, present and future *Double taxation agreements in PNG*

PNG has negotiated 9 DTAs (also known as double taxation treaties), some dating to before independence. The primary aim of DTAs is, in territories where residents are taxed on their global income, to avoid situations where income sourced overseas is taxed twice, the logic being that this double taxation would potentially deter investment between the two countries.

DTAs are not standard. However, the Organization for Economic Cooperation and Development (OECD) and the United Nations have recommended clauses and text for these legal agreements that have resulted in much commonality across DTAs. DTAs also cover such issues as the definition of residency, and can impose upper limits on tax rates (in particular withholding taxes) which are lower than the rates that would be levied on individuals and companies from third countries.

Whilst DTAs can be effective in preventing double taxation and in clarifying tax matters for investors, there are increasing concerns that they can also be used to give the unintended outcome of not taxing income in any jurisdiction – usually referred to as ‘double non-taxation’. Inconsistencies in legal definitions of residency allow the taxpayer (individuals in particular) to float between different tax jurisdictions over the tax year so to avoid being legally resident in any jurisdiction, and hence avoid any tax liability. It is for this reason that withholding taxes, levied as a final tax, are popular, to ensure that floating taxpayers pay at least some tax.

For PNG, two DTAs stand out as the most widely invoked: with Australia (signed in 1989) and Singapore (signed in 1993). Challenges have been noted in applying the articles within these treaties (Table 4 below). The 183-day residency condition allows a contractor to remain non-resident for up to a full year if it straddles two tax years, and enforcing 90- or 183-day residency clauses is challenging as there is no link between immigration records and the tax office.

Finally, it is worth noting that the risk of double taxation is minimized in many modern tax administrations without the need for a double taxation agreement. This is achieved by allowing tax paid on overseas income to be deductible from gross income if proof of tax being paid on foreign income can be provided. This applies regardless of whether a DTA is in place between the two tax jurisdictions.

The 2015 Taxation Review recommended the suspension of all ongoing double taxation agreement negotiations.

Table 4: Comparison of key elements of the Australian and Singaporean DTAs

Tax item	Standard	Australia DTA	Singapore DTA
	17%		
Dividends	10% mining income 0% oil and gas income	20%	15%
Interest	15%	10%	10%
Royalties	10% (or 30% if paid to an associate)	10%	10%
Resident for tax purposes	90 days	90 days	90 days. 183 days for construction, or 183 days for Independent Personal Services

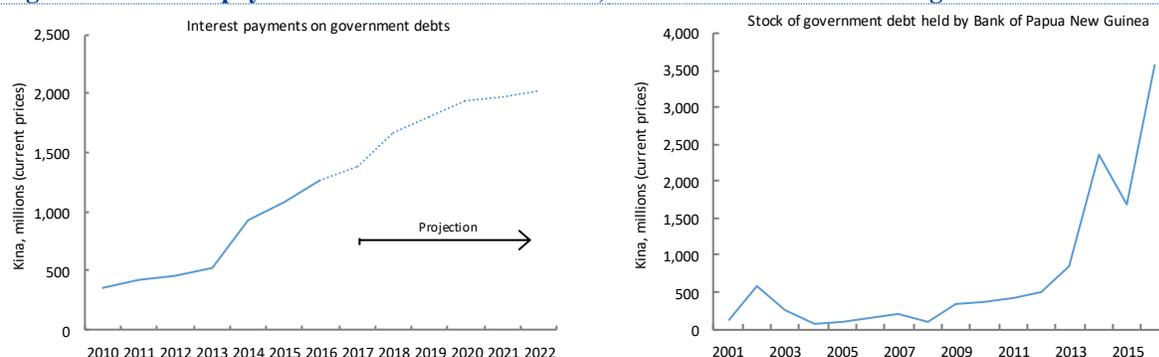
Source: Taxation Review Committee (2014a) & World Bank staff

5.3 Addressing increases in debt and debt servicing costs

101. **There has been a significant increase in public debt.**¹⁰¹ According to the IMF-World Bank Debt Sustainability Analysis (2016), public debt amounts to approximately 38 percent of GDP once arrears to a superannuation fund and liabilities of public enterprises are accounted for. The former includes contingent liabilities owed by the central government to the superannuation fund, NasFund, and are estimated to be about 3.4 percent of GDP at end-2016, while the latter are about 0.6 percent of GDP, though data on public enterprise liabilities are incomplete and not up to date.

102. **The steady increase in the government’s stock of debt is pushing up interest expenses whilst reducing the appetite for the domestic financial sector to take on additional government debt (Figure 46).** Debt servicing costs have more than doubled (as a share of total expenditure) from 4 percent to 11 percent between 2013 and 2016. Currently, public expenditure on debt interest payments is higher than on either the health or education sectors.

Figure 46: Interest payments are forecast to increase, whilst central bank financing has soared



Source: Budget documents (various years), projections from IMF 2016 Article IV, Bank of Papua New Guinea

103. **The yield curve has been steepening and domestic sources of financing are drying up.** The majority of domestic banks report reaching their internal exposure limits to PNG government debt. This is increasing rollover risks and forcing the authorities to diversify their financing sources. In response, the Bank of Papua New Guinea (BPNG) has been purchasing government securities.¹⁰² This central bank financing of the deficit has been growing rapidly since 2013. In particular, there has been a significant increase between 2015 and 2016 in the central bank’s net claims on government (111 percent) which indicates that the central bank has been directly funding the budget.

104. **Against this backdrop, the risk of debt distress has heightened.** This conclusion arises from the increasingly short-term profile of government debt, with Treasury Bills becoming ever more prevalent, which also contributes to higher rollover risks. However, this assessment crucially depends on whether public finances can be brought under control, and if a primary fiscal surplus can be achieved.

105. **The rising debt and debt servicing costs reflect changes in the fundamentals underpinning PNG’s debt landscape, and warrants a reassessment of the debt management strategy.** To this end, authorities have stated their intention to re-orientate the debt portfolio to reduce interest costs, lengthen

¹⁰¹ The government has registered a deficit each year since 2011, with gross government debt having increased from PGK 6.8 billion to PGK 21.9 billion over the period 2011 to 2016.

¹⁰² The central bank purchases have accounted for 63 percent of the increase in the stock of Treasury bills and inscribed stock between end-2015 and end-2016.

average debt maturities, and lower rollover and foreign exchange risks. These ambitions are stated in the authorities' Medium-Term Debt Management Strategy (MTDS) which is appended to the Medium Term Fiscal Strategy (2018-2022). The MTDS, along with measures to increase the depth in the domestic financial market, seeks to shift towards issuing a greater proportion of longer-term debt instruments and make more frequent use of external sources of concessional financing. In particular, concessional loans from development partners should be drawn on to fund necessary infrastructure and development projects. The strategy is aligned with the Fiscal Responsibility Act, with objectives such as maintaining debt at sustainable levels, maintaining financial risks at prudent levels, and developing the domestic debt market.

106. **Going forward, immediate efforts should be directed towards addressing noted shortcomings in debt management operations.** The 2015 Public Expenditure and Financial Accountability (PEFA) assessment gave PNG a score of 'D' for debt management¹⁰³, noting that the debt records maintained by Treasury risk being incomplete due to the absence of a comprehensive, up-to-date central register of loan agreements and guarantees, including implicit and explicit guarantees on borrowing by state-owned enterprises. Resolving this weakness is a 'low-hanging fruit' activity that can provide valuable information to underpin better decision-making and financial planning.

107. **The reporting and monitoring of contract payments should be strengthened, and efforts made to understand the size and scope of accumulated expenditure arrears.** As outlined in Box 9, expenditure arrears are being used as a form of unofficial deficit financing which add to the stock of public debt, and can create serious fiscal risks if left unchecked. The allocation of resources in the 2017 Supplementary Budget to discharge some of these arrears is an important first step. However, this will not resolve the structural causes of periodic build-ups of arrears. Departments do not always follow the established commitment control procedures, which in turn results in the over-commitment of expenditure and the creation of arrears. Reports have cited the accumulation of expenditure arrears at both the central and sub-national levels, but with limitations in the system for recording and reporting overdue payments, quantification of the magnitude of arrears is challenging. This is another strong reason why the roll-out of the Integrated Financial Management System across the public sector needs to be expedited – to create a single, centralized database to control and track supplier contracts and payments. It also reinforces the need to continue the implementation of the government's 2015-2018 Public Financial Management (PFM) Roadmap, which identified four key areas for improvements, two of which are: (i) the comprehensiveness and transparency of recording and reporting in the budget; and (ii) the control of budget execution.

Box 9: A promise made is a debt unpaid
The causes and consequences of government expenditure arrears

Government expenditure arrears are financial obligations that have been incurred by the public sector for which payments have not been made by the due date, and thus essentially add to the stock of government debt.¹⁰⁴ Arrears can accrue at both central and provincial government levels, in statutory authorities and state-owned enterprises, and cover all types of spending (salaries, pensions, goods and services, social transfers, and capital projects). The definition of when a payment falls into arrears differs from country to country, but typically it is between 30 and 90 days. Many governments face challenges in quantifying the total size of their payment arrears, and once identified their size can come as a shock. In 2011, Portugal estimated a stock of arrears equivalent to 4 percent of GDP, Greece 5 percent, and Angola 10 percent. A large flow of arrears may disguise the true size of the

¹⁰³ The lowest score on a 4-point scale.

¹⁰⁴ See Flynn & Pessoa (2014) for an overview of the issues arising in preventing and managing government arrears.

government deficit, providing an incomplete picture of the country's true budget constraint and required fiscal adjustment.¹⁰⁵

Evidence indicates that delays in government payments reduce private sector profitability, increase the likelihood of bankruptcies, and slow economic growth.¹⁰⁶ Arrears are thus a mechanism of contagion, insofar as delayed payments to government suppliers can transfer liquidity constraints from the public to the private sector. This can have immediate consequences for economic activity, as firms curtail demand along their supply chain and delay investment. If arrears are to wage-earners or pensioners, households may reduce their consumption. Firms can also delay tax payments, arguing that if the government owes them money, why should they pay their tax bill? At the extreme, non-payment of wages to public servants can result in the rationing or closure of public services, such as schools and health clinics. Delaying payments is thus a costly way of dealing with government liquidity challenges or a debt limit. In fact, efforts to clear outstanding obligations can boost the economy in the short term. Over the medium term, resolving the structural causes of arrears build-ups can reduce public procurement costs – as government suppliers no longer need to mitigate the risks and opportunity cost of delayed payments by adjusting their initial prices upward.

In PNG – as in many other low- and middle-income countries – build-ups in arrears are frequent, and the underlying cause of their persistence are weaknesses in public financial management practices and systems. Over the past 25 years PNG has experienced numerous episodes of arrears build-up.¹⁰⁷ Yet, the 2015 Public Expenditure and Financial Accountability (PEFA) assessment found that PNG has no mechanisms for recording and monitoring payment arrears.¹⁰⁸ Thus, although the PEFA report cites the accumulation of arrears at both the central and sub-national levels, without a mechanism to aggregate all overdue payments, it is difficult to quantify their size. The roll-out of the Integrated Financial Management System (IFMS) across the public sector is an important first step to resolving this weakness.

A two-pronged approach is recommended for tackling expenditure arrears:

i) Preventing further arrears accumulation.

The most effective way to control the accumulation of arrears is to prevent arrears from being incurred. Therefore, the first step in preventing arrears is to understand the underlying causes. Once identified, potential remedies could include: (a) strengthening the legal and regulatory framework; (b) enhancing the credibility and realism of the budget; (c) improving accounting and reporting; (d) strengthening commitment controls; (e) improving cash and debt management; (f) enhancing oversight of subnational governments and state-owned enterprises; and (g) upgrading the government's financial management information systems.

ii) Clearing existing arrears. This has five steps:

- *Stocktaking.* A timetabled stock-taking exercise, with a clear cut-off date and a clear definition of the information requirements needed from all relevant institutions. This will likely involve additional data collection as many financial management information systems do not cover all public sector spending (e.g. provincial governments or state-owned enterprises).
- *Verification.* Unpaid invoices should be: collected; subject to tests to verify their existence, value, and vintage; and categorized as to their validity. Only original documentation should be accepted, not

¹⁰⁵ Diamond & Schiller (1993).

¹⁰⁶ Checherita-Westphal et al. (2015).

¹⁰⁷ In 1994 arrears reached around 4 percent of GDP following a slump in mineral export receipts. Arrears peaked again in 1998-99, as the Asian financial crisis caused another negative shock to commodity exports. Arrears were reduced during 2000-01 under the purview of a Stand-By Agreement with the IMF, but rose again to around 2 percent of GDP in 2003 as new expenditure controls were either circumvented or ignored. In recent years, arrears to a superannuation fund have accrued, in response to which the fund has ceased paying out the government share of pensions to retirees.

¹⁰⁸ A 2014 survey of 121 low- and middle-income countries found that in almost 20 percent of countries the stock of central government arrears was more than 10 percent of total central government expenditure, while 38 percent of countries were unable to generate reliable data on the stock of unpaid bills from the past two years (Flynn & Pessoa, 2014).

photocopies, to avoid fraudulent claims.

- *Classification.* A database of valid outstanding payments should be established and maintained centrally by the ministry of finance. This can be a resource-intensive and time-consuming exercise, requiring dedicated staff resources. A practical approach would be to focus in the first instance on large claims, gradually expanding the coverage of the database.
- *Prioritization.* Once a database of valid claims on government has been established, a set of criteria for prioritizing their liquidation should be determined. A transparent set of prioritization criteria could include socioeconomic impact, age of the arrears, type of creditor, cost of penalties and interest, and the currency of the arrears.
- *Liquidation.* Some countries facing the challenge of clearing a significant stock of arrears have established an arrears committee in the Ministry of Finance. Such a committee should ensure that payments are made in accordance with the agreed prioritization criteria.

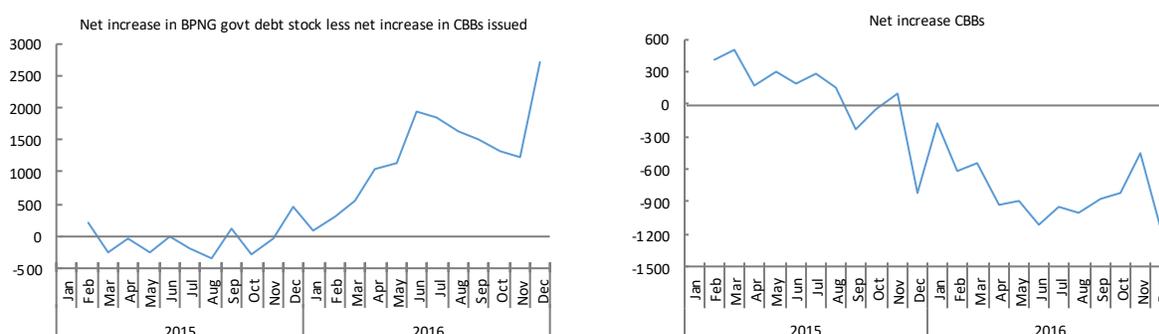
5.4 Increasing the effectiveness of the monetary policy framework and resolving the imbalance in the foreign exchange market

108. **High liquidity in the banking sector has removed the need for interbank lending between commercial banks.** High liquidity is a legacy of the following four factors: (i) the ramping up of government expenditure in 2012; (ii) the large unsterilized flows of foreign currency into the financial system during the period of high resource prices; (iii) the Treasury using commercial banks for some activities, such as for administering government trust accounts; and (iv) the continuing reluctance of domestic banks to lend to the private sector due to the perceived high risks involved. Figure 47 shows that the net increase in the government debt stock less liabilities of central bank bills held by financial institutions has been rising. This reflects the increase in the purchase of government debt by the central bank coupled with the declining willingness of financial institutions to purchase central bank bills. Further, in order to mop up the excess liquidity, the central bank has only been able to on-sell a limited portion of the treasury bills to the public through its tap facility.¹⁰⁹

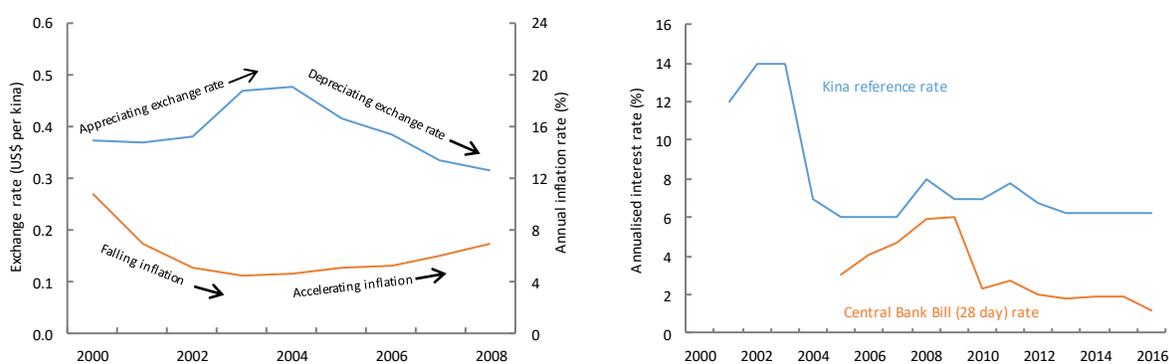
109. **The high liquidity contributes to the weak link between the Kina Facility Rate (KFR),¹¹⁰ the short-term interest rate (for 28-day central bank bills) and lending rates in the commercial banking sector (Figure 48).** This is principally due to two factors: (i) BPNG does not provide any numerical reference about its macroeconomic goals such as inflation or money growth; and (ii) high levels of liquidity in the domestic banking sector. Without any commitment to a nominal anchor, it is difficult for financial markets to anticipate future movements of the reference rate. Market players do not have well-formulated views on the future direction of monetary policy and it has limited, if any, impact on their financial decisions.

¹⁰⁹ In March 2017, the Bank of Papua New Guinea announced the intention to introduce a new tap facility to on-sell Government securities to individuals, businesses, Government agencies, other institutions and offshore investors. The success of such a move is uncertain given that commercial banks have reached their limits for holding government debt and that it is unclear to what extent corporations and individuals wish to purchase additional Government debt.

¹¹⁰ The KFR, the principle tool for the BPNG to achieve its macroeconomic policy objectives, is the reference rate for interbank lending, and is set through monthly announcements.

Figure 47: Rising liquidity driven by purchase of government paper and limited sale of CBBs

Source: Bank of Papua New Guinea

Figure 48: The exchange rate, rather than interest rates, is used to influence price stability

Source: Bank of Papua New Guinea

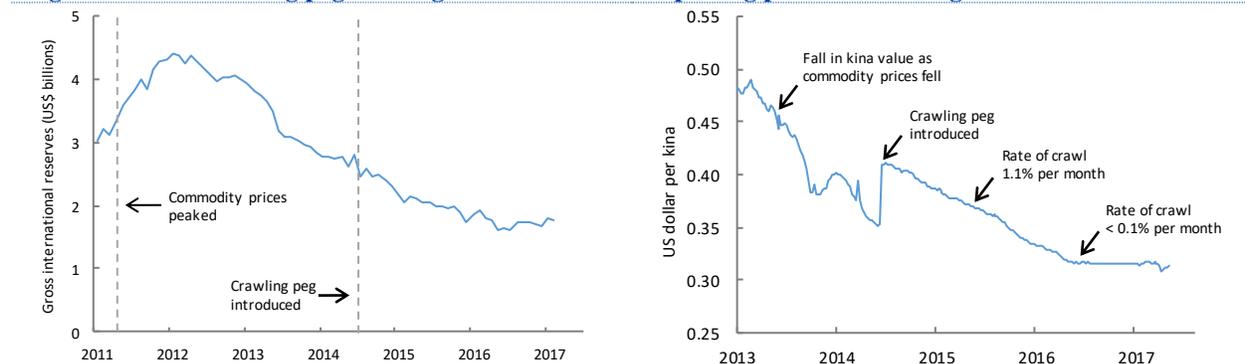
110. **In practice, the monetary authorities have turned to foreign exchange market interventions to influence price stability.** Following the downturn in the commodity cycle, the central bank has permitted only a relatively slow depreciation of the exchange rate so as to support price stability. Hence, the stability of the exchange rate becomes a signal of price stability. This creates a problematic cycle with the central bank intervening in the foreign exchange market to smooth out the exchange rate to avoid undesirable consequences on inflation, but, by doing so, it further strengthens the relationship between the exchange rate and inflation.

111. **Ultimately, the lack of an effective and sustainable monetary policy tool to influence domestic price levels and anchor inflation expectations, leads to elevated expectations of inflation and a higher long-term rate of inflation.** This can be seen when comparing inflation rates in PNG, which have averaged 5.3 percent since 2010, to those in the wider Asia Pacific region where inflation has averaged about 3.8 percent. This relatively high and sustained rate of inflation works against the creation of a favorable business environment, and hurts the poor who see their real incomes fall as prices rise.

112. **The crawling peg exchange rate regime introduced in mid-2014 has led to an imbalance in the foreign exchange market.** The downturn in resource prices, the impact of the inclement weather (El Niño), and the fact that PNG LNG has not yielded any significant foreign exchange inflows, have led to downward pressure on the currency (Kina). In 2014, authorities introduced a foreign exchange trading

band which led to an appreciation of the USD/Kina exchange rate (Figure 49).¹¹¹ This effectively removed the role of short-term market forces in setting the Kina exchange rate, shifting the foreign exchange regime to a crawling exchange rate band. The de facto BPNG-controlled crawling peg against the US dollar¹¹² led to a backlog of outstanding orders. As at end of 2017:Q1 the foreign exchange backlog stands at PGK 700 million, after having declined from PGK 1.5 billion a year previously.

Figure 49: The crawling peg exchange rate mechanism is putting pressure of foreign reserves



Source: Bank of Papua New Guinea

113. **The sustainability of this regime depends on the ability of the monetary authorities to supply the market with adequate foreign exchange, which in turn relies on stocks of foreign exchange reserves.** As of December 2017, reserves have fallen 60 percent (USD 1.7 billion) since their peak in September 2012 (USD 4.4 billion) to their lowest level since July 2007. In addition, the capital and financial account turned negative in 2015 owing to the repayment of private external medium- and long-term loans related primarily to PNG LNG. This indicates that the ability of the authorities to maintain the existing exchange rate regime is limited, risking a disorderly exit from the crawling peg regime and a rapid currency depreciation. Furthermore, the prospect of a rapid depreciation fuels speculative activity that can disrupt the smooth operation of the market for foreign currency.

114. **There are a number of steps the authorities can undertake to improve the effectiveness of the monetary policy framework to ensure that the Kina Facility Rate is a credible benchmark for money market operations.** First, the central bank should absorb the excess Kina liquidity in the economy. Second, improve the coordination between the Treasury and BPNG on fiscal and monetary policies, including Treasury cash management to ensure cooperation in terms of the views of each institution on the dynamics of the economy to support better liquidity management by BPNG. Third, the central bank should transition to an inflation targeting framework to anchor inflation expectations. The latter should be undertaken gradually, as the capacity of the National Statistics Office to provide more accurate consumer price inflation information will need to be enhanced prior to the establishment of an effective inflation targeting framework.

115. **A more flexible exchange rate regime would help to take the pressure off currency reserves and improve the private sector's access to foreign exchange.** Greater exchange rate flexibility and improved market efficiency and transparency would reduce the cost of adjustment to lower commodity

¹¹¹ BPNG argued that the band was in response to the perception that commercial banks were profiting from on-selling foreign exchange sourced from BPNG interventions a foreign exchange trading band was introduced in June 2014.

¹¹² For the period July 2014 to April 2016 the Kina depreciated at a rate of around 1.1 percent per month, and since May 2016 the rate of crawl has slowed to less than 0.1 percent per month.

prices, and help to curtail risks involved with a disorderly exchange rate adjustment. However, since currently the effectiveness of monetary policy is constrained by excess liquidity, both monetary and exchange rate policy would be needed to improve the functioning of the foreign exchange market and manage the potential inflationary consequences.

116. **Given the structural constraints in the foreign exchange market, a sudden shift to a completely free-floating exchange rate mechanism may not be appropriate.** With the relatively inelastic supply of foreign exchange and limited number of market participants, a freely operating interbank foreign exchange market may result in excessive exchange rate volatility together with persistent and prolonged overshooting of the currency, as the few market participants with market power attempt to extract rents from the currency volatility. Therefore, the transition to a more market-driven exchange rate mechanism needs to be consistent with the foreign exchange market structures in the country. Furthermore, progress will need to be adequately paced and carefully sequenced, to ensure that the requisite elements of the domestic financial system – many of which are currently ill-prepared for a ‘big-bang’ policy shift – are sufficiently strengthened and bedded down prior to incremental steps towards greater market determination. This will help to avoid a disorderly exit from the crawling peg regime.

117. **Continuing the status quo would entail a continuation of the persistent exchange rate misalignment, a depletion of foreign exchange reserves, and the potential growth in a parallel foreign exchange market which would stifle interbank trading further.** These developments would also have severe repercussions for the business environment, further weakening the non-resource sector, and undermining efforts to diversify PNG’s economy. To prevent this, there is a need to begin the orderly transition to a more flexible exchange rate regime. Some possible steps include: (i) reducing the central bank’s role in the foreign exchange market by supporting the entry of more authorized foreign exchange dealers in the interbank market; (ii) increasing foreign exchange market information by BPNG gathering and providing more detailed information on the sources and uses of foreign exchange and more detailed balance of payments data; (iii) introducing a more transparent foreign exchange auction with BPNG committing to the stated rules of the bidding process while ensuring that participants do not collude in order to manipulate the auction.

6. Pathway II: Deepening and widening access to quality services

118. **Significant improvements in the reach and quality of services will be key to achieving the twin goals.** Service delivery is fundamental to economic and human development, and as highlighted in Section 3, better access is associated with lower poverty in Papua New Guinea. Education, health and sanitation services are direct contributors to these objectives – boosting the wellbeing and economic potential of the populace – while law and order serves to protect person and property, safeguarding against exploitation and abuse of power, and contributing to broader stability. Effective service delivery boosts the poor’s resilience to a range of shocks, given their heavy dependence on public services and low precautionary savings, while also promoting job creation through support for a healthy and enabling business environment.

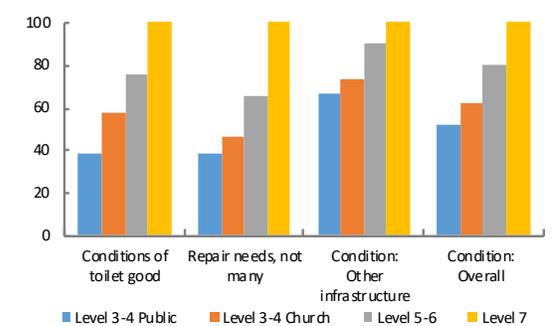
119. **Papua New Guinea manages to deliver a range of public services, despite enormous challenges.** The country has working hospitals, schools, judicial and law enforcement bodies, and a functioning set of institutions for public policy and administration that is capable of delivering outcomes. The country has a major road network and key logistical ports (air and sea), while both internet and electricity are at least available to those in the urban centers. These are accomplishments given the country’s highly rurally-dispersed population, connectivity-constraining geography, low public sector planning and implementation capacity, frequent fiscal challenges, and poor governance track-record. Nonetheless, despite its successes, overall performance is mixed, at best. As outlined in Section 2.4, there are many gaps and shortfalls across all sectors. The quality of school education is likely to have been falling, maternal health remains a major concern, law enforcement and connective infrastructure are inadequate, and sanitation indicators are among the worst in the world. Moreover, difficulties are magnified in rural areas where most of the population resides.

120. **Given the wide-ranging, cross-sectoral incidence of services shortfalls, an overarching strategy that identifies and tackles key tractable constraints that are common across most sectors, is imperative.** In this vein, Pathway II considers four broad avenues to improve service delivery in PNG: (i) increasing the quantity and quality of spending; (ii) mitigating capacity constraints; (iii) improving planning, monitoring and evaluation; and (iv) improving the functioning of the decentralized institutional service delivery mechanism.

6.1 Increasing the quantity and quality of expenditure

121. **Across all sectors, greater focus is needed on maintenance of basic infrastructure, particularly on those facilities located in the rural areas.** The problem of inadequate maintenance in PNG is essentially one of poor asset management resulting in insufficient resourcing and planning for ongoing maintenance requirements. Expenditure on maintenance has not kept pace with capital expenditure, and in some cases, growth in capital spending has squeezed recurrent expenditure, consequently negatively impacting service provision. Rather than neglecting infrastructure and then having to rebuild it, provision of sufficient funding for operational and maintenance costs will ensure more efficient outcomes. Here are examples across some sectors:

Figure 50: Infrastructure indices for health facilities surveyed



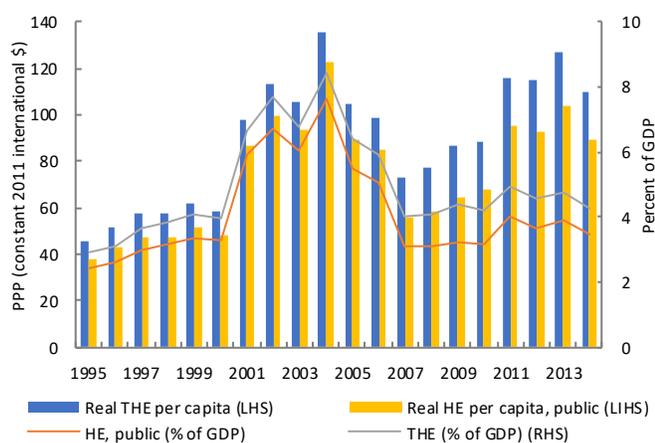
Source: Khan (2017)

- **Health sector:** Level 3-4 hospitals, which are primary care facilities located mostly in rural areas, are in the poorest condition (Figure 50).
- **Education sector:** Poorly maintained schools adversely affect class attendance and schooling outcomes.
- **Transport sector:** Funding for road maintenance is inconsistent and inadequate with annual funding for road maintenance and restoration of national roads standing at 20 percent of calculated needs since the 1990s. This has resulted in significant deterioration of rural roads over time.
- **Water and sanitation sector:** Improving the funding of operations and maintenance (O&M) in the water and sanitation system is necessary particularly since around USD 20 million per year is required to finance the O&M of current and future infrastructure. The available funding for maintenance is constrained given that the collection of user fees continues to be a challenge. For example, Eda Ranu in Port Moresby estimates its non-revenue water from illegal connections and tariff collections between 2009 and 2011 to be about 50 percent of total water production. It is also unclear how O&M for rural water will be funded, particularly since in the past this has been left to rural communities to finance.

Health

122. **Total health expenditure (THE) has been stagnating between 4 to 5 percent of GDP in recent years, and current budget projections indicate that this will not increase, forcing the sector to raise efficiency rather than rely on additional resources to improve service delivery.** While public health expenditure (HE) has increased since the late 1990s (notwithstanding some volatility), it has increased only very marginally as a share of GDP (Figure 51), indicating that the government has not raised the prioritization of health in the national budget. Public HE per capita increased in constant price terms until a peak in 2004, but by 2014 had fallen by about 27 percent to a level close to that seen in 2001. Current budget projections forecast a further decline until 2021 to levels of the late 1990s.¹¹³

Figure 51: Health expenditure per capita, total and public (current USD and % of GDP)



Source: World Development Indicators

123. **In addition, funding for basic functions and frontline service delivery remains unreliable, particularly at lower-level facilities.** Out of a representative sample of Level 1-4 facilities¹¹⁴ only 18 percent receive cash from the government, 58 percent receive in-kind support, 83 percent receive user fees, 29 percent receive no external support (cash or in-kind) but collect user fees, and 12 percent receive no external support and also do not collect user fees. Spending on key inputs such as drugs as well as operational expenditures for outreach are very low at the frontlines and may be squeezed further as public spending on health declines.

¹¹³ Papua New Guinea Department of Treasury (2017).

¹¹⁴ Howes et al. (2012).

Education

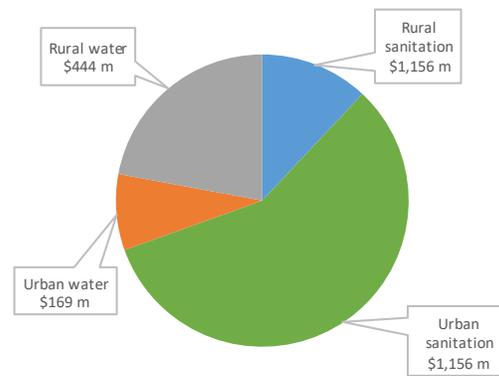
124. **Increased expenditure to subsidize tuition has led to other challenges which are adversely affecting teaching quality.** With the introduction of the TFF in 2012 there was a substantial increase in funding to the education sector. From 2004 to 2013, education funding by all levels of government more than tripled, from PGK 653.3 million to PGK 2,242.1 million, while annual funding per student almost doubled, from PGK 640 to PGK 1,179. In the four years from 2010 to 2013, public funding of the national education system more than doubled in nominal terms. Teachers' emoluments (salaries, allowances and leave fares) continues to be the largest single category of education cost. This rapid scale up in resourcing (and the increased demand that has come with heavily subsidized tuition) has stretched the capacity of the system, potentially jeopardizing student learning outcomes.¹¹⁵

Water and sanitation

125. **The absence of noticeable improvements in access to water and sanitation can be partly attributed to the historical inadequacy of government investments in these areas.** Prior to the government's recent fiscal challenges, there was a notable increase in public spending in the WaSH¹¹⁶ sector from 2010 to 2013. However, even with this increase, investments in the sector remained only around 0.3 percent of GDP, which is just a third of the internationally recognized minimum allocation of 1 percent.

126. **Financing requirements for the water and sanitation sector are enormous.** To reach the government's 2030 targets of 70 percent access to clean water and improved sanitation, the WaSH Service Delivery Assessment estimated the total investment required from 2011 to 2030 at approximately USD 2 billion (10 percent of current GDP), more than two thirds of which is for sanitation (Figure 52). Moreover, over half of the investment will need to be directed towards improvements to urban sanitation given the rising rate of urbanization and under-funding in the past. Anticipated medium-term budget allocations will not be sufficient to finance required investments and meet targets.

Figure 52: Financing needs to reach 2030 WaSH target



Source: 2015 National WaSH Policy

Transport

127. **Road rehabilitation has received insufficient funding and available resources have tended to be disproportionately skewed toward the urban road networks.** In 2015, 24 percent of Department of Transport and Infrastructure's budget was spent on road rehabilitation, but this amount dropped significantly to 11 percent in 2016, and is expected to drop further still to less than 8 percent by the end of 2017.¹¹⁷ The National Road Fund¹¹⁸ is financed through a 4 toea per litre levy (about USD 0.013) on

¹¹⁵ This is outlined further in the following section.

¹¹⁶ Water supply, Sanitation and Hygiene.

¹¹⁷ The decreases are a result of the suppressed prices for mineral resources and petroleum, which has contributed to PNG's deteriorating fiscal condition.

¹¹⁸ Once rehabilitated, the National Road Authority (NRA) is responsible for maintaining national roads. NRA receives funding from the National Road Fund. The Fund (approved in 2003, operational in 2006) which was created to ensure a more predictable source of funding for road maintenance.

domestic diesel fuel. Studies have indicated that the amount needed is closer to 20 toea per litre. Since the 1990s, annual funding for road maintenance and restoration of national roads has been on the order of 20 percent of calculated needs, and inadequate maintenance of road sector assets has resulted in significant deterioration over time. As a result, many sections of the paved network have reverted to gravel through pavement failure, creating rough to impassable conditions, particularly during and following rainy seasons.¹¹⁹ Roads in rural areas and those in and around urban informal settlements tend to be in particularly bad shape, highlighting the need for more funding to be directed beyond the formal urban centers.

Energy

128. **Achieving the government’s electricity targets of 70 percent access by 2030¹²⁰ and carbon neutrality by 2050, will require significant investment (Figure 53).** The additional funding would amount to USD 1.4 to 1.7 billion invested in both grid and off-grid networks. This equates to an average annual cost ranging between USD 104 million and USD 130 million from 2017 to 2030, and between USD 1,035 and USD 1,274 per connected household.¹²¹ The recent completion of the National Electrification Rollout Plan (NEROP) provides an indicative roadmap of the grid and off-grid expansion and could be used as a coordinating device for government stakeholders and development partners’ support. Given the geography and settlement patterns of PNG’s population, the plan concluded that grid electrification is the least-cost option for approximately 75 percent of the nation’s future population, while off-grid systems are recommended for the remainder. NEROP also concluded that grid access could be quickly and cheaply raised from 12.4 percent to 18 percent by connecting households living within 1km of existing transformers. While off-grid investments will still be needed in parallel, grid expansion provides the most cost-effective way for connecting the most people. Further discussion of NEROP, the state-owned electricity utility, and necessary reforms to the power sector’s service delivery mechanism can be found in Box 10 at the end of Pathway II.

Figure 53: Investment needed to achieve 70 percent access to electricity by 2030

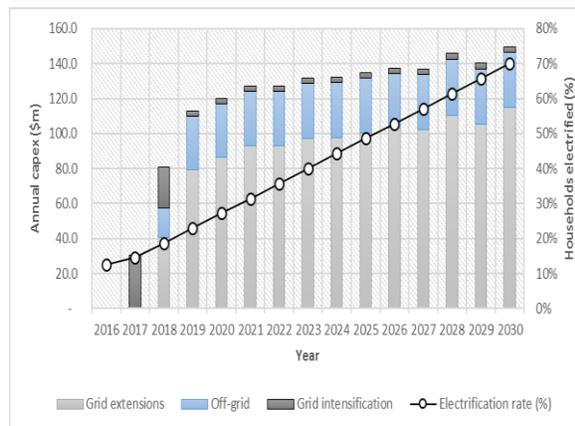


Figure 54: Grid and off-grid expansion program

Results of spatial query	Current Grid Access (2016)		Program for 100% Electricity Access (Grid & Off-Grid) by 2030					
	Access Categories	Population (Households)	Percent	Recommended Type of Access and Investments	Population (Households)	Percent	Capex per HH	Total Capex (M)
Within range of LV connection: <1 km	Customers: grid access with PPL account	460,000	6%	EasyPay meters for existing customers	460,000	4%	\$260	\$22
		90,000			90,000			
	Consumers: grid access w/o PPL account	460,000	6%	Improved connections + EasyPay meters for consumers	460,000	4%	\$450	\$39
		90,000			90,000			
No grid access (calculated by difference)	540,000	7%	Grid Intensification (LV line + connection)	1,680,000	14%	\$990	\$272	
	100,000			280,000				
Beyond range of LV connection: >1km	Requires new access (grid or off-grid determined by geospatial model)	6,030,000	81%	Grid extension (MV, LV, connection)	6,790,000	55%	\$1,680	\$2,200
		1,160,000			1,320,000			
					Off-grid / Mini-Grid	2,950,000	24%	\$1,160
				570,000				
	Population (Households)	7,630,000	100%	Population (Households)	12,330,000	100%	\$1,370	\$3,200
		1,440,000			2,330,000			

Note: Excludes investments in generation and transmission.
 Source: The Earth Institute and Economic Consulting Associates (2016)

¹¹⁹ The estimated difference in life-cycle costs to regularly maintain a sealed road in PNG and one that does not receive preventative maintenance and must be rehabilitated is on the order of PGK 3.5 million/km over a 20-year period.

¹²⁰ See Vision 2050 and the government’s 2011 Electricity Industry Policy.

¹²¹ Cost of off-grid expansion are more uncertain as they will depend on the delivery model chosen (solar home system, diesel mini-grid, hybrid system etc.).

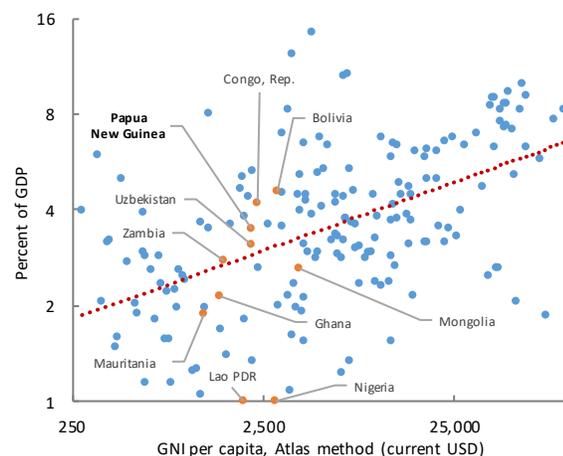
Law and order

129. **State institutions of law and order are grossly under-resourced.**¹²² The bulk of the police presence is found in the country's urban regions and even here there is a deliberate strategy of focusing activities away from the informal settlements. Whether in urban or rural areas, there are too few police per capita (among the lowest rates in the world) to reliably monitor and enforce the law, and response times to reported incidents are typically measured in hours.¹²³ Basic provisions such as gasoline are limited and there are reports that victims in remote locations have been asked to pay the costs of fuel for police attendance and investigation.¹²⁴ The judicial system and correctional services are similarly underfunded. Trained judicial personnel are in short supply, leading to poor legal representation, extended detentions and delays in trials.¹²⁵ Far fewer cases are brought to trial than the number of arrests that are made.¹²⁶ Prisons are understaffed and breakouts are a common occurrence.¹²⁷ These conditions create an environment that is conducive to widespread fraud, corruption and the perversion of the law. On the other hand, rural and urban village courts, urban mediators and settlement committees do resolve disputes and regulate settlement on a day to basis.¹²⁸ For further discussion of challenges in law and order, see Box 11 at the end of Pathway II.

Funding constraints are a problem, but more spending is not the only solution

130. **Across all sectors, increasing expenditure would aid in the delivery of services, but evidence points to shortfalls in effectiveness that must also be addressed.** Compared to its peers, PNG has on average been spending relatively more on health and education (as a percentage of GDP). From 1995 to 2014, public health expenditure and education averaged 4.1 percent and 6.5 percent of GDP, respectively, which is even higher than most lower middle-income countries. However, this has not translated into commensurately higher outcomes. This suggests that there are other opportunities to improve service delivery by, for instance, improving the quality of spending.

Figure 55: Public health expenditure (% of GDP) and GNI per capita



Source: World Development Indicators

131. **Quality issues in public spending are prominent at lower levels of government where, for instance, provinces have been spending their funds on administration rather than on priority basic service areas.** This lack of focus and concentration on the delivery of basic services has been responsible for ongoing funding gaps and ultimately denied much needed services to the broader population. Poor spending choices and misplaced priorities have been an obstacle to achievement of national development

¹²² Kauvu (2006).

¹²³ Overseas Security Advisory Council (2016).

¹²⁴ Sokhin (2014).

¹²⁵ Freedom House (2016).

¹²⁶ Lakhani and Willman (2014a).

¹²⁷ Freedom House (2016).

¹²⁸ Craig and Porter (Forthcoming).

goals and delivery of Papua New Guinean aspirations. This trend in public expenditure is likely to continue unless those charged with managing and expending public funds are compelled to comply with financial laws, guidelines, and procedures, and held accountable for their actions and decisions.

132. **Improvements to the public financial management system can raise the quality of public spending.** The government increasingly recognizes the importance of effective public financial management for improving the quality of public spending and, in turn, the delivery of services. The government has taken a number of positive steps in this regard. The 1995 PFM Act has been strengthened and the government undertook a Public Expenditure and Financial Accountability (PEFA) assessment in 2014. The latter was followed by an independent assessment by the IMF in 2015. Subsequently, the 2015-2018 PFM Roadmap was adopted and is now in the process of being implemented. As part of the Roadmap, the Department of Finance is currently in the process of rolling out an Integrated Financial Management System. Additionally, over 2014-2015, the government collaborated with the World Bank in preparation of a Report on Observance of Standards and Codes which assessed corporate sector accountability & transparency, including small and medium enterprises (SMEs) and state-owned enterprises (SOEs).

133. **The PEFA highlighted opportunities for improvement in four key areas:**

- i. *Improving the credibility of the fiscal strategy and budget.* There is a tendency for recurrent expenditure, particularly wages and salaries to be higher than planned and spending on development expenditure (capital expenditure) to be lower than budgeted. The under-spending in development expenditure is mainly due to capacity limitations, weak project implementation and possibly a lack of reporting on execution of donor-funded projects. The preparation of capital budgets is fragmented, and needs to be further integrated with recurrent budgets. In addition, few departments provide systematic reports on the physical and financial progress of these projects. The lack of data integrity is a big issue, both for aggregate and individual budget items, thus reducing the overall quality of financial reports.
- ii. *Improving the comprehensiveness and transparency in recording and reporting in the budget.* Improvements can also be made to reporting and reconciliation of inflows and outflows, to and from the Treasury Single Account (Waigani Public Account). The recent push to further devolve spending to district levels of government through the District Development Authority (DDA) also raises a number of issues that need to be addressed, including risks of reduced transparency and accountability, and leakages or delays in the disbursement of funds. There is an opportunity to improve on the comprehensive and timely reporting on the operations of state-owned enterprises, the large number of statutory bodies, and donor funds. This would facilitate better cash management and reduce the vulnerability to fiscal risks.
- iii. *Improving control of budget execution.* Improving cash management would improve budget execution. For example, government deposits held in multiple trust accounts at commercial banks has not only contributed to excess liquidity (as discussed earlier) but has resulted in a fragmented system of cash management that reduces transparency and leads to inefficient use of public resources which impedes timely delivery of services. In addition, current rules allow extensive administrative reallocation between line items (with Treasury approval) but there is space to improve the adherence to these rules. There is also a need to strengthen payroll controls (particularly for teachers). In general, these have been compromised by decentralization and the transfer of responsibility for controls and reconciliations to lower tiers of government, which have limited capacity, capability and incentive to adhere to sound principles of public financial

management. Non-compliance with internal controls and regulations needs to be identified and bare consequences. Furthermore, the IFMS rollout across the public sector needs to be expedited.

- iv. *Enhancing external scrutiny and undertaking corrective measures.* Ensuring systemic audits of government departments and agencies coupled with imposition of penalties for breaches of the law and financial misconduct would provide much improved accountability.

6.2 Mitigating capacity constraints

134. **Public sector capacity is a constraint to delivery of quality services at the national level and the problem is even more severe at lower levels of government.** There are myriad dimensions to such capacity constraints: human resource constraints; technical constraints; availability of supplies; and limited ancillary services to enable service delivery. There is also considerable variation in capacity across provinces, and between urban and rural centers, with shortages being most acute in the latter. Generally, the structural constraints of remoteness restrict the ability to hire (and keep) staff and to maintain infrastructure, making capacity constraints more acute at the local rather than national level. This reflects the relatively lower access to services at the local level in rural areas.

135. **Although there exist significant capabilities in central agencies, there is a pervasive shortage of skilled public sector personnel in both front office and back office staff roles.** Moreover, there are inconsistencies in the skills and knowledge of existing staff due to limited training.¹²⁹ There are key personnel gaps in internal audit staffing, including staff associated with procurement, financial management and safeguards. Frontline staff, with limited training, are stretched to capacity. Here are some examples in the following sectors:

- i. *Health:* PNG currently has 6 health workers per 10,000 people¹³⁰ (with 0.5 physicians per 10,000 people), which lies far below the expected level for PNG's income level (Figure 56). Population-to-total-health-staff ratios vary from 188:1 in NCD to 1,125:1 in Central Province (Figure 57). The current workforce lacks adequate training and is rapidly aging (in 2009, 56 percent of the workforce were aged 45 and above).¹³¹ The training capacity of the sector has seen a long-run decline. For instance, real recurrent expenditure on nursing colleges dropped by 50 percent between the mid-1980s and 2009.
- ii. *Education:* As noted in Part 1, teacher recruitment has not kept pace with recent increases in school enrollment rates. This has led to rising pupil-teacher ratios and, consequently, a deterioration in the quality of education. In addition, the quality of teachers needs to be improved. Teachers, TVET college lecturers and instructors, and FODE employees have not been provided with sustainable professional development opportunities despite the existence of a 'teacher in-service training policy'. Research in PNG has shown that teacher professional learning is an important driver of quality teaching and quality student learning (Kukari & Honan, 2010; Paraide, Evans, Honan, Muspratt & Reta, 2013). The poor quality of primary and secondary education is reflected in complaints from much of the business community that, even after completion of schooling, youth

¹²⁹ For instance, Paraide (2014) finds that one reason for children being absent from school is that subjects are poorly taught and inadequately covered in schools.

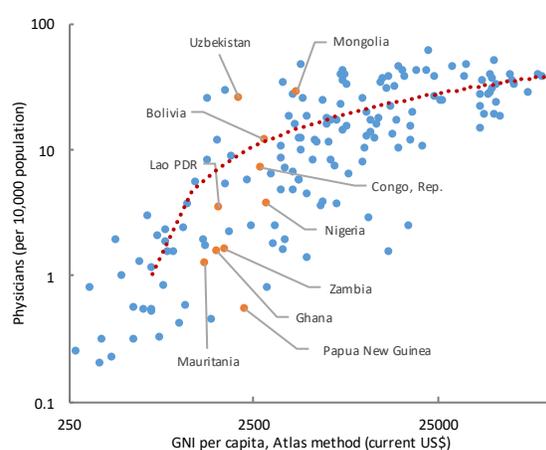
¹³⁰ The World Health Organization (WHO) recommends a minimum of 23 health workers per 10,000 people to achieve the Millennium Development Goals (MDGs).

¹³¹ World Bank (2011).

are often unfit for the labor market, with many unable to accomplish tasks requiring basic numeracy and literacy.

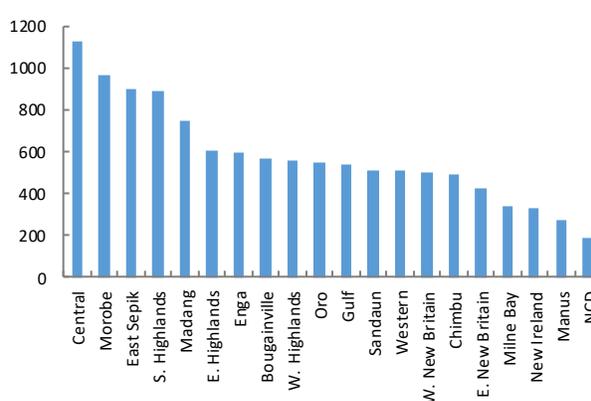
- iii. *Transport:* The Department of Works (DoW) under the Department of Transport and Infrastructure is responsible for rehabilitating the road network. After DoW hands over roads to the National Roads Authority (NRA) for maintenance purposes, it is difficult for NRA to adequately maintain the assets as it lacks the necessary skilled staff.
- iv. *Water and sanitation:* A critical constraint in the sector is a shortage of human resources such as specialized engineers and technicians to deliver increased output in water and sanitation. Current staffing in the sector is estimated to be around 1,100 people. If the 2030 targets are to be met, an additional 7,600 people would be required.¹³²

Figure 56: Physicians per 10,000 population, 2005-2015 (latest data available)



Source: WHO Global Health Workforce Statistics Database

Figure 57: Population per health worker by province, 2009



Source World Bank (2011)

136. Relative underprovision of supporting rural infrastructure, utilities services and other amenities constrains public sector capacity in rural PNG. As in most countries, greater availability of such amenities in urban centers translates into a strong aversion among public officials to be relocated to rural and remote localities. The problem is particularly acute in PNG and includes under provision of such basic requirements as supporting housing. For example, Howes et al. (2014) find that it takes a significant number of hours (on average) for a teacher to access supporting services such as a bank (12 hours) and trade store (3.5 hours). The public sector consequently faces considerable challenges in recruiting the necessary talent, including in key professions such as teaching and medical staff, to rural locations.

137. Improvements in the availability of basic equipment, materials and infrastructure are necessary to ensure delivery of services. For instance:

- (i) *Health sector:* The distribution of medical supplies is unreliable (Figure 58 and Table 5). There have been cases of drugs needlessly expiring while in storage and awaiting distribution.¹³³ Poor

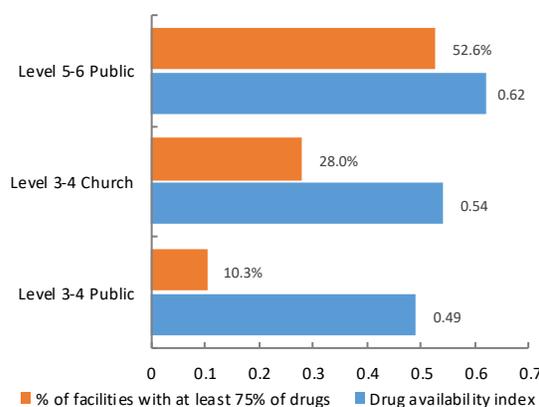
¹³² Smets (2013).

¹³³ In a recent survey, only 10.34 percent of public level 3-4 facilities (district level and below) had at least 75 percent of essential drugs available on the day of the survey and the index of availability of 45 drugs on a continuous basis was 0.49 (where a maximum of 1 indicates that all drugs are available at all surveyed facilities). Church facilities on average display a higher availability of drugs, which may be due to the fact that they are larger on average within the same facility level.

distribution also greatly hinders the delivery of frontline health services such as laboratory services, particularly in the smaller clinics (level 3-4).

- (ii) **Education sector:** The absorptive capacity of the education system, particularly at the secondary and tertiary level, is limited due to a lack of basic materials, such as textbooks. On average, there are about 2 students per textbook in math and language classes in grades 5 and 6, with the Enga Province fairsing the worst at about 5 students per textbook.¹³⁴ Basic infrastructure also needs upgrading, with many school facilities in poor condition. In 2012, approximately 30 percent of classrooms were in a condition warranting a complete rebuild (Figure 59).

Figure 58: Availability of essential drugs



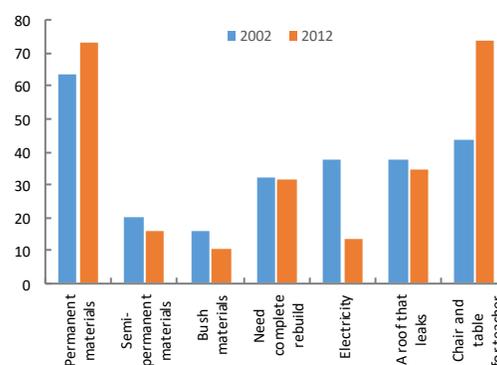
Source: Howes et al. (2014)

Table 5: Summary of availability indices

Index	Level 3-4		
	Public	Church	Level 5-7
Family Planning Items	86%	84%	91%
Vaccines	76%	83%	83%
Antenatal care items	72%	81%	72%
Test kits and others	68%	78%	96%
Maternal and neonatal items	64%	78%	87%
Protocol	64%	82%	84%
Drugs	61%	65%	74%
Information System	54%	59%	77%
Overall Readiness	49%	60%	84%
General Services	44%	53%	64%
Laboratory Services	30%	55%	95%
Overall	61%	71%	82%

Source: Khan (2017)

Figure 59: Condition of classrooms (%)



Source: Khan (2017)

138. **Shortfalls in private sector capacity are a key hindrance to infrastructure maintenance and construction, as well as service delivery.** The delivery of public goods and services will often rely to varying extents on intermediate inputs provided by the private sector. However, procurement can pose a challenge. PNG’s small formal private sector means that there are only a few firms in any given sector with the experience and capacity to meet government requirements. Most of the skilled, high capacity firms are better paid in the resource sector. This leaves only low skilled firms to undertake major works contracts. In terms of smaller, provincial and district road maintenance, which can be undertaken by local, less skilled firms, shortages can still be acute: each province has a limited pool, often only two or three firms. This makes it extremely difficult for provinces to carry out maintenance works to an adequate level.

139. **Moreover, the slow and laborious government procurement process adversely affects private companies supporting public service delivery.** In particular, inertia and lack of transparency at the Central Supply and Tenders Board (CSTB) makes government contracts less appealing. In the time

¹³⁴ Howes et al. (2014).

that it takes for a contract to be awarded, the funding may end up reallocated elsewhere, wasting the time and money of tenderers. This contributes to delays in procurement of services and equipment such as medical supplies.

140. **There is a need to improve both the generation and transmission capacity of the grid and, where grid connectivity is less appropriate, expand access to and capacity of off-grid alternatives.** Reaching the 70 percent access to electricity target will require an additional 300MW of generation at USD 0.10-0.12/kWh, before accounting for any additional commercial, industrial and mining projects that might arise. For example, an additional 30-40 percent of current generation capacity (i.e. amounting to about an additional 180-230 MW) would be required to meet anticipated future needs of an expanding resource sector.¹³⁵ There is a largely untapped opportunity to use the country's abundant indigenous resources (including renewables) to overcome capacity shortfalls in power generation. Partnerships for energy development may be explored through public-private partnerships with mineral and petroleum companies, as well as with the palm oil sector (such as New Britain Palm Oil).

6.3 Improving planning, monitoring and evaluation

141. **Planning, monitoring and evaluation, although having improved in recent years, are constrained by the paucity of data.** Severe data challenges are often of a magnitude that make planning, monitoring and evaluation challenging. Basic questions such as whether national sector expenditure, workforce or infrastructure have increased or decreased in recent years, can be difficult, if not impossible, to answer with available data. Policy must therefore be formulated and implemented without an accurate grasp of on-the-ground realities. This can significantly change the narrative around particular issues and compromise policy effectiveness. Data challenges include¹³⁶:

- **Data fragmentation:** Nationwide data relevant to the sector (if available) is held by many agencies and government departments, without open access. This includes expenditure data held in different central agencies, provincial governments, DDAs and SOEs (where applicable).
- **Quality of data:** Data quality is limited and varies significantly from year-to-year. For instance, in the health sector budget data captured in IFMS and budget reports varies significantly from report to report and actual expenditure data is recorded with significant and inexplicable deviations from budgets (as large as 50 percent). Data on health outputs and outcomes relies on reporting from provincial governments, which do not fully comply with requirements, overstate the quality of facilities or outcomes, and often provide otherwise unreliable figures.
- **Data sharing:** Accessing data often requires formal requests between departmental heads, which are sometimes not endorsed. Availability of data in online repositories in an accessible format, even for data which is in the public domain (e.g. detailed budget outcome figures after completion of the budget year), is limited.
- **Inconsistency between national and international data:** Information available in both national and international repositories is often difficult to reconcile and can differ significantly (e.g. health workforce ratios, health access statistics, budget figures and GDP).

142. **More specifically, across a number of sectors, there is an opportunity to improve planning, monitoring and evaluation.** For example:

¹³⁵ Typically, the resource sector has relied on independent power producers (IPPs) to meet its energy needs.

¹³⁶ Data and knowledge gaps are discussed further in Appendix 2.

Water and sanitation

143. **Although there have been improvements in planning and monitoring in the urban space for the provision of water services, further improvements in coordination between state and non-state actors is necessary particularly in the rural areas.** The reporting requirements of SOEs to shareholders in the urban water sector are driving better monitoring, with utilities using international industry standard indicators to benchmark their performance. However, there is a notable absence of a national asset register or inventory of rural water supply schemes, and there is no obligation or mechanism for service providers or implementers (especially non-government organizations and resource companies) to register schemes when they are built. Further, there is limited information on urban sanitation outside sewerage systems because there is no system in place to collect data. Consequently, operations and maintenance are largely unmonitored and appear to be lacking in many areas.

Transport

144. **The transport sector suffers from a severe lack of data to inform road maintenance.** Although a road asset management system has been in place since 1998 (and expanded to provincial roads in 2001), the collected data is sporadic and of poor quality. This contributes to a lack of strategic planning in the sector, which allows for funds to be directed away from high priority projects.

Health and education

145. **Based on church-run schools and health centers, improving planning and monitoring in the health and education sector can significantly improve performance of both sectors.** Church-run schools and hospitals are better at planning for delivery of medical and teaching supplies than government-run schools and health centers. In addition, church-run schools and health centers are able to better monitor attendance of health personnel and teaching staff. Arguably one reason for this is that church-run schools and health centers are more intrinsically intertwined within the community they are located in and thus have a vested interest in better serving the community vis-à-vis public-run institutions.

Energy

146. **Partial plans in the power sector need to be adopted, complemented and followed as a guide for investment decisions.** Although NEROP still requires both approval from government and to be shared with partners, it nonetheless provides a solid base and general roadmap for increasing electricity access in PNG. Technical assistance will be required to transform its high-level recommendations into detailed technical and implementation plans. Further sector analysis is also required to determine the least-cost generation and transmission options that can meet PNG's additional power needs nationwide. These plans could form the basis for both future investment in the sector and resource mobilization for such investments (i.e. government contributions, organization of a partner roundtable for support pledges, etc.). Once government knows which projects are least cost for the country, it can proactively reach out to the market and solicit proposals for desired projects that are consistent with its power sector plans (rather than simply reacting to unsolicited private sector proposals as is often the case, and which are difficult to compare and assess).

6.4 Strengthening the decentralized institutional service delivery mechanism

147. **Although decentralization can be the basis for a highly effective model of service delivery to rural areas, the pace of decentralization has arguably exceeded the speed at which subnational systems have been able to adapt to their increasing responsibilities.** PNG's 2015 PEFA recorded poor

performance in a number of areas crucial to decentralization, especially accounting, recording and reporting.¹³⁷ Financing requirements notwithstanding, the planning mechanisms (including decision making) for allocating financial resources to the sector by central and sub-national governments are not entirely clear. Budget monitoring and reporting is incomplete: the national budgeting system does not fully distinguish water and sanitation budgets, while financing by non-government organizations (NGOs) and resource extraction companies are entirely off budget and not reported.

148. **Devolving expenditure to the districts to improve service delivery through the District Development Authorities (DDAs) has had mixed results.**¹³⁸ They currently have some experience in using funds to get different levels of government to work together, but they suffer high vulnerability to poor investments driven by perverse incentives for rent distribution. In particular, there is limited transparency and accountability coupled with leakages or delays in the disbursement of funds. Constraints are apparent in basic public financial management processes, including cash flow management and reporting, technical capacity, and infrastructure management at the provincial, district and local level government. Given that the trend toward greater decentralization is likely to continue, action will be needed in each of these areas.

149. **Funds directed to the district-level governments have yet to prove their potential, with successes idiosyncratic.** District Services Improvement Program (DSIP)¹³⁹ funds, which bypass conventional processes for district-level funding, are particularly fraught with risks since they can be spent via political directive without the need to account for local service needs and priorities. As a result, much of the funding is redirected away from critical infrastructure. For instance, politicians prefer to direct funds towards highly visible new road infrastructure, rather than maintenance of critical roads.¹⁴⁰ Accountability and budget transparency of provinces and district authorities is also low, and there is no regular budget monitoring from the national level.¹⁴¹ Anecdotal accounts so far indicate that projects are fragmented, vulnerable to unilateral decisions on the part of the DDA CEO, and often very poorly informed technically. Successes are idiosyncratic and tend to arise where funds are used to leverage and extend existing projects, when direct lines of accountability are present, and when there is some commitment to inclusion of a range of different local groups.

Health

150. **In the health sector, at the subnational level, funding is managed through complex layers of administration, which introduce additional delays and prevent funding from reaching frontline facilities.** Additional to delays at the national level, cash flows also face interruptions at the subnational level, where funds have to be transferred between provincial treasuries to provincial health offices, Provincial Health Authorities (PHAs) and districts, which then procure goods for health facilities. Compounding these problems, regular provincial expenditure reviews by the National Economic and Fiscal Commission have highlighted that subnational governments also spend a disproportionately large amount on their own administrative costs, rather than supporting frontline service delivery (e.g. instead of

¹³⁷ Receiving the lowest score on a 4-point scale.

¹³⁸ Each DDA (and therefore each MP) is earmarked to receive PGK 10 million per annum.

¹³⁹ District Service Improvement Program grants and Provincial Service Improvement Program (PSIP) grants are allocations of funds from the National Government to each of the districts and provinces. These were designed for a holistic approach to service delivery, involving all stakeholders including Members of Parliament, National Departments and Agencies, Provincial Administrations, District Administrations and the recipients themselves (the people). However, in practice, the funds have often been used with high discretion by elected MPs of corresponding electorates, with little-to-no public reporting on what these funds have been spent on. See Auditor-General's Office of Papua New Guinea (2014).

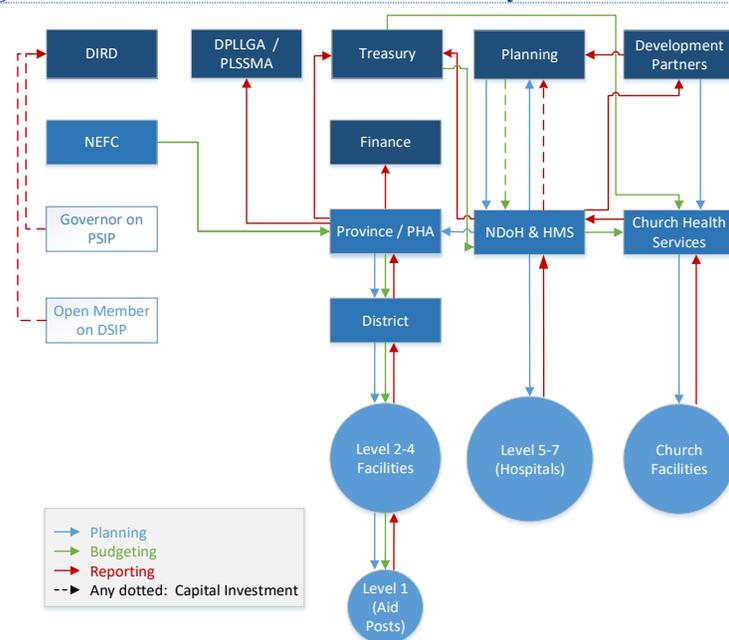
¹⁴⁰ Gelu (2008, p.47).

¹⁴¹ Gelu (2008, p.97).

purchasing petrol for outreach patrols and distributing drugs to facilities). There are a number of reasons for these delays, which make it clear that fund flow issues are a symptom of more general governance and logistical constraints at the provincial level. These include:

- Ex-ante accountability controls: Too much emphasis on controlling spending before expenditures are made, rather than oversight after spending;
- Delays in approving both expenditure at the provincial health office (the Section 32 officers) and travel of district or facility staff to provinces to get expenditures approved;
- Provinces and districts retain too much of the allocations from national government (such as Health Functional Grants) for own administrative overhead costs;
- Issues with accessing cash in districts;
- Procurement guidelines (e.g. 3 quotes) are hard to follow in remote areas; and
- Difficulties in cashing cheques in rural areas.

Figure 60: Governance structure of the health system



Source: World Bank staff

151. **The PHAs, introduced to streamline governance of the health sector at the subnational level, do not address key constraints to service delivery as it mostly relies on the same service delivery mechanism as the previous provincial health office.** The PHA reform does not address poor capacity at the district level, nor do they improve the alignment of provincial and district infrastructure funding to national policies and plans. A key constraint to effective service delivery is a lack of coordination with, and capacity at, the district level (which is responsible for the majority of support responsibilities to facilities). If district capacity is poor, the PHA has little leverage to improve this, meaning that key bottlenecks will persist. The PHA also has no inherent ability to improve the usage of PSIP and DSIP funding which now represents the main funding source for infrastructure investment in frontline facilities, nor is it capable of addressing shortages in the health workforce at frontline facilities. Without a credible

commitment to address these constraints lying outside the PHA, the potential to improve services through the PHA model is limited.

Education

152. **Similarly, in the education sector, the absence of appropriate systems and capacity to support the highly decentralized administration framework results in significant challenges to policy implementation.** Limited coordination between the subnational and national entities administering the sector creates uncertainty which adversely affects service delivery. The Teaching Service Commission which has responsibility for employment of teachers (oversees teachers' terms and conditions of service, salaries, allowances and welfare), does not coordinate effectively with the Department for Education, Treasury, or Finance Ministry. This creates budget overruns and, in some cases, teachers who do not meet the requisite qualifications. Additionally, with provincial and district administrations and provincial education boards having responsibility for establishing, building and maintaining schools, deploying teachers, and employing education officers, there is a disconnect in the funding mechanism even though a provincial education subsidy in the form of Education Function Grants are allocated to cover operating costs and maintenance in the sector.¹⁴²

Water and sanitation

153. **There is an opportunity to improve the overall WaSH service delivery framework to mitigate implementation constraints.** Currently, PNG's WaSH sector is fragmented and uncoordinated given the lack of a lead government ministry implementing WaSH policy.¹⁴³ There is also a lack of clarity of roles and gaps in responsibility for delivery of WaSH services to rural areas, which are the responsibility of provincial and local level governments (LLGs).¹⁴⁴ No DSIP funds are specifically earmarked for the provision of WaSH services in the districts, so it is unclear what proportion, if any, of district budgets are being spent in this area of service delivery.

154. **The government has adopted the National Water, Sanitation and Hygiene Policy in an effort to remedy the fragmented and uncoordinated provision of water and sanitation services in PNG.** The policy was approved by the National Executive Council (NEC) in late January 2015. It is a culmination of a number of years of effort by the government, supported by donors and other non-government stakeholders, to develop and establish PNG's first sector-wide national policy on the development, management and implementation of the water supply and sanitation sector development and service provision plans. The policy provides for the establishment of a National Water, Sanitation and Hygiene Authority to form the anchor agency for policy implementation, sector regulation, coordination and systemization, monitoring, and capacity building.

¹⁴² Local-level government's responsibilities include the funding and maintenance of elementary and primary schools and helping districts to develop district education plans consistent with provincial education plans. Communities, through schools' governing bodies, also share responsibility for infrastructure, including school buildings, teachers' houses and ancillary facilities.

¹⁴³ Water PNG, a SoE, is the de facto sector leader and is tasked to provide urban water and sanitation services on a commercial basis while promoting water and sanitation in rural and peri-urban areas on a self-help basis. Eda Ranu is responsible for delivering profitable metered water and sanitation services in the nation's capital, Port Moresby. Goroka Urban Authority manages the Goroka water supply and sewerage system.

¹⁴⁴ Decentralization of responsibility and funding of water supply and sanitation services to provincial governments and LLGs since the 1995 Organic Law has meant that subnational government is permitted to develop its own water and sanitation infrastructure.

Transport

155. **In the transport sector, it is important to improve integration between the Department of Works and the Department of Transport and Infrastructure.** As stated earlier, DoW is responsible for rehabilitating the road network. Once rehabilitated, the National Road Authority is responsible for maintaining national roads. An informal agreement exists between DoW and NRA whereby national roads that have been rehabilitated but deteriorate due to lack of maintenance are handed back to DoW. The informal nature of these arrangements has caused confusion and undermined accountability for the roads in question. This causes confusion between DoW and NRA in terms of responsibilities for maintaining the national road network. In general, the funding allocation from national government and the funds administration process mean that road funding at the lower levels is inconsistent and insufficient.

156. **Until very recently, enforcement of safety regulations, licensing and compliance was fragmented, being split between the Land Transport Division of the Department of Transport, the Native Land Trust Board and the National Road Safety Council.** Enforcement has been ineffective in lifting road worthiness and safety of road vehicles, and spot fines/penalties are not enough to deter from repeated traffic offences. In 2014, the Road Traffic Act established the Road Traffic Authority (RTA) which combines all of these organizations into one. The RTA is in the very early stages of operation, and it is unclear yet whether its establishment will improve the oversight of the sector.

Law and order

157. **Ordinary Papua New Guineans have begun to look for local solutions given the central government's challenges in establishing law and order.** State institutions have a poor track record of responding to incidents and apprehending perpetrators. In many instances, citizens seek alternative avenues for resolving disputes and protecting their interests, including through retribution and mediation. There is some evidence of successful local community mechanisms that have adapted to safeguard people and property and reduce conflict and violence, and these are likely to have had an overall effect of de-escalating or pre-empting wider conflict. Where appropriate, government should explore avenues for supporting successful emergent institutions while also being very careful not to destabilize their incentive structures and community perceptions of their legitimacy. At the same time, it should be noted that these mechanisms are often less effective in securing women's interests.¹⁴⁵

Box 10: Keeping the lights on *Improving the service delivery mechanism in the power sector*

Policy formulation for the power sector is managed through the Energy Division of the Department of Petroleum and Energy (ED-DPE). ED-DPE monitors, reviews, and provides recommendations on fuel pricing, electricity tariffs, and government charges and subsidies. From an operational perspective, PNG Power Limited (PPL), the electricity utility, is an SOE and is licensed under the Electricity Industry Act to generate, transmit, distribute and sell electricity in PNG and has exclusive rights to supply small customers (<10 MW load) within 10 km of its network. It is a vertically integrated, quasi-monopoly. PPL manages capacity of about 300 MW which includes three main grids located in Port Moresby, the Lae-Madang-Highlands area, and the Gazelle Peninsula, as well as another 19 independent power systems that service 26 smaller urban centers. A number of independent power producers (IPPs) manage a further 280 MW.

Institutional arrangements in the sector will need to improve in order to achieve the government's goals on access and service delivery. Arrangements proposed by NEROP must be discussed and acted upon, leveraging the

¹⁴⁵ Craig, Porter and Hukula (2016); Craig and Porter (2017; Forthcoming).

experience gained in successful electrification programs around the world and adapted to the PNG context. These should leverage opportunities for better involvement by private sector and other partners (e.g. local authorities, financing partners, private sector, mining companies) as an important dimension of the service delivery model. Whatever specific institutional arrangements are agreed going forward, DPE and PPL (or any successors thereof) will have a key role to play in sector development. These entities need to be significantly strengthened to ensure sector priorities can be implemented.

Government should develop a clear and transparent framework for incorporating private sector investment and involvement in implementation of the least-cost power development plan. This could include identification of appropriate market segments for private sector participation (e.g. generation, transmission, distribution; grid and off-grid), but also promoting least-cost generation projects, agreeing on IPP selection processes, and developing frameworks for working with major anchor customers to explore partnerships in infrastructure development. Private sector participation is crucial given the magnitude of prevailing investment gaps and this is particularly important in the off-grid sector. However, this needs to be matched with a well-designed regulation and monitoring regime, and an electricity regulator with sufficient technical and commercial skills to hold private sector participants to account.

In order to enable further private investment in generation, PPL needs to be in a strong financial standing, so as to improve bankability of the power purchase agreements. PPL's financial and operational performance is weak. It exhibits high levels of financial, commercial and technical losses and there are doubts over its ability to deliver on ambitious rollout plans. It is imperative that PPL establish programs for financial recovery and for improving its financial and operational performance.¹⁴⁶

Box 11: **Catch them if you can**
Challenges in law and order

The ongoing deficit in the provision of law and order has eroded public trust in related institutions, damaged the perceived legitimacy of the state and motivated the search for protection and redress through other means. State legitimacy has faced challenges since the onset of independence, given the absence of strong social foundations for a common national identity and the tendency for disparate clans to rely on their own customary institutions and practices of conflict resolution. Forum shopping across formal, hybrid and informal arenas of conflict resolution has been common and may increase in light of the dysfunction exhibited by formal institutions.¹⁴⁷ The relatively poor security environment has given rise to a booming industry of private security services, with indications that the number of security personnel outnumber the active police force. These services have been increasingly filling the vacuum left open by the police, and some have established formal arrangements with law enforcement enabling private personnel to perform police functions, including arrests.¹⁴⁸ However, there are many risks associated with the substitution of private services for the security responsibilities of the state. Few legislation, monitoring and accountability safeguards exist around the activities of such firms. There is already some evidence of distorted incentives leading to perverse activities that exacerbate the breakdown in law and order: security firms may be staging incidents to increase the demand for their services and undermine competitors.¹⁴⁹ Moreover, security should not only be afforded to those with the capacity to pay.

Papua New Guinea's cultural context presents a set of challenges to the establishment of law and order. Conflict is considered an important part of everyday life and relations, and everywhere local dispute mechanisms are crucial

¹⁴⁶ PPL needs to tackle arrears, particularly those emanating from public agencies and SOEs. For instance, in 2015, the DPE declared a state of emergency to help collect overdue electricity bills for PPL, which was in financial distress. PPL was owed PGK 138 million and 30 percent of the electricity provided by PPL was never paid for.

¹⁴⁷ Lakhani and Willman (2014c).

¹⁴⁸ Lakhani and Willman (2014b).

¹⁴⁹ Ibid.

to safety and security.¹⁵⁰ Communal escalation and engaging in retributive conflict is common: but so are processes of dispute resolution, mediation and compensation, involving not just individuals but clans, tribes, wantoks, and political followers.¹⁵¹ In some cases and places, active conflicts between clans can continue unresolved for decades and resonate across both rural to urban environments as individuals and families relocate.¹⁵² But in many other locations, largely peaceful relations have now extended over some decades. These results are often the result of communal actions operating at the edge of state authority.¹⁵³ Victims of crime have been known to avoid reporting incidents to the police, due to a lack of trust in them as well as fear of retribution from the offender's wantok.¹⁵⁴ Police often take sides in conflicts, and can be reluctant to pursue matters involving alleged perpetrators from their own ethnic groups. State authorities are seen as outsiders who cannot be trusted because they are unknown to the clan, thereby limiting full cooperation with investigations.¹⁵⁵

¹⁵⁰ Lakhani and Willman (2014c).

¹⁵¹ Ibid.

¹⁵² Ibid.

¹⁵³ Craig and Porter (Forthcoming).

¹⁵⁴ Boamah and Stanley (2007).

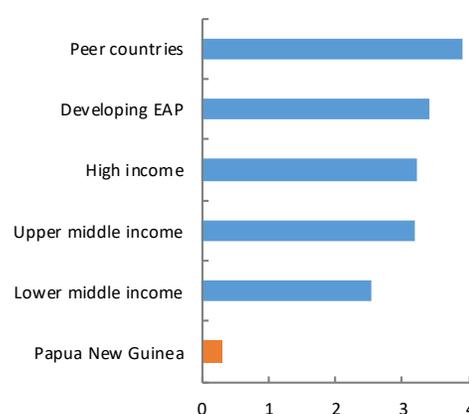
¹⁵⁵ World Bank (2013a).

7. Pathway III: Enabling private sector development for job creation and inclusive growth

158. **Boosting development of the private sector will be essential to expanding employment opportunities for all Papua New Guineans, meeting the demands of a growing working-age population, and ensuring inclusive growth.** An improved enabling environment for private enterprise will help deliver crucial improvements in productivity outside the resource sector, supporting the government’s economic diversification objectives and establishing broader-based foundations for future economic prosperity. It would also reduce fiscal dependence on resource rents, boost resource sector spillovers through expanded availability of local supply chain linkages, and support economic activity in rural and remote areas where state capacity and employment is limited.

159. **Persistently low net inflows of foreign direct investment (FDI) indicate a largely unfavorable business environment.** In 4 of the 10 most recent years for which data is available, net FDI was negative (i.e. divestments were greater than inflows), and over this decade (2005-2014), PNG’s performance has been much poorer than in other regions (Figure 61). Recent legislation barring activities by foreign-owned small and medium-sized enterprises across large segments of the economy, if implemented, will further erode the country’s image to foreign investors and curtail the pace at which foreign technologies and know-how are brought ashore. Such actions coupled with the elevated costs and risks of engaging in private enterprise have diminished Papua New Guinea’s international standing as a destination for foreign direct investment, leading to PNG’s private sector remaining relatively underdeveloped.

Figure 61: Foreign direct investment, net inflows (% of GDP, 2005-14 average)



Source: World Development Indicators

160. **In considering PNG’s private sector development, it is helpful to distinguish between the resource and non-resource sectors.** The former has been a strong performer since independence, is dominated by relatively large foreign firms, is the source of the bulk of the country’s exports, and has attracted crucial FDI into the economy. However, as stated earlier, the high capital intensity of these activities entails that their prospects for significant job creation is limited. In contrast, performance in the non-resource economy, where the majority of businesses operate and where most Papuans earn their living, has been less impressive. Businesses in PNG’s non-resource sector tend to be characterized by small size and high levels of informality. The challenges of generating business growth and expansion, particularly for smaller firms, have led to a paucity of medium-sized businesses – a so-called ‘missing middle’.¹⁵⁶ Over 90 percent of private enterprises are micro-sized and informal, once subsistence and smallholder agricultural producers and the self-employed are counted. Even amongst those firms that are administratively licensed in some way, estimates suggest that over 70 percent of all enterprises have under 10 employees and about 25 percent of all enterprises are informal.

¹⁵⁶ Grice and Manoka (2017).

161. **Given this economic landscape, if PNG is to reduce poverty and boost shared prosperity through jobs-laden, inclusive growth, private sector development efforts will need to be focused on the non-resource economy.** Setting the non-resource economy on a more robust growth trajectory will require addressing impediments to the business environment that have kept PNG firms small and have long starved much of the economy of FDI. Key sectors with considerable untapped potential for private sector driven inclusive growth include agriculture, fisheries and tourism, and in each of these, government has a role to play in establishing the appropriate enabling environment, including through the provision of sound institutions, essential services and other key public goods. Attention also needs to be afforded to the large informal economy – an important source of livelihoods for the poor and vulnerable, and yet a context where market participants face many of the same business environment challenges with greater severity, owing to their limited capacity and uncertain legitimacy.

7.1 Removing constraints in the business environment to boost private sector growth

162. **Doing business in Papua New Guinea is particularly challenging.** Firms must learn to navigate a complex operating environment, often on the basis of little more than personal contacts and word-of-mouth advice, and contend with a raft of other obstacles that are the consequence of, among other things, weak institutions, limited public sector capacity, and adverse economic geography. These have the effect of restricting entrepreneurship, amplifying the costs and risks of conducting business, and blunting the incentives for growth. While wholesale improvements in the business environment are likely to require a medium- to long-run horizon, swift government action aimed at addressing the most immediate and tractable challenges would be an important start and may help boost investor confidence in the country's private sector prospects.

Figure 62: Doing Business sub-indices, percentile rank, 2017

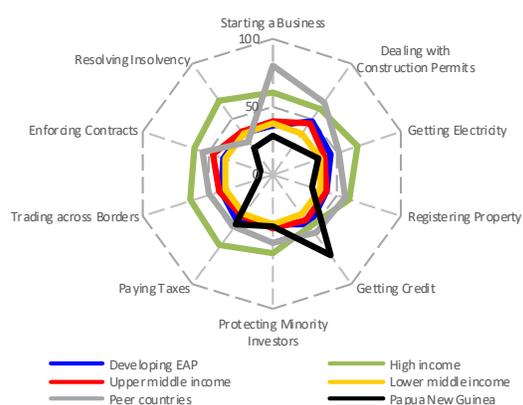
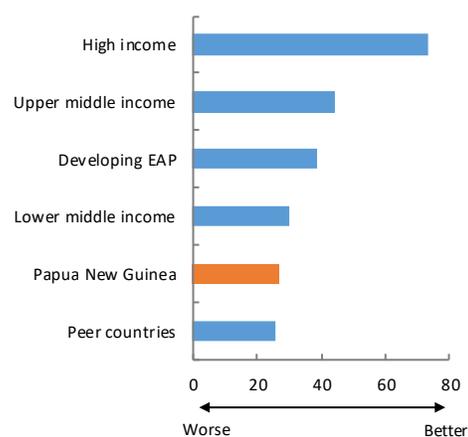


Figure 63: Doing Business, overall, percentile rank, 2017



Source: World Bank (2017b) and staff calculations

163. **The Doing Business indicators suggest that although there are specific areas where PNG tails its international peers, its business environment performs about midway among them on average.** Papua New Guinea was placed 119th among 190 countries in the World Bank's 2017 Doing Business rankings, situating it midway among its lower middle-income resource rich peers, midway among the island states of the Pacific, but worse than the average of Developing East Asia and the Pacific (Figure 62 and Figure 63). Weaker areas of performance were in Trading Across Borders and Enforcing Contracts,

while Getting Credit rated very favorably, mostly on account of a recently established personal property security register. The Doing Business indicators are primarily based on the prevailing laws and regulations¹⁵⁷ – a de jure assessment of conditions. They are also designed to reflect circumstances faced by firms situated in the largest business city of a country. In PNG, with one of the lowest urbanization rates in the world, and where enforcement of laws and regulations is relatively lax, the Doing Business indicators are therefore unlikely to paint a very accurate picture of the business environment. Direct surveys of the pain points faced by firms provide a more practical alternative.

164. **Business surveys draw attention to the following key themes where efforts to improve the business environment should be focused: (i) infrastructure and related services; (ii) access to finance; (iii) access to land; (iv) law and order; (v) corruption; (vi) skills shortages; and (vii) political uncertainty and the stability of rules (Figure 64).** The most widely reported results on business constraints are drawn from the Institute of National Affairs (INA) and Asian Development Bank (ADB) (2012) Business Environment Survey, which ranks law and order as the most binding constraint for formal sector firms of all sizes. Results, reported only for the whole sample, reinforce the findings from the World Bank (2015a)'s Enterprise Survey on the prominence of concerns about corruption, law and order, and political uncertainty. Concerns about transport, electricity and telecommunications infrastructure are also raised, with the first of these also reported in two surveys by Tebbutt Research. Tebbutt Research (2014), which surveyed over 1000 formal sector SMEs, found access to both land and finance, and government corruption, the chief concerns. Tebbutt Research (2008) provides a spotlight on informal sector constraints, again highlighting business concerns about law and order, transport and access to finance. The number one concern identified by informal firms was access to market, which might relate to both their exclusion from markets owing to their informality, as well as to vendor access fees.

Figure 64: Collected results of surveys on the challenges faced by business

World Bank (2015a)	INA and ADB (2012)	Tebbutt Research (2014)	Tebbutt Research (2008)
Biggest obstacle to business:	Highest-rated constraints to business and investment:	Major obstacles for business operations and growth:	Most serious obstacle facing local businesses:
Formal small firms: - Crime, theft and disorder - Corruption - Political instability	Formal, all sizes: - Law and order - Corruption - State of transport infrastructure - State of electricity infrastructure - Skilled labor - State of telecomms. infrastructure - Political uncertainty & stability of rules	Formal SMEs: - Difficulty leasing or buying land - Access to finance, loans, capital - Government corruption - Tax rates - Difficulty dealing with banks - Difficulty transporting/moving goods across country	Informal sector firms: - Access to market - Transportation - Access to loans - Crime, theft and disorder - Water availability and cost
Formal medium firms: - Access to land - Political instability - Crime, theft and disorder			
Formal large firms: - Corruption - Practices of informal sector - Access to finance			

Note: The constraints in each survey are ordered in descending priority.

Sources: World Bank (2015a); Institute of National Affairs and Asian Development Bank (2012); Tebbutt Research (2014); Tebbutt Research (2008).

165. **Improvements in service delivery with respect to infrastructure and related services would enhance the business climate and make a significant difference to many firms.** Section 3 highlighted key shortfalls in service delivery. The areas where businesses have raised the loudest concerns are in transportation, electricity and telecommunications. Transportation was rated among the top three constraints by a broad spectrum of firms in 2012; was reported by 32 percent of formal SMEs as a major

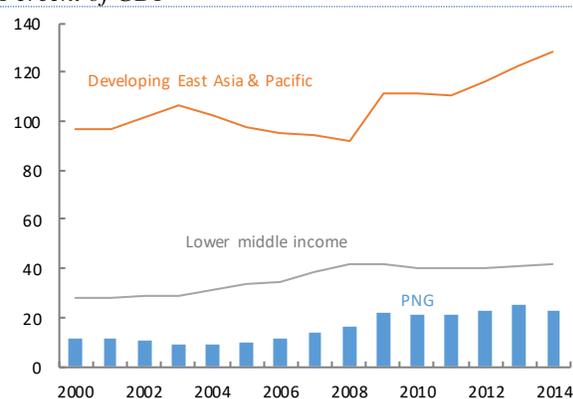
¹⁵⁷ Approximately two thirds of data used in constructing the indicators are based on a reading of the law.

obstacle to operations and growth in 2014; and, among informal sector firms in 2008, was voted 2nd-place as the most serious obstacle to business. Electricity came in only marginally behind transportation in INA and ADB (2012)'s survey and was the fourth-highest major obstacle for remotely located formal SMEs according to Tebutt Research (2014). Telecommunications too has consistently rated among the major constraints in INA surveys but access has improved markedly in recent years since Digicel's market entry.

166. **Although access to finance for businesses has improved in recent years, there is considerable room for further progress.** Since the early 2000s, domestic credit to the private sector has doubled as a share of GDP. Recent advances in, and expansion of, mobile banking have been game-changing, particularly to those outside urban centers and rural towns who have long been disconnected from financial sector infrastructure. Nonetheless, finance is not readily available to businesses in Papua New Guinea and falls behind the averages exhibited by the developing East Asia and Pacific region and lower middle-income countries (Figure 65 and Figure 66). According to Tebutt Research (2014), 52 percent of SMEs report that improved access to finance would be the foremost way to help grow their business, while in Tebutt Research (2008) almost 50 percent of informal sector businesses held the view that better access to finance was the best way to stimulate people to open more businesses. Financial sector liquidity, particularly among banks and savings and loan societies, has remained well above the minimum levels required by regulators, indicating that there are other constraints holding back the appetite for domestic lending.

Figure 65: Domestic credit to private sector

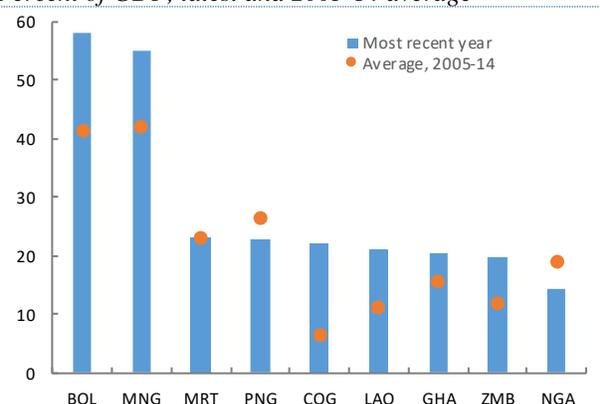
Percent of GDP



Source: World Development Indicators, IMF estimates

Figure 66: Domestic credit provided by private sector

Percent of GDP, latest and 2005-14 average



167. **Poor credit availability can be attributed to a range of factors, including high informality, limited eligibility of customary land as collateral, poor financial literacy, and an absence of centrally collated credit information.** As noted, there is a high incidence of informality in PNG's private sector, and informal sector operators understandably struggle to receive finance from the formal sector given uncertainties around their legitimacy to operate and their limited attachment to formal institutions. The vast majority of agricultural producers operate on customarily-held land which, owing to uncertainty around the land tenure regime and constitutional restrictions on land ownership, is often deemed ineligible to meet the collateral requirements for agricultural loans. Recent establishment of a personal property securities register constitutes a positive step toward addressing some of the challenges firms face in putting up collateral. Financial literacy is very limited across the country, leaving many unable to understand the most basic of financial contract terms, as well as elevating the inherent risks in lending to businesses. Moreover, there is limited availability of credit information in the country, raising challenges in the credit worthiness assessment of borrowers, and making it difficult for borrowers to build a good track record.

168. **Additionally, to promote financial development, greater efforts are required to, inter alia, address the low level of competition in the banking system (as well as among non-bank financial institutions).** The International Monetary Fund (2015) contends that the three large banks in PNG (two Australian banks and one domestic bank) play a dominant role in providing credit to the economy. The wide interest rate spreads (between deposit and lending rates) in PNG reflect the oligopolistic nature of the banking system and the costs and risks of doing business. Additionally, the lack of competition has led to relatively high levels of profitability,¹⁵⁸ which can limit incentives for banks to innovate and seek out new customers in order to expand their customer base. In this context, the IMF’s 2015 Article IV staff report argues that the priority should be to *“facilitate financial deepening by reducing entry barriers, including for microfinance institutions, and encouraging the development and adoption of new technologies such as mobile banking and microfinance products.”*¹⁵⁹

169. **Firms face difficulties in accessing commercially-viable and affordable land, imposing considerable constraints upon business expansion and investment plans.** Across firms of all sizes in 2012, 58 percent of firms reported in 2012 that their expansions had been significantly hindered by difficulties in accessing land – up from just 38 percent a decade earlier.¹⁶⁰ Among SMEs in 2014, ‘difficulty leasing or buying land’ was the constraint to operations and growth that most firms were concerned about (38 percent). Urban-based SMEs were the most affected (41 percent), with rural (30 percent) and remote (25 percent) firms less so. After years of stalled progress on land reform, scarcity has intensified, with local residents and businesses increasingly forced out into the peripheries of urban towns.¹⁶¹ Land constraints can be a major problem for rural enterprises too – often being identified as an obstacle to farm production by those in the rural informal sector.¹⁶² In projects requiring major land acquisition, the costs of making land assessments and then identifying and compensating relevant landowners can be substantial in terms of both time and money. This can be due to a lack of landowner registration, the need for social mapping and subsequent public notice, and extortionary compensation claims by customary owners who are well aware of PNG’s land supply constraints.¹⁶³ Even when agreement on a new lease is obtained, poor contract enforcement and weak property rights, mistakes in the issuances of leases, document loss, inconsistent duplicates and fraud are all issues that need to be contended with.

170. **PNG’s customary land regime accommodates diversity in cultural practices and may prove a sound basis for availing land without compromising traditional ownership, but numerous challenges exist.** PNG’s system of customary land administration enables customary landowners to voluntarily form special incorporated entities – called incorporated land groups (ILGs) – that can enter into legally binding contracts with those who wish to lease their lands. This has the potential to assuage fears by outside parties regarding the legal recognition of land agreements and potential forfeiture of land-use rights. The registration of an ILG involves codification of the various customs that will pertain to the land, any processes for collective decision making by the customary owners, as well as processes for the management of disputes. Despite the inherent potential to accommodate significant diversity of cultural practices, the success of ILGs has been constantly hindered by, among other things, limited training and administrative capacity, limited public awareness of the voluntary registration system, low community

¹⁵⁸ PNG’s banking sector was the fourth most profitable of 177 comparable countries in 2011, measured by return on equity.

¹⁵⁹ IMF (2015).

¹⁶⁰ INA and ADB (2012).

¹⁶¹ In prime locales of Port Moresby, apartment rents have been comparable to those in Manhattan, New York (Andrews, 2016).

¹⁶² Manning (2007).

¹⁶³ ADB (2008).

literacy, and principal-agent conflicts between ILG management and the landowners.^{164,165} The land registration process is also excessively complex, requiring 17 steps and the involvement of 7 government agencies, and sometimes taking up to four years.¹⁶⁶ Overall, this system has not been successful in opening up PNG's customary lands for the mutual benefit of owners, outside commercial interests, and the broader economy.

171. **Opportunities exist to improve the performance of the customary land regime so that it promotes private sector development.**¹⁶⁷ Registration processes for customary land need to be simplified, consolidating numerous steps and allowing some flexibility in the information requirements (which can be difficult for some to meet). Public awareness of the registration system, including in the rights it confers to landowners and leasers, should be expanded among all stakeholders, to overcome unjustified fears and misconceptions. Land administration within the public sector needs to be supported, including through capacity development for better processes for record keeping and customer service, and improvements in transparency and accountability. Finally, better boundary demarcation of registered lands, possibly supported by maps and/or updated mapping technologies, would help reduce the incidence of disputes over conflicting claims to land.

172. **Restrictions on foreign firm participation in the domestic economy have the potential to deter foreign investment, job creation, and technology transfer from overseas.** They often result in higher prices and limits on the set of goods and services that are available to PNG households and businesses, while protecting inefficient domestic firms and local special interests. In 2016, the government launched its SME Policy 2016 which included a Reserved Activity List (RAL) that significantly expanded the set of activities that are to be subject to foreign ownership restrictions. Criteria have been set based on firm-specific and skill-specific characteristics to impose requirements of 100 percent or 51 percent local ownership across an extensive list of sectors.¹⁶⁸ While the degree of current policy enforcement is unclear, these changes have dramatically raised the business environment risks, not just for those firms affected by the RAL – which may now be forced to abandon majority ownership or sell out entirely – but also for other small-to-medium-sized firms with any degree of foreign ownership, which may now be concerned about similar policy changes that may apply to them in the future. Foreign participation restrictions should be carefully evaluated to ensure that they are not ultimately counterproductive to the government's development and poverty reduction objectives.

173. **Shortcomings in the provision of law and order have significantly increased the cost of operating in PNG.** A survey of mostly formal urban firms suggests that businesses incur average losses of about USD 33,000 in stolen property each year. Further, 38 percent of businesses report closing early due to fear or threat of crime and this too is estimated to result in losses of over USD 30,000 per year.¹⁶⁹ In 2012, break-ins were reported to be affecting over 70 percent of businesses, while more than 50 percent were also affected by each of vehicle theft, assault of employees off site, vandalism, and property theft without force. Criminal targeting of key logistics routes such as the Highlands Highway impedes the transport of goods and leads to lost business, stocks and inventories. Family and sexual violence (FSV) is widespread, with almost all surveyed firms indicating that they had employees who were victims of this.

¹⁶⁴ Weiner and Glaskin (2007).

¹⁶⁵ Koyama (2004).

¹⁶⁶ Wangi and Ezebilu (2017).

¹⁶⁷ Ibid.

¹⁶⁸ PricewaterhouseCoopers (2016).

¹⁶⁹ Lakhani and Willman (2014b).

Businesses claimed that FSV not only affects the productivity of victims in the workplace, but in many cases it would literally follow them to, and take place at, their work site.

174. **Given firms have been largely unable to elicit effective support from the state institutions of law and order, there been a strong trend towards engagement of private security services.** 84 percent of companies pay for some form of security service. More than two-thirds employ private security staff. This adds another layer of costs, with security expenses on average amounting to about 5 percent of annual business costs. Other costs include those due to vandalism, and the foregone business activity when crimes (such as vandalism, or theft of key assets such as a crucial computer or motor vehicle) lead to temporary business shutdown.¹⁷⁰ The proliferation of private security services further erodes public confidence in the government's ability to provide law and order, weakens the government's monopoly on the use of force, and leads to conflicts of interest when police personnel moonlight as private security guards.

175. **Corruption places a considerable burden upon the private sector.** In 2012, a majority of firms (57 percent) reported that they had been either 'fairly', 'highly', or 'very highly' affected by instances of government corruption involving irregular payments to officials.¹⁷¹ However, making payments to ensure public service delivery did not result in any significant benefit to firms that paid. Only 30 percent of those making 'irregular payments' reported actual service delivery without further demands for payments. Businesses also have little recourse when government officials demand irregular payments. In 2012, 22 percent of firms reported never seeking recourse, and only 14 percent reported that they could 'mostly' or 'always' seek recourse. Over 30 percent of large firms identified corruption as the single biggest obstacle to their business.¹⁷² On the other hand, 37 percent of formal sector SMEs identify it as a major obstacle¹⁷³, and 17 percent of small firms, as their biggest.¹⁷⁴

176. **There are a couple of key areas where there are opportunities to reduce the adverse impact of corrupt practices on businesses.** Corrupt practices by public servants are prominent in government land administration where 44 percent of businesses report experiencing it. Other problem areas include finance, tax, and customs.¹⁷⁵ For SMEs the allocation of government contracts was a key realm in which corruption appeared to be rife, manifesting in favoritism toward family members and wantoks.¹⁷⁶ SME business owners report concerns about the diversion of public funds, with the belief that only a fraction of funds earmarked for public works was being spent as intended, exacerbating the infrastructure shortages that have hurt private sector prospects.¹⁷⁷

177. **Firms have highlighted the existence of major skills gaps in the local labor market.** The higher-level skills generally demanded for formal private sector jobs are poorly matched with the relatively lower skill levels held by locals. Recent evidence suggests that for 83 percent of (mostly urban, medium-to-large sized, formal sector) firms, local skill shortages are a barrier to growing employment.¹⁷⁸ For the wholesale, hospitality and retail sectors, skills shortages are the number one factor holding back recruitment. Unsurprisingly, the most severe shortages were reported at the high-end of the skills ladder,

¹⁷⁰ Lakhani and Willman (2014b).

¹⁷¹ INA and ADB (2012).

¹⁷² World Bank (2015a).

¹⁷³ Tebbutt Research (2014).

¹⁷⁴ World Bank (2015a).

¹⁷⁵ INA and ADB (2012).

¹⁷⁶ Tebbutt Research (2014).

¹⁷⁷ Ibid.

¹⁷⁸ Deloitte Touche Tohmatsu and the United Nations Development Programme (2017). The report is based on a survey of over 230 businesses in Port Moresby, Madang, Mt Hagan and Lae in late 2016.

in jobs requiring competence in management, followed by professional services. Some areas will be amenable to a quicker supply response than others, such as with the significant shortages in food trades skills. In addition to skills shortages, 71 percent of businesses said human factors such as staff productivity, attendance and punctuality were a barrier to hiring more staff. The situation has resulted in a high appetite for, and incidence of, foreign worker recruitment in the formal sector, increasing the difficulty faced by locals in securing good quality jobs. The government has an opportunity to work together with the private sector to ensure that Papua New Guineans are getting the right education and training that will prepare them for the demands – in both skills and attitude – of today’s workplace.

178. **The presence of a burgeoning cohort of youth, many of whom are underemployed or engaged in relatively low-productivity informal sector activities, presents an opportunity for delivering on the country’s low-to-mid-tier skills needs.** Appropriate provision of in-demand industry-relevant education and vocational training can prepare youth for productive engagement as employees or in a self-employed capacity. However, to date, PNG’s TVET system has not been as successful as hoped. One reason has been limited coordination between the curricular offerings of TVET institutions and the skills being demanded in the PNG labor market. These institutions also suffer from limited capacity – lacking the systems and resources to provide both an adequate quality of education and sufficient places for the very large numbers of school leavers each year that would benefit from further upskilling.

179. **Widespread informality in PNG’s private sector is not surprising given the perceived barriers to, and limited benefits of, formalizing.** Surveys conducted in 2008 and 2014 give insight into the formalization plans of informal firms (Table 6 and Table 7). In 2008, 6.8 percent of informal firms indicated they would ‘probably’ become formal within two years while a further 2.7 percent said they were certain of it. Then in 2014, 29 percent of informal sector SMEs said they were very likely to formalize within 12 months. Although this may suggest an improvement in the sentiments towards formalization between 2008 and 2014¹⁷⁹, the large majority of informal operators in both years nonetheless planned on remaining informal. As reasons for remaining informal, firms in 2008 pointed to: a lack of information about what to do (54.4 percent); no apparent benefits from formalizing (49.2 percent); high financial and time costs (39.4. percent); and high tax expenses and administrative burden (36 percent).¹⁸⁰ Almost 18 percent of firms had investigated or attempted formalizing previously, but were held back by difficulties complying, the complexity of the process, and an inability to find the necessary information. The barriers to formalizing that were most frequently reported by informal SMEs included not knowing how to register (44 percent), high costs of registration (22 percent), the business being too small to justify it (10 percent), and the absence of a government office nearby (9 percent).¹⁸¹

Table 6: Intention to become formal in next 2 years

Response Category	%
Absolutely no chance	40.3
Not very probably	18.9
Maybe	29.5
Probably	6.8
Almost certain	2.7
Don't know	1.8

Source: Tebbutt Research (2008, p60)

Table 7: Intention to formalize in next 12 months

Response Category	%			
	Urban	Rural	Remote	Total
Very likely	29	35	31	29
Somehat likely	32	33	33	32
Not very likely	26	25	22	26
Not at all likely	10	6	11	10
Refused/Don't know	3	2	4	3

Source: Tebbutt Research (2014, p175)

¹⁷⁹ This is not a straightforward conclusion, since the response options were framed differently across the two surveys.

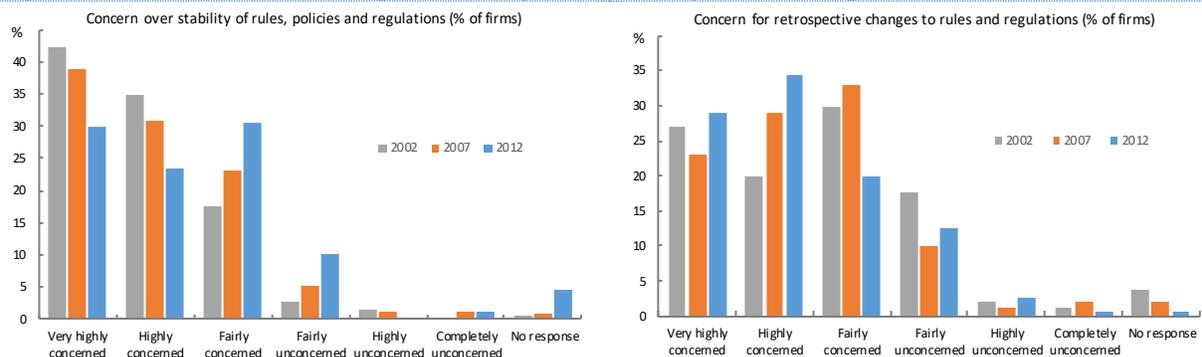
¹⁸⁰ Tebbutt Research (2008).

¹⁸¹ Tebbutt Research (2014).

180. **Firms largely appear to be self-selecting into informal or formal status based on whichever they believe is more advantageous to them.** This is suggested by the fact that a majority of firms in each status do not believe that firms in the other status are in a relatively better situation. Only 29 percent of informal firms believed that formal businesses were in a relatively better situation and only 10.4 percent of formal firms believed that informal businesses were in a relatively better situation.¹⁸² One explanation is that when firms believe that changing status (i.e. from formal to informal, or vice versa) is more advantageous, they typically go ahead make this change.

181. **Reducing barriers, lowering costs, and broadening awareness of the formalization process is unlikely to eliminate the existence of an informal economy.** International experience suggests that such interventions may not bring about major change.¹⁸³ Even when policies are tailored to the local context, the experience of advanced countries clearly demonstrates that informal activities will always remain some part of the economy. For the smallest enterprises, semi-subsistence agricultural producers, and other occasional market participants, it may never make financial sense to take on the added burdens of formalizing. Similarly, for firms that are far from the reach of the state and that have limited access to public service provision, formalization might never offer much benefit. For the government, there may be little rationale in pursuing the compliance of firms that are either too small to impact public revenues or which are engaged in activities that have no notable externalities. However, in those circumstances where greater formalization is justified, a more effective enforcement regime alongside interventions that boost the ‘pull’ factors from the formal sector, may prove important parts of the strategy.

Figure 67: Stability of, and retrospective changes to, rules, regulations and policies



Sources: INA and ADB (2008); INA and ADB (2012).

182. **One such ‘pull factor’ that would support greater formalization of the economy would be an improvement in the policy environment for the private sector.** Policies that improve the ease of doing business should go together with a stable, transparent regulatory environment. Additionally, policy certainty is necessary to encourage the development of a formal private sector. Currently, sudden policy changes which impose new requirements upon businesses with little forewarning, are not uncommon in PNG. Reasons for this state of affairs include periodic changes in ministers and senior public servants who have considerable discretionary authority, and the inadequate community and stakeholder consultation processes that are employed (if and when at all) by the public service. Over half the businesses surveyed in 2012 identified either a ‘very high’ or ‘high’ concern for stability of rules, regulations and policies (Figure 67, above). When including those who were ‘fairly concerned’, this raises the share to more than 85 percent

¹⁸² Tebbutt Research (2008).

¹⁸³ International Finance Corporation (2013); De Mel et al. (2012); Galiani et al. (2015).

of firms – a figure that has steadily risen since the early 2000s. Two in every three businesses expect that their business will be damaged by major policy changes whenever a change of government takes place.¹⁸⁴ Policy changes are sometimes undertaken retrospectively, raising uncertainty and harming business confidence. In 2012, 80 percent of businesses reported concerns about potential retrospective changes.

7.2 Opportunities for inclusive, private sector-led growth in the non-resource sector

183. **Considerable untapped potential exists in PNG for inclusive, private sector-led growth in the following non-resource sectors: agriculture, fisheries and tourism.**¹⁸⁵ Given that the vast majority of Papua New Guineans engage in traditional subsistence and semi-subsistence agriculture in the rural areas, agriculture can play a significant role in providing broad-based income and employment opportunities across the country. Similarly, development of the fisheries sector will create important opportunities for PNG's many coastal communities. As PNG has a relatively unskilled and semi-skilled labor force, and a geographic diversity that provides for one of the most diverse visitor experiences in the world, tourism development may prove an ideal fit and hold enormous potential. Furthermore, support for linkages between tourism hospitality services and local agricultural food production (where the majority of women and youth are engaged), would boost creation of more and better jobs for women and the burgeoning youth cohort.

7.2.1 Agriculture sector

184. **Agriculture is the bedrock of the Papua New Guinean economy and one of the best hopes for generating private-sector-led balanced and inclusive growth.** Combined with forestry and fisheries, the sector is the largest behind the resource sector (as a share of GDP), generates a concomitant share of the country's exports, and supports the livelihoods of a significant majority of the population. According to the 2011 Census, around 74 percent of all households are engaged in growing food crops, vegetables and root crops, and 58.2 percent of the total employed population (i.e. aged 10 years and over) was employed in subsistence agriculture. The production of major export cash crops generates income for millions of rural residents. It is estimated that around 2.43 million people earn an income from coffee, while cocoa is a source of income for around 1.93 million people, and oil palm activities support an estimated 220,000. Other agricultural activities supporting cash incomes of more than or close to a million people include betel nut and betel pepper, firewood, tobacco, Irish potato and copra. With the exception of palm oil, the majority of this production is undertaken within a traditional village environment on customarily owned land, and remains far beyond the purview of any public or private agricultural institutions until the produce departs the village for markets or commodity boards.¹⁸⁶ The sector is a key host to the informal economy and an important contributor in the supply chain of the retail and hospitality industries. Where transport infrastructure and logistical services allow, agriculture promotes key linkages between the country's rural and urban economies.

185. **Improved performance in the sector is crucial for bolstering food security.** Households in PNG are vulnerable to food shortages and corresponding price hikes that emerge due to adverse climatic events. Given the considerable reliance by poor rural households on subsistence agriculture (including small-scale gardening) for their food needs, such circumstances can lead to severe hardship if the local agriculture sector (including markets and distribution infrastructure) is not dynamic enough to adjust

¹⁸⁴ INA and ADB (2012).

¹⁸⁵ While Pathway III highlights important inclusive growth prospects in these three sectors, it does not preclude the possibility of growth opportunities in other sectors of the economy.

¹⁸⁶ Allen (2009).

quickly or if it lacks capacity to do so. Climate-driven shortages in 2015 and 2016 left over 300,000 people in need of food aid and fed into sharp increases in some staple food prices in urban centers, placing considerable pressure on household budgets of the poorest and most vulnerable. Residents of urban settlements can be particularly impacted by food price shocks, given their lack of access to cultivable land. A higher performing agricultural sector will also likely promote greater food availability in the country with potential favorable flow-on effects for undernutrition rates.

186. **The government recognizes the importance of the agriculture sector.** The government has pursued a high-level sectoral development strategy over the last decade to improve the sector's productivity. In its most recent major effort, an ambitious National Agricultural Development Plan 2007-2016 was adopted, backed by substantial long-run funding commitments but faced with implementation challenges relating to governance, capacity issues and monitoring the outcomes of the sector. Policy in the sector has primarily focused on the four major export crops – cocoa, coffee, oil palm and copra – but agriculture in PNG extends well beyond these cash crops, with food for domestic consumption also important, hence future support should be more broad based.

187. **However, over the last three decades, the sector has experienced only moderate growth and its international competitiveness has waned.**¹⁸⁷ Aside from oil palm, growth in exported agricultural commodities has been underwhelming with cocoa and coffee export volumes trending lower for at least a decade.¹⁸⁸ Food production is estimated to have kept pace with population growth, but this is a far cry from the enormous potential of the sector and the growth rates achieved in other developing countries. Much of the country's fertile agricultural land is not employed in commercial production and too much national produce wastes away in either difficult-to-access rural locations or on the long, poorly refrigerated journey to market.

188. **There are several reasons for the relatively low productivity in the agriculture sector.** The sector is characterized by smallholder producers employing poor crop management techniques with limited use of manufactured fertilizers, pesticides, improved seed varieties and farm machinery.^{189,190} Agricultural extension services – the principal policy tool for farmer education – have been long underfunded, leading to deteriorating service quality and increasingly limited nation-wide coverage.^{191,192} Factors such as these have rendered average yields low for most crops – well below their genetic potential.¹⁹³ Agricultural producers, from subsistence and semi-subsistence producers to firms and operators across the rest of the value chain, must also contend with the same impediments to business that retard development in other parts of the private sector. Among the most critical to agriculture are inadequate transport infrastructure and the challenge of accessing markets, access to credit, and land tenure. Additionally, the sector's once-reputed institutions have suffered from poor management and oversight, with key leadership positions awarded not on the basis of merit to ensure skilled sectoral stewardship but rather as a reward for political patronage.

¹⁸⁷ New Zealand Institute of Economic Research (2006).

¹⁸⁸ See Box 12.

¹⁸⁹ Food and Agriculture Organization and World Bank (2017).

¹⁹⁰ New Zealand Institute of Economic Research (2006).

¹⁹¹ Sitapai (2012).

¹⁹² As one measure of the increasingly limited capacity of public extension services to cater to the sector, whereas in 1980 there were around 1000 rural residents per extension officer, in 2015 this figure is closer to 7000.

¹⁹³ See Box 12.

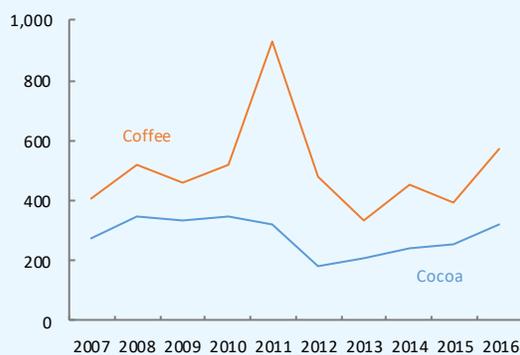
189. **There are several avenues to support broad-based improvements in productivity and growth in the agriculture sector, with the potential for significant employment generation.** These relate to improving: (i) access to markets and information by improving transport, refrigeration, storage and logistics services, including internet connectivity; (ii) crop, land and water management; (iii) knowledge of agronomy; (iv) pest control (such as cocoa pod borer); (v) access to land to support economies of scale; (vi) access to finance; (vii) delivery of extension services; (viii) the use of locally adapted technologies; and (ix) government institutional support structures within agriculture.

190. **Further, focusing on productivity of women in agriculture would support poverty reduction and shared prosperity.** Given that women play a significant role in PNG's agriculture sector, growing both cash and non-cash crops, focusing on the constraints facing women in this sector would increase the returns to investment in agriculture. A good start would involve improving their skills and capabilities and increasing access to extension services and finance. In addition, giving women a larger share of the benefits (that is, having a larger share of income from farming activities) would incentivize increased productivity among women.¹⁹⁴

Box 12: Reaching potential
Boosting smallholder coffee, cocoa and vanilla productivity

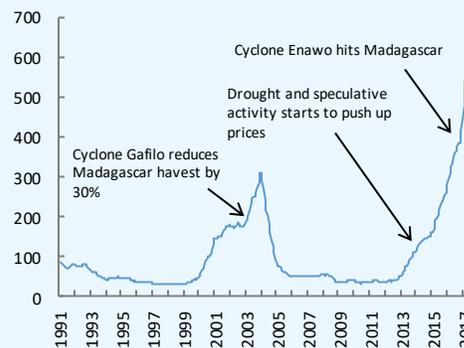
In terms of exports, coffee and cocoa are among the main commercial crops in PNG, second only to palm oil. Following a particularly sharp decline in 2012, combined export earnings started to recover in 2013 and had risen to PGK 890 million in 2016 (Figure 68). Coffee and cocoa are important crops for PNG also because they provide a significant source of cash income for a large proportion of the almost 7 million people living in rural areas. Coffee (arabica) generates the largest proportion of cash income for the rural population of PNG, providing 33 percent of the total cash income from agriculture activities, followed by fresh food (22 percent) and cocoa (11 percent). Over 4 million rural people receive a combined cash income from coffee and cocoa.

Figure 68: PNG exports of cocoa and coffee
Kina, millions, 2007-2016



Source: BPNG and commodity boards.

Figure 69: Vanilla prices are booming
USD per kilogram



Source: Financial Times (2017)

¹⁹⁴ See: World Bank (2015b). Related to this, Australian Department of Foreign Affairs and Trade (2017) refers to an ACIAR pilot program in PNG--the Family Teams project--which works with the family as a business unit, addresses the issue of time availability of women, gender relations and finds the best way to increase women's involvement in a way that considers her time constraints, and has a positive impact on gender relations within the family and community. The model recognizes the varied family structures (no set definition, works with single-headed households, widows, multiple wives, etc.). It also works with local community and technical organizations that have existing relationships and interests in the community; provides training and services in model that is suitable to family teams.

Although important, coffee and cocoa yields, especially those of smallholders, are low in PNG compared with their genetic potential. Coffee (arabica, green bean) yields average around 947 kg/ha, which is less than half the genetic potential yield of 2,000 kg/ha. Even more acute, cocoa yields average 284 kg/ha, which is a fraction of the genetic potential yield of 3,000 kg/ha. The performance of PNG plantations demonstrates the potential for increasing smallholder yields – coffee and cocoa plantation yields average 1,685 kg/ha and 535 kg/ha respectively. The challenge for PNG has been to provide the right package of support to smallholder coffee and cocoa farmers to achieve these higher yields.

The Productive Partnerships in Agriculture Project (PPAP) has been providing support to smallholder coffee and cocoa farmers since 2011. Funded by the Government of PNG, along with the World Bank and other donors, PPAP aims to improve the livelihoods of smallholder cocoa and coffee farmers. A core feature of the project is support for the development of productive partnerships between smallholders and the private sector. The initiative combines material and money support and has shown early signs of achieving major yield improvements. PPAP's support to smallholders is increasingly relevant for PNG especially with the emergence of disease. Cocoa pod borer had a major impact on production, from which smallholders are only starting to recover, and the emergence of coffee berry borer is similarly threatening to impact on production.

Natural vanilla is the world's second-most expensive spice and PNG ranks among its top four global producers. Despite strong competition from synthetic vanilla, shifts in consumer preferences have strengthened the demand for vanilla beans over the past decade. While the high price has traditionally reflected the significant labor intensity of cultivation, more recent years have seen steep increases owing to market speculation and weather-related supply-side disruptions in the world's largest producer, Madagascar. Global prices in 2016-2017 have been over 1000 percent higher than just 5 years prior (Figure 69).

The vanilla shortage presents a short-term windfall for PNG farmers and a longer-term opportunity to increase global market share. If reports of prices rising as high as USD 500/kg prove accurate, this could translate into exports of over USD 100 million in 2017, compared to just USD 5 million in 2015. Returns to cultivated land can be very high, exceeding PGK 10,000/ha for good quality vanilla. In terms of land use, vanilla production currently has the largest land utilization for a crop in PNG outside of coffee and cocoa. The leading provinces producing vanilla are East Sepik, Manus, Madang, Morobe and East New Britain. The future of the vanilla industry looks very promising largely due to the discovery of carcinogenic substances in the substitute artificial vanilla essence. However, opportunities for a quick profit – including early harvesting and 'bulking out' shipments to increase weight – particularly in response to recent shortages, should be resisted. Rather, efforts to build a reputation for quality, so that when Madagascan supplies return to normal levels buyers will still value the Papuan crop, will help to grow long-term markets for Papuan vanilla.

7.2.2 Fisheries sector

191. **The fisheries sector is an important part of the PNG economy and it plays a significant role in the traditional way of life in coastal communities.** The nature of these activities varies significantly given the high geographic and ecological diversity of the country's fishing areas. It ranges from reef flat harvesting, spear fishing and invertebrate collection, to net fisheries for barramundi and catfish, to lobster fisheries, prawn trawling, and tuna harvesting via longline and purse seine. This is a core activity among coastal communities, but its significance for inland communities should also not be underestimated. Although fisheries production takes place in offshore fisheries^{195,196}, coastal and inland fisheries have been the most directly important for supporting the livelihoods of Papua New Guineans through their subsistence,

¹⁹⁵ PNG's EEZ comprises part of the Western and Central Pacific Ocean tuna fishery, the source of about 50 percent of the world's tuna catch.

¹⁹⁶ Food and Agriculture Organization (2010).

semi-subsistence or small-scale commercial activities. Moreover, fish constitute an important source of protein in local diets – a deficiency of which is associated with child malnutrition and stunting.

192. **Both locally-based and foreign-based (as well as locally-flagged and foreign-flagged) vessels operate in PNG’s offshore fisheries, and land their catch onshore.** Among the incentives for the high foreign fleet participation in PNG’s offshore fisheries and the local-basing of operations, have been the significant concessional fishery access terms provided in return for investment in, and utilization of, local canning facilities, as well as the preferential access to European markets conferred to fish exports processed in PNG.^{197,198} These incentives are aimed at supporting the industrial development of the fisheries sector by improving the viability of processing operations in PNG relative to major regional competitors such as Vietnam, Thailand and the Philippines. As a result, PNG has 5 canneries in operation across Lae, Madang and Wewak, and another 4 facilities are in development.¹⁹⁹ While these facilities have the potential to support many thousands of jobs, capacity utilization is very low due to high utilities and shipping costs, low labor productivity, and other challenges associated with the broader business environment. Government has been recently investigating avenues for restructuring incentives within the sector to increase utilization and local employment.

193. **The fisheries sector suffers from many of the same business environment impediments outlined for the rest of the economy.** Infrastructure is poor, access to electricity is minimal and unreliable, business credit is limited, and so on. Provincial and local administration are largely responsible for coastal resource management, but as discussed throughout this SCD, there are major skills and capacity shortfalls and poor accountability mechanisms that impede effective delivery on those responsibilities. Furthermore, the small size of many of the coastal communities at different locations results in smaller total production volumes that weaken the financial case for investment in processing and other facilities that are crucial to supporting small-scale commercial activities and greater SME involvement.

194. **Despite challenges with international cost competitiveness, boosting the development of the sector has the potential to promote much needed economic diversification, support coastal community livelihoods, generate jobs, and increase food security.** Smaller market players need support to access processing facilities and appropriate marketing and distribution networks for their output.²⁰⁰ While investment will be required and both private and public options should be explored, these options will need to leverage business from the larger operators in offshore and coastal fisheries so as to reach production volumes that can lower average costs and improve efficiency. Efforts should also be aimed at supporting viable and sustainable aquaculture development in the highlands regions. Going forward, sustainable management of fishery resources will be essential as population and other pressures place increasing stress on fishery ecosystems. Monitoring is necessary to prevent ecosystem destruction as, for instance, practices such as dynamite fishing are still believed to be widespread.²⁰¹ Ecosystem collapse or overfishing would prove a disaster for many communities. Training and capacity building will be therefore required at the provincial and local government level, as are interventions discussed elsewhere in this SCD aimed at broad-ranging governance, PFM and institutional reforms. Improvements in food security for coastal communities will also be achievable via the allocation of a share of offshore fishery access rights to

¹⁹⁷ World Bank (2017c).

¹⁹⁸ Other incentives including tax holidays, accelerated depreciation and double deductions are also offered by the government for investments and activities in the sector (Oxford Business Group, 2015).

¹⁹⁹ Data gathered by IFC from industry sources.

²⁰⁰ For instance, small-scale fisheries need to be linked up better with the major Madang Industrial Center (formerly known as the Pacific Maritime Industrial Zone).

²⁰¹ Naime (2016).

coastal communities, trialing of efforts to retain and better distribute locally landed by-catch from these offshore fisheries, and investment in inshore fish aggregation devices near these communities.²⁰²

195. **Success should also entail making the most out of PNG’s offshore fishery resources.** Recent World Bank research focuses on the prospects for tuna fisheries between now and 2040, and notes that PNG has the potential to realize expanded public revenues and job creation. This will require efforts aimed at better regional cooperation around fisheries, improvements in the sustainable management of fish stocks, enhancements in the flexibility and value of fishery access rights, upskilling of fishery managers, better branding and marketing of local tuna, and support for regional processing clusters.²⁰³

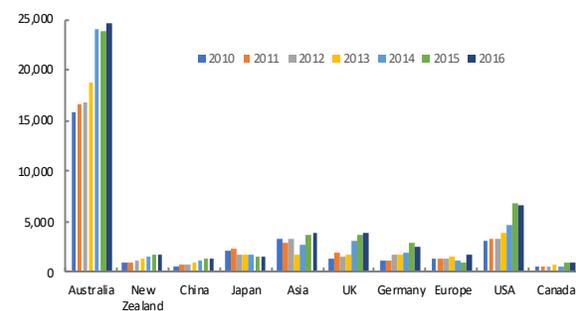
7.2.3 Tourism sector

196. **The development of a sustainable tourism sector has the potential to engender more inclusive growth that can benefit the bottom 40 percent, and be gender inclusive.** PNG’s incredible natural and cultural assets make for an attractive tourist destination²⁰⁴, with diverse visitor experiences that include world class diving, surfing, major walking tracks, bird watching, cultural exposure, adventure products, and World War II historical sites. The sector is labor intensive, generating a wide range of jobs, especially for women and youth, together with economic opportunities for local communities, including those in the primary and artisan sectors, which are the most likely to live in extreme poverty. When properly managed, tourism can enable the preservation of natural and cultural heritage – some of PNG’s most valuable assets – which are critical foundations of resilience and social cohesion for communities.

197. **The government has identified sustainable tourism as a priority sector that can lead to more inclusive growth.** PNG’s Medium-Term Development Plan 2 (2016-2017)²⁰⁵ highlights the importance of the tourism sector, featuring as one of its objectives to “increase the number of international tourists and business travelers for cultural, environmental and economic benefits of Papua New Guineans.” Similarly, the PNG Tourism Master Plan 2007-2017²⁰⁶ set a specific goal of “doubling the number of tourists on holiday in PNG every five years.”

198. **The sector has seen steady growth in visitor numbers (Figure 70).** Between 2002 and 2015, international arrivals grew by an annual average growth rate of 13 percent. In absolute terms, visitor arrivals grew from 54,000 in 2002 to 199,000 in 2015, representing slightly more than 1.5 million visitors during this period. The majority of holiday arrivals were from Australia (24,000), followed by the United States (6,800) and United Kingdom (3,600).²⁰⁷ In the Asian region, China is a potential growth segment for Papua New Guinea and represented 6 percent of total arrivals in 2016.²⁰⁸

Figure 70: International arrivals from China and other markets are growing rapidly



Source: PNGTPA (2017)

²⁰² World Bank (2017c).

²⁰³ Ibid.

²⁰⁴ In 2017, the country was selected as one of National Geographic Traveler’s 21 ‘Best of World Destinations’.

²⁰⁵ The rolling Medium-Term Development Plans provide investment plans aligned to the ‘PNG Development Strategic Plan 2010-2030’ and the ‘Vision 2050’.

²⁰⁶ ICCC and PNGTPA (2006, Part 4.10).

²⁰⁷ PNGTPA (2017).

²⁰⁸ Ibid.

During the last ten years, the Chinese market expanded at an average annual growth rate of 16 percent. To fully capitalize on this opportunity and continue to expand Chinese visitor numbers at rapid rates, the sector will need to recognize key differences in tourism preferences between Chinese visitors and visitors from the country's traditional Anglo source markets, and tailor tourism offerings accordingly.

199. **Niche market tourism and the cruise market will continue to be the two main growth areas in the sector.** The country's geographic, ecological and ethnographic endowments provide many opportunities for the development of higher-yielding niche experiences for special interest tourists, and this has contributed to robust growth in arrivals. Visitor arrivals by cruise ship are reported to have seen even stronger growth due the increasing size and number of cruises.²⁰⁹ PNG has become a popular destination for cruise tourism – the fastest growing tourism channel in the world – which accounted for nearly USD 4.5 million in visitor expenditure in 2015. Of the local economic impact, 54 percent was generated from spending by cruise operators (mainly through port fees), 43 percent was generated by passengers, and three percent by crew members purchasing goods and services from local businesses. Opportunities for ecotourism may also be significant, but these remain relatively unexplored to date.

200. **Currently, given the country's endowed natural assets, the tourism sector's contribution to the economy and employment is below its potential.** The relatively low contribution of travel and tourism to the economy ranks PNG at 184th place in the World Travel and Tourism Council's rankings (out of 185 countries). WTTC (2017) estimates travel and tourism's direct contribution to GDP at 0.7 percent of GDP and employment at 0.6 percent of total employment in 2016. When adding the induced and indirect effects, the total contribution²¹⁰ of travel and tourism reaches 1.9 percent of GDP and 1.7 percent of total employment.

201. **The limited competitiveness of PNG's tourism sector due to the relatively high cost and limited quality of services offered, stymie efforts to enhance PNG's attractiveness to potential tourists.** A significant concern is safety and security, which as discussed earlier, continues to adversely affect outsiders' views of the country. Other issues include: (i) weak provincial and tourism institutions, which lead to the preparation of unrealistic provincial tourism strategies, limited knowledge about market demand, poor marketing, and insufficient workforce development; (ii) inadequate supporting infrastructure and related services; and (iii) a limited supply and/or poor quality of tourism products and services.

202. **Tourism can also provide opportunities for income generation and economic empowerment for women which, in turn, would support poverty reduction and inclusive growth.** Enhancing the returns on women's participation in SMEs which service the tourism sector such as in the provision of agriculture produce and handcrafts, would lead to the economic empowerment of women. Further, workforce development for tourism, especially for women, could boost opportunities in roles such as tour guides and hotel staff.²¹¹

203. **To improve the attractiveness of PNG as a tourist destination, a fully integrated multisectoral approach is necessary.** The elements of the approach are: (i) improve safety and security; (ii) improve access to and reduce cost of travel to and within PNG; (iii) improve or rehabilitate infrastructure, products and experiences to allow for entry of both tourism-related services and other

²⁰⁹ However, actual passenger disembarkation numbers are not available.

²¹⁰ The total contribution adds the indirect (i.e. purchase of food and cleaning services by hotels) and induced (spending of those directly or indirectly employed by the industry) effects.

²¹¹ United Nations World Tourism Organization and United Nation Women (2010); World Bank internal communications on PNG's tourism project, July 2016.

ancillary businesses which support the sector, to engender competition that will reduce costs and raise service quality; (iv) increase the participation of local communities in providing ancillary services to the sector; and (v) strengthen the institutional and policy frameworks for tourism development across national, provincial and local levels. The sustainable management of PNG's natural environments and preservation of its unique and extensive biodiversity will also be essential.

8. Pathway IV: Managing risks to the sustainability of inclusive growth and poverty reduction

204. **This pathway focuses on managing risks to poverty reduction and shared prosperity.** No country is devoid of such risk, and some risks can at best be managed rather than fully be eliminated. The risks that PNG faces are complex and varied. For the purposes of this chapter, they are classified under four overarching themes: economic; social; environmental; climate change and natural hazard; and political. These themes are closely related and not mutually exclusive. In many cases the identified risks are associated with multiple issues that have been discussed in other sections of this SCD. Consequently, mitigation will in part be achieved by directly addressing these challenges. However, it is also crucial that government sets out to regularly identify key risks, monitor associated developments, and pursue deliberate strategies for mitigating the most potent risks identified.

205. **Threats to PNG's ability to deliver opportunity, stability and services to its diverse, dispersed population, and guarantee prosperity for future generations, arise from a number of sources.** PNG's resource dependence has underpinned elevated macroeconomic volatility and challenges in maintaining the fiscal space to fund essential services and safety nets. Inherent instability and gross inequalities of the resource-dominated economy have weakened institutions, undermining accountability and service delivery, and blunted the incentives for the political class to deliver inclusive development. High political fragmentation alongside perverse patronage arrangements and limited transparency in the use of public funds exacerbates these challenges. Rising urbanization and modernization are placing stress on traditional institutions and, combined with a burgeoning youth cohort and limited economic opportunity, create conditions for social strife. Endemic gender-based violence threatens wellbeing and constrains opportunities for women, creating the risk that a large share of the population will be left behind even as the country's fortunes improve. The country is susceptible to a range of environmental, climate change and natural disaster hazards. Moreover, economic development, population growth and urbanization combined with poor planning are intensifying pressures on natural environments and ecosystems that support livelihoods and are critical to the long-run prospects of key sectors.

206. **At the same time, there are forces in PNG economy, society, politics and institutions which, day to day, work to address these challenges.** These forces and their protagonists are not so visible. Their role in mitigating violence in urban settlements, in mediating complex and communal disputes, making local marketplaces safe, and creating inclusive networks of opportunity for women and youth has emerged organically in the local contexts where they operate, often unseen and unsupported by state institutions. The good news extends beyond local action: significant social movements and legislative innovation are emerging around women's rights and gender-based violence; there is recent evidence of a stronger policy basis (long absent) to political pacts and alliances; and social media and other forums are increasingly employed to promote accountability and democratic process.

8.1 Economic risks

207. **The principal economic risks in PNG relate to the country's resource dependency.** The close correlation that the country's GDP growth and fiscal performance have with developments in global commodities prices, has been the basis for PNG's periodic boom and bust economic cycles. Commodities prices are volatile and, in the absence of strong macroeconomic institutions, this volatility has been frequently transferred to the domestic economy, placing stress on fiscal security, service provision and governing institutions.

208. **Elevated macroeconomic volatility is associated with lower long-run growth, disproportionately hurts the poor, and increases inequality.**²¹² Cross-country analysis indicates that higher output volatility is associated with lower per capita growth in poor countries. This relationship is particularly strong and detrimental, from volatility to growth, when volatility is in excess of normal business cycle fluctuations.²¹³ Economic volatility also increases inequality. The poor are least protected during downturns and crisis episodes. The income share of the poorest quintile of households declines when aggregate volatility rises significantly, and inequality tends to rise more in recessions than it does during upturns.²¹⁴

209. **Fiscal management comes under pressure when resources-related revenues – which are hard to predict and subject to the vagaries of the commodity cycle – constitute a large share of total public revenues.** A downturn in commodity prices can quickly shrink fiscal space, potentially necessitating cuts in service delivery and jeopardizing hard-won progress in human development. With GDP growth also typically facing downside pressure during a commodity cycle trough, such expenditure consolidation becomes necessary at a time when social services and safety nets are most needed. During a cyclical upswing in prices, revenue windfalls are often translated into spending booms that can be very difficult to unwind, exacerbating the fiscal crisis and the scale of the necessary cuts when high prices eventually subside. Spending and borrowing may also be ramped up on the basis of optimistic price forecasts, but before revenues have materialized, leaving public finances in disarray if events do not turn out as anticipated.

210. **PNG is currently confronted with the risk that a sustained commodity price downturn will continue to deteriorate public finances and require a further scaling back of essential services.** As discussed in earlier sections of the SCD, there are formidable challenges to the delivery of quality public services in PNG, and further funding cuts will only make matters worse. Furthermore, persistent fiscal deficits financed through increased domestic and external non-concessional borrowing, including the printing of money by the central bank, and accumulation of expenditure arrears, have had negative spillovers across the broader macroeconomy and weakened the business environment. These issues are not altogether new to PNG and, given the country's long legacy of resource sector reliance, appropriate macroeconomic and fiscal policies aimed at addressing these challenges and mitigating the overall risk are long overdue.

211. **There is a risk that future generations of Papua New Guineans will lament the depletion of their national endowments, if there are few long-run development gains to show for it, and if a broader basis for long-run growth is not established before they run out.** Prudent management of a country's resource wealth entails that a country's citizens (including future generations) get the best deal out of the extraction and sale of exhaustible endowments, and that the associated revenues are put to good use. Government needs to utilize the associated revenues to make careful investments aimed at sustainably improving human development and raising the competitiveness of the broader economy. The global competitiveness of PNG's non-resource sectors will inevitably be hurt by commodity cycle driven volatility in the exchange rate. This is particularly so during upswings, when the expanding resource sector quickly draws in factors of production from other sectors, and where an appreciating exchange rate weakens global demand for the exports of the latter. Nonetheless, it is the non-resource economy that PNG must rely on to

²¹² World Bank (2013b).

²¹³ Hnatkovska and Loayza (2003).

²¹⁴ Calderon and Yeyati (2009).

maintain living standards and economic prosperity during the cyclical troughs and, in the long run, when the country's resource sector prospects are past their heyday. The promotion of economic diversification and the alleviation of key binding constraints will help PNG gradually overcome its reliance on resources and transition to a more sophisticated and broad-based structural basis for growth, with lower vulnerability to commodity shocks.

212. **The presence of extractable resources increases pressure on land tenure systems and regulation, creating disputes within and between communities.** The emergence of new economic wealth and the opportunity to capture corresponding rents has fractured relationships between families, villages and tribes. Natural resources such as timber have been extracted within relationships that play on fragmentation: companies have struck one-sided, often socially divisive deals with those able to present themselves (though, not always accurately) as legitimate authorities over contested resources. Proper representation of local community interests can get overlooked, including appropriate benefit sharing of rents derived from what are usually communally-owned lands. Wider resource grabbing facilitated by central interests is also visible in the Special Agricultural and Business Leases (SABL), by which a range of international interests (including forestry and oil palm) working with complicit central government interests have gained resource control over vast swathes of PNG forest. Despite multiple promises, SABLs are yet to be formally and legally revoked. There is a risk that future reforms in this space, as well as other mechanisms aimed at freeing up land will erode the traditional safety net that land constituted.

213. **Poor transparency and accountability in the management and distribution of revenues from resource extraction is giving rise to public discontent and threatening stability.** The public are increasingly contesting the effectiveness and legitimacy of public authorities' ability to responsibly regulate extractives sector deals and mediate disputes. This is leading to significant disillusionment and discontent amongst the general population, and landowner groups, in particular. For instance, the violent conflict in PNG's eastern-most island province of Bougainville during the period 1988 to 1997 illustrates the perceived lack of transparency in the agreements made between the national government and the operator of the massive copper mine that dominated the economy. Dissatisfaction with benefit-sharing agreements between the large copper mine and local communities included the belief that the benefits of the mine were going disproportionately to mainland PNG, that migrants were benefiting from the mine more than landowners, and that communities in other parts of the island were excluded from the benefits. More recently, while there are obvious risks around the possible resumption of mining and the impending referendum,²¹⁵ resilience has emerged in the form of institutional/governance innovation associated with the political settlement (peace agreement) and with changes to mining legislation.

Box 13: **Winds of the past**
New risks on Bougainville's horizon

Bougainville's civil war was a brutal and complex struggle, conducted both between PNG security forces and Bougainville armed secessionists, and between several different factions, over 1988-1998. As part of the Bougainville Peace Agreement (BPA), and subject to prior conditions being met (including good local governance and disarmament of locals), the Government of PNG has committed to holding a referendum on independence, recently scheduled for June 2019. It will refocus attention on a range of contentious issues, and thus pose a risk in itself to stability, security and economic development.

There are both clear risks associated with each of the following issues: (i) unresolved compensation claims linked to the environmental impacts of a key mine that was at the center of tensions at the outset of the original conflict;

²¹⁵ See Box 13.

(ii) the resumption of mining at this contested site; (iii) the ability of Bougainville to achieve fiscal self-reliance; (iv) the disruptive power of parties (including local and sub-regional factions, or influential and offshore-influenced individuals) who did not participate in the peace process and who contest the legitimacy of the Autonomous Bougainville Government (ABG); and (v) the representative legitimacy, authority and governance practice of the ABG, including its ability to secure law, order and disarmament of local factions.

There is no prospect of ABG fiscal self-reliance either before the referendum or in the absence of a return to large-scale mining (and not within the next ten years even if mining recommences soon). An independent Bougainville state would require more than 10 times current revenues to balance its budget. Hence, a referendum outcome in favor of independence would encounter implementation difficulties, given the uncertainty of ongoing PNG commitment to subsidizing ABG and AROB. Resumption of mining would be expensive, and attracting a major investor under prevailing circumstances will be challenging. Tensions between Bougainvillians in favor of and opposed to the return of large scale mining could generate more conflict.

Meanwhile, the ABG are demonstrating strong commitments to good governance and achieving political legitimacy and authority. There is also close dialogue between the ABG and the private sector about diversifying the economy and the revenue base.

8.2 Social risks

214. **PNG is faced with the challenges of a rapidly modernizing traditional society with evolving demands from an expanding, urbanizing and more youthful population.** Increasing urbanization and greater connectedness to the global marketplace of culture and ideas will accelerate demands for education and opportunity, shifting social and political identities. The impact of modernizing influences – schools, church, cities, local travel, media and the internet – is already heavily registered across PNG cultures. As a result, traditional segmentation around kin preference has hybridized with new forms of stratification and inequalities. Wantok alliances now sit alongside new identities, related to village, province and urban settlement, formal and informal sector economic opportunity, youth, gender, work, and citizen entitlement. In some cases, this can place strains on the traditional social institutions that have served as an important safety net for the poor. While family and wider *wantok* relations remain central to personal safety, economic subsistence and continuity of identity, these are shifting rapidly in contemporary Papua New Guinea.

215. **The country's extraordinary ethnographic and cultural diversity can pose challenges for social cohesion.** Frictions can emerge from the interface between various national institutions (especially, for instance, the legal or political system) and the diverse power structures, norms and practices of traditional local societies. They also regularly emerge between different ethnic and wontok groups, as can be seen for instance in land disputes that are a frequent²¹⁶ source of social strife. These can arise over ownership, use, or access to shared benefits, and occasionally devolve into violence. Understanding inter and intra-village and tribe relations, including relevant disputes and conflicts, power structures and how these structures are displayed, evolve and interact, is therefore essential in Papua New Guinea. On a related note, investments by both public and private sector need to be tailored to work within the prevailing social institutions and account for their diverse, evolving mix of formal and informal decision-making structures in order to mitigate risks of failure.

²¹⁶ Land disputes comprise almost a quarter of all reported disputes (Lakhani and Willman, 2014c).

216. **The large presence of the enclave-based resource economy has created frictions in Papua New Guinea's social fabric.** Conflict over resource rents and revenues is apparent from family to local to central levels, and both inside and outside of government. Resources exist in territorial enclaves, fuelling spatial inequity and conflict between villages, districts, provinces and regions. Resentments develop between adjoining districts where one has resource rents and the other does not. As visible around PNG's LNG and mining enclaves, existing territorial relations are transformed: conflict fault-lines can deepen or change, disabling previous resolution mechanisms, and enabling the re-emergence of ethnic violence. Outsiders arriving in resource enclaves seeking opportunities can create further tensions, especially as they side with or are protected by local factions.

217. The remainder of this section explores important social risks relating to gender, youth and urbanization.

8.2.1 Gender

218. **As outlined in Section 2, PNG women face considerable threats to their personal safety and wide-ranging obstacles to their participation in the economy.** These exclude women from sharing in the full benefits of PNG's economic development and risk undoing progress made to date. A country cannot hope to achieve the twin goals when half of its population is subject to various forms of systematic discrimination. There is an urgent need to improve employment opportunities for women and undo various structural impediments that place women at a disadvantage.

219. **Violence against women is endemic and this directly impacts on women's ability to participate in wider opportunities.** Women face precarious risks to their personal safety in all parts of their life, whether at home, at the markets, at work, or merely walking down the street (see Box 2). If not systematically confronted and mitigated, inequality of opportunity between the genders may widen further, with women held back and increasingly unable to take advantage of the opportunities that future growth and development have to offer.

220. **Progress is being made by the private and public sectors to include women in the economy and eliminate barriers to their full participation.** The IFC-sponsored PNG Business Coalition for Women (BCFW), for example, brings together more than 60 companies and corporate leaders to drive positive change for women and businesses in the country. The BCWF helps PNG's private sector to recruit retain and promote women – as employees, leaders, customers and business partnerships – develop gender smart policies and practices, expand opportunities for women in supplier and distributor networks, and address gender-based violence. Addressing GBV and increasing women's economic empowerment will help increase the private sector's productivity and profitability.

221. **More generally, the Government of Papua New Guinea has recognized the need to address GBV.** The *National Policy for Women and Gender Equality 2011-2015*²¹⁷ aims to promote improved equality, participation, and empowerment of women in PNG, including strategies to increase advocacy against violence against women and girls (VAWG) and providing services to affected victims. Research and legislation development to better address GBV is also a key element of the policy. The government has also developed the National Sexual Reproductive Policy which includes strategies to limit family and sexual violence.

²¹⁷ Prepared by the Department of Community Development.

8.2.2 Youth

222. **The burgeoning youth cohort, who have limited employment opportunities and who may consequently engage in criminal activities and substance abuse, are a notable source of risk to inclusive growth and poverty reduction.** PNG youth find themselves at a crossroads, increasingly frustrated with traditional decision-making processes that exclude them, and yet unable to take full advantage of the opportunities offered by a growing economy. Relationships between the generations have historically been rigid, with decision-making power consolidated with the clan elders. New opportunities to circumvent traditional processes and move up the social ladder more quickly, are being generated by the influx of natural resource projects and increased mobility that allows youth to migrate to urban areas.²¹⁸ However, such opportunities are in short supply and growth in recent decades has not been sufficiently inclusive as to provide decent jobs for the numbers of young new entrants to the labor force.

223. **Opportunities for youth are severely limited.** The youth unemployment rate is higher than that for the overall population and there is both stigmatization and exclusion of youth from urban formal labor markets. Economically active youth are largely engaged within the informal economy, where their activities can be subject to intense competition and violence. That this large, dynamic, education-hungry demographic cohort might not have the opportunity to live up to its enormous potential, would be an extraordinary waste of PNG's human capital. At the same time, this creates a large pool of disaffected and available youth, for whom political action in support of patrons may seem among the very few options available for improvements in their circumstances. Political disappointment often seems inevitable and, as seen in recent elections, can erupt into local violence.

224. **Limited opportunity for youth in the rural economy has driven large flows of rural-urban migration, increasing their social and economic vulnerability.** The social capital that young people have in their ties with family, village and tribe is an often overlooked yet important asset that can be eroded during this migration. Subsequent generations born and raised in these urban centers must also confront related challenges: they may be unfamiliar with their mother tongue and tribal affiliations, may not know extended family in the rural hinterlands, and may consequently have no means of accessing customary land. On the other hand, while community dynamics governing urban settlements are different to those in the village, familiar kin and groups provide some dimension of support, especially in times of sickness, financial, or law and justice difficulty. Affiliation patterns in urban contexts are especially flexible, with Tok Pisin, school, church and sporting activities providing new forms of association.²¹⁹

225. **Participation in criminal activities can present a potentially attractive avenue for income generation for many young economically inactive males living in urban settlements.** The youth are routinely depicted as being at the root of PNG's violence and social order issues. Anecdotal as well as some limited survey evidence suggest that most of the relatively serious criminal offences in Port Moresby are committed by young males between the ages of 15 and 20 years old.^{220,221} Violent and armed youth gangs that have in the past gained notoriety throughout urban centers in modern PNG constitute effective organizing entities for engaging in such activities. They may also provide an important sense of group identity to disenfranchised urban youth who have been disconnected from their cultural roots and traditional

²¹⁸ World Bank (2013a)

²¹⁹ Kanaparo et al. (2014).

²²⁰ Boamah and Stanley (2007).

²²¹ Supporting evidence from the Port Moresby Urban Youth Employment Project (UYEP) points to high levels of prior participation in crime among economically inactive youth. For instance, prior perpetration of assault by UYEP applicants in a given program round has been as high as 42 percent, while that for stealing has been as high as 26 percent.

communities. Prominent-though-contentious views hold that in societies with very young populations, when youth are denied the opportunity for meaningful economic and social advancement, this can become a source of broader instability and civil unrest.^{222,223} At the same time, urban youth do make considerable contributions to family economies in PNG, especially through informal marketing. Moreover, there is some evidence that urban youth gangs have failed to institutionalize, and may have entered decline.

8.2.3 *Urbanization, violence and local dispute resolution*

226. **Like PNG's population and geography, violence and fragility are diverse, and manifest very differently in different places.** 'Tribal' or communal violence might be endemic in some locations; in others, it has been long suppressed by local leaders and people themselves sorting out disputes, and learning to live together within multi-ethnic settings. Even widely used regional distinctions and potential divides such as among urban settlers from different provinces, or between 'Highlanders' and 'Coastals' or 'Papuan' have not become a basis for entrenched, endemic conflict. Urban settlements have seen communal violence between different groups escalating from minor disputes between families or children; but many other groups living adjacent are not drawn into the cycles of conflict.

227. **Urban settlements can be sites of acute communal violence.** Urbanisation is changing political, economic and social structures. Large flows of rural-to-urban migration, together with limited availability of land and economic opportunity, have pushed a large share of the urban population into high-density informal settlements along the urban peripheries. Co-location of different groups in the same urban settlement is the norm: very few settlements are mono-ethnic. Individual house sections or compounds within settlements are commonly composed of people from the same wantok, who have arrived in the same urban settlement through family and village chain migration patterns. This means that any small conflict or episode of drunken and disorderly behaviour can rapidly escalate into a communal conflict, especially where suspicion is underpinned by fears and mutual misunderstandings about practices involving sorcery. In late 2015, for example, the robbery of a single betelnut seller by a small group of drunken youths escalated into an ethnic conflict, that saw more than 250 houses burnt to the ground in Lae.

228. **Local urban communal violence can also be a significant threat to wider urban stability and security.** Recurrent incidents of wider communal violence in the last three decades in Lae show how, in the context of urban ethnic rivalries and failing urban governance, communal violence can escalate to the point where it threatens wider conflict. But even there, where Highlander versus Morobe or Coastal politics have been acute, considerable day to day ethnic mixing across fault-lines continues, and a range of local mechanisms have come to resolve immediate tensions, and lay a strong potential basis for longer term stability. In Port Moresby, while there are similar geographical fault-lines between Highlands and Papuan people, the situation seems even less polarised, and processes of mixing and cohabitation more advanced and entrenched. Local conflicts emerge at market place and other local flashpoints: but none has ever escalated into city-wide cross-ethnic confrontation.

229. **Local institutional adaptation in urban law and justice has had a significant role in making urban settlements safer.** State reach into urban peripheries has been limited. But endogenous and quasi-state processes have seen grassroots law and justice capabilities emerging in village courts and 'komiti' networks of ethnic leaders devoted to dispute mediation. They have also helped regulate local markets in the absence of more formal state mechanisms.²²⁴ However, these emergent institutions have not kept pace

²²² Urdal (2004)

²²³ Ali (2014).

²²⁴ Craig and Porter (2017).

with PNG's urban expansion. Sustainably expanding these would make a positive difference across urban PNG and provide a launch pad for future leadership, while at the same time avoiding the disruption of local contexts and trust relations that arises when interventions are linked to unprecedented financial opportunities.

230. **Strengthening these local adaptive forms of urban settlement leadership requires careful and selective engagement.** They are based on not just money, but forms of respect, trust, knowledge of people, and group histories. They are not easily directly engaged by the state or development partners without disrupting their grounding in local human, social, cultural and symbolic capital. But community policing models and support for proximate institutions including village courts and ward-level community church and business networks can provide links which strengthen their problem-solving authority.

231. **Urbanization will continue and, if well managed, will be an increasingly important source of resilience for the PNG economy and society in the long run.** Urban growth helps an economy to diversify, to move beyond bases of subsistence rural production and resource dependence. Urban voter power brings a shift from resource rent driven patronage, and towards a politics responding to demands for population-wide services, and for institutions to deliver them.²²⁵ These positive outcomes will be more likely if emerging forms of urban governance – including, notably, city authorities – become more capable institutions, able to handle the diverse pressures of their increasingly populated, multi-ethnic locales. They will also need to do a better job of ensuring service provision, particularly to informal settlements, since these tend to be arrival zones for rural-to-urban migrants. For instance, without improvements in services such as sanitation and water – which are already underprovided in settlements – ongoing urbanization will exacerbate pressures on existing systems and can generate further failures public health.

8.3 Environmental, climate change and natural hazard risks

232. **Natural environments and ecosystems provide a crucial basis for long-run prospects in key economic sectors, but their sustainability is at risk.** The country's coastal and marine resources, fertile lands, dense wide-ranging forests, and enormous fresh water reserves, and their corresponding ecosystem services, are essential to the millions of local livelihoods that are based in agriculture, forestry, fisheries and tourism. However, a growing population, urbanization, resource extraction, poor agricultural practices and an expanding economic footprint are all placing increasing pressure on the environment and, in some cases, there is evidence of considerable degradation. Prudent management of the environment, giving regard to the dividends that these assets have to offer in future years and for future generations, will help ensure the sustainability of the economic activities described above and help lock-in progress toward the twin goals. In a similar vein, sound management of the country's exhaustible natural resources is essential for ensuring that benefits to local communities are maximized and that the broader public stands to benefit from the extraction and depletion of these national endowments.

233. **PNG faces a range of environmentally-driven risks with potential for far-reaching impact.** In 2016, PNG placed 10th out of 171 countries in terms of risks associated with its exposure and vulnerability to natural hazards.²²⁶ Most prominently, the country must contend with the impacts of floods, droughts, landslides, earthquakes and sea-level rise:

²²⁵ Barma et al (2012); Auty (2007).

²²⁶ United Nations University Institute for Environment and Human Security, Bündnis Entwicklung Hilft and University of Stuttgart (2016).

Floods: About 18 percent of the country’s total landmass is permanently inundated or regularly flooded. Most of PNG experiences flooding during the monsoons. The highlands have a long history of severe floods while, in the coastal plains, floods cause erosion and heavy sedimentation that impact agricultural productivity and downstream settlements. In the lowlands, coastal ecosystems such as mangroves, estuaries, and coral reefs endure damage due to heavy silt loads and debris brought in by flood events. Up to 30 percent of PNG’s population may be adversely affected by future flooding events if projections are realized. On occasion, major flooding has also rendered access to mining sites impossible, with serious effect on mining revenues.

Droughts: Droughts affect the Southwestern plains, Central Province plains, Cape Vogel area, Markham valley, Bulolo valley, Maprik–Angoram area, and areas in the Eastern Highlands and Madang Provinces. In recent years, droughts have created serious food insecurity in some locations.

Landslides: PNG has among the most severe landslide hazard profiles in the world due to its steep mountain ranges, high seismicity, and high annual rainfall. These are common in the highlands and frequently damage vital infrastructure, upland forests, and the homes and gardens of thousands of residents.

Earthquakes: Located along the Pacific rim of fire, PNG is subject to considerable seismic activity. Major earthquakes occasionally result in injuries, loss of life and significant damage to buildings and infrastructure. Earthquakes have been responsible for the landslides across the country, as described above, as well as tsunamis that have affected PNG’s islands and coastal regions.²²⁷

Sea-level rise: Rising sea levels are already causing problems in PNG and the challenge will get more severe in the future. The effects are apparent in Katarets Island and the Motlocks where much land is now underwater. Sea-level rise results in inundation of coastal areas, coral bleaching, loss of wetlands, and may eventually displace communities. Similarly, saltwater intrusion is observed to be destroying freshwater trees along the Binaturi River in the Western Province and limiting access to freshwater in general.

234. **Climate change is impacting PNG.** Mean air and sea surface temperatures in the region have exhibited a long-run uptick. The El Niño–Southern Oscillation (ENSO) phenomenon has been observed having an increasingly negative effect on PNG’s climate, triggering more intense and prolonged drought and flood events. Recent evidence and model simulations point to a more frequent occurrence of El Niño weather patterns. There has been an intensification of the monsoon. Coastal areas and islands are already experiencing the effect of climate change driven weather events and sea-level change. Climate change driven mobility in PNG has the potential to drive a range of conflicts, such as in resettlement areas and sites of urban arrival.

235. **Projected climate change could impose serious economic costs.** In PNG, the costs of coping with, and recovering from, natural disasters are comparatively higher, given the challenging logistics of reaching remote and spatially dispersed populations.²²⁸ The country’s rural communities have limited access to education and health facilities and lack the financial capacity (savings, insurance) to cope with the impacts of disasters and climate change. Women also suffer more from climate extremes than men,

²²⁷ In February 2018, PNG experienced a 7.5 magnitude earthquake, followed by a number of large aftershocks over March and April.

²²⁸ OECD and World Bank (2016).

because they tend to depend more on natural resources for livelihood and subsistence, and are vulnerable to gender-based violence in the aftermath of disasters.²²⁹ The University of Notre Dame's Global Adaptation Initiative ranks PNG 173 out of 181 countries for its vulnerability and readiness to the challenges of climate change. One positive highlight has been the high level of customary land ownership which, although constraining economic development, has acted as a brake on natural resource exploitation, deforestation, river silting, and flood severity.

236. **Natural disasters and climate variability severely affect the agriculture and fisheries sectors, leading to lower economic growth and affecting the most vulnerable populations.**²³⁰ The arrival (or nonarrival) and intensity of the annual monsoon cycles has important effects on local livelihoods, especially in areas of PNG where rainfall is marginal but crucial to cropping. The highland regions are particularly sensitive to variability in agricultural yields as a result of changing climate. In recent years, climate-driven shortages in the highlands left hundreds of thousands of people in need of food aid while also placing pressure on poor and vulnerable urban households by pushing up prices for some staple foods. Under a high emissions scenario, catches of skipjack tuna in PNG's waters are estimated to witness enormous declines by 2100.²³¹ Sea temperature increase and acidification may over time destroy Papua New Guinea's coral reefs.²³² Coral reefs not only contribute to economic growth through fisheries and tourism, they protect the coastlines from storms and loss of land. Between 50,000 and 70,000 coastal inhabitants rely on coral reefs for their food, livelihoods and shelter.

8.4 Political risks

237. **PNG is politically diverse and fragmented with thousands of tribal groups represented by local and national government structures which do not fit easily with local kin or place/village affiliations.** Strong loyalties to place and kin or wantok language groups persist and play out in political rivalries. Politics at any official level thus becomes a site of intense contest and conflict within the wider electoral and representative system and involving large numbers of locally supported candidates. The winners in these contests rarely represent a majority of voters, and nor does the distribution of patronage that being elected typically enables. Those elected often retain the loyalty (and maintain the patronage) of just a tiny proportion of the voting population, paving the way for widespread political disenfranchisement.

238. **Such fragmentation has generated regular political instability.** Only two governments have managed to complete a full elected term since independence. This has created incentives for political pacts (strong, durable agreements). Functioning well, these kinds of pacts can protect both national unity and stability and local interests and assets.²³³ In PNG these pacts have long been criticized for being highly personalized, cash based, transactional and short term.²³⁴

239. **In PNG, the provisioning of rents and patronage through various forms of political pacts has been a source of fragility.**²³⁵ This is employed at many levels, including in the building of parliamentary coalitions and in the appeasing of elites and key voter segments, with few if any checks and balances. Limited accountability in the use and distribution of public funds may lead to corruption, loss of

²²⁹ World Bank (2016).

²³⁰ OECD and World Bank (2016).

²³¹ Asian Development Bank (2013).

²³² Ibid.

²³³ Slater (2010); Khan (2010).

²³⁴ Standish (1999).

²³⁵ This issue receives further attention in the next section.

legitimacy, and violence. Contests over patronage are intensely political and can degenerate into acts of physical violence, when supporters and clients of a patron lose their privileges. These patronage loyalties and conflicts are very often mapped to local kin and tribal allegiances, and thus can reignite conflict. The net effect is loss of both effectiveness and legitimacy for government at all levels: an ideal environment for the nurturing of grievance and the ready eruption of reactive violence.

240. **Central control over resource rents, and incentives to use these to drive the political process, can (and have) manifest in pockets of political violence and popular dissatisfaction over electoral processes.** Resource rents and revenues typically flow into centralized executive arrangements, where they are subject to elite capture: that is, to being managed and allocated by central actors within government and the executive. There they are typically subject to little wider scrutiny, and highly amenable to political or patronage influence, and become the source of destabilizing political competition for rent control. It can also drive other forms of violence along ethnic fault-lines, between communal groups and excluded youth in towns and cities and around mines, forestry, plantation and other resource enclaves. Disputes over the control of natural resources and associated rents have been at the root of many local level conflicts.

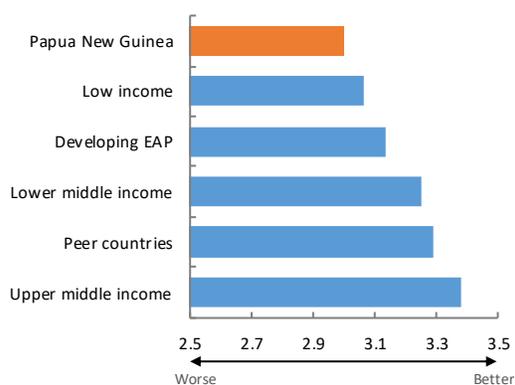
9. Cross-cutting theme: Governance and institutions

241. **Ensuring effective governance and the quality and inclusiveness of institutions is important for the long-run development of a country.**²³⁶ This is especially the case in countries with high political or social fragmentation, as well as in economies that are highly dependent on natural resources – and Papua New Guinea satisfies both of these characterizations. While there are a number of important areas of institutional strength in PNG, the country nonetheless exhibits comparatively low scores on key institutional and governance indicators. These weaknesses are a source of challenges across the economy and society, and they cut across all four pathways of the SCD.

9.1 Evidence of institutional and governance weaknesses

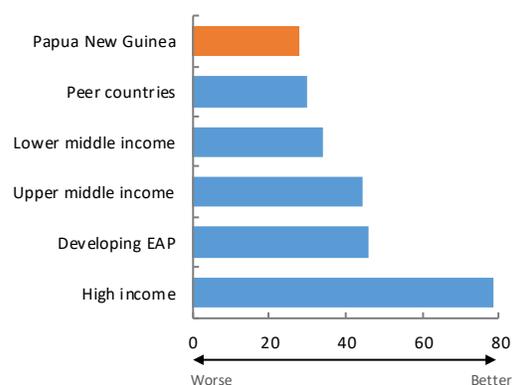
242. **Headline indicators of governance and institutions rank PNG unfavorably relative to other countries.** The country has received low and recently-deteriorating scores on the World Bank’s Country Policy and Institutional Assessments which assess the quality of policy and institutional frameworks in areas such as economic management, structural policies, social inclusion and equity, and public sector management. On a scale of 1 (low quality) to 6 (high quality), PNG’s average score across these areas was 3.0 in 2016, lower than the averages of key comparator country groups (Figure 71), and having fallen from 3.3 in 2012. Similar comparative performance is evident in the World Governance Indicators (WGI) (Figure 72).

Figure 71: CPIA, IDA resource allocation index, 2016



Source: World Development Indicators

Figure 72: World Governance Indicators, average percentile rank²³⁷, 2015



Source: World Governance Indicators

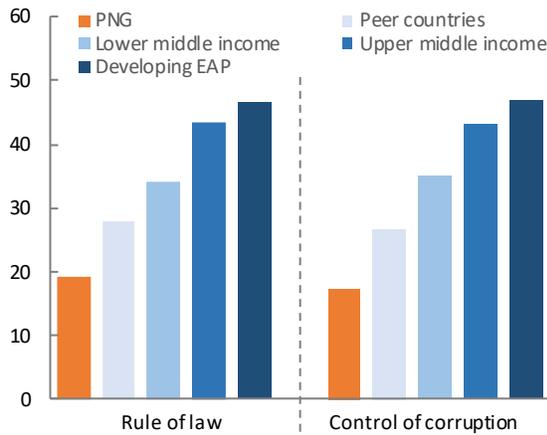
243. **The resulting environment, combined with weak enforcement of law and order, has been responsible for a proliferation of corruption and rent-seeking behavior.** While the direct impacts of corruption upon businesses – including higher costs and withholding of service delivery – were highlighted in Pathway III, there are substantial broader consequences including reduced government effectiveness and an erosion in the general public’s confidence in public institutions. Significant elements of a rentier state have emerged, with what could be characterized as attempts at state capture by various local and foreign actors and the misappropriation of public resources. Corruption has become a considerable problem in Papua New Guinea. Among the categories of the WGIs, PNG performs most poorly in control of

²³⁶ Acemoglu and Robinson (2005).

²³⁷ For each country, average percentile rank is calculated across all WGI categories. Country group averages are then calculated.

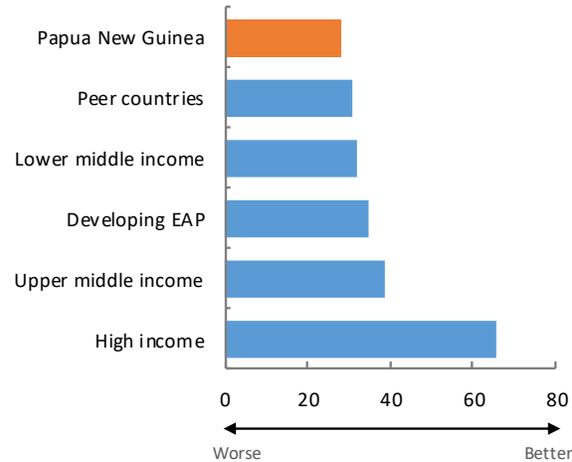
corruption²³⁸ where it features at the 17th percentile rank among countries (Figure 73). Transparency International, for 2015, also ranks PNG poorly (139th out of 168 countries) with respect to its corruption perceptions index (Figure 74).

Figure 73: World Governance Indicators, rule of law and control of corruption indices, 2015



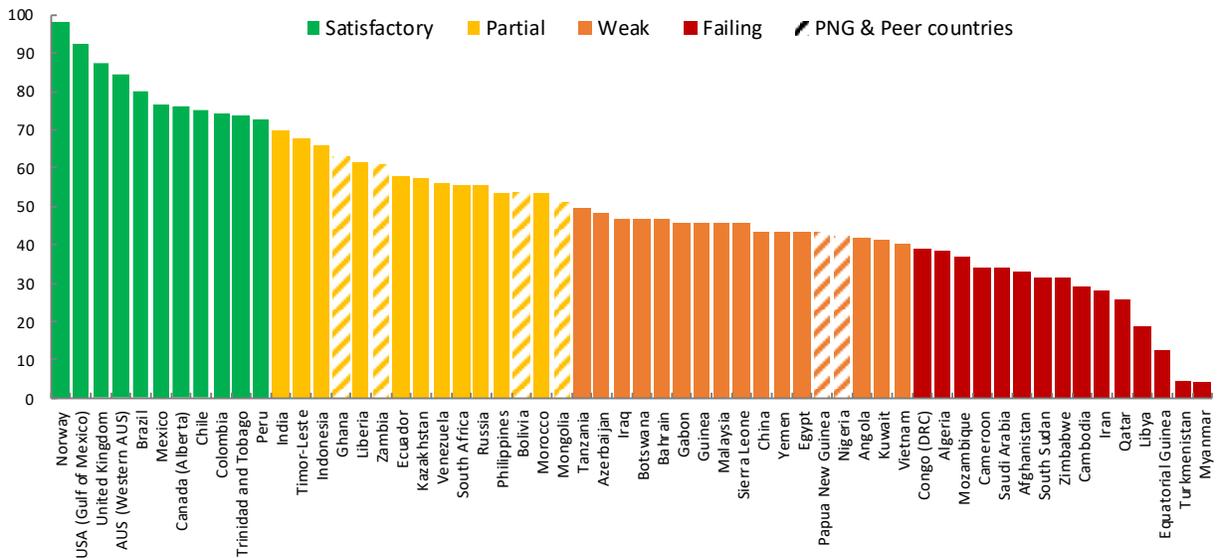
Source: World Governance Indicators

Figure 74: Corruption Perceptions Index, country ranks and group averages, 2016



Source: Transparency International

Figure 75: Resource Governance Index – Composite index



Source: Natural Resource Governance Institute

244. **Weaknesses in the governance structures of PNG’s resource sector reflect the broader institutional and governance context and are compounded by limited public sector capacity.** Considerable public attention has been directed at the oil, gas and mining industries, with important

²³⁸ Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as ‘capture’ of the state by elites and private interests.

questions raised about the limited transparency of projects' contractual arrangements; the adequacy of benefits that accrue to local landowners, businesses and government (see Section 8.1); and the public sector's capability to negotiate complex agreements and, subsequently, monitor and enforce their provisions. Poor governance arrangements and a lack of transparency can create opportunities for graft, misappropriation, and resource sector outcomes that do not serve the best interests of the Papua New Guinean public. However, even where such challenges are overcome, most resource extraction projects still present government with significant informational hurdles in its attempt to monitor activities and calculate the payments owed to it (Box 6). Assessing the quality of resource governance on the basis of institutional and legal settings, reporting practices, safeguards and quality controls, and the enabling environment, the Natural Resource Governance Institute's Resource Governance Index ranks PNG 39th out of 58 resource-rich countries, giving it an overall classification of 'weak', and placing it only a short distance away from 'failing' (Figure 75).

245. **There is an absence of an overarching and consistent framework for the determination of economic policy in PNG.** Weak governance structures, limited coordination, and shortfalls in public sector capacity make the policy-making environment rather opaque, and this can contribute to significant divergence between legislation, policy and implementation. Policy making in PNG is informed and driven by a medley of economic advice (of varying quality) provided to the government, the personal political strength of the respective senior civil servant whose department is responsible for a policy area, and the political realities in the country. The public sector's track record of varied and often-limited implementation effectiveness, adds a further layer of complexity, even when good policies and political appetite are well aligned. Given such a difficult policy environment and PNG's highly fractious political dynamics, it is no surprise that policy commitments have often proven shallow.

246. **Papua New Guinea will need better governance and institutions if it is to make significant and sustainable progress toward achievement of the twin goals.** Given the pervasiveness of these challenges, efforts will be necessary on multiple fronts. Opportunities to better align incentives, performance, accountability, and policy commitments, and establish improved governance arrangements, should especially be harnessed where they will catalyze key reforms under the transformative pathways outlined in this SCD. This will help ensure that PNG's endowments are exploited responsibly, that the returns are shared equitably, and that benefits also accrue to future generations. It will be essential to establishing the right long-run incentives that deter rent-seeking and encourage government, individuals and firms to invest in physical and human assets.²³⁹ As discussed in Pathway II, implementation of more effective institutional arrangements (particularly PFM) within the public sector can boost outcomes in service delivery, but also, if designed appropriately, can raise transparency and accountability to the general public, and elevate pressure on the political class for better outcomes.

247. **The good news is that there are elements of success evident across the country, that provide resilience to institutions and are helping to create momentum for improved service delivery.** Service delivery may be fragmented, but there are functioning local hospitals, clinics and schools, alongside quality provincial, urban, district and local-level government structures. There is also capable leadership in departments, private sector, civil society, churches and social services, and in law and justice in urban settlements. Roles of the province, district, local level government and ward are being redefined following a 2015 review of the country's Organic Law on Provincial Governments and Local-level Governments, and

²³⁹ Barro (2015) shows that rich countries have consistently prospered because they possess persistently favorable high-quality institutions, which leads to a higher steady-state per capita GDP.

city authorities are emerging with greater capacity. The rollout of IFMS at subnational levels will raise prospects of both visibility and accountability for public finances, while likely exposing the ill effects of poor cashflow management in PFM (see Box 9). While more should be done to strengthen institutions and governance in the resource sector, PNG's participation in the Extractive Industries Transparency Initiative that seeks to improve sector transparency and accountability is a step in the right direction. These factors could see PNG emerge with more effective governance over time.

9.2 Understanding the key sources of PNG's institutional and governance weakness

248. **Overall, PNG's governance arrangements as a whole are best understood as attempts (and some failings) to deal with the institutional impact of heavy resource dependence and political fragmentation.** Resource dependence and political fragmentation have thus been the principle drivers of institutional and governance weakness. Although enormous resource wealth is widely seen as a basis for PNG's rise into lower middle-income status, most of the weaknesses characterized above can be related to institutional features common to resource dependent economies (see Box 14). PNG's extraordinary ethnic diversity gives rise to a highly fragmented political landscape, adding to and exacerbating the political economy challenges that arise from resource dependency. Combined with a Westminster parliamentary system that leaves governments susceptible to votes of no-confidence, this has been an obstacle to political stability, policy predictability and coherence, and the delivery of public services. The remainder of this section highlights key aspects of how PNG's resource dependence and political context give rise to many of the governance and institutional challenges that are evident throughout the SCD.

Box 14: So much in common *Institutional features of resource-dependent economies*

Several institutional features are common to resource-dependent developing economies and warrant focused policy attention. These include:

- Geographically uneven resource base and correspondingly uneven rent distribution that underpins inequalities.
- Boom and bust cycles of revenue flows driving volatility in funding of agencies and subnational government, affecting overall predictability and effectiveness of government services.
- Political instability related to revenue and rent instabilities; or ensconcement of elites, with further incentives to suppress democratic accountabilities.
- Centralization of resource rents and related allocative powers, enabling elite capture and rent seeking
- Heavy reliance on verticalized funds delivery systems from center to periphery, enabling patronage and hampering both voice and horizontal accountability.
- Verticalized revenue flows are fragmented and uneven, typically not linked to recurrent expenditure, and dominated by capital expenditure projects.
- Proliferation of centrally controlled authority and SOE arrangements with limited accountability.

Source: Barma (2012); Auty (2007).

9.2.1 *Institutional and governance weakness linked to resource dependence*

249. **In the absence of strong fiscal and PFM frameworks, large flows of resource revenues into public coffers are susceptible to misappropriation and misallocation, and can be a source of institutional weakness.** Unlike taxation revenues, resource rents are rarely attached to strong political accountabilities, such as for the provision of health or education services.²⁴⁰ Rents arrive at both central and local levels into the hands of elites with high political discretion over expenditure. They are commonly channeled to local level via development budget projects, rather than recurrent spending. They travel into institutional arrangements dominated by individual leaders, enabling return of political favors and rents (kickbacks) to office holders and patrons.²⁴¹ These arrangements continue unabated due to the lack of, as well poor implementation of, transparency and accountability mechanisms across government, and are ultimately significantly detrimental to the quality of public expenditure.

250. **This institutional weakness manifests in poorly conceived projects without the associated recurrent expenditure to support their ongoing staffing, operation and maintenance (as discussed in Pathway II).** This is a familiar experience among PNG's many inadequately funded and understaffed health centers and school classrooms, and is also reflected in the 'build-neglect-rebuild' investment patterns in local road construction. Inadequate infrastructure and, among other things, weak capacity in the government's provision of law and order services, were identified as crucial impediments to private sector development (as discussed in Pathway III).

251. **Notably, the 2003-2012 resource 'super-cycle' amplified the resource economy distortions of PNG's public institutions.** Resource revenue flows were increasingly institutionalized into top-down, fragmented expenditure arrangements. These booming rents led to rapid expansion of development budgets: the ratio of development to recurrent spending rose from 30:70 to peak at 70:30. As development budget grant transfers expanded, the share of budget properly allocated to provinces and lower administrative levels through recurrent function grants fell to just 3 percent. Moreover, a shift toward the funding of regional infrastructure via tax credits to the resource sector had the impact of fragmenting the accountability for maintaining crucial roads. SOEs proliferated, reducing the transparency and accountability of public funds.

252. **Volatile revenues accompanied by volatile expenditure, and both driven by resource sector volatility, have weakened the integrity and credibility of institutions that rely on stable public expenditure to pay staff, develop quality services, and retain public support.** As discussed in Pathway I, resource sector driven volatility facilitated fiscal excesses and poor PFM during the commodity boom and, at the onset of the downturn, was therefore also responsible for the circumstances that intensified pressures on government to variously increase borrowing, build up expenditure arrears, print money, and place foreign exchange restrictions on businesses. Short-term, expenditure contractions led to sharp and immediate cessations in service delivery in certain areas. This can have long-run ramifications, especially where the urgency of fiscal consolidation prevents service rollbacks and other adjustments from being undertaken in a strategic, sensible way. Furthermore, without powerful mechanisms for ensuring that centrally collected resource rents actually reach local areas and are transformed into services, centralized autonomy in allocation is likely to increase. This would likely lead to an even greater politicization and unequitable distribution of funds, as well as the ongoing detrimental preponderance of capital expenditure

²⁴⁰ See Moore (2004).

²⁴¹ Fraenkel (2011).

over recurrent. These factors create an environment conducive to corruption and are obstacles to improved central coordination, working decentralization and economic diversification.

9.2.2 *Institutional and governance weakness linked to political fragmentation*

253. **PNG’s fractious political environment has led to pragmatic responses by political actors to try and achieve stability and control, however, these have been responsible for a number of developments with negative consequences for institutions and governance.** The most concerning of these pragmatic responses are: (i) the proliferation of political pacts underpinned by rent-based provisioning, (ii) centralization without coordination, and (iii) the institutionalization of the significant funding and autonomy of Open MPs²⁴² without corresponding accountability for decentralized service delivery.

(i) *Proliferation of political pacts underpinned by rent-based provisioning*

254. **Intense, diverse political competition delivers fragmented, plural outcomes in PNG.** MPs are elected from very large fields of candidates (up to 50 in an electorate, each with local support pockets). Fewer than 50 percent are returned in the next election. More than 100 parties, some tiny, participate nationally, with independents who choose alliances post-election. Absent a strong class basis for mass parties, governments are assembled in a separate process after election itself, out of multiple parties. In this informally institutionalized process, rents and office are important bases for government formation and subsequent stability.²⁴³

255. **As touched on in Pathway IV, political pacts (which are employed within constituency, party and national government contexts) are increasingly achieved through institutionalization of rent distribution.** Political rents (money and influence accessible through political power), whether formal or informal, are crucial to political and economic development globally²⁴⁴, but their role in PNG has been detrimental and is expanding.²⁴⁵ PNG has seen the proliferation of ‘provision pacts’²⁴⁶: pacts based on the provision of political rents to elites in order to establish patronage and remain in power. Provision pacts encourage MPs and their entourages to personally engage in distribution of rents at the local level, whether or not they have the expertise to effectively allocate and oversee these scarce funds. Rent based provisioning of MPs has been institutionalized in the District Services Improvement Program (DSIP) and Provincial Services Improvement Program (PSIP) grants systems, which give MPs access to, and wide-ranging autonomy over, millions of Kina, with very limited transparency required in how the funds are utilized. These arrangements lead to the fostering of personalized patronage relationships with local constituency groups to garner voting commitments and, in turn, results in the favoring of certain electoral areas over others. It has created incentives to mix public money with private investments in ways that do not necessarily benefit the broader public interest, and to easily divert government resources into loyal pockets – including loyalist-controlled businesses which can act as insurance for MPs should they not be re-elected.

²⁴² Of the 111 members of parliament, 89 are chosen from single-member ‘open’ electorates, while the remaining 22 are chosen from single-member provincial electorates. Under the District Services Improvement Program and Provincial Services Improvement Program, members of parliament receive annual funding designations with limited monitoring and accountability for how this is spent. Open and Provincial MPs are each entitled to PGK 10 million and PGK 5 million, respectively.

²⁴³ Nevertheless, governments have historically been very susceptible to no-confidence votes.

²⁴⁴ Khan (2010).

²⁴⁵ On PNG rents, see Okole (2016).

²⁴⁶ Slater (2010).

256. **From an international comparative perspective, provision pacts have led to state weakness and fragility.** They may also drive increasing militarization and a competitive authoritarianism, including restriction of democratic mechanisms, such as freedom of assembly and speech, and compliance of the press.²⁴⁷ When political pacts are based on rent-based provisioning, there are strong incentives not to invest in watchdogs or anti-corruption authorities, or citizen accountability mechanisms. On the contrary, the benefiting parties will be inclined to reduce transparency, shifting arrangements into SOE or private sector institutions, where commercial sensitivity can deny scrutiny of patronage practices.

(ii) *Centralization without co-ordination*

257. **Despite political fragmentation, there are powerful centralizing forces active in PNG.** Westminster systems are susceptible to centralized ‘fusing’ of political and executive powers within cabinets: the same elected member is also the effective head of the executive. Heavy centralization is also common with resource dependence, where resource rents flow in to central levels to be allocated by political and executive agencies. This centralizing is advanced in PNG, institutionalized in the cabinet or National Executive Council (NEC), major expenditure vehicles such as the PIP and SIPs, and proliferation of statutory authorities and SOEs. But concentration of power has not enhanced coordination across different levels or portfolios of government, with fragmentation of development mandates and poor PFM ensuing.

258. **Power and patronage possibilities in PNG politics depend heavily on being part of the government and access to both the resources and discretion that membership of the National Executive Council brings.** This includes enhanced access to national PIP funds for projects within MPs’ electoral districts, which facilitated district MP elite capture and led to a proliferation of under-resourced or abandoned ‘PPP’ experiments under district ‘business arms’. Being in opposition means severely constricted access to project grants, and little ability to patronize constituencies. All these factors strengthen central arrangements, but further fragment and misdirect funding to subnational levels.

259. **NEC and cabinet membership has been expanded by dividing roles among multiple small ministries, and allocation of roles to coalition partners.** Each role offers expandable rent-seeking opportunities, but raises the difficulties in achieving executive and policy coherence. The centralizing forces of government alongside the general fragmentation of PNG’s political landscape entails that opposition ranks can become thin and struggle to present a clear, unified message, limiting the effectiveness of the opposition’s role in providing checks and balances. Parliamentary debate and committees are sidelined, and policy consensus can become largely unnecessary: there is little if any opposition to the passage of NEC decisions.

260. **Statutory authorities and state-owned enterprises are directly controlled by central government, and their proliferation has resulted in increased centralized power.** Statutory authorities and SOEs have tended to have appointed boards and officials with direct linkages to central government actors, raising challenges for their governance. For instance, contracting and other discretions can be expanded by this means, and they are less subject to official scrutiny or integration into wider policy. Furthermore, revenues (or SOE dividends) can be transferred without public scrutiny.

261. **Some emergent examples have been positive but, on the whole, centralization is yet to deliver notable coordination gains.** Executive and other powers accrued by the Department of Finance have enabled them to put legislation and IFMS systems into place, which will improve visibility across other central and subnational agencies. Policy coordination has been somewhat enhanced through the Alotau

²⁴⁷ Levitsky and Way (2010).

Accords. Analytic capability and grant allocation mandates in the (recently re-established) National Economic and Fiscal Commission have rationalized function assignments and grants to provincial government. Some agencies (e.g. education) have been better able to leverage central funds, directing them from the center out to local facilities, and have thus performed better than others (e.g. health – see discussion in Section 6.4).

- (iii) *Institutionalization of the significant funding and autonomy of Open MPs without corresponding accountability for decentralized service delivery*

262. **High level support for district-focused decentralization has seen new arrangements introduced that have boosted the already-rising influence of Open MPs.** Following independence, PNG's highly rurally-dispersed population combined with long-running inadequacies in the provision of infrastructure and services by central government, led to a growing call over the decades for greater decentralization of service delivery. At the same time, PNG's highly fragmented political landscape and governments' vulnerability to no-confidence votes were affording Open MPs increasing political clout. In the early 2010s, this culminated in the Prime Minister and Chief Secretary overseeing the institutionalization of Open MP power in the District Development Authority (DDA). DDAs inherited the basic institutional structures of previous 'Area Authority' and Joint District Planning and Budget Priorities Committee (JDPBPC) arrangements, thereby giving Open MPs a central and powerful position in the allocation of constituency development funds. Open MPs were now in control of DSIP grants, which had risen from a mere PGK 10,000 in 1982 to PGK 10 million per annum today; twice the PSIP grant allocation received by Provincial MPs in their analogous role in provincial-level governments. As already discussed²⁴⁸, these grants are an important facilitator of rent-based provision pacting. However, importantly, this failing is due to the very limited accountability that is tied to the service delivery objectives that the grants were originally designed to achieve, as well as the generally limited capacity in subnational governments (see Section 6.4).

263. **Despite leading to some success, these relatively new arrangements have left Open MPs largely unaccountable for translating crucial scarce funds into service delivery outcomes in their districts.** The arrangements funnel funds through alternative mechanisms to recurrent budgets – limiting transparency, accountability and the capability of subnational governments. While procedures exist for the reporting of related expenditures, few MPs submit such acquittals, and even these submissions are typically unaudited. No-one other than their electors will hold them to account for failed expenditure and projects, or failure to acquit funds. Prosecution for diversion of funds is rare. In some cases, these grants have delivered dividends, with roads and local facilities being built out in the districts where they previously would not have been (though oftentimes these are not appropriately maintained, staffed or supplied – as discussed in Sections 6.1 and 6.2). There is limited access to information, narrow incentives to perform, no contesting of plans, and poor coordination. Unsound investment choices are therefore commonplace. This has been fundamental to the sub-par delivery of public services and infrastructure beyond PNG's urban centers. Decentralization and the empowerment of provincial and local level government since independence was envisaged to proffer more locally responsive governance and institutions. However, without the right checks and balances, clear allocation of responsibilities, and accountability for how resources are used, this opportunity has been squandered, leading to large gaps in service delivery, a difficult business environment, and poor development outcomes. The way forward needs to involve significant integration of SIP funds into recurrent expenditure regimes (including IFMS) around core

²⁴⁸ See Section 9.2.2.i.

services, and the formal allocation of functions (with associated reporting and accountability) and related funding to the district level.

PART 3: Priorities to reduce poverty and boost shared prosperity

10. Prioritization

264. **Prioritization is the final, and potentially the most important, step of the Systematic Country Diagnostic exercise.** Having laid out the major issues, challenges and opportunities confronting PNG on its path to the twin goals, it is crucial that priorities are identified so that development efforts and scarce public resources can be focused on achieving the greatest impact. Part 3 of the SCD presents the results of employing three criteria (listed below) for selecting priorities. In addition to employing these criteria, consultation was undertaken with internal and external stakeholders to ensure that the priorities received broad support. The priorities are laid out in the next section, categorized under the pathways of the analytical framework introduced in Part 2. Priorities relating to the ‘cross-cutting’ theme of governance and institutions, owing to their interrelated nature, are also captured under the four pathways. The priorities are intended to be concise and focused, and will therefore not attend to many of the issues that may be considered important by academics, other stakeholders, or the extensive literature on PNG.

265. **The following criteria were employed in selecting priorities for accelerating Papua New Guinea’s progress toward poverty eradication and shared prosperity:**

- i. *Demonstrated impact on the twin goals:* Based on the available evidence, the extent to which an issue poses an impassable constraint or extraordinary opportunity for the achievement of the twin goals;
- ii. *Complementarities and synergies:* The degree to which reforms addressing the most binding constraints are associated with more than one pathway, and especially where they magnify the impact of other prioritized efforts. Significance is also placed on reforms which may be key prerequisites for, or which can be expected to have key synergies with, other prioritized efforts.
- iii. *Feasibility:* Consideration of feasibility is essential if prioritized efforts are to deliver results. Some reforms are not feasible until other prerequisite or complementary steps are accomplished, while other reforms might simply lack the minimum political support required to proceed with implementation.

266. **The full set of priorities together with an indicative assessment against each of the above three criteria, are presented in Table 8.** A more substantive discussion of each priority follows in Section 11.

Table 8: Summary table of priorities

Key Areas		Final Stage Priorities	Prioritization Criteria		
			Demonstrated impact on the twin goals	Complementarities and synergies	Feasibility
Pathway I – Ensuring prudent macroeconomic policy management and effective implementation					
Fiscal	• De-linking economic growth and public expenditure from resource sector volatility		●	●	●
	• Raising domestic resource mobilization		●	●	●
Debt	• Improving the management of the public debt portfolio		●	●	●
Monetary and external sectors	• Establishing and strengthening the necessary mechanisms for an effective monetary police regime, and transitioning toward an exchange rate regime where price determination is more closely aligned with market forces		●	●	●
Pathway II – Deepening and widening access to quality services					
Focus on underserved areas	• Improving service delivery in rural communities and urban informal settlements		●	●	●
Planning and monitoring	• Strengthening NSO statistical services and both the management and sharing of data by public sector agencies		●	●	●
Public investment and financial management	• Improving public investment management by ensuring that operational budgets and maintenance are factored into plans for infrastructure and capital projects		●	●	●
	• Strengthening public financial management to improve credibility and execution of the budget		●	●	●
Devolution of responsibilities	• Improving basic institutional arrangements within subnational governments, as well as between national and subnational levels of government		●	●	●
Alternative delivery models	• Exploring alternative models, such as in partnership with the private and non-profit sectors, to ease the fiscal burden of expanded service delivery and raise performance		●	●	●
Sectors	Health	• Increasing access to medication	●	●	●
		• Improving primary health facilities to support preventative health care and early disease detection	●	●	●
		• Addressing child undernutrition and adult malnutrition	●	●	●
		• Combating tuberculosis	●	●	●
	Education	• Raising the quality of school education	●	●	●
		• Expanding the vocational training system and improving alignment with market needs	●	●	●
	Law and order	• Strengthening law enforcement and judicial institutions	●	●	●
	Energy	• Expanding electricity access across the country and improving performance of PNG Power Limited	●	●	●
	Water and sanitation	• Addressing institutional shortfalls in water and sanitation services delivery	●	●	●
	Transport & ICT	• Improving connectivity within PNG	●	●	●

Key:

Very High	High	Moderate	Low
●	●	●	●

Pathway III – Enabling private sector development for job creation and inclusive growth					
General		• Improving key trade corridors			
		• Expanding access to credit			
		• Promoting access to commercially viable land with secure tenure and boosting the capacity of PNG’s land administration institutions			
		• Ensuring stability of rules, regulations and policies, and effectively implementation of commitments			
		• Implementing active labor market policies			
		• Ensuring policies on foreign firm participation are balanced and do not unduly discourage international capital and entrepreneurship			
Sectors	Agriculture	• Raising productivity by extending PPAP-type programs to more districts and regions, and other crop types			
	Fisheries	• Boosting economic dividends from offshore fisheries and supporting the commercial viability of smaller coastal fishing activities			
	Tourism	• Focusing on the cruise market and niche segments of tourist demand			
Pathway IV – Managing risks to the sustainability of inclusive growth and poverty reduction					
Economic risks		• Ensuring that benefit-sharing agreements in the extractives sector are fairly constructed and implemented			
Social risks		• Better integrating and supporting urban informal settlements to mitigate the risks of entrenched poverty and clusters of deprivation			
		• Providing opportunities to PNG’s large cohort of inactive and underemployed youth			
		• Addressing the ongoing disadvantage and economic exclusion of women			
Environment, natural hazard and climate change risks		• Mitigating the impacts of climate change through better preparation and adaptation			

Key:

Very High	High	Moderate	Low

11. Priorities

11.1 Prudent macroeconomic policy and effective implementation

267. **De-linking economic growth and public expenditure from resource sector volatility.** Resource-sector-driven volatility in economic growth and fiscal performance has been a recurring problem throughout Papua New Guinea’s post-independence history. Economic volatility and sudden, steep cuts to funding of public services, have a relatively larger burden on the poor and vulnerable. Strong fiscal anchor(s) will help delink government spending from volatile resource revenues. With the Fiscal Responsibility Act recently being amended to include a NRPB-to-non-resource GDP rule, it is now important that the details of its implementation are defined and operationalized. Groundwork for operationalization of the SWF should also be prepared in anticipation of future upswings in the commodity cycle. Improved macroeconomic management of resource revenues will have the added effect of easing upward on the exchange rate during commodity booms and thereby supporting the international competitiveness of the non-resource economy.

268. **Raising domestic resource mobilization.** Increases in revenue collection will be necessary if government is to be able to finance expansion and improvements in service delivery and growth-enabling infrastructure, without accumulating excessive levels of debt. The capacity of tax administration institutions should be strengthened by boosting tax audit capacity and the administration of GST. The long-run erosion of the tax base needs to be reversed. Key steps include limiting issuance of new discretionary tax incentives; streamlining the complex system of exemptions and zero ratings for GST; increasing efforts to tax and audit non-residents;²⁴⁹ and ensuring new business registrations are automatically issued tax identification numbers to capture them within the system. Initiatives to improve revenue performance should be prioritized according to their likely impact on revenue collections. For instance, focusing revenue collection efforts on the large firms will yield significant results given that up to 80 percent of corporate income tax is paid by the largest 250 companies. The government has indicated an appetite for many of these reforms and, in some cases, progress is underway.

269. **Improving the management of the public debt portfolio.** Improved debt management, such as through aligning debt portfolio characteristics with the government’s long-run objectives, while taking steps to identify and cover arrears and contingent liabilities, are first-order priorities to restore confidence in fiscal sustainability. Effective debt management reduces the risk of sovereign and currency crises. Clearing arrears with the private sector can help to reactivate domestic demand and encourage greater lending to domestic firms, while ameliorating creditor concerns that unrecorded debts may be impinging on debt sustainability. Likewise, some ‘low-hanging fruit’ actions to enhance debt management, such as establishing a comprehensive, up-to-date register of loan agreements and guarantees (including on borrowing by SOEs) are essential to creating the fiscal space to support the government’s wider development agenda. Improved transparency relating to contingent guarantees over SOE debt may catalyze improved financial management and raise service delivery efficiency.

270. **Establishing and strengthening the necessary institutions for an effective monetary policy regime, and transitioning toward an exchange rate regime where price determination is more closely aligned with market forces.** An improved monetary policy framework and institutions are crucial prerequisites for a transition to a more flexible exchange rate. PNG’s elevated exchange rate and associated policy-imposed shortages of foreign exchange have imposed a significant burden on the non-resource

²⁴⁹ Additional efforts are needed to ensure that non-residents do not exploit residency clauses in double taxation agreements and other loopholes to avoid paying tax

economy – where most of the working poor are employed – and have also led to lower household consumption as demonstrated by significant import compression. Consequently, efforts to improve the functioning of monetary policy – and the KFR as the instrument – should be expedited, so that BPNG is well placed to combat the inflationary consequences of greater exchange rate volatility. This would remove a major political roadblock to resolution of PNG’s exchange rate dilemma. Moreover, only once this is achieved should a gradual, properly-sequenced process of transition to a more market-driven exchange rate mechanism be undertaken.

11.2 Deepening and widening access to quality services

271. **Improving service delivery in rural communities and urban informal settlements.** Section 3 identified a close link between poverty and limited access to services. A major focus of future efforts needs to be on closing wide gaps in service delivery in rural communities and informal urban settlements. This is where most of PNG’s poor reside and where inadequate service delivery is undoubtedly contributing to entrenched poverty and hardship. Provision of services in these areas can be expected to improve human development outcomes, raise workforce productivity, and address a range of constraints in the business environment. It may also moderate the incentives underpinning rural-to-urban migration – poor institutional responses to which have led to sprawling and underserved informal urban settlements. Progress will require improving the public service’s capacity to (i) plan and monitor services, (ii) strengthen roles and accountability, and (iii) deliver resources to where they are most needed; as well as complementary initiatives tailored to sector-specific constraints.

272. **Strengthening NSO statistical services and both the management and sharing of data by public sector agencies, to support planning and monitoring.** High performance in service delivery requires strong capacity for planning and monitoring. However, the ability of public administration to accomplish this is considerably hampered by PNG’s poor data environment. Just as it is impossible to arrive at a reliable diagnosis of recent poverty trends given a HIES that is 8 years old, there are numerous other major issues for which little or no data is being collected. Policy development and implementation is therefore often informed by dated data or by potentially unrepresentative small-sample surveys conducted by independent researchers. The NSO should be supported to expand its capacity so that major gaps in collection and availability of national statistics are addressed. Recognizing resourcing constraints (and the fact that the implementation of good quality survey processes and data collection can be challenging), it will be important to identify and focus on the delivery of a set of priority datasets that will most support public administration and service delivery. Improvements in the data environment will require public sector efforts beyond the NSO. For instance, across the public service, agencies are sitting on treasure troves of information and data which could be better shared and leveraged. Improved information and data management is therefore warranted and, where appropriate, public sector institutions should be encouraged to make these resources available to relevant stakeholders and the broader public.

273. **Improving public investment management by ensuring that operational budgets and maintenance are factored into plans for infrastructure and capital projects.** Across the country, infrastructure and capital projects have been hampered (and, in some cases, have fallen into dilapidation) due to poor planning of, and financial allocations for, operational budgets and maintenance. There are strong political economy incentives behind the high frequency of new capital project commitments, but relatively less political motivation to ensure that these projects continue to deliver for their communities in the long run. This can create severe impediments to economic development, such as when major transport infrastructure falls into disrepair, or ports deteriorate below minimum standards required by cargo vessels, or medical facilities have no budget to offer basic services. The performance of public investment

management should be raised by synchronizing capital and recurrent expenditures to ensure accountability for the operationalization (and ongoing maintenance) of investment projects by more effectively coordinating the budget process between the Department of National Planning and Monitoring and the Department of Treasury at the national level and between Treasury, Finance, DPLGA, DIRD at the subnational level. Steps should be taken to better reflect maintenance and operational budget needs in infrastructure plans and, where appropriate, in the tender process for contracts. Implementation of user charges, where appropriate, could provide an important avenue for meeting related funding needs. Also, statutory bodies (such as PPL and Water PNG) should be better empowered to function fully as corporate entities, with appropriate incentives to maintain and broaden the provision of their respective economic infrastructure.

274. Strengthening public financial management to improve credibility and execution of the budget. Weak public financial management is pervasive in PNG and is a major constraint on effective public administration – especially in areas of service delivery. It is also an important factor behind poor execution of the national budget and therefore contributes to the government’s fiscal and debt challenges. Effectively and expeditiously rolling out the PEFA Roadmap is a critical step to improving PFM. This should include completing the Integrated Financial Management System rollout to include personnel emoluments both at the national and sub-national levels. Improvements are needed in cash management as well as in the management of interdepartmental flows of funds (e.g. between Treasury, Finance, DPLGA, DIRD). Furthermore, accountability and transparency of budget execution should be bolstered by (i) restricting virements;²⁵⁰ (ii) supporting the funding, independence and suitable powers of independent oversight and official watchdog bodies (e.g., the Auditor General, Ombudsman Commission, and proposed Independent Commission Against Corruption); and (iii) reinforcing the role and funding of the legislature in overseeing the performance of the executive (notably, the Parliament’s Public Accounts Committee).

275. Improving basic institutional arrangements within subnational governments, as well as between national and subnational levels of government. Efforts to devolve responsibility for service delivery to subnational levels of government have had mixed results and, in many cases, have been hindered by misaligned incentives, a lack of administrative rules and processes, and limited absorptive capacity. While devolution of funding is being implemented through vehicles such as the PSIP and DSIP, this has not been matched by comparable improvements in the delivery of key infrastructure and services. Consequently, development continues to be held back, especially outside of urban areas. Subnational service delivery mandates have been allocated between provincial and district administrations, but accountability, cashflow, coordination and human resource management remain key impediments. Steps should be taken to boost administrative institutions and capacity in all these areas. Clearer designation of functions and service delivery responsibilities may be necessary, and these may need to be more closely tied to provision of funding. Promoting conformance to a set of common standards and rules in procurement, budgeting and reporting would be advantageous, so long as these are tailored for the low-capacity context of district- and provincial-level public administration.

276. Exploring alternative models, such as in partnership with the private and non-profit sectors, to ease the fiscal burden of expanded service delivery and raise performance. The government does not achieve sufficient domestic resource mobilization for it to be able to finance major expansions in service delivery. Efforts to improve tax administration, reverse base erosion, and implement user fees will be important, but so too will be the employment of alternative models that involve outsourcing to, or co-delivery with, partners based outside of government. For instance, public-private partnerships and NGOs

²⁵⁰ Virement is the administrative transfer of funds between budget line items.

could be better leveraged in service delivery, subject to appropriate checks and balances such as in tendering processes and in designating clear accountability for results. Schooling provides a good example of an area of service delivery where church-affiliated organizations have achieved better outcomes than those of government. Consequently, exploring and piloting alternative models of service delivery, and supporting those that work, could have the potential to deliver quick gains in service quality, while at the same time easing the fiscal burden of service expansions. Resource companies too, are already involved in service delivery in the education, health and the water sectors, and improved government coordination with these efforts should be considered.

Sector-specific priorities:

Health

277. **Increasing access to medication.** Shortages of medication are widespread in PNG’s health system, especially in clinics and facilities outside urban areas. Papua New Guineans are suffering from illnesses and poor treatment that could be readily addressed by cheap modern medications and medical supplies. Part of the problem is the grossly inadequate number of frontline facilities that serve as an interface for rural provision of medications, but so too are underfunding of medicine procurement, poor systems to support planning and decision-making about which medicines to procure, and poor institutional capacity and logistical processes for getting medications out to the sites where they are needed most. Improvements to the financing and distribution mechanism for medical supplies, particularly in the rural areas could deliver quick and significant gains. Working with the private sector (through public-private partnerships), NGOs and church organizations, improving tender processes, and better use of data and technology, are some ways to overcome logistical challenges and lower costs of getting medications to those who need them.

278. **Improving primary health facilities to support preventative health care and early disease detection.** A shortage of frontline facilities, particularly outside major urban areas but also near informal settlements – that is, in parts of the country where most of the poor reside – is responsible for enormous gaps in health service provision. More frontline facilities need to be established and, equally if not more important, appropriate staffing levels need to be ensured beyond urban centers. The low per-capita availability of physicians outside urban areas needs urgent action. Focusing efforts at improving primary health care facilities in conjunction with NGOs and church organizations will have far-reaching benefits. Primary health care facilities should be the first line of defense against both communicable and non-communicable diseases by working with communities to educate them on preventative health care and ensuring that they are able to address diseases at an early stage. This would reduce the overall disease burden and cost pressures on the system, and also help moderate the long queues and resourcing pressures at larger provincial and national health centers.

279. **Addressing child undernutrition and adult malnutrition.** Child undernutrition (and stunting) and adult malnutrition are responsible for significant cognitive and productivity deficits in the population, particularly among the poor and those with limited access to services. This constrains the opportunities for individuals’ livelihood improvements while, more generally, contributing to workforce capability shortfalls in the labor market. Addressing this challenge will require changes in population habits relating to diet. Policies educating the population on healthy food consumption and motivating behavior change need to be undertaken. In some cases, efforts may need to be directed at ensuring local market availability of key foodstuffs or, otherwise, supplements. Complementary efforts in support of WaSH services, as outlined elsewhere in this priorities section, are also crucial. Improved diets would also have the benefit of tackling

those NCDs that are linked to poor diets, such as diabetes and heart disease – an important consideration given their growing incidence and burden on the health system.

280. **Combating tuberculosis.** PNG has been categorized as a high-burden country for TB by the World Health Organization and both MDR and XDR have risen to unprecedented levels in hotspots across the country. This has the potential to quickly develop into a major national challenge, with significant consequences for public health and placing a heavy burden on PNG’s under-resourced health system. An urgent and scaled-up response is therefore necessary. The government has recently accepted substantial project support from development partners in order to tackle outbreaks and combat the broader transmission and incidence of the disease. Ongoing support for these efforts is crucial to ensure the job gets done and, in the longer run, institutional structures need to be improved so that the health system can better respond to major epidemiological outbreaks.

Education

281. **Raising the quality of school education.** PNG’s education system achieves poor outcomes at the primary and secondary level, creating a barrier to economic opportunity and improved livelihoods for both the young and future generations. This is a key cause of shortages in basic numeracy, literacy and other basic skills that PNG’s private sector frequently calls attention to. Expansion in primary enrolment rates as a result of the government’s Tuition Fee Free policy, combined with ongoing challenges in delivering resources and facilities at the local school level, provides reason to believe that the quality of education services may have deteriorated further in recent years. Efforts to raise the quality of education provided by PNG’s schools are therefore crucial. While rapid improvements in quality are unlikely at a system-wide level, targeted programs (such as READ PNG) may be able to make significant gains in a short time. The schooling system needs to better address students’ learning needs, ensuring that they are well prepared for graduation to higher grades, and supporting them to complete all years of primary and secondary schooling. Effective human resource management of teachers, including expanded professional development opportunities, will be necessary to reduce absenteeism and raise performance. In addition, minimum standards for school infrastructure and operations should be developed and adhered to. With ongoing funding of the TFF constituting a key policy commitment of the current government, it may be an opportune time to progress reforms in this space.

282. **Expanding the vocational training system and improving alignment with market needs.** PNG’s vocational education and training system lacks the resources and institutional capacity to meet the significant scale of training needs by PNG’s young and largely under-skilled working-age cohorts. Its services also appear to be poorly aligned with the market needs of employers. Many firms cannot find local applicants with the necessary skills and talent to fill vacancies with basic trade skills requirements, thereby leading to recruitment of foreign workers in PNG as well as constrained growth in the creation of good quality formal sector jobs. Improvements in the vocational education and training system are therefore vital. Doing so would also boost an important avenue for increasing the workforce readiness of women, given their high dropout rates in high school and, consequently, the need for alternative avenues for skills development.²⁵¹ To improve alignment of the services provided, better coordination is required between education and training providers and the private sector. Vocational training centers could, for instance, be developed as public-private partnerships to ensure that centers are well funded and staffed, and that training meets the current and anticipated demands of the private sector. Sector-specific initiatives, such as training centers focused on the skills needs of the petroleum and minerals sector, and supported by pooled resources

²⁵¹ On this point, however, it will be also important for educational and training providers to become better equipped to cater for the sanitary and security needs of domiciled women.

between government and resource companies, should be explored. Development partners could also be encouraged to support these centers by certifying quality and providing seed capital for government participation.

Law and order

283. **Strengthening law enforcement and judicial institutions.** Adequate funding, training, and operations support is paramount to strengthening the police force, courts, magisterial service and the overall justice system. In PNG, shortfalls in these services have been a source of breakdowns in law and order, eroded trust in government, and hampered other social and economic institutions. This has inflicted large costs on business (e.g. theft and property damage, as well as the need for private security), impeded economic exchange, and had a particularly pernicious impact on the safety and freedoms of women. Papua New Guinea’s urban areas may be among the most unsafe in the Pacific region. This situation, and the poor international reputation that PNG has correspondingly acquired, has made the country a less attractive destination for foreign investment and also prevented the tourism sector from realizing its full potential. The government has received ongoing assistance from development partners in support of its law enforcement and judicial institutions for many years. However, it may need to be convinced of the enormous scale of the problem and the need for much larger and more transformative efforts.

Energy

284. **Expanding electricity access across the country and improving performance of PNG Power Limited.** Access in PNG is very low by international standards and especially so outside of urban areas. Expanding access, especially in rural areas, will improve the lives of the poor by supporting a greater availability of services, and expanding both the set of productive activities that PNG households can engage in and the set of technologies that they can exploit. It will help address a key constraint in the business environment, thereby promoting private sector development and job creation. Electricity rollout should be progressed alongside efforts to improve continuity and reliability of service. An important corequisite will be performance improvements in PNG Power Limited, the state-owned electricity authority. Tractable steps include: (i) establishing additional grid solutions focusing on connecting those who reside within 1 km of existing transformers, as suggested by NEROP; (ii) establishing new solutions by scaling up programs such as connecting distributed solar systems to PPL’s grid; (iii) setting up an appropriate institutional and regulatory framework, financing mechanism, and roadmap; and (iv) strengthening the institutional capacity, and improving the management and operational performance, of PPL.²⁵²

Water and sanitation

285. **Addressing institutional shortfalls in water and sanitation services delivery.** Inadequacies in water, sanitation and hygiene are associated with a considerable disease burden in Papua New Guinea. The country is one of the poorest performers in the East Asia and Pacific region and conditions are worst in rural areas and urban settlements. Improvements will mean better health outcomes – for instance, through lower incidence of diarrhea and dysentery, which should also reduce rates of undernutrition and stunting among children – and improved workforce productivity. A raft of institutional, policy, financial and capacity-related challenges will need to be addressed for better service delivery. A key place to start is in setting out well-defined roles and responsibilities across central, provincial and district-level governments with respect to the delivery of WaSH services, in order to establish a chain of accountability.

²⁵² This could be done through an initial review of PPL and preparation of a management improvement plan, which would include support for internal restructuring, equipping PPL with the right management tools, loss reduction and revenue protection programs, together with targeted network rehabilitation and reinforcement.

Transport and ICT

286. **Improving connectivity within PNG.** Papua New Guinea’s challenging economic geography raises transaction costs in economic exchange, hampers the development of economic linkages between rural PNG and urban centers, and is the source of significant difficulties in the delivery of services to rural households. Improving connectivity across the country, through physical transportation infrastructure and related services, as well as through expanded and more affordable access to information and communications technology services, will be key to enabling economic development and higher incomes. Increasing the length and quality of the rural road network, and linkages to national priority roads, is essential given the large share of the population residing in rural areas and the relatively poorer state of the rural road network. This would help address a key private sector challenge in PNG, particularly in the non-resource economy. Better internet connectivity is urgently needed to enable modern ICT services in support of banking, commerce, and delivery of government services to the broadly dispersed, poorly connected population. The digital economy theme of the 2018 Asia Pacific Economic Community meetings in Papua New Guinea provides a unique opportunity to expedite reform in the ICT sector.

11.3 Enabling private sector development for job creation and inclusive growth

287. **Improving key trade corridors.** PNG’s low population concentrations and limited cross-country and inter-hub transport connectivity prevent the buildup of the kind of economic agglomeration necessary to deliver high economic growth rates. When activity begins to concentrate in particular locations or along particular routes, competition rises, markets get deeper with a broader collection of goods and services on offer, activities with larger fixed costs become financially viable, labor relocates nearby providing a greater depth and breadth to the skills available, and service delivery (public and others) can reach more people more easily. The government should focus on improving access to key infrastructure services such as transport, energy and communications along the main trading corridors (e.g. the Highlands-Lae and Highlands-Port Moresby corridors). These corridors need to be promoted along routes that make the most economic sense, such as where the demand for such connectivity is strongest, or where rural-urban integration would deliver the greatest gains. They should not simply be a tool to inject economic activity into the poorest regions. The government’s Development Strategic Plan 2010-2030 (DSP) has proposed an analogous approach, with a set of 10 economic corridors that will form the basis for implementing a large part of the DSP. Development partners should work with the government on these plans to ensure they are fit for purpose, economically sound, and not overly ambitious in assuming levels of public sector capacity that are simply not feasible in PNG’s current context.

288. **Expanding access to credit.** Limited access to credit imposes constraints on the growth of PNG’s private sector. This poses a challenge to achievement of the twin goals insofar as it slows income growth and job creation. Credit availability is most limited for small commercial activities, particularly of an informal character, and especially those located outside urban centers and rural towns. Households too, face challenges in accessing financing – limiting their flexibility to make optimal long-term investments in health and education, as well as in their own small commercial or subsistence activities. In recent years there has been progress in expanding credit access in some areas (with, for instance, banks reaching further out into rural PNG), alongside government efforts aimed at improved financial inclusion, and BPNG initiatives on financial literacy. These efforts are complementary and require ongoing support so that recent successes can be extended. For instance, improved financial literacy increases the understanding of, and demand for, financial services, which leads to higher financial inclusion (so long as undue barriers such as physical proximity to service hubs are addressed), and both of these raise the likelihood of gaining access to credit. Looking ahead, banks should be encouraged to continue extending services beyond PNG’s

population hubs and to simplify and better tailor the necessary paperwork and other lending requirements for the circumstances of the unbanked and informal sector participants. Financial sector reforms, such as those that boost competition, should be advanced to ensure that the right incentives and competitive pressures exist for banks to lend to the private sector (rather than holding on to excess liquidity). The government should continue implementation of its National Financial Inclusion Strategies while the BPNG should continue with efforts to promote financial literacy. Options to include financial literacy in schooling curricular should be explored. There is evidence to suggest that better financial literacy of women can have the added benefit of improving the use of household cash flows.

289. **Promoting access to commercially viable land with secure tenure and boosting the capacity of PNG’s land administration institutions.** Limited access to land has been a major challenge for the private sector. Severe scarcity of commercially viable land, particularly in urban centers, has limited the expansion plans of existing firms while pushing up commercial rents and preventing market entry by small businesses. At the same time, poor administration of the broader land titles and registration regime has raised the risks of operating a business. High urban land prices have also been a driving force behind sharp declines in housing affordability and the rapid expansion of informal urban settlements and homelessness. The current customary land regime, with its Incorporated Land Groups that have the potential to facilitate secure, legally enforceable contracts for the use of customary land without abandoning customary ownership or other key rights, needs to be given adequate support and a chance to succeed. The complex ILG registration process needs to be significantly simplified and registration should be more strongly promoted. Quicker resolution of disputes over land boundary demarcations is also essential. This will require increased resourcing of the public institutions involved in land administration, simplification of administrative processes, improved record keeping, better information sharing across relevant government agencies, and a focus on raising standards of customer service when interfacing with the public. Landowner education also needs to be improved, with clearer information disseminated about the current system and how it can be navigated. The provision of incentives to encourage land registration by landowner groups should be explored.

290. **Ensuring stability of rules, regulations and policies, and effective implementation of commitments.** The government should be supported in reducing uncertainty in the business environment that arises from factors such as: unanticipated changes to rules, regulations and taxes; retrospectively applied changes to policy; unsuspectingly falling afoul of government-induced changes to the operating environment that have not been properly advertised; and policy commitments that are poorly or not at all implemented. These raise the risk profile of the country, deterring FDI, while also discouraging firms from making long-term plans and investment decisions. Greater policy coordination and engagement across relevant government departments is needed to better identify policy conflicts or other implementation obstacles that could necessitate policy reversal. Retroactively applied policy changes should be avoided in all but the most serious circumstances, and government should make a public commitment to this extent. Better consultation is needed with the business community and other stakeholders during the policy development process, and advance notice of major upcoming policy changes should be provided. Policies that are announced should also have appropriate and substantive implementation plans to raise the likelihood of successful implementation.

291. **Implementing active labor market policies.** A more responsive labor supply will help alleviate private sector skills shortages and get more of the poor and vulnerable into gainful employment, especially within the formal sector. Active labor market policies such as the establishment of effective job centers and labor exchanges, implementation of effective on-the-job training schemes (e.g. traineeships and apprenticeships), and support for well-targeted short-term employment subsidies in priority professions,

will reduce labor market information asymmetries, reduce the cost and risk to businesses of hiring young inexperienced workers, and help job seekers get both invaluable entry-level experience and training. For instance, job centers could improve job market matching by: disseminating information on vacancies; assisting job seekers with interview skills and application writing; and reducing employer uncertainty regarding applicants' skill levels, abilities, experience and work ethic. Active labor market policies would complement reforms in the education services sector. They would provide assistance to, among others, the very large cohort of young working-age individuals who have passed schooling age, opening up another avenue of support outside of vocational education and training institutions, which have capacity constraints and which will take many years to expand to optimal scale. Indications of recent government interest in expanding the World Bank's urban youth employment project into districts outside of Port Moresby may suggest that appetite exists for a broader set of active labor market schemes going forward.

292. **Ensuring policies on foreign firm participation are balanced and do not unduly discourage international capital and entrepreneurship.** PNG's extensive restrictions on foreign ownership are a barrier to foreign direct investment, domestic competition, innovation and job creation. The impacts extend beyond those firms and sectors that are the target of the policy, by increasing policy uncertainty and perceived business environment risks for all majority-foreign-owned SMEs. The costs and benefits of such restrictions therefore need to be carefully evaluated by government. The current RAL is too extensive and should be wound back, much like how earlier restrictions were largely repealed in 2005. Where restrictions are motivated by concerns about employment practices (e.g. related to foreign workers), dumping practices, or product quality (e.g. low-quality goods imports from Asia), these should be addressed through targeted mechanisms rather than through the blunt instrument of ownership restrictions.

Sector-specific priorities:

Agriculture

293. **Raising productivity by extending PPAP-type programs to more districts and regions, and other crop types.** The majority of PNG's poor have incomes and livelihoods that are linked to the agriculture sector. The sector has enormous untapped potential, but has been held back by a host of constraints. Recent success has been achieved via the Productive Partnerships in Agriculture Program which has raised productivity, yields, and the income of many thousands of smallholder farmers in cocoa and coffee. Such productivity-enhancing, extension-service-incorporating programs should be extended to other cash crops. Vanilla may be one prime candidate, given its high labor-intensiveness and high returns, but support for non-cash crops such as vegetables should also be explored. In the latter case, complementary benefits will also be derived in terms of improved food security and nutrition. Further actions to improve the productivity of smallholder farmers, and mechanisms to better enable commercial farming activity, should be considered and tailored to crop-specific circumstances.

Fisheries

294. **Boosting economic dividends from offshore fisheries and supporting the commercial viability of smaller coastal fishing activities.** PNG’s offshore fisheries account for a significant share of the global tuna catch. They provide an important source of both public revenues, through the licensing of fishing access rights, and jobs, through incentives promoting onshore cannery processing activities. More can be done to leverage this endowment and related fishing activities, to boost revenues and deliver benefits for the poor. In line with recommendations from World Bank (2017c), efforts should be aimed at better regional cooperation around fisheries, upskilling of fishery managers, improvements in the sustainable management of fish stocks, enhancements in the flexibility and value of fishery access rights, better branding and marketing of local tuna, and support for regional processing clusters. The government should be supported to find ways to make local processing operations more cost competitive and financially viable, so that it can lay the foundation for sustained industrial development in the sector, rather than onshore landing merely being the policy-mandated ‘price’ that fishing firms agree to pay to acquire fisheries access. Complementary priorities aimed at improving the business environment and service delivery (especially electricity, transport infrastructure and port facilities) would help make a difference in this respect. Efforts should also be trialed to retain and better distribute locally landed by-catch, and the smaller fishing sector operations of coastal communities should be supported in better integrating with larger onshore processing facilities.

Tourism

295. **Focusing on the cruise market and niche segments of tourist demand.** Tourism is a key external-facing sector with huge potential owing to PNG’s diverse natural geography and biodiversity, its proximity to East and Southeast Asia, and its links to Australia’s colonial and WWII history. The sector is labor intensive and has a skills profile that is reasonably well-aligned with PNG’s relatively unskilled and semi-skilled labor force. Importantly, the sector can be an important source of jobs for women and youth, and provide entrepreneurial opportunities for the poor to supply operators in the sector or, otherwise, sell directly to tourists. Given PNG’s high cost structure and limited tourism development, sector initiatives should be focused on niche market segments (e.g. adventure tourism, cultural tourism and, potentially, ecotourism) and the rapidly growing cruise sector. Cruise ships provide a means for visitors to contend with underdevelopment of the local tourism sector, as the ships themselves provide a host of ancillary services that may not be readily available to travelers onshore. Improvements in PNG’s international reputation for personal safety would boost arrivals and help maximize the potential of the sector. Complementary efforts in improving PNG’s law and order situation will be essential for achieving headway in this area. Complementary efforts in improving the business environment and, in particular, transport connectivity, would provide dividends, by ensuring that visitors can easily get to their desired destinations across the country. Local communities in key tourist hot spots should be worked with to identify opportunities to integrate them into the tourist experience being sought by visitors. Steps should be taken to improve supply chain linkages between major tourism and hospitality operators and smaller local firms. Major operators in the sector should also be encouraged to form partnerships with vocational education and training providers to address any skills shortages in the sector.

11.4 Managing risks to the sustainability of inclusive growth and poverty reduction

296. **Ensuring that benefit-sharing agreements in the extractives sector are fairly constructed and implemented.** PNG’s significant resource endowments are a source of conflict, with different parties (e.g. landowners, government and extractives companies) vying for a larger share of the spoils. In some cases, when not managed well, this can escalate into more serious violence – the most notorious example

of which being the Bougainville conflict, which had a detrimental impact on the economy, led to the loss of lives, and significantly damaged PNG's international reputation as a destination for investment. More recently, unexpectedly low compensation payments distributed to landowners by the PNG LNG project, despite record levels of exports, has been fueling increasing dissatisfaction. It is important that benefit sharing arrangements and contracts for extraction rights are carefully designed to ensure that all parties get a fair outcome. This may require better and more extensive consultation with relevant stakeholders, and where contracts involve complex technical content, appropriate expertise should be brought in from overseas (potentially with the support of development partners) to support authorities if local capacity is unavailable. Where disagreements do escalate, it is important that all parties are brought back to the negotiating table to ensure an avenue for airing of grievances, and progress towards a peaceful and more equitable outcome.

297. **Better integrating and supporting urban informal settlements to mitigate the risks of entrenched poverty and clusters of deprivation.** Urban informal settlements have been growing at a rapid pace, fueled by rural-to-urban migration, and strong growth in the price of urban residential rental space that has pushed those on low and middle incomes out of the market. The urban poor are concentrated in these areas with harsh living conditions and limited security for person and property. The state has not responded well to settlement growth and this has resulted in severe underprovision of services. The risk of long-term entrenched poverty is therefore considerable. Support needs to be provided to emerging urban governance – new city authorities – so that they can become more capable institutions, able to handle the diverse pressures of their growing, multi-ethnic populations, and the challenges faced by settlement residents. Coupled with increased resourcing, clear functional assignment and fiscal decentralization arrangements for urban authorities will need to be prioritized. Safety and security issues need to be addressed as a priority. One way is to support emergent local institutions that deal with everyday conflict and settlement issues – such as settlement 'komitis' – on as stable a base as possible, with appropriate support from the urban authority. Priority efforts to deepen and widen access to quality services, discussed earlier in Part 3, have an important role to play in improving conditions in these settlements and ensuring that the urban poor are not left behind.

298. **Providing opportunity to PNG's large cohort of economically inactive and underemployed youth.** Youth face considerable economic disadvantage in PNG and, in urban areas, they account for a disproportionate share of the urban poor. Having failed to receive an adequate education in their schooling years, and largely unable to access post-secondary education and training opportunities, youth must nonetheless enter a labor market that they are poorly prepared for and which produces few formal sector jobs. Most have little choice but to settle for unemployment, underemployment, or engagement in unpaid, low-productive work within their family or community. Opportunities need to be expanded for the young to engage in productive economic activities that contribute to the economy and broader society. Limited opportunities for youth can have long-run impacts. For instance, skill atrophy sets in as schooling years fade into the distance, and growing older without substantive labor market experience can lead individuals to be locked out of the labor market. Youth who are unable secure productive jobs are therefore more likely to face persistent job market challenges throughout their lives, allowing poverty and hardship to trail them into their adult life and spill over into the families that they start. Given PNG's large youth population, the scale of the issue is considerable, jeopardizing progress toward the twin goals. Addressing economic disadvantage and the lack of opportunity for youth is therefore imperative. It will require action on a range of fronts, under priorities already discussed above. For instance, steps to improve service delivery in education will help ensure children get the right start, while active labor market policies will help overcome remaining barriers upon entry into the labor force. Action to improve the business environment and boost

job creation will ensure that more jobs are available for youth to go into. Importantly, PNG's youth challenge needs to be considered a priority across government, and emerging opportunities should be exploited as, when, and wherever they arise in the policy space.

299. **Addressing the ongoing disadvantage and economic exclusion of women.** Women experience poorer access to services, are relatively excluded from economic opportunity, and are subject to elevated risks to their personal safety. The burden of these inequities falls not just on women themselves, but can also have perverse consequences for the development and future prospects of their children. Urgent action is needed across multiple fronts to address pervasive gender inequality, ensure the basic social guarantee of protection from violence, and overcome this major risk to stalled progress on shared prosperity. Like with youth, PNG's gender challenge needs to be considered a priority across government. Women should be empowered to fully participate in the economy. Legislation and regulations that restrict women's labor force participation by, for instance, limiting night-time hours, physical labor, and so on, need to be unwound. Gender-smart workplace policies should be encouraged, especially among larger businesses that help set industry benchmarks, and could include safe transport to and from work, access to flexible work arrangements, sexual harassment policies, health services, and even childcare support. Efforts are needed to boost women's access to education services, particularly at the secondary and tertiary levels, and health services, particularly in the area of primary and maternal healthcare. Resourcing of shelters and crisis centers will be necessary to ensure that women have an avenue to escape from situations of abuse, and initiatives are needed to train law enforcement in better management of cases of both domestic and gender-based violence. Alternative mechanisms for resolution of GBV and domestic violence cases need to be made available to women, when community courts and other community-based institutions fall short.

300. **Mitigating the impacts of climate change through better preparation and adaptation.** Papua New Guinea faces a host of challenges associated with climate change. These range from vulnerability of coastal communities to storm surges and sea level rise, to vulnerability of large interior regions to flooding. Residential structures and essential infrastructure in informal urban settlements have limited resilience to severe weather hazards, and the major aspects of the country's agricultural and fisheries sectors (e.g. harvests of cocoa, coffee, sweet potato and tuna) are sensitive to changes in climate. PNG therefore needs to be better prepared for the possible consequences of climate change. This should start with improvements in government capacity to identify, raise awareness of, and respond to climate risks. Support should be provided for associated institutional reform and strengthening so that climate change risk mitigation can be incorporated more flexibly into policies and regulations. Climate change scenarios should be accounted for in disaster risk plans. More specific actions include support for natural reinforcement of coastlines and/or additional coastal structures and vegetation (i.e. for coastal community vulnerability); increased river dredging, reinforcement of levees, and reestablishment of natural flood plains and vegetation in upstream areas and riverbanks (i.e. for riverine flooding vulnerability); improved solid waste management and drainage systems in informal settlements (i.e. for informal settlement vulnerability); promoting the diversification of agricultural crops, research into climate resilient crops that are appropriate for local conditions, and adoption of irrigation systems that are less sensitive to rainfall variation (i.e. for agriculture sector vulnerability). Efforts should include capacity development of subnational governments, and involve participation from local communities so as to increase their awareness of risks and coopt their participation in, and ownership of, solutions.

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Appendix 1: Multidimensional poverty index – Methodological notes

The multidimensional poverty index prepared for this SCD's poverty assessment captures simultaneous deprivations (and their intensities) experienced by Papua New Guinean households in the areas of economic circumstances, human capital, and access to basic facilities. The technical methodology used to construct the index is analogous to that developed by the Oxford Poverty and Human Development Initiative and the United Nations Development Programme, but different domains and indicators have been used.

Specifically, the different indicators are:

Economic circumstances:

- Household experiencing absolute poverty?
- Household experiencing asset poverty?

Human capital:

- Household head is not economically active?
- Household head is not formally schooled?
- Household has unschooled children?
- Household has no access to an affordable health facility?
- Household has underweight children?

Access to basic facilities:

- Household has no access to piped water?
- Household has no access to improved sanitation?
- Household has no access to cooking fuel?
- Household has no cemented, wooden, or tiled floors?

Each domain is given equal weight in the index and each indicator has an equal weight within its respective domain.

Based on these deprivation indicators, a score is assigned to each household. As is standard practice, an individual household is defined as multidimensionally poor if its score is greater than 0.33. To arrive at the index, however, a couple further steps are required. First, the proportion of total households that are multidimensionally poor is calculated. This proportion is then multiplied by a scalar adjustment factor, between 0 and 1, to account for the intensity of deprivation experienced by the multidimensionally poor households. The higher the adjustment factor, the higher the intensity of deprivation. The resulting 'adjusted proportion' is the MPI.

Further details on the standard multidimensional poverty index can be found at:

<http://www.ophi.org.uk/wp-content/uploads/OPHI-MPI-Brief.pdf>

Technical notes for deriving the index can be found at:

http://hdr.undp.org/sites/default/files/hdr2016_technical_notes.pdf

Appendix 2: Data and knowledge gaps

A2.1. Data gaps

301. **There are wide-ranging data challenges that impose constraints on effective governance and economic management.** Many statistical indicators which are considered standard in other parts of the world are either not prepared or are otherwise produced so irregularly, or with poor quality, that their usefulness is limited. This jeopardizes the quality and feasibility of key government activities such as planning, policy development, monitoring and evaluation which require timely and reliable data. The NSO does not have sufficient resources and technical capacity to carry out a comprehensive program of national statistics. The IMF, PFTAC, the Australian Bureau of Statistics and the Pacific Community provide various forms of technical assistance in support of data preparation and dissemination at the NSO and BPNG.²⁵³ The IMF has noted recent improvements in national accounts, fiscal, monetary and financial sector data preparation and dissemination. Tables A1 to A3 provide a basic diagnostic on key national datasets.

Table A1: Micro data

Type of census/survey	Latest (year)	Second latest (year)	Representativeness (national, regional, urban/rural)	Data accessibility (open access/with permission/no access)	Disaggregation (Y/N)	
					Sex	Regional
Censuses						
Population census	2011	2000	National	With permission	Y	Y
Agriculture census	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Business/establishment census	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Surveys						
Household survey on income/consumption	2010	1996	National	No access	Y	Y
Household survey on education (e.g. MICS)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Household survey on health (e.g. DHS, MICS)	2016	2006	National	No access	Y	Y
Business/establishment survey	2013	N.A.	National	No access	N	N
Labor force survey (LFS, household survey on labor only)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source: World Bank

Table A2: Compliance with WBG's core data standards

	WBG Standard	Compliant (Y/N)	Actual yearly interval or %
Household survey of income or consumption	One every 3 years	N	20 Yrs
PPP price survey	One every 3 years	N	5 Yrs
Civil registration and vital statistics	<ul style="list-style-type: none"> • 80% of births registered • 60% of deaths registered with cause of death 		

Source: World Bank

²⁵³ The BPNG is responsible for a number of key datasets (e.g. monetary and financial sector, balance of payments, and employment).

Table A3: Macro data

Summary of dissemination practices	Periodicity		Timeliness	
	eGDDS standard	Country	eGDDS standard	Country
National accounts: GDP by Production and Expenditure at Current and Constant Prices.	Q	A	1Q	2Y
Consumer price index	M	Q	2M	4-6W
Central government operations	Q	A	1Q	15M
Central government gross debt	Q	Q	2Q	1M
Central bank survey	M	M	2M	3W
Balance of payments	Q	Q	1Q	2M
External debt	Q	Q	2Q	1M
Merchandise trade	M	A	12W	1Q
Production index	M	N.A.	12W	N.A.
Employment	A	Q	3Q	2M
Unemployment	A	N.A.	3Q	N.A.
Producer Price Index	M	N.A.	2M	N.A.

*Note: Daily (D), Weekly (W), Monthly (M), Quarterly (Q), Annually (A), Irregular (I), and Not Available (N/A).
Source: World Bank*

A2.2. Knowledge gaps

302. **The SCD, in surveying the available evidence and attempting to identify the foremost opportunities and constraints associated with achieving the twin goals, has revealed significant knowledge gaps.** A selection of these are listed in Table A4.

Table A4: Key knowledge gaps

Topic	Description
Poverty analytics	There is very limited understanding of the current status of poverty and progress toward the twin goals, because the most recent HIES was carried out in 2009/10. PNG's circumstances have evolved significantly since that time, but it is not altogether clear how this has affected the poor and vulnerable.
Labor force/employment	There is a poor understanding of conditions in the labor market owing to the absence of a labor force survey. BPNG produces an employment index without job numbers and does not capture most of the workforce who are in informal activities. A jobs-focused, inclusive growth strategy will require policy that is based on a better understanding of PNG's labor market.
Sectoral analysis of productivity	Given current data constraints, it is not possible to understand the productivity challenges facing PNG.
Informal sector	Given its prominence in the PNG economy, particularly in supporting livelihoods across the country, a better understanding is required of the informal sector, including activities, employment, access to services, and barriers to formalization.
Environment and natural capital	Not enough is known about environmental and ecosystem degradation in PNG. The country's natural capital is crucial to sectors such as tourism, agriculture, forestry and fishing. A better understanding is therefore necessary of ongoing pressures from sources such as resource extraction, urbanization, climate change and broader economic development.
Resource sector governance	The PNG public sector's capability to effectively understanding and negotiate highly complex resource extraction agreements with multinational firms needs to be better understood so that appropriate technical assistance can be provided.

Provincial and district spending and service delivery	Despite government’s significant efforts aimed at devolving responsibility for service delivery to the subnational level, spending on service provision at the level of provincial and district governments is not transparent, often goes unreported, and therefore is not well understood.
Education sector	Education is a key sector where PNG falls behind and more work needs to be done to better understand the shortfalls in, and solutions for, prevailing system. Major gaps exist in PNG’s education sector statistics. for instance, published net enrolment rates are not reliable, and little is known about indicators/performance at the early childhood level. Circumstances are likely to have evolved significantly in recent years with ongoing implementation of the Tuition Fee Free policy.
Political economy	The ability of institutions to deliver the commitment, coordination and cooperation required for improved services is shaped by the political economy within sectors, at sub-national levels, and nationally. Understanding the broader and specific political economy will be critical to the design and implementation of effective programs in support of improved service delivery. This will inform the range of feasible approaches, the opportunities for strengthening incentives and inclusion, and adaptation in the processes of implementation.
Infrastructure stocktake	A stocktake and assessment of PNG’s major public infrastructure assets would support government efforts aimed at prioritizing expenditure and avoiding those problems that arise out of poor operational and maintenance funding (e.g. system collapse or the need for a wholesale rebuild).