

# **PAPUA NEW GUINEA**

# **MEDIUM TERM DEVELOPMENT PLAN**

# **2011-2015**

**“Building the foundations for prosperity”**

**Department of National Planning and Monitoring**

**Port Moresby**  
**October 2010**

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## Foreword



Since independence we have dreamt of prosperity. We have aspired to be a well educated, healthy, united nation as described so well in Vision 2050. But for thirty-five years we could not see how to make our dream a reality. We have been without clear, long term direction. As a result, the living standards of most Papua New Guineans today are no better than they were for our forefathers at independence.

The Papua New Guinea Development Strategic Plan, 2010-2030 has ushered in a new era of development planning for our country. Building on the Vision 2050, this strategic plan now marks the way to prosperity. This plan is the substance of Vision 2050, clearly describing where we want to be by 2030. It is the map for our nation, explaining how we can attain prosperity for all our people. But the Papua New Guinea Development Strategic Plan, 2010-2030 is

only the first step. The next step is to detail what we will do to move forward. The next step is the Medium Term Development Plan, 2011-2015.

How are we going to achieve the sector targets detailed in the Papua New Guinea Development Strategic Plan, 2010-2030? How much will it cost? Who will be held accountable? All of these questions are answered by the Medium Term Development Plan, 2011-2015.

The Medium Term Development Plan 2011-2015 now becomes the touchstone for all sectoral, provincial, district and local level government plans. It describes the resource envelope within which the National Government will operate for the next five years. It sets out clearly what is to be achieved by National Government expenditure. It provides both direction and accountability for all sector activities. The Medium Term Development Plan 2011-2015 pulls together the whole of the nation in a team effort to realise the Vision 2050.

We are a young nation and therefore we must dream big. But we are a developing nation and therefore we cannot afford to make mistakes. Let us continue to dream of greatness. But let us also plan carefully and let us move together. Then we may step out with confidence.

I acknowledge my team of hardworking staff of the Department of National Planning and Monitoring, led by Secretary Joseph Lelang, who have produced this document just six months after the completion of the Papua New Guinea Development Strategic Plan, 2010-2030.

I therefore humbly commend to you the Medium Term Development Plan, 2011-2015, an action plan for pursuing our vision.

Thank you and God bless Papua New Guinea.

**Hon. Paul Tiensten, LLM, MP**  
**Minister for National Planning & District Development**

## Introducing the MTDP



Let me take this opportunity to introduce the first Medium Term Development Plan (MTDP) 2011-2015 for Papua New Guinea (PNG) and briefly highlight what it sets out to achieve. The MTDP 2011-2015 is the first of four rolling Medium Term Development Plans to implement the Papua New Guinea Development Strategic Plan (PNGDSP), 2010-2030. The PNGDSP clearly sets out the 20-year strategies and targets to achieve Vision 2050. This first MTDP will be a crucial foundation and its implementation will be monitored closely.

This MTDP is revolutionary. Emphasis is no longer on expenditure priorities, as it was under its predecessor plan (MTDS 2006-2010). It is a policy driven plan, supported by specific targets and projected estimated costings to achieve the desired results. The last MTDS revolutionised planning and budgeting practices in

PNG as for the first time it prioritised budgetary resources to priority areas under the development budget. The MTDS review indicated that sectoral alignments in terms of the size of budgetary resources meeting the expenditure priorities has been significant, with close to 80 per cent of resources over the last 5 years being spent on MTDS priorities. Lessons learnt from the MTDS period 2005-2010 has helped us to design this MTDP better by setting clear sectoral strategies, targets, indicative resource requirements and clarifying the agencies responsible for delivering results.

This MTDP is also designed following the sequencing principles detailed in the PNGDSP, 2010-2030. Its theme will be to improve and develop the governance and institutional capacity together with essential infrastructure and the necessary policy mix required to prepare PNG to advance into higher productivity and improve the quality of life of all Papua New Guineans. The emphasis will now be on getting the preconditions right, the basic infrastructure, institutions, and systems and processes to a compatible standard to pave the way for effective service delivery and private sector led growth. A significant amount of resources in the first 5 years will be focused on improving the efficiency and governance of the institutions that deliver services as well as opening up and expanding the productive capacity of the economy through transport and infrastructural connectivity.

With a clear theme, this MTDP sets out projected estimates of costs for strategies and outlines targets for all sectors to work towards achieving the kind of development outcome the PNGDSP demands. The setting of clear deliverable targets has shifted the focus away from Treasury and Planning Departments to implementing agencies. The limelight is now on implementing agencies, government institutions, provinces and districts to deliver results. Under the MTDP, implementing agencies will be held accountable as to whether they are delivering results or not. The MTDP provides the clarity and justifies the resources for sectoral plans, strategies, programs, investment and activities. It calls for performance in terms of delivering the desired results and promotes a performance-based culture throughout the public service system. It will impose an obligation for institutional restructuring and alignment to achieve the set deliverable targets, and tie in contracts of heads of agencies to perform. This also provides the basis for effective monitoring of sectoral performance by the Department of National Planning and Monitoring.

It is now necessary and mandatory for all the agencies and institutions of the Government to align their plans, strategies, programs and activities to the Medium Term Development Plan, 2011-2015. The funding to sectors starting in 2011 will be based on a process of annualising programs and activities to achieve the strategies and deliverable targets. With collaboration, tireless effort and determination we will be able to transform PNG into a middle-income country with an improved quality of life for all citizens. The time and avenue to start is MTDP 2011-2015. Let us now begin because a step at a time will take us on the journey to our destiny.

**Joseph Lelang**  
**Secretary**  
**Department of National Planning and Monitoring**

# Part 1

## The MTDP approach

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### 1.1 The objectives of the Government

The Medium Term Development Plan 2011-2015 (MTDP) is a 5-year rolling development plan providing a clear, accountable plan for investment. It sets the sector strategies, targets, deliverables and their projected estimated cost of implementation. The MTDP is aimed at translating the Papua New Guinea Development Strategic Plan 2010-2030 (PNGDSP) into tangible results. It also takes into account the lessons learnt and experience from the previous Medium Term Development Strategy 2005-2010 (MTDS). The MTDP outlines the specific players who will be responsible for achieving key deliverables. It strengthens the National Government's ability to monitor and evaluate investments over the coming years during the life of the PNGDSP 2010-2030.

Therefore, the MTDP implements the PNGDSP and the Vision 2050 and will be a sequenced mid-term plan. The MTDP 2011-2015 will concentrate on the **enabling activities** under each sector which will be funded and implemented by the sector agencies, provincial governments, community service organisations (CSOs) and development partners<sup>1</sup>. The progress of this plan will guide the following 3 mid-term plans, thus high priority will be given to the enabling activities such as road infrastructure, education, health and economic sectors, among others.

The desired deliverables under the MTDP 2011-2015 will be supported by:

- targets for this MTDP and the remaining 3 MTDPs to ensure we **'stay on track'**;
- the identification of risks and assumptions to ensure sectors coordinate and link with each other;
- demarcation of the respective agency's responsibilities; and
- the specification of resource requirements from various financing sources.

The linkages between the MTDP and both the PNGDSP and the Vision 2050 may be summarised by the following four points.

1. The Vision 2050 maps out PNG's development initiatives for the next 40 years and identifies seven strategic pillars underpinning economic growth and development. The PNGDSP translates the seven strategic focus areas of Vision 2050 into directions for economic policies, public policies and sector interventions with clear objectives, targets and indicators.
2. The MTDP is guided by the PNGDSP on how best development in PNG will be undertaken under the Public Investment Program (PIP), outlining resource utilisation by focusing development efforts on key policy areas.
3. The MTDP guides the development of sector policies, plans and strategies. Vision 2050 and PNGDSP both provide economic development frameworks and performance indicators that enable policy proposals to be prioritised and closely monitored through implementation of the MTDP. Budget submissions by sectors, provinces, CSOs and other development partners will be aligned with the expenditure and development priorities outlined in Vision 2050, translated in the PNGDSP and articulated in the MTDP.
4. Importantly, the allocation of scarce resources will be prioritised across sequenced targets and deliverables over the 5 year period of the MTDP. Sectors, provinces, CSOs and development partners' Public Investment programs and budget appropriations will be aligned to priorities of Vision 2050, PNGDSP and the first MTDP.

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<sup>1</sup> The alignment of the development partners under the Accra Declaration and other partner agreements will be adjusted and reviewed straight after the adoption and endorsement of the MTDP 2011-2015 by NEC.

## **1.2 Addressing supply-side constraints**

The success of the PNGDSP 2010-2030 will depend on how well strategies and expenditures are sequenced for implementation. Although each Medium Term Development Plan (MTDP) is designed to achieve progress in every aspect of the PNGDSP, some parts will be given higher priority in the early MTDPs. In this case, the first MTDP 2011-2015 will concentrate on policy areas referred to as “key enablers” to lay the foundation for the success of all other parts of the PNGDSP.

The PNGDSP identifies the key enablers that will establish PNG on a path towards prosperity. The Government will integrate its investment to lay the foundation for growth by addressing the supply-side constraints and expanding the productive capacity of the economy in the first MTDP 2011-2015. As part of laying the foundation for growth the Government will ensure fiscal and monetary stability is attained, land is sufficiently unlocked for development, law and order problems are normalised and quality infrastructure connectivity is established to connect rural populations to markets and services. All of these are essential for attracting investment in agriculture and in other major sectors of the economy.

In the same manner, encouraging competition in the first MTDP 2011-2015 period is a low cost policy that facilitates both economic progress and efficient delivery of services. Introducing competition into the mobile phone sector, for example, has generated an unprecedented improvement in phone services throughout PNG.

Likewise, education needs to be given high priority in the first MTDP. While the benefits of primary and secondary education will not manifest until about 10 years later, a highly productive workforce will be essential by then to ensure the success of the PNGDSP. Higher and technical education is also a key priority to equip the workforce to implement the PNGDSP and build the nation. Moreover, substantial economic gains from higher education are available by replacing expensive foreign workers.

Equally, transport and the provision of key public utilities of electricity, clean water and sanitation are priorities in the first MTDP 2011-2015 as they are required to facilitate investment across the economic sectors of PNG, from agriculture to manufacturing to tourism. However, the costs of providing this infrastructure are lower and the returns are higher when land is accessible, when crime is not an impediment, when funds are well managed, and when providers are competing by offering better service and lower prices. At the same time, effective infrastructure services help to reduce the cost of providing rural education and law and order.

Underpinning the Government’s success in implementing these priorities in the first and subsequent MTDPs is the public sector’s performance and governance issues. High standards of public sector management involve high standards in the various institutions, departments and agencies through which the Government conducts its business. For PNG to have a prosperous future, good public sector management is crucial as it is the Government that will be relied upon to deliver the foundations of nation building outlined in the PNGDSP.

These aspects of the PNGDSP discussed above will be given the highest priority in the first MTDP 2011-2015 as it will create a virtuous cycle of growth and development. The rationale is that these priority areas are the enablers for growth. They are the policies that will lay the foundation for PNG to progress rapidly towards middle income status by 2030. If significant progress is not made in each of the enablers by 2015, PNG will not realise the status of a middle income country by 2030. Therefore it is in these areas where development budget expenditure will bring the greatest returns.

As highlighted in the PNGDSP, the benefits to PNG of these investments will be substantial. For instance, over 710,000 full time equivalent jobs will be created in rural PNG as a result of initiatives to promote rural development, including infrastructure to provide modern amenities and to open up rural access to markets. Infant mortality will drop substantially as investment in roads and law and order ensure mothers have access to health facilities. The causes of cholera and typhoid will be removed by the provision of clean water and sanitation. PNG’s population will be equipped to participate in the nation’s prosperity through investment in quality education, including higher education.



### 1.3 The MTDSP framework

To outline what will be done over the next 5 years in order to achieve the PNGDSP goals, a framework for each of the sub-sectors has been developed for the MTDSP document (figure 1.1). Each framework is accompanied by a short discussion providing an overview of the plan for the sub-sector. The MTDSP framework has been developed in line with results-based monitoring and evaluation.

The **first box** of the framework reiterates the PNGDSP goal for the sub-sector. For example, the PNGDSP goal for utilities is “all citizens and visitors to have access to reliable and affordable public utilities by 2030”. To monitor progress toward the sub-sector goal, indicators and targets have been developed. These indicators are based on those outlined in the PNGDSP and take into consideration international obligations and local priorities. The source column details where the data will come from.

#### 1.1 The MTDSP Framework

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Develop an efficient health system which can deliver internationally acceptable standards of health services	Infant mortality rate	Census/DHS	57 per 1000 live births	45 per 1000 live births	30 per 1000 live births	25 per 1000 live births	Below 17 per 1000 live births
	Under-5 mortality rate	Census/DHS	100,000 live births	50 per 1000 live births	40 per 1000 live births	30 per 1000 live births	Below 20 per 1000 live births
	Maternal mortality ratio	DHS	500 per 100,000 live births	400 per 100,000 live births	300 per 100,000 live births	200 per 100,000 live births	Below 100 per 100,000 live births
	Life expectancy	Census/DHS	60 years	62 years	65 years	68 years	70 years

No.	Sector Strategy
1	Improve service delivery
2	Strengthen partnership and coordination with stakeholders
3	Strengthen health systems
4	Reduce the burden of communicable diseases
5	Promote healthier lifestyles
6	Improve emergency response to disease outbreaks and emerging population threats

DSP 2030 deliverables	No.	2011-2015 target	2016-2020 target	2021-2025 target	2026-2030 DSP target	Risks and Assumptions
4 specialise regional health posts	1.1	1 built in Morobe	2 built in Morobe	1	0	Land is secured
4 specialise regional health posts built and fully operational	1.2	500 in the 4 regions	1500 in the 4 regions	3000	1500	Access roads are built and maintained
95% of births attended by skilled health personnel	1.3	67% across the 4 regions	78% across the 4 regions	80%	95%	Access roads are built and maintained
100% of pregnant women attending antenatal clinics	3.1	45% across the 4 regions	55% across the 4 regions	75%	100%	Appropriate number of trained health personnel available
100% of facilities with adequate medical supplies	3.1	67% across the 4 regions	75% across the 4 regions	80%	100%	Access roads are built and maintained

Department	Department of Health	Department of Works	2014	2015	2030	Funding options
Estimated inputs (million)	1.1	5	0	0	50	GoPNG/donors
	1.2	4	5	5	2	GoPNG/donors
	1.3	1	1	1	80	GoPNG

MTDTPs is followed. Lastly, the agency or government department responsible for ensuring the deliverables are realised is detailed.

The **fourth box** provides information on the estimated resources needed to attain the deliverables. Resources are detailed by amount and by funding option – donor, government or other.

### 1.4 The economic impact of the MTDSP

Implementation of the MTDSP will be the first step towards reaching the target outlined in the PNGDSP of Papua New Guinea becoming a prosperous middle-income country by 2030. This will be underpinned by the rapid economic growth driven by the MTDSP policies and investments. Over the period 2011-2015, economic growth is expected to average 8.7 per cent a year (figure 2.1 in part 2). This will result in a healthy rise in the average GDP per person from K3430 in 2010 to K4681 by 2015 (figure 1.2).

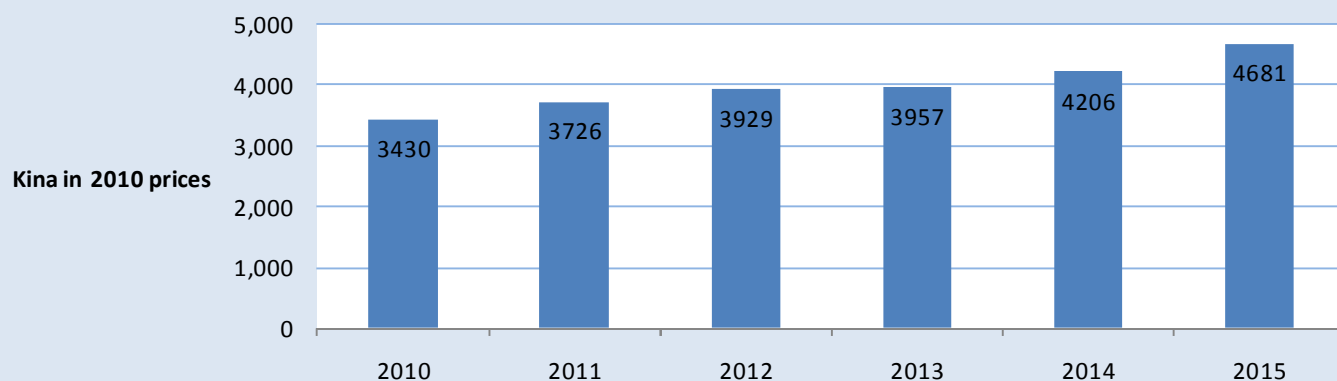
In comparison, economic growth would be much lower in the absence of the MTDSP, averaging 5.7 per cent a year. GDP per person in 2015 would be K4065. The MTDSP will therefore add an average of 3 percentage points to growth each year, adding K616 to GDP per person by 2015.

Importantly the expected economic growth will be shared amongst Papua New Guineans with the MTDSP putting in place the PNGDSP policies for broad based and inclusive growth. In fact non-mining GDP growth is expected to exceed total GDP growth over the years 2011-2015, averaging 9.0 per cent (table 2.2). The key principle for achieving this is to bring development to rural areas and this will be done through the implementation of economic corridors and the development of core infrastructure in rural areas.

The twin approach of increasing economic growth and spreading the benefits of growth will result in substantial progress in overcoming the poverty of opportunity that exists in Papua New Guinea. In doing this, important progress will be made against the first Millennium Development Goal (MDG) of eradicating poverty. The growth in GDP per person outlined in figure 1.2 and the rise in employment in both rural and urban areas outlined in figure 1.3 are key indicators of progress against MDG 1.

## 1.2 Growth in GDP per person, 2010-2015

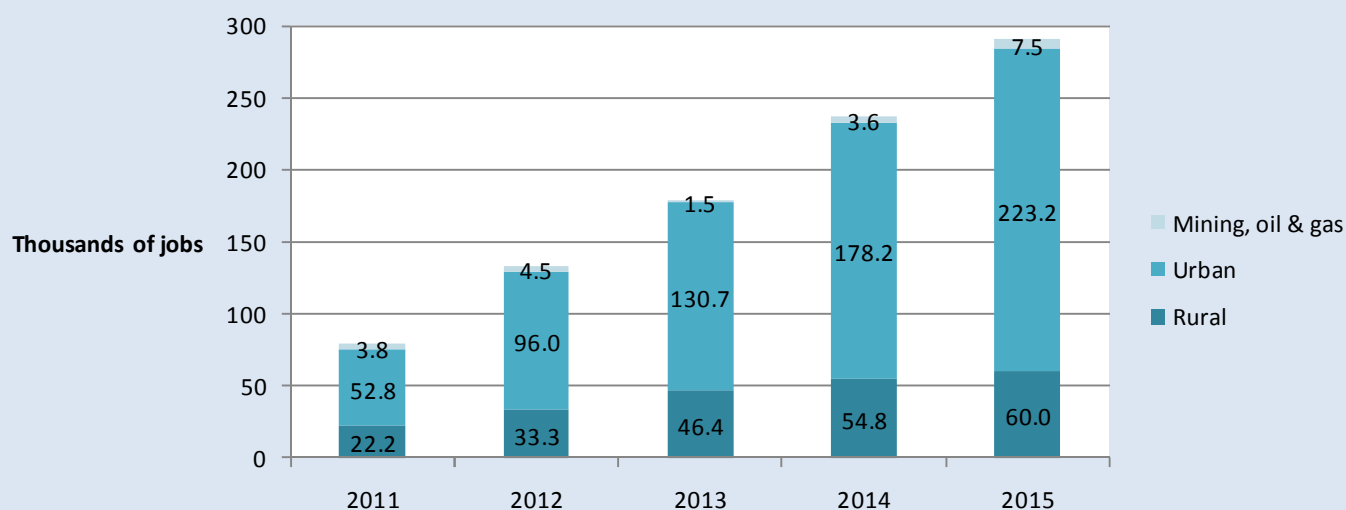
Kina per person in 2010 prices



Source: These forecasts are calculated using the Government's model of the PNG economy, PNGGEM

## 1.3 Job creation, 2011-2015

Thousands of jobs created by sector



Village informal	17,500	25,500	31,100	35,800	37,400
Rural formal	4,700	7,800	15,300	18,900	22,700
Mining, oil & gas	3,800	4,500	1,500	3,600	7,500
Manufacturing	4,000	6,700	9,100	12,000	14,800
Construction	16,400	28,000	37,300	51,300	64,300
Commerce	7,900	13,500	18,100	24,600	31,600
Transport	2,900	4,700	5,800	7,700	9,400
Other services	18,500	38,200	54,400	74,600	93,400
Urban informal	2,900	5,000	6,000	8,000	9,800
<b>Total jobs created</b>	<b>78,800</b>	<b>133,800</b>	<b>178,700</b>	<b>236,600</b>	<b>290,800</b>

Source: These forecasts are calculated using the Government's model of the PNG economy, PNGGEM

Perhaps the best way to measure the success of the MTDP is to gauge the number of jobs that are created. By 2015 there will be an additional 290,800 people who will have jobs (figure 1.3). This compares with about 121,700 additional jobs without the MTDP. About 244,000 of these jobs will be in the formal sector with most

of the balance representing additional rural employment at the informal level in the village environment (figure 1.2).

More than 223,000 jobs are expected to be created in urban based industries. Most of this reflects job creation in services – particularly in construction (see figure 1.2). This is a result not only of the construction phase of the LNG Project, but a surge in MTDP infrastructure investment initiatives and the associated stimulus to private sector investment. Education and health are “other services” industries expected to generate a sharp increase in employment as a result of MTDP initiatives. The commerce industry will also generate strong job growth on the back of higher consumption and investment.

Despite the focus of the MTDP on rural development, the gain in jobs for rural based industries is expected to be 60,000, which is less than the growth expected in urban based industries. This is because the emphasis is on the development of rural infrastructure which will take time to build and for which the economic benefits to the rural population will not be felt in full until future years. Much of the employment growth in urban based industries will be due to the development of rural infrastructure.

Amongst the initiatives outlined in the MTDP, the areas that will deliver the most impact to jobs and economic growth in the MTDP period will be in land, law and order, higher education, transport and electricity infrastructure. The economic impacts of initiatives in each of these areas are outlined in table 1.1. For example, the economic benefits associated with implementing the MTDP initiatives for higher education will result in an additional K464 million in GDP in 2015, K144 million additional tax revenue, and nearly 30,000 more jobs (table 1.1).

**Table 1.1 – The economic gains in 2015 from the implementation of selected MTDP initiatives**

	Gain in GDP K million	Gain in tax revenue K million	Number of jobs created
Land	864	460	22,446
Law and order	1002	834	41,947
Higher education	464	144	29,847
Road transport	2362	702	52,396
Water transport	857	266	17,726
Air transport	500	137	10,081
Electricity	572	165	17,522

## Part 2

# Conducive environment required for implementing the MTDP 2011-2015

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The first MTDP 2011-2015 is designed to ensure necessary conditions are met, enhancing institutional capacity and key enablers in order for the economy to utilise the gains to advance into high productivity mode. The success of this MTDP will be underpinned by a stable political environment and a productive and proactive public service machinery. The implementation of key impact programs under the MTDP will require accommodative macroeconomic management, especially where both the fiscal and monetary policy regimes are responsive to the development needs of the country, and yet serve the fundamental role of maintaining macro stability.

The development of the financial sector to encourage an entrepreneurial culture and a vibrant business and investment environment that competitively promotes private sector led growth is crucial under the MTDP. To lay the foundation for competition and growth, State owned enterprises will be required to play key roles in mobilising resources and investing in the key enablers such as transport infrastructure, utilities and human resources. This also applies for the development of Economic Corridors discussed in Part 6. A pragmatic trade policy regime will have to be pursued under the MTDP to ensure that the Government's intention for international trade diplomacy is effectively pursued and PNG gains from such arrangements.

### **2.1 Current policies and potential risks**

The Government will implement the MTDP starting from the existing policy environment. Important policy initiatives of the Government that are already in place will be reinvigorated to accommodate the development agenda of PNG. The policy environment that the MTDP will operate is expected to be responsive, accommodative and pro-growth. Existing policies will be reinforced, while necessary policy initiatives will be introduced to accommodate the pursuit of the PNGDSP for achieving the Vision 2050.

The macroeconomic policies of the Government include promoting sustainable growth led by private sector investment in the non-mining sector. This has already proven to be fruitful. Since 2005, non-mining GDP growth has exceeded mining GDP growth, signifying a considerable policy achievement where growth has been broad-based. With the LNG Gas Project coming on stream in 2014 the Government is well aware of some of the adverse impacts of large inflows of foreign currency earnings and will now use the MTDP 2011-2015 to address the constraints in the productive capacity of the economy.

The existing macroeconomic policies will provide the umbrella for the MTDP to operate. The economy has enjoyed considerable stability in the Government's fiscal performance because the Government has adhered to the principles in the Fiscal Responsibility Act and has been guided by both the Medium Term Fiscal Strategy and the Medium Term Debt Strategy. The Government will continue to adhere to the guidelines under these important policy documents and where necessary will review certain aspects to accommodate the agenda under the MTDP.

The monetary policy conduct of the Government has also been guided by the objective of attaining price stability and promoting a vibrant domestic financial system, including the payment and settlement systems. The economy has been successful in realising price stability and even safeguarding itself from the adversity of the 2008 global financial meltdown. The challenges in the conduct of monetary policy will be ever increasing as the economy grows under the PNGDSP. It is anticipated that monetary policy will broaden its objective to accommodate the Government development agenda and not just stabilisation.

The trade policy initiatives of the Government will be pursued in the MTDP with greater emphasis on trade and investment promotion. The Government will pursue trade liberalisation and export promotion with more vigour and determination under the MTDP. It will continue to pursue its trade and investment strategies through accommodative sectoral policies, especially by making land available in the Economic Corridor areas for special free-trade and industrial zones within those areas and ensuring well connected transport and utilities services throughout PNG.

In international trade and relations, PNG has a mutual relationship with all its partners and will continue to engage with them. The 'Look-North' policy will be pursued with emphasis on trade diplomacy in order for PNG to become involved in the production network of the East Asian economies.

On the domestic front, key sectoral policies and initiatives will continue to be pursued with closer collaboration and coordination among the sectors. Mineral exploitation will follow the existing arrangements with the State taking a larger stake in future project development. Likewise, investment in forestry, agriculture and fisheries resources, and in downstream activities will comply with existing environment law and policy guidelines. The Government will continue to promote income earning opportunities by providing linkages to markets, encouraging provision of credit to small business activities, and encouraging the activities of the informal market to flourish.

The Government is committed to pursuing its human development policies through existing health and education initiatives. PNG has taken the challenge to reverse the regressing conditions of human development and will pursue its sectoral policies and strategies to achieve this and meet the ambitious targets of the PNGDSP. By intervening in the 'poverty hot-spots' of PNG, mostly in rural areas, the Government will be able to achieve the tailored MDG goals for 2015.

The momentum of the reforms pursued since 1995 will continue under the MTDP, where structural impediments to business and investment will be addressed to allow for competition in the economy. State-owned enterprises have been corporatised and in their areas of operation competition has been gradually introduced to the benefit of consumers. The introduction of competition in the telecommunication industry, for example, speaks for itself. The open-sky policy has brought competition, lower prices and increased services to both international and domestic destinations in the airline industry. The Government will continue to promote level playing fields by avoiding preferential treatment, including tax concessions and subsidies. The Government will safeguard investors by enforcing contract and property rights law. In all its endeavours, the objective will be to promote private sector led growth for the economy.

Due to instances of market failure, however, competition is not always the panacea for delivering services and improving the living standards of Papua New Guineans. The Government's role in modern PNG is well defined as it will continue to play its traditional role in delivering basic services to the people. The Government will rely on the Public Private Partnership (PPP) modality discussed in Part 6 and other arrangements to deliver the services to the people of PNG, while providing the necessary conditions and enforcing the rule of law for business and investment to come into play.

To effectively deliver results to rural PNG the Government has initiated policies in the PNGDSP. Some of the policy initiatives that will give more weight to the MTDP implementation include: an Economic Corridor Development Policy, an Electricity Development Policy, a Land Use/Development Policy and a Rural and Urban Development Policy.

The implementation of the PNGDSP through the MTDPs are subjected to various risks. Paramount on the list of possible risks is political instability or discontinuation of development focused policy initiatives under future political regimes. The political environment has been stable over the last 8 years, largely due to the Political Integrity Act. This was crucial for the reform process and was a core reason for the robust private sector led growth. Sustaining political stability will be necessary for realising Vision 2050.

Law and order and social unrest or conflicts are also areas that pose risks, especially for deterring potential investors and inhibiting delivery of services to the rural populace. The LNG gas project is expected to lay the foundation for significant resources to flow into PNG which will be used to leap-frog development. From the construction phase through to production there will be a delicate balance of landowner interest and conflicts which the Government has the prerogative to manage.

PNG relies heavily on the exports of its traditional commodities. This exposes PNG to significant risks of negative shocks in commodity markets and in the global economy more generally. Global economic and financial crises have the potential to destabilise the PNG economy because of its integration through trade and financial channels. However, there are also upside risks as commodity prices and the global economy may experience periods of unexpected growth.

## **2.2 Economic outlook for 2011 -15**

Since 2005, PNG has experienced sustained and strong economic growth that has not been seen before. Growth averaged 5 per cent between 2005 and 2009 despite the global financial crisis. This growth can be traced to four key factors:

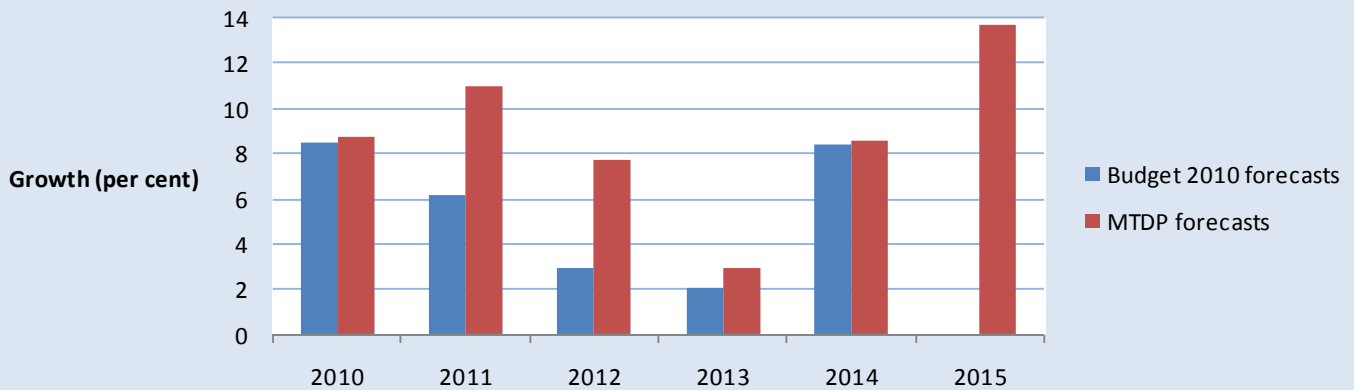
- the new era of political stability that has resulted in improved governance and increased private sector confidence;
- a return to macroeconomic stability underpinned by exchange rate and interest rate stability;
- improvements in infrastructure, especially telecommunications; and
- increased Government development expenditure on public investments.

The 2010 Budget forecasts anticipate this rate of average growth to continue in the period 2010-2014 (figure 2.1). These forecasts are based on an assumption of continued political and macroeconomic stability and take into consideration the considerable investments associated with establishing PNG’s first LNG project. Also taken into consideration is the anticipated winding down in production at the Ok Tedi mine by 2013.

A surge in development expenditure for MTDP initiatives to improve infrastructure and services points to even higher growth than previously anticipated in the Budget 2010 forecasts. Figure 2.1 outlines the MTDP forecasts for economic growth using the PNGGEM model of the PNG economy taking the additional MTDP initiatives into consideration. Implementing the MTDP is expected to result in an average rate of growth of 8.7 per cent between 2011 and 2015. Growth is expected to average 7.6 per cent through to 2014 before surging to nearly 14 per cent in 2015 as a result of production commencing in the LNG Project.

## 2.1 Growth in real GDP, 2010-2015, Budget 2010 and MTDP forecasts

per cent growth



Source: The MTDP forecasts are calculated using the Government’s model of the PNG economy, PNGGEM

After navigating through difficult times since 2008, the global economy has begun to recover and is expected to return to normal growth levels during the MTDP period. Importantly, PNG’s main trading partners fared well during the global downturn, with Australia avoiding recession and China continuing on its path of very strong growth. Robust growth in China is particularly important for PNG as the revenues received for PNG’s mineral exports will increasingly become dependent on the dominant China market.

Growth in China is expected to underpin robust prices for PNG’s key mineral commodities during 2011-2015. However, the current high level of gold prices is expected to recede until a small recovery after 2012 (table 2.1). Oil prices are expected to rise steadily to approach US\$100 a barrel by 2015, and copper prices are expected to remain at current high levels. Strong prices in gold, copper and oil point to a healthy revenue base for the Government over 2011-2015.

**Table 2.1– Forecast world prices for oil, gold and copper, 2010-2015**

	2010	2011	2012	2013	2014	2015
Oil US\$ a barrel	\$72	\$76	\$84	\$92	\$100	\$105
Gold US\$ an ounce	\$1118	\$1010	\$873	\$885	\$933	\$975
Copper US\$ a tonne	\$6762	\$7025	\$7779	\$7434	\$7021	\$6588

Source: Official forecasts of the Australian Government

Table 2.2 provides detailed forecasts of a range of key macroeconomic variables for 2011-2015 with the implementation of the MTDP. Strong capital inflows associated with investment in the LNG Project and robust commodity prices are expected to underpin a strengthening of the exchange rate over most of the MTDP period. This is despite growth in import volumes exceeding growth in export volumes. Strong import growth is associated with a surge in investment driven by the LNG project as well as robust growth in consumption. Papua New Guinea's national income is expected to expand at an unprecedented pace during 2011-2015, providing the basis for the strong growth in consumption.

**Table 2.2 – Forecast growth for key macroeconomic variables, 2011-2015**

	2011	2012	2013	2014	2015
Real exchange rate (positive is appreciation)	6.7%	2.8%	-2.9%	4.2%	2.4%
Real GDP	11.0%	7.7%	2.9%	8.6%	13.7%
Real non-mining GDP	11.2%	9.1%	7.3%	9.0%	8.4%
Real Gross National Income	11.1%	10.5%	3.7%	9.0%	11.9%
Real consumption	13.6%	8.9%	2.8%	7.8%	6.6%
Real investment	28.6%	12.7%	6.8%	12.0%	6.5%
Export volumes	7.6%	5.6%	-5.8%	7.4%	23.1%
Import volumes	14.5%	11.5%	1.5%	10.8%	12.5%

Source: Forecasts are calculated using the Government's model of the PNG economy, PNGGEM

## 2.3 Political stability

As discussed in the previous section, the sustained, rapid growth experienced by PNG since 2005 can in part be attributed to the nation's newfound political stability.

Prior to the adoption of the Organic Law on the Integrity of Political Parties and Candidates (OLIPPAC) PNG's political, social and economic conditions were in a poor state. A key problem was political instability resulting from frequent changes of Government through votes of no confidence. Frequent restructuring and policy reversals, ad-hoc decision making processes, unclear policy settings and weak development strategies all contributed to a breakdown in the delivery of vital services such as health, education and infrastructure.

In 2001 the Mekere Government introduced OLIPACC to stabilise PNG politics by enhancing the role of political parties in Parliament and at the same time providing a stable political climate. What ensued was almost ten years of political stability under the National Alliance-led Government until the ruling in July 2010 by the PNG Supreme Court which nullified specific provisions of OLIPACC.

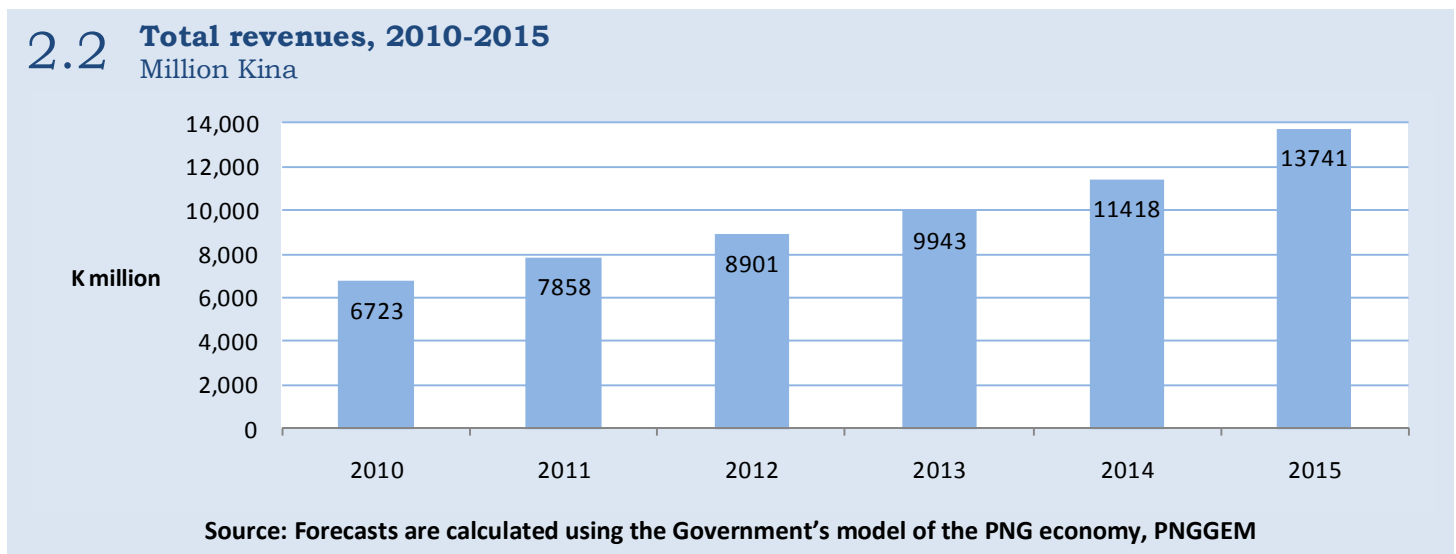
In the years following the inception of OLIPPAC, investor confidence soared and PNG experienced its longest period of sustained high economic growth since independence. Although the exact impact of OLIPPAC is subject to debate, there is no doubt it provided PNG with the foundations conducive for long term economic growth and prosperity. In the same way, political stability has been essential for the periods of sustained rapid growth achieved by many of PNG's neighbouring countries in Asia including, Indonesia, Malaysia, Singapore, Korea and China. Interruptions to political stability on the other hand undermine investor confidence and economic growth.

It is now a matter for Parliament to review the provisions of OLIPPAC that have been ruled to be unconstitutional, and redraft this very important law. The big challenge is to introduce constitutionally valid legislative settings that will give effect to political stability and set the conditions for positive economic growth aided by clear strategic development policy thinking and settings.

## 2.4 Fiscal situation

### *The outlook for Government revenue*

Government revenues are expected to experience robust growth over the years 2011-2015 (figure 2.2). This is in line with the rapid economic growth discussed in section 2.2 and is supported by the expectation that healthy commodity prices will continue as outlined in table 2.1. A surge in revenue in 2015 is associated with production commencing in the LNG Project. Mining and petroleum revenues will continue to be dominant, particularly from 2015 as a result of the LNG Project. However, much of the growth in revenues is expected to be sourced from the broader economy. GST, personal income tax and non-mining corporate tax collections are all expected to rise rapidly during 2011-2015.



### *The existing fiscal regime*

Since the early and mid 2000s, the fiscal situation in PNG has undergone substantial change. In 2010, the circumstances are very different to what they were when the Medium Term Debt Management Strategy, the Medium Term Fiscal Framework and the Fiscal Responsibility Act (2006) were formulated. PNG is now beginning to outgrow the current system of fiscal management and some adaptations will be needed for implementing the MTDP, as discussed in section 2.1.

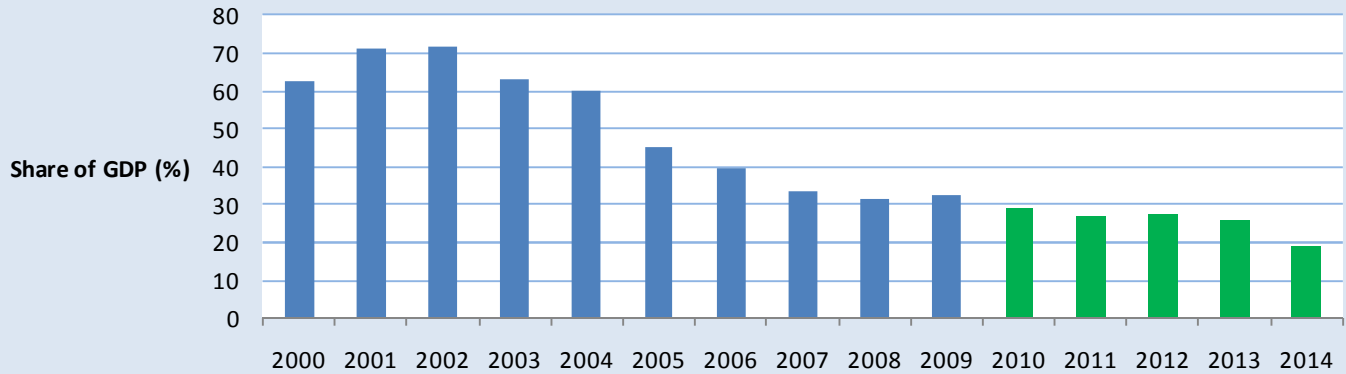
On the global stage, PNG is in the enviable position where public debt has fallen sharply since the early 2000s to reach 32 per cent of GDP in 2009 (figure 2.3) and is expected to drop further to 29 per cent of GDP in 2010 and then to just 19 per cent by 2014. This positions PNG as a country with very low public debt on the international stage and contrasts sharply with the high public debt levels of many advanced countries – in many cases exceeding 100 per cent of GDP.

As outlined in the PNGDSP 2010-2030, PNG is now reaching a position where it may be counterproductive to make any further significant reductions in debt. Borrowing money to finance nation building activities can accelerate economic growth, and when the finance is provided by international institutions such as the World Bank or Asian Development Bank, it is available at very low interest rates. Further discussion on this is provided in part 7 in the context of funding the MTDP.



## 2.3 Public debt, 2000-2009 and Budget 2010 forecasts for 2010-2014

Public debt as a share of GDP



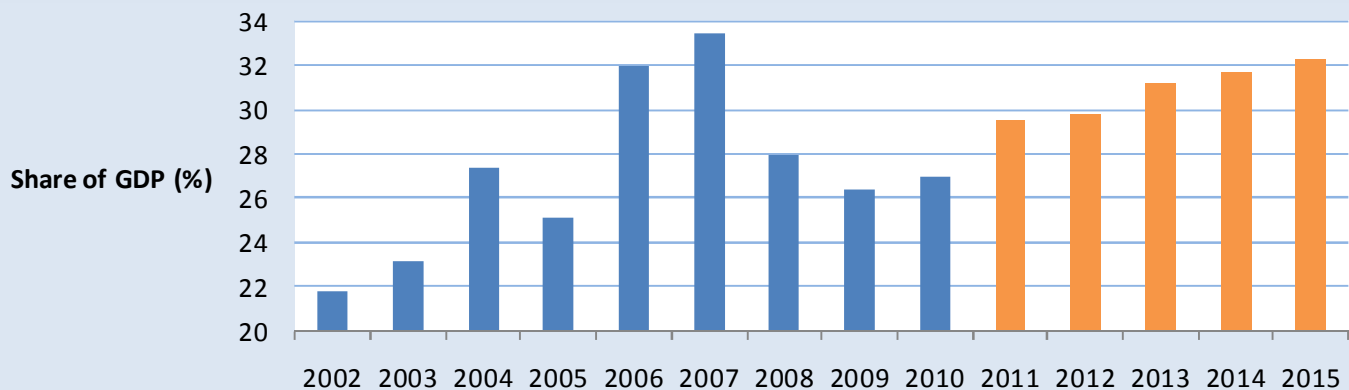
Source: 2010 Budget Papers.

The Fiscal Responsibility Act has been particularly effective in delivering a stable and prudent Budget bottom line. Since 2005, there have only been two years when the Budget has fallen into deficit. The global financial crisis led to an unexpected slump in revenues late in 2008, resulting in a modest Budget deficit of 2.2 per cent of GDP. A further deficit of 0.2 per cent of GDP in 2009 was a very good outcome, considering the global recession and the difficulty experienced by governments around the globe in reigning in deficits.

However, the stability in the Budget bottom line is masking an alarming volatility in government revenues (figure 2.4). In order to maintain a stable Budget bottom line, it has been necessary to match the volatile revenues with equally volatile expenditures. This has significant consequences for macroeconomic stability, including stability in the balance of payments. Government revenues rose from 25 per cent of GDP in 2005 to 33 per cent in 2007 before falling back to 26 per cent in 2009 (figure 2.4). This is because government revenues have increasingly become dependent on taxes and dividends from mining and petroleum. In turn, these revenues depend on global prices for the commodities produced, and the volatile and unpredictable nature of the international commodity markets is reflected in fluctuating government revenues. Of concern is that the volatility in revenues has been largely unpredictable.

## 2.4 Government revenue, excluding grants, 2002-2009

Revenue as a share of GDP



Source: Budget Papers for 2002-2010 and PNGGEM modelling for 2011-2015

The result has been that forecast government revenues can differ sharply from actual revenue outcomes. For example, in 2007 the forecast in the budget was for revenue to reach K4.5 billion but actual revenues in 2007 were in fact K6.3 billion. Since 2004, government revenues have exceeded the amounts forecast in the annual Budgets by K4.8 billion in aggregate – equivalent to 22 per cent of 2009 GDP. This is a considerable discrepancy that has had to be dealt with through supplementary budgets and allocations to trust accounts. This makes expenditure planning very difficult. When the LNG project comes on stream this situation is expected to worsen as a result of the direct link of the revenue stream to global prices for oil.

During the years 2011-2015, Government revenue is expected to steadily increase to 32 per cent of GDP. However, this remains subject to uncertainty as long as world commodity prices are unpredictable. In section 7.4 of Part 7 alternative revenue projections are provided to account for alternative commodity price scenarios.

### ***Moving forward to a new fiscal regime***

A plan for moving the fiscal regime forward to accommodate the new circumstances and to fund the MTDP is described in Part 7. This includes a discussion on the adaptations needed in the legislation that governs fiscal responsibility. A way forward for dealing with the uncertainty of Government revenues is outlined in section 7.4 of Part 7. The key elements are:

- to identify areas of expenditure that are made flexible so that expenditure in these areas is increased if revenues are higher than anticipated and reduced if revenues are lower than anticipated; and
- to allow flexibility in borrowing for MTDP initiatives so that borrowing is reduced when revenues exceed forecasts and increased in the event of low revenues.

## **2.5 Monetary situation**

### ***Price stability and low interest rates***

Achieving and maintaining an economic environment of stable prices and lower interest rates is critical in order to implement the key sectoral strategies outlined in the first MTDP period and onwards. This is because stability in prices will support further investment expansion in key infrastructure that PNG urgently needs in order to lay the foundation for future growth in other sectors of the economy. Stable prices will also help maintain the real value of the kina, providing certainty for Papua New Guinean wage earners.

As outlined in section 2.2, low and stable interest rates have been central to the recent period of healthy economic growth. It will be important to maintain this in order to underpin investor confidence. High or volatile interest rates would deter businesses from borrowing and investing in PNG and would increase the cost of living for most citizens.

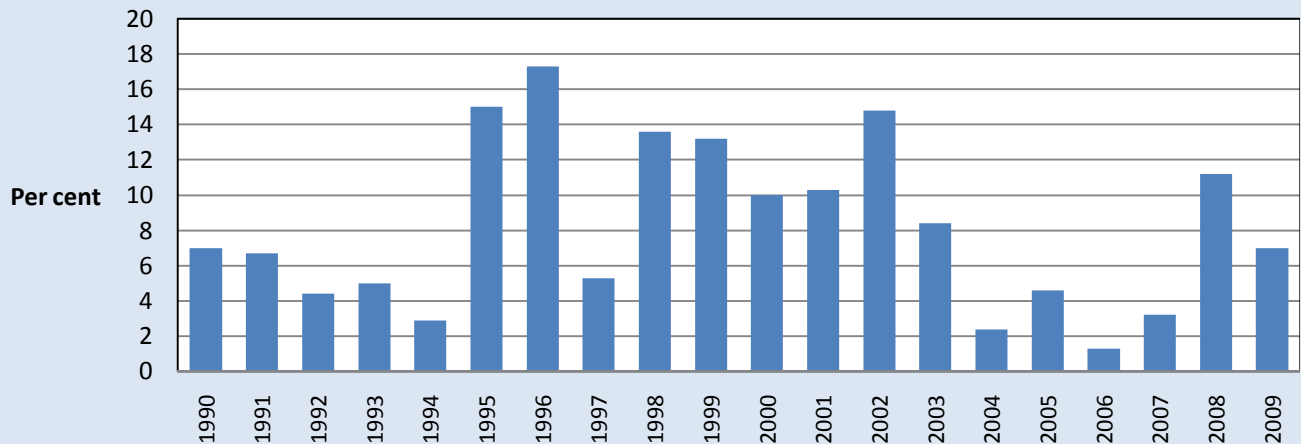
PNG's policy approach thus should put an emphasis on addressing the causes of inflationary pressures rather than relying solely on monetary policy to treat rising inflation with high interest rates.

### ***Monetary policy***

PNG's inflation rate was high and volatile from the 1990s until 2002 as demonstrated in figure 2.5. However, this changed with the introduction of the *Central Banking Act 2000* which removed political interference and granted full independence to the Bank of PNG in conducting monetary policy. This has continued to make the Bank of PNG successful in managing the exchange rate with an emphasis on stability and preventing the sharp fluctuations that prevailed before 2002. As a result, inflation since 2003 has been low and stable, apart from 2008 when global fuel prices surged – a factor outside the control of PNG. Similarly, interest rates have become stable.

It is important to maintain the independence of the Bank of PNG, as consistency in monetary policy gives businesses the confidence to invest.

## 2.5 Annual inflation rate, 1990-2009 per cent



As experienced in the late 1990s, movements in the Kina are a major influence on inflation. When the Kina depreciates, imports become more expensive in Kina terms, fuelling inflation. This explains the high degree of correlation between the exchange rate and PNG's inflation rate. The Bank of PNG has moderated short term fluctuations in the exchange rate, and in that way has helped to cushion PNG from short term inflationary impacts. However this policy would be more effective if the exchange rate was stable against a trade weighted mix of currencies, rather than the existing emphasis on stability against the US dollar.

### ***Alleviating inflationary pressures***

Monetary policy can be effective as a short term response to inflationary pressures, but there are limits to how much monetary policy can control inflation when it is caused by factors outside of PNG's control – for example rises in global oil prices. Over the medium to longer term, other policy measures rather than monetary policy are required. In particular, policy measures are needed that boost productivity, lower costs of production, and address supply constraints that lead to inflationary pressures.

Supply constraints are among the key causes of inflation in PNG due to the lack of productive capacity to respond to rising demand. In particular, land is not available for productive development, resulting in high and rising costs for real estate. Further, there is a severe shortage of skills in PNG that imposes a high cost on the economy from having to import labour. Addressing these two supply constraints would bring important benefits in lowering inflation and are among the key policy initiatives of the MTDP 2011-15.

Maintaining an open and competitive economy is another key element of the MTDP 2011-15 that will be important in keeping prices down. This is because the threat of competition provides a strong incentive for businesses to be innovative in order to ensure their prices and products are attractive to customers.

## **2.6 Financial sector development**

The development of the financial and banking sector is an essential element of the growth and prosperity espoused under the PNGDSP 2010-2030 to achieve the objectives of Vision 2050. This MTDP is to be implemented under an environment where the financial sector is responsive to the transaction and investment demands of both the private sector and the people at all levels of society. The payment and settlement systems should operate with a level of efficiency that is comparable to international standards. Transaction costs and other unnecessary overheads or hidden costs to the sector and the economy should be minimised.

The Bank of PNG (BPNG) has supervisory and regulatory responsibility of the financial and banking sector and oversees the payments and settlements system in PNG. As part of developing the sector, the BPNG is to ensure that innovation and competition are encouraged, including diversification of financial products that not only give more opportunities to business and investment but open up access for the rural communities to integrate their informal systems to the financial and real sectors.

In the MTDP period the BPNG is expected to consolidate its policy initiatives and reforms while at the same time lay the foundation for the sector to attain the depth, buoyancy, and elasticity that is comparable to global best standards.

#### ***The medium term strategies for consolidation***

- Stable interest rates underpinned by the pursuit of an optimal inflationary target.
- Expansion of credit to the private sector, especially for productive investment in the construction, extractive, agriculture, and downstream manufacturing industries.
- Further development of financial products that meet the demands of small enterprises and newcomers that have difficulty securing investment funds from commercial banks due to their higher risk premium.
- Encouragement of innovation and initiatives from the banking sector to improve efficiency in services by cutting down on transaction and overhead costs and other hidden costs, such as waiting-costs, that add inefficiency to the economy as a whole.
- Continued encouragement of the outreach of financial services to the grassroots level through microfinance and other credible facilities.

#### ***The medium term initiatives for long term growth***

- The depth of services remains thin in the formal sector by international comparison. As the economy grows and expands, complexity and diversification of products should be tailored to meet specific demands.
- Financial services to rural areas are still underdeveloped and the majority of the population is cut off from the formal market system. Product diversification is to be encouraged to meet the demands of informal business activities and, for more rural outreach, aimed at integrating the non-monetary sector to the formal sector.
- A review of the financial sector is to be immediately undertaken with the objective to develop strong capital markets with sufficient liquidity that will meet domestic credit demand as well as attracting foreign investors.

## **2.7 Business and investment**

The PNGDSP goal for business and investment is for PNG to offer an attractive environment that encourages business in PNG. The Government will ensure rules on governance, institutions, and legislation are enforced. The law and order problem must be kept at bay while investment in public infrastructure and utilities is undertaken to accommodate the growth of economic activities.

The Government, in partnership with development partners and state-owned enterprises, will invest broadly in the key enablers to pave the way for business activities and investment to take place in the 10 Economic Corridors outlined in the PNGDSP and discussed later in Part 6. The Government will continue to supervise the free market to ensure it functions efficiently with clear rules and regulations, while at the same time intervening in areas where markets fail to work effectively to maximise the welfare of Papua New Guineans. Competition promotion – discussed in the next section – is a crucial ingredient to the effective operation of markets.

#### ***Medium Term strategies to promote business and investment activities***

- Ensuring administrative and institutional systems and processes that facilitate business and investment attain levels of efficiency compatible with international standards. This MTDP will focus on promoting:
  - a sound legal system;
  - well-defined and protected property rights;
  - a transparent and mature property market;
  - a reliable and competitive financial system; and
  - low transaction costs in setting up and running businesses.
- Investment in transport infrastructure and connectivity.
- Investment in utilities, energy, telecommunication, and information and communications technology (ICT), through PPP.
- Investment in human resource to build a local skilled workforce.
- Promotion of domestically owned businesses to invest abroad.

## **2.8 Competition and consumer protection**

### ***Recent successes***

PNG has achieved success in competition policy in recent years, showing the way forward for other developing nations. The introduction of competition into the mobile phone sector, for example, has resulted in the proliferation of mobile phone services throughout the country. Similarly, competition in the international and domestic air sectors has resulted in lower fares, and more innovative service, helping to connect the nation. Similar success is envisaged under the MTDP 2011-2015 across a broader range of industries.

### ***The way forward***

Fair competition and consumer protection policy are key elements of the MTDP 2011-2015. Fair competition and consumer protection will provide the right environment for businesses to flourish to the benefit of all Papua New Guineans. Businesses will focus on serving their customers well and on investing for growth instead of on keeping competitors out of their industry or on attempting to influence Government administration in their favour. In this regulatory environment, PNG's economic growth will be enhanced and will lead to higher living standards for all Papua New Guineans.

The Independent Consumer & Competition Commission (ICCC) plays an essential role in enforcing competition, fair trade and consumer protection regulations. The ICCC will be well resourced under the MTDP to fulfill this role effectively, particularly in the key service sectors of information and communication technology (ICT), transport, electricity and construction and in the key goods sectors of processed foods and construction materials.

The introduction of mobile phone competition has delivered substantial efficiency and lifestyle dividends across the country. Under phase 2 of the Government's ICT policy, competition will be extended to the provision of internet services and to the international gateway, helping to substantially lower ICT costs in PNG and allowing service providers to extend services across PNG. Where the provision of internet and phone services is not commercially viable, public private partnership will be considered to enable all Papua New Guineans to have the opportunity to share in the gains from ICT. Tenders for private participation in PPP will be competitive in order to obtain the most beneficial partnership outcome for PNG.

As outlined in section 2.9, competition has a role in key sectors that are overseen by State owned enterprises, including air transport, electricity supply and water and sewerage services. State owned enterprises will use a competitive tender process to identify the most cost effective options for the Government to provide essential infrastructure and essential services. Through this competitive process, private parties will be contracted to help State owned enterprises meet the MTDP targets for their sectors.

PNG's future living standards depend on the construction undertaken through the MTDP 2011-2015. The construction sector will be relied upon to build the roads, airports, water ports, ICT networks and electricity infrastructure identified as critical in the MTDP. However, there is a serious shortage of skills within PNG that will prevent the domestic sector from delivering the level of service that PNG needs. Given the extent of infrastructure development required under the MTDP 2011-2015, there is also likely to be a shortage in equipment and finance in the domestic sector. PNG will therefore need foreign construction businesses to operate in PNG. The Government will actively pursue foreign participation by advertising all construction tenders overseas. Tenders will provide clear guidelines about the taxation and legal treatment of businesses. Conditions on tenders will be designed both to encourage foreign participation and to encourage investment in the development of local skills, for example through joint venture arrangements.

Furthermore, because of the importance of construction for PNG's future, it is critical that construction materials are readily available at a reasonable price. Therefore the ICCC will be tasked to ensure the supply of construction materials is competitive.

The ICCC will also be tasked to focus on the processing food sector to ensure the business environment allows new entrants into every part of this important sector. The development of this sector will pave the way for value adding to PNG's agricultural sector.

Raising awareness is a key strategy of the PNGDSP for improving consumer protection and fair trade practices. For this reason, the ICCC will be mandated and resourced to raise awareness of rights and responsibilities among businesses and among consumers.

The ICCC has, to date, played the additional role of reviewing and recommending competition policy reform. This responsibility was conferred on the ICCC because of both its expertise and its independence from industry. The ICCC has performed remarkably well, contributing key reports such as the PNG Housing and Real Estate Industry Review of 2010. However, it is good practice in policy formulation for this role to be

undertaken independently of both industry and of the ICCC. The ICCC's role in prosecuting anti-competitive behaviour often puts ICCC in legal conflict with business, and this could in the future lead the ICCC to recommend policies or regulations that unfairly undermine the rights of business. To avoid this situation, under the MTDP the responsibility for reviewing and recommending competition policy reform will be vested in a body that is independent of both industry and of the ICCC. To this end, a Competition for Development Branch will be established in the Department of National Planning and Monitoring to advise on how to achieve the ultimate goal of the PNGDSP through competition and consumer protection policy.

## **2.9 State owned enterprise reform**

### ***State owned enterprise policy framework***

The PNGDSP outlines the broad policy framework to position State owned enterprises (SOEs) as crucial institutions for PNG's development into a middle income country by 2030. The key ingredients are as follows.

- Public enterprises will play a pivotal role in service delivery and infrastructure development, although privatisation may be further considered as a means for improving efficiency and effectiveness.
- Private sector competition will impose an ongoing obligation for SOEs to operate efficiently using cutting edge industry technology. This is because the performance of SOEs can be measured against their private sector competitors. The substantial benefits of this approach have already been proven with private sector competition leading to the revolution of the telecommunications industry. As a result, the efficiency and effectiveness of Telikom have improved substantially.
- Through partnership with the private sector, SOEs can gain access to the skills, technology and finance that is needed to improve performance and expand infrastructure.
- In areas where service delivery is not commercial, the Government will subsidise investments by funding SOEs to fulfil Community Service Obligations.

### ***State owned enterprises in 2011-2015***

Since 2002, the main SOEs have been placed under the control of the Independent Public Business Corporation. This institutional arrangement will continue as it has been effective for better organising SOEs, improving their accountability and governance, and raising their standard of performance.

Air Niugini has faced much tougher competition on international air routes since 2008, resulting in significantly lower airfares. But in the face of competition, Air Niugini has become stronger, recording a healthy profit in 2009 in a year when most international airlines suffered heavy losses, while still managing to lower airfares and improve service. As outlined in section 2.8, the success of competition will be continued by welcoming new carriers on international routes, while encouraging Air Niugini to expand its reach in the Asia-Pacific region. Barriers to domestic competition will also be broken down to ensure that Papua New Guineans receive a highly competitive and low cost service.

The PNGDSP outlines a broad plan for a national grid with an electricity transmission super-corridor. The investments required in 2011-2015 and beyond for electricity generation, transmission and distribution infrastructure will require financial resources beyond the capacity of PNG Power Ltd. Partnership with the private sector will be needed for PNG Power to have the desired financial capacity. In areas where building transmission and distribution lines are less commercial, partnership with donors may be needed. Alternatively, dividends may be reinvested for this purpose. The scope for competition in electricity generation is high, so private sector investment under competitive conditions will be relied upon to build generation capacity. For PNG Power, the bulk of its financial capacity for investment should be directed towards building the grid where competition is less feasible.

The rapid improvement in the performance of Telikom since the introduction of competition will need to continue. Over the period 2011-2015, Telikom will be required to focus on the process of building and extending a reliable and technologically advanced internet service. This will need to track closely the extension of electricity services into rural areas. Through B-Mobile – the 50 per cent Telikom owned mobile phone company established in 2008 – Telikom will need to pay attention to ensuring that those rural areas that are yet to receive mobile phone services get connected. This may require reinvesting dividends in cases where building the infrastructure is not commercial.

PNG Ports Corporation Ltd operates 16 of the 21 major ports in PNG. Implementation of the PNGDSP will result in rapid growth in the demand for port services driven by rapid and broad based economic growth. It is estimated in the PNGDSP that throughput will nearly double by 2015 and increase five-fold by 2030. As such,

PNG Ports Corporation Ltd has a responsibility to build the capacity to meet the demand. The extent of the investments required will mean that partnering with the private sector will be essential.

The National Development Bank was established in 2007 to provide financial services to small and micro businesses, with a particular focus on rural areas. This is a valuable institution as making finance available to small and micro businesses will be the cornerstone of broad-based growth that benefits the whole community. Over the period 2011-2015 there will be a continued focus on building the strength of this institution both by securing more resources to make available for lending, and by facilitating private sector competition to ensure the efficiency and effectiveness of the National Development Bank.

The MTDP 2011-15 will be a period in which the substantial upgrading of water and sewerage services envisaged by the PNGDSP will get underway. Eda Ranu Ltd is responsible for water and sewerage services in Port Moresby and should be able to extend services across the Port Moresby population on commercial grounds. Partnering with communities may be needed to extend services into settlements. The provision of water and sewerage services to the rest of PNG is the responsibility of the PNG Waterboard. Much of the investments required for extending water and sewerage services will not be commercial which will require the PNG Waterboard to engage with communities, the private sector and development partners.

Competition is generally not feasible in the provision of water and sewerage services. The efficiency and effectiveness of Eda Ranu and the PNG Waterboard will therefore need to be measured against key indicators – in particular, the standard of service delivery and the extent of infrastructure investment to extend services.

## **2.10 Trade**

In the PNGDSP the goal for trade is for PNG to realise the benefits of trade by effectively engaging with the rest of the world through international and regional trade negotiations. Trade provides PNG with market opportunities to have its products exported to earn foreign exchange and to import essential goods and services, including the transfer of technology and skills. The world has recently become more integrated with considerable reductions in trade barriers and the new and emerging markets in East Asia and other regions have provided PNG with many opportunities for trade.

### ***Strategies under MTDP***

The Government will continue to concentrate on trade facilitation and bilateral negotiations to promote private sector led integration with the global economy. The priority areas to be pursued in 2011-2015 are summarised in the following.

#### **a. Initiatives for immediate action**

- Development of transport infrastructure and utilities to facilitate trade and give cost advantages to domestic exporting industries.
- Opening up of access to export markets by:
  - developing domestic marketing and technological capabilities to improve productivity;
  - implementing programs and initiatives to minimise the burden on export oriented businesses; and
  - providing a low cost, low risk environment to run a business to enable export oriented businesses to be highly competitive.
- Promoting export led growth in all industrial sectors through careful planning and sequencing.
- Promoting targeted investment through the economic corridors, and establishing at least 3 free trade and export processing zones within the corridors.
- Establishing international standards in the handling and marketing of agricultural produce in order to gain access to foreign markets.
- Establishing a Trade Development Board that will effectively and strictly coordinate and pursue trade, with particular focus on the promotion of exports.
- Encouraging the integration of small and medium enterprises in foreign markets by promoting their off-shore investments and partnerships.

**b. Promoting strategic policies**

- Pursue trade diplomacies where PNG's foreign policy will be focused on supporting PNG's trade and development in the following areas:
  - addressing both trade barriers and technical barriers to trade through systematic reforms and trade dialogue;
  - proactively engaging in global integration through regional trade agreements and regional production networks, including taking a leadership role amongst Pacific island countries in global and regional trade negotiations.
- Promote outward-oriented trade policies by moving away from liberalisation of imports to facilitation of exports.
- Pursue accommodative trade policies that are aimed at supporting trade and growth by strengthening institutions, improving governance and ensuring macroeconomic stability



# Part 3

## Key sectors

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Unlocking land for development, normalising law and order issues, investing in primary, secondary, higher and technical education, health, utilities and a quality transport infrastructure are all crucial enablers that will lay the foundations for PNG's prosperity. As such, they have been grouped together in Part 3. While the benefits of primary and secondary education will not manifest until about 10 years later, a highly productive workforce will be essential by then to ensure progress is made in achieving the higher order objectives set out in the PNGDSP. Higher and technical education is a key priority to equip the workforce with the skills needed to implement the PNGDSP and build the nation.

### 3.1 Land development

**Goal: Provide a secure, well administered land market that serves the needs of landowners and contributes to the nation's strategic development**

#### *Introduction*

Crucial for development is the availability of productive land which is a key input to socio-economic activities. The growth and progress of PNG relies on making more land available for productive use. PNG has unique and diverse arrangements in the ownership of land, which complicates the process of making the land readily available for productive use within the formal market. About 97 per cent of land in PNG is customarily/communally owned by tribes and clans, and only 3 per cent is alienated land owned by the State.

Unlocking land for productive use is a key challenge for PNG, and the Government is approaching the process with care to ensure landowners have the freedom to make land available in the formal market and benefit from it, while retaining ownership of the land. Among the key challenges are the identification of landowners and the attachment of records against their clan membership through to the surveying and servicing of the land. Skilled personnel such as physical planners, surveyors and engineers are all essential for land development, but are in short supply.

#### **MTDP 2011-2015**

Informed by the PNGDSP's land development goal, the MTDP initiatives on land are built around four pillars to be implemented by the Government's National Land Development Program (NLDP) through the NLDP 1 Implementation Plan 2011-2015. These are: (1) land administration and support; (2) customary land development; (3) dispute resolution; and (4) developing land markets. Land administration initiatives will include decentralising land administration to the provincial and local levels. The MTDP will ensure resources are mobilised to making land available for development. Additional strategies and initiatives of the MTDP that go beyond the NLDP 1 Implementation Plan 2011-2015 will address the supply side. This includes producing a sufficient number of land experts to all the provinces to help with the processes involved in the provincial and corridor land development, including assisting landowners in surveys and land use planning.

The key areas of land development in the MTDP are summarised as follows.

- **Land administration and support** – Strategic components include establishing provincial land offices in the four priority economic corridors, strengthening lands record maintenance and storage, strengthening the land services function of the Department of Lands and Physical Planning (DLPP), reviewing the land administration legislation, and development of a National Land Information System.
- **Customary land development and ILGs** – One of the key objectives is to unlock customary land for development and to ensure that the arrangements under which this is undertaken is satisfactory to all stakeholders, especially the indigenous landowners. The Incorporated Land Groups (ILGs) mechanism formalises a group of landowners to engage in leasing their land for development. The economic corridors will be implemented on customary land; therefore, the Economic Corridor Implementation Authorities (ECIA) must have the capacity to deal with land issues. The current pilot projects on customary land development in will continue and will be useful for providing lessons on customary land issues to the economic corridors. A special land development advisory service will be established.

The *Land Group Incorporation (Amendment) Act* and the *Land Registration (Customary) (Amendment) Act* will be fully implemented within the medium term.

- **Alienated land development** – Weak administration and land use planning is preventing the effective development of alienated land. The work on improving land administration will therefore be crucial in the development of alienated land, including developing market based mechanisms for releasing land to developers.
- **Dispute resolution** – The work on dispute resolution will be pursued in alignment and coordination with work on land administration and customary land development.
- **Institutional development and capacity building** – Institutional development and capacity building will be undertaken to strengthen partner agency operational and management capacity. This component will include land related training and education. The NLDP Office will be operational and will coordinate the various aspects of the land program in the first five years.
- **Land use planning** – The Government will develop a Land Use Planning Scheme to guide the best use of land. This will ensure that the natural environment supporting the diverse culture is protected, that a particular economic activity is suitable for the designated parcel of land, and that there is sustainable economic development.
- **Housing and land** – The housing shortage has a strong correlation with the land shortage. Therefore the Government will need to address land supply as the first step in addressing housing.
- **Supply of skilled land planners and surveyors** – Increasing the supply of the required numbers of key skilled personnel in land management will require expansion of both physical infrastructure and spaces in the tertiary education system in PNG.

### ***Challenges in implementation***

The MTDP will emphasise effective implementation of the NLDP to deliver on the key result areas. There are many challenges and obstacles facing the implementation of land reform. They include building the support of NGOs, securing adequate funding for the program, and obtaining active participation and commitment by implementing agencies.

Another important risk is that foreign influences could begin to undermine the current PNG driven land reform initiatives. The current NLDP is driven by the PNG government and must continue to be driven by PNG in order to manage well the cultural sensitivities and obtain outcomes appropriate and effective for PNG.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Provide a secure, well administered land market that serves the needs of landowners and contributes to the nation's strategic development	<b>Land available in the formal market</b>	DLPP	3%	7%	11%	15%	20%
	<b>Land administration and decentralisation</b>						
	Installation of computerised land titling and land use recording systems and maintenance of systems	DLPP	40%	95%	99%	100%	100%
	Provincial land offices providing mandated services	DLPP, DPLGA	0	5	12	20	20
	New land parcels available for development on alienated land	DLPP, DPLGA Provincial Governments, NCDC	Audit	1,000 additional parcels from base	5,000 additional parcels from base	10,000 additional parcels from base	20,000 additional parcels from base
	<b>Customary land and dispute resolution</b>						
	Customary land available for development (hectares)	DLPP	approx. 1,000 ha	1,800 ha	3,300 ha	5,500 ha	9,100 ha
	Number of ILGs registered in accordance with legislation	DLPP	0	7,000	15,000	20,000	25,000
	Backlog of unresolved land related disputes (more than 6 months)	MS DPLGA	Audit 15,000	13,000	7,000	2,000	1,000
	<b>Urbanisation and physical planning</b>						
Number of approved urban plans on alienated and customary land	OoU, NCDC, DPLGA Provincial Governments	0	10	30	50	70	
Lead government department	Department of Lands and Physical Planning (DLPP), Office of Urbanisation (OoU), Magisterial Services (MS), National Capital Development Commission (NCDC), Office of Civil Registry (OCR), Department of Provincial and Local Government Affairs (DPLGA), National Research Institute (NRI)						

No.	Sector Strategy
1	Land administration and decentralisation
2	Incorporated Land Groups and dispute resolution
3	Customary land and alienated land development
4	Expedite economic corridors

<b>PNGDSP 2030 deliverables</b>	<b>No.</b>	<b>2011-15</b>	<b>2016-2020</b>	<b>2021-2025</b>	<b>2026-2030</b>	<b>Risks and assumptions</b>
<b>Land administration and decentralisation</b>						
Accurate and updated land records that meet user requirements	1.1	95% of data accurately updated	99% of data accurately updated	100 % of data accurately updated	100 % of data accurately updated	
Land services meeting the needs of clients	1.2	- DLPP effectively and transparently performing its core functions - Pilot Provincial Land Offices established	Land services installed and operational			
Decentralise core land administration and management functions	1.3	Pilot Provincial Land Offices established	Establishment of Land Offices in more provinces	All Provinces have land offices		
<b>Incorporated Land Groups and dispute resolution</b>						
Successfully resolved disputes through mediation / land courts	2.1	- Backlog of disputes are settled - Mediators are trained and resourced				
<b>Customary land and alienated land development</b>						
Develop alienated land	3.1	Audit of alienated land is completed				
More customary land available for development	3.2					
Customary owners are aware of their land rights and land development opportunities	3.3					
<b>Economic Corridors</b>						
Expedite Economic Corridor development through the support of land administration and land management services	4.1					

<b>Responsibility</b>	DLPP, OoU, MS, NCDC, OCR, DPLGA, NRI						
<b>Estimated inputs (K million)</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2011-2015</b>	<b>Funding option(s)</b>
<b>Total</b>	34	37.1	27.8	19.7	18.2	<b>136.8</b>	GoPNG/Donor

## **3.2 Law, Order and Justice**

**Goal:** Provide a safe, secure, and stable environment for all citizens, visitors, communities, and businesses to conduct their affairs freely.

### ***Introduction***

The issues of law, order and justice have a significant impact on the social and economic development of PNG. Order and justice are both basic human rights and fundamental preconditions for a well functioning market economy. Law and justice have therefore been identified as a Government priority under the PNG Development Strategic Plan 2010-2030.

The rule of law is necessary to maintain the incentive to save, invest and accumulate the necessary assets that underpin higher living standards. The ease of doing business in PNG depends critically on the maintenance of law, order and justice. Organised crime, fraud and illegal trafficking of guns and drugs are all rising threats, raising the cost of doing business in PNG and ultimately deterring investment. Even for semi-subsistence village communities, the rule of law is essential for encouraging participation in the market economy. If cash incomes and assets (such as coffee trees) are under constant threat of destruction or theft, smallholders are likely to withdraw from the cash economy and revert back to conservative, but low risk subsistence livelihoods.

The quality of life in both rural and urban communities also is compromised by crime and violence. Women in particular face the greatest risk of violent assault. More broadly, individual communities and the nation as a whole bear the cost of the destruction of public assets, including lack of access to essential services. Local disputes that result in the destruction of community assets such as aid posts and schools directly deprive the disputing communities from health and education services, undermining opportunities to improve their living standards.

### ***MTDP 2011-2015***

A sector wide approach is required to address the law and justice issues confronting PNG. For example, by removing the large backlog of cases in the National and Supreme Courts, the large population of detainees awaiting trial will be reduced, relieving the pressure on Correctional Services. To this end, under the MTDP 2011-2015, at least two resident judges will be located in each region to attend to cases in a timely manner. Moreover, the growth in cases reaching the higher courts will be slowed by focusing on early resolution of disputes, beginning at the community level through raising the skills of police and village court officials, and by improving the payments system of village court officials. Furthermore, to ensure a higher number of offenders re-enter society fully rehabilitated, reintegration of offenders back into the communities will be facilitated through partnerships with community based organisations (CBOs), faith based organisations (FBOs) and civil society organisations (CSOs).

A cost effective and sector wide approach to investment and operations will characterise the first MTDP. Early emphasis will be given to rehabilitating much of the sector's infrastructure that has been poorly maintained. Central agencies then need to coordinate their resource allocation to ensure infrastructure remains in good condition. To economise on the costs of new construction and of maintenance, new infrastructure of different law and justice agencies will be co-located wherever this lowers the overall cost or improves the effectiveness of service delivery. For example, rural police stations, district court facilities and housing for police and court personnel will often be co-located to economise on the cost of negotiating for land and to simplify maintenance work. Similarly, joint capacity will be built within strategic government agencies to fight corruption at the highest level and to ensure a high rate of disposition of fraud and corruption cases in the courts.

### ***Building on MTDP 2011-2015***

From 2015 on, the focus will turn from rehabilitation of infrastructure and removing the backlog of cases, to greatly expanding access to law and justice services across the nation. This will require careful coordination to take advantage of economies of scale and scope, to target areas of need and to ensure sufficient growth in manpower and equipment to resource the new infrastructure. Improvement in partnerships with CSOs, FBOs, and CBOs will increase community awareness and involvement in dispute resolution and crime prevention activities.

### ***Challenges in implementation***

A number of challenges confront the law and order sector. A key issue has been poor routine maintenance of infrastructure, resulting in the deterioration of much of the sector's infrastructure to the point that renovation is no longer possible. This is a very expensive way to provide a service, as it is far more cost effective to extend the life of infrastructure through routine maintenance, than to rebuild or rehabilitate. Improved coordination between central agencies is required to address this issue.

Effective financial management is essential for ensuring resources are well utilised. Managing the implementation of activities, especially under the development budget has not been effective in the past and must be resolved to ensure the effectiveness of expenditure on law and order.

Considerable attention has been given in the past to organisational governance and structure, but with little return in terms of the indicators of crime and justice. In the future, a balance must be struck between finding the ideal structure and getting on with the job. This challenge is best approached by ensuring the sector is led by experienced and well paid Papua New Guineans who are committed to a sector wide approach and who will work tirelessly to achieve a safe and just society for all.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Provide a safe, secure and stable environment for all citizens, visitors, communities and businesses to conduct their affairs freely	Crime rate (crimes per 1000 population)	Crime Survey Report	91 per 1000 (9.1%)	70 per 1000 (7.1%)	50 per 1000 (5%)	40 per 1000 (4%)	30 per 1000 (3%) – crime at reasonable rate)
	Incidence of major crime	Police Annual Report	600,000 estimated; 150,000 reported in 2005	550,000 (reduced by 8.3%)	380,000 (reduced by 36.7%)	320,000 (reduced by 46.6%)	270,000 (reduced by 55%)
	Number of well trained and well equipped police officers (see Annex 1 for regional & provincial targets)	Annual Report & Police Review Report	5,160 police, but few well trained	8,440 police, all highly trained	13,230 police, all highly trained	17,020 police, all highly trained	24,000 police all highly trained (equivalent to world standard of 1 police officer to 400 people)
	Number of police stations (see Annex 1 for regional & provincial targets)		184	300	470	610	850
	Number of village courts (see Annex 1 for regional & provincial targets)		1190	1950	3050	3930	5540
	Backlog of District Court cases	NJSS Annual Report, MS annual report					
	Number of remandees in prison awaiting trial	CIS	60% remandees and 40% convicts awaiting trial				
	Rate of disposition of fraud and corruption cases	RPNGC, OC & Public Prosecutor					
Lead government department	Law & Justice sector agencies						

No.	Sector Strategy
1	Coordinate law, order and justice agencies in order to be cost effective
2	Improve access to law and justice services
3	Effective law and justice services by enhancing skills and improving incentives of key personnel
4	Effective use of restorative justice, early dispute resolution and crime prevention to minimise the incidence and seriousness of crimes
5	Appropriate measures for weapons control, private security services and other emerging issues
6	Public made aware of rights and responsibilities in all spheres of society

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and Assumptions
Clear and effective strategy for delivering law, order and justice to PNG	1.1	Develop a law, order and justice strategic plan for effectively addressing current and future issues.	Implement strategy, monitor effectiveness and update where necessary.	Implement, monitor and update.	Implement, monitor and update.	Papua New Guineans are best placed to develop, monitor and update a law, order and justice strategy as they have a vested interest in the nation's security and they understand the culture. Hence handing this responsibility to foreign consultants poses a significant risk to progress.
Improve village courts	2.1	-Ensure village court officials and village law enforcers are paid appropriately and on time. -Ensure village courts in maritime provinces are easily accessible -1950 village courts	-Village court systems are effectively operating -Maritime provinces and isolated villages have easy access to village court services -3050 village courts	-All village courts are fully resourced -3930 village courts	5540 village courts	-Lack of effective coordination between agencies and different levels of governments -Lack of ownership by the sector agencies
Adequate District Court resources	2.2	17 well resourced District Courts	30 well resourced District Courts	50 well resourced District Courts	70 well resourced District Courts	
Capacity building for legal aid and public awareness of legal rights in provinces	2.3 and 6.1	Incorporate Provincial Justice Centres with District Courts in 2 provinces.	5 Provincial Justice Centres	10 Provincial Justice Centres	22 Provincial Justice Centres	
Land mediation capacity building	2.4	Support the work of the National Land Development Program				
Increased manpower	2.5	-8,440 police (1:860) -160 District Court magistrates -2 resident judges in each region -Increase State and Government civil litigation lawyers	-13,230 police (1:610) -250 District Court magistrates -1 resident judge in each province -Increase State and Government civil litigation lawyers	-17,020 police (1:530) -320 District Court magistrates -2 resident judges in most provinces -Increase State and Government civil litigation lawyers	-24,000 police (1:400) -450 District Court magistrates -3 resident judges in most provinces -Number of State and Government civil litigation lawyers are at desired level	
Law and justice facilities of adequate standard and maintained	3.1	-Upgrade existing run down facilities -Improve office infrastructure, information technology systems and logistics	-Facilities are fully maintained to good standard -Agencies fully equipped with office infrastructure, information systems and logistics			
Provision of new infrastructure as needed based on prioritisation with Law and Justice Secretariat	3.2	-Erect Supermax at prisons -New police headquarters -1 detention centre for juveniles in each region -Barracks and housing provided to new intakes				



Develop database system for law and justice agencies	3.3	A database system for the Ombudsman Commission and other law and justice agencies to prioritise the backlog of complaints				
All personnel highly trained with emphasis on early and lasting resolution	3.4	-All police, village court officials and CIS well trained from 2012 onwards -Police know and abide by standing orders -Fraud squad in place and effective				
Government is provided with excellent legal service	3.5	-Public Prosecutor, State Solicitor General, State Solicitor lawyers and Government civil litigation lawyers paid according to performance -CLRC well resourced and their services strategically prioritised				
Develop and implement guns and weapons security policy following gun summit	4.1	-Develop policy as part of overall law and justice strategy. -Increase border surveillance with Defence Force and other border agencies.				
Develop and implement private Security Industry Authority Act to ensure it is in national interest	5.1	Develop and implement Security Industry Act as part of overall law and justice strategy.	Private security services to cooperate and work along with the police to combat crime.	Private Securities are guided by the Act		

Responsibility	Law and Justice sector agencies						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
<b>Total</b>	170.4	175.4	175.4	270.4	320.4	1112.2	GoPNG/Donors

### **3.3 Health**

**Goal:** **Achieve an efficient health system which can deliver an internationally acceptable standard of health services.**

#### ***Introduction***

The current status of the health sector is depicted by unfavourable human development indicators such as high infant and neonatal mortality rates, high maternal mortality as well as deteriorating conditions of infrastructure such as roads and bridges, health centres and hospitals. Unfavourable economic conditions in terms of access to markets, and opportunities for economic activities (mainly through paid jobs) also contribute towards the status of the quality of lives of the people.

PNG has one of the highest maternal mortality rates in the world and currently a woman in rural PNG has a one in 25 chance of dying in her lifetime as a result of childbirth. Immunisation coverage has been low over the past few years and hence a high number of children die before they reach their fifth birthday. According to the 2006 Demographic and Health Survey, infant mortality was reported to be 57 deaths per 1,000 live births, child mortality for those aged 0-5 years was 75 deaths per 1,000 live births, and maternal mortality was reported to be 733 deaths per 100,000 live births. The fragmentation of health service delivery at the provincial level has contributed towards the deterioration in health service delivery in the provinces, districts and local communities. Furthermore, other challenges facing the health sector include a high population growth rate (2.7 per cent), HIV/AIDS (1.61 per cent of adults), deteriorating law and order, transport, communications and other infrastructure, and low provincial capacity to finance, manage and deliver social services.

Within the next 20 years the Government aims to achieve an efficient health system which can deliver an internationally acceptable standard of health services by rehabilitating aid posts, health centres and district hospitals as well as trialing community health posts in strategic locations. Furthermore, there will be improvements in the storage, distribution and procurement of basic drugs, vaccinations and medical equipment through the rolling out of the Provincial Health Authority reforms. The proposed Pacific Medical Centre will also enhance delivery of health services and promote training of health personnel, while the capacity of Angau Memorial Hospital will be developed further to distinguish it as the first “specialised” hospital equipped with modern medical equipment for the Momase Region. The other 3 “specialised” regional hospitals will be a refurbished Port Moresby General Hospital (Southern), Mount Hagen Hospital (Highlands) and the Nonga Base Hospital (New Guinea Islands).

The national MDG targets and indicators associated with the health sector (MDG 4, 5 and 6) have been integrated into the sector framework within the MTDP 2011-2015 as well as the PNGDSP 2010-2030. As such, over the next five years key interventions will contribute towards achieving the ultimate goals of the PNGDSP 2010-2030, Vision 2050 and the MDGs.

#### ***MTDP 2011-2015***

In order to achieve the PNGDSP goal for health by 2030, the Government will over the next 5 years focus on getting ‘back to basics’ with rehabilitation of the foundations of our primary and preventative health care system, focusing on improving maternal health and child survival, and reducing the burden of communicable diseases. Infectious disease and maternal and child health matters account for the greatest burden on health services and by addressing these concerns PNG will also achieve MDG 4, 5 and 6.

The Government will focus on rehabilitating the current system to a level where each facility is fully operational. As such, key deliverables during the next five years will include rehabilitation of aid posts, the trialing of community health posts in strategic locations and rehabilitation of health centres and district hospitals. Alongside these deliverables will be improvements in the storage, distribution and procurement of basic drugs, vaccinations and medical equipment. These interventions will be enhanced through the implementation of the provincial health authority reforms, which will commence during MTDP 2011-2015 and will be rolled out across the country over the next ten years. This reform will be a cost effective way of strengthening management of the health system.

Work will commence on ensuring key provincial hospitals (Kerema, Goroka, Angau and Nonga) are fully operational over the next twenty years and feasibility studies will be conducted on the four regional hospitals’ ability to be upgraded to become specialised hospitals in later MTDPs. The Angau Memorial Hospital will be the first hospital to be recapitalised as a specialised regional hospital. Alongside these interventions the

proposed Pacific Medical Centre will be constructed and will be the nation's leading referral hospital with respect to urgent and critical care needs. The Pacific Medical Centre will work in collaboration with public hospitals and some of the world's leading teaching hospitals. Partnerships with the private sector, churches and non-governmental health service providers will remain important during this time, at all levels of service delivery.

***Building on MTDP 2011-2015***

The Government will, over the years 2016-2030 continue to rehabilitate and open aid posts, health centres, and community health posts, taking advantage of prior investment in the transport and utilities sector. Pending the success of the community health posts, aid posts and sub-health posts will progressively be replaced with community health posts. Health facilities will also be modernised. Moreover, district health centres will be upgraded to hospitals in districts without ready access to provincial hospitals and in accordance with population and geographical requirements. Rehabilitation of key provincial hospitals including teaching hospitals and Port Moresby General Hospital (PMGH), as well as the construction of the Pacific Medical Centre, will take place during the first 10 years. The following 10 years will focus on the remaining provincial hospitals as financing allows.

***Challenges in implementation***

For effective implementation of deliverables over the years 2011-2015, recruitment and training of health personnel (doctors, nurses and community health workers with midwifery skills) within hospitals and community health posts is paramount. By 2015, 325 physicians and 3,600 nurses will have to be recruited, while these numbers will increase to 4,900 physicians and 19,500 nurses by 2030. Moreover, the provision of transport infrastructure and key utilities – water, sanitation, telecommunications and electrification – to health facilities, a functioning cold-chain for transport and storage of refrigerated products, and consistent government funding for operations are essential.

DSP goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Achieve an efficient health system which can deliver an internationally acceptable standard of health services	Infant mortality rate	Census/DHS	57 deaths per 1000 live births (2006)	43 deaths per 1000 live births	35 deaths per 1000 live births	26 deaths per 1000 live births	Below 17 per 1000 live births
	Neonatal mortality rate (%)	DHS	29 deaths per 1000 live births (2006)	22 deaths per 1000 live births	18 deaths per 1000 live births	13 deaths per 1000 live births	9 deaths per 1000 live births
	Under 5 mortality rate (refer Appendix table for regional and provincial targets)	Census/DHS	75 deaths per 1000 live births (2006)	56 deaths per 1000 live births	44 deaths per 1000 live births	32 deaths per 1000 live births	Below 20 deaths per 1000 live births
	Maternal mortality rate	DHS	733 deaths per 100,000 live births (1994)	500 deaths per 100,000 live births	360 deaths per 100,000 live births	230 deaths per 100,000 live births	Below 100 per 100,000 live births
	Life expectancy	Census/DHS	57 years	Males: 62.2 years Females: 62.7 years	Males: 64.2 years Females: 64.7 years	Males: 66.2 years Females: 67.2 years	70 years
	Proportion of 1 year old children immunised against measles	NHIS/DHS	58% (2009)	73%	80%	87%	94%
	Proportion of 1 year old children immunised with 3 doses of DTP-HepB-Hib	NHIS	70% (2009)	80%	86%	92%	97%
	Proportion of children immunised against TB	NHIS, TB Program	forthcoming	75%	80%	87%	95%
	Proportion of births attended by trained health personnel	DHS/NHIS	40% (2009)	54%	68%	81%	95%
	Contraceptive Acceptor Rate (per 1000 women of reproductive age)	NHIS	263 per 1000 WRA (2009)	320	360	400	450
	Contraceptive Prevalence Rate (%)	DHS	32% (married women 15 – 49 yrs)	40%	65%	67%	70%
	Couple years of contraceptive protection <sup>2</sup>	NHIS	105/ 1000 WRA	115	125	135	145
	Proportion of children born to mothers outside the age range 20-34	DHS/Census	28%	25%	22%	20%	18%
	Percentage of children born to mothers with 4 or more children	DHS	30% women aged 15-49	27%	24%	20%	15%
	Proportion of births with birth interval < 2 years	DHS	27% (2006)	24%	21%	18%	15%
	Proportion of pregnant women who received at least one antenatal care visit	DHS/NHIS	DHS (2006), 84% NHIS (2009), 59%	70%	75%	82%	88%

<sup>2</sup> Couple years of contraceptive protection, otherwise known as couple years of protection, is a measure of the amount of effective contraception supplied in PNG. It is the number of couples who could be provided with the available contraception for a whole year per 100,000 couples.

	Women aged 15-49 with unmet need for family planning (%)	DHS	27.4% (2006)	25%	22%	18%	15%
	Underweight births as a proportion of total births	NHIS	9.4%	9.1%	8.9%	8.6%	8.2%
	Proportion of underweight children under 5 years of age	NHIS	28%	26%	24%	22%	20%
	Proportion of children under 5 who are significantly below average height for their age	NHIS/MNS	forthcoming				
	Proportion of children under 5 sleeping under long life impregnated nets (LLIN)	DHS/IMR survey	40%	80%	90%	95%	95%
	Proportion of households owning mosquito nets	DHS/IMR survey	38%	65%	85%	90%	95%
	Proportion of children under 5 with malaria who are treated with anti-malarial drugs	NHIS/IMR Survey	22%	80%	90%	100%	100%
	Incidence of malaria by sex (cases per 1000 population)	NHIS	Total = 230 (2009) F and M forthcoming	Total = 180	Total = 150	Total = 120	Total = 100
	Incidence of TB per 100,000	NHIS	475	400	330	240	150
	TB case detection rate	NHIS	33.2 (2007)	35	40	50	75
	Treatment completion rate (%)	NHIS	71% (2007)	75%	85%	90%	95%
	Case fatality rate (%) of pneumonia by sex (children under five)	NHIS	Total = 3.0% F and M forthcoming	Total = 2.9%	Total = 2.7%	Total = 2.4%	Total = 2.1%
	Proportion of population with access to affordable essential drugs on a sustainable basis	DoH	75%	78%	80%	85%	90%
Lead government department	Department of Health (DoH)						

No.	Strategies for developing a world class health system
1	Improve service delivery
2	Strengthen partnership and coordination with stakeholders
3	Strengthen health systems
4	Improve child survival
5	Improve maternal health
6	Reduce the burden of communicable diseases
7	Promote healthier lifestyles
8	Improve preparedness for disease outbreaks and emerging population health threats

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and Assumptions
Outreach services: rural outreach clinics for children under 5 years	1.1	30 clinics per 1000 children under 5 yrs)	40 clinics per 1000 children under 5 yrs	50 clinics per 1000 children under 5 yrs	80 clinics per 1000 children under 5 yrs	<ul style="list-style-type: none"> <li>-Access roads are built and maintained</li> <li>-Trained personnel present</li> <li>-Cold-chain developed and maintained</li> <li>-Effective utilities</li> <li>-Funding is secured and released on time</li> <li>-Land is secured</li> <li>-Provinces take up the Community Health Post initiative requiring additional CHWs.</li> <li>-Security is guaranteed, particularly for the Pacific Medical Centre</li> </ul>
95 per cent of health facilities with adequate medical supplies and equipment	1.2	-50% provincial transit stores operational -Rationalise to 3 AMS. -75% of all facilities have adequate medical supplies.	-100% provincial transit stores operational -Rationalise AMS to 2 -90% of all facilities have medical supplies	-100% provincial transit stores operational -Rationalise AMS to 2 -95% of all facilities have medical supplies	-100% provincial transit stores operational -Rationalise AMS to 2 -95% of all facilities have medical supplies	
-7,500 aid posts and community health posts (CHP) established and fully operational (refer Appendix for national, regional and provincial targets) -rehabilitation of 2672 aid posts and construction of new CHPs	1.3	-Rehabilitation of 25% of aid posts -Trial and establishment of 20 CHPs in strategic locations	-Rehabilitation of 50% of aid posts -Minimum 178 CHPs built and functioning.	-Rehabilitation of 100% of aid posts -1000 CHPs established. -Aid posts and sub-centres progressively replaced by CHPs	All aid-posts and sub-centres progressively replaced by CHPs in all districts and LLGs.	
50% of district health centres upgraded to hospitals	1.4	50% of existing district health centres rehabilitated.	-100% of district health centres rehabilitated. -At least 5 district health centres upgraded to district hospitals.	Continued expansion of district hospital network.	All districts have access to functioning health centres.	
100% of district hospitals rehabilitated.	1.5	50% of district hospitals rehabilitated		100% of district hospital rehabilitated		
Rehabilitation of provincial hospitals	1.6	Rehabilitation of key provincial hospitals (Kerema, Goroka, Angau and Nonga)		Rehabilitation of remaining provincial hospitals and of PMGH		
Four regional specialist hospitals established and fully equipped	1.7	Feasibility studies conducted on all four regional specialist hospitals.	4 regional hospitals upgraded to become specialist hospitals over 20 years starting with Angau Memorial Hospital	4 regional hospitals maintained as specialist hospitals	4 regional hospitals maintained as specialist hospitals	
Upgrade training institutions (refer Appendix tables for national, regional and provincial targets for doctors, nurses and CHWs)	1.8	-20 doctors a year commence training -500 nurses a year commence training -500 CHWs a year with midwifery skills commence training	-200 doctors a year commence training -750 nurses a year commence training -750 CHWs a year with midwifery skills commence training	-500 doctors a year commence training -1000 nurses a year commence training -1000 CHWs a year with midwifery skills commence training	-600 doctors a year commence training -1400 nurses a year commence training -1400 CHWs a year with midwifery skills commence training	
Pacific Medical Centre constructed and operationalised	1.9	-Feasibility study conducted and construction commences	Pacific Medical Centre constructed	Pacific Medical Centre operationalised	Pacific Medical Centre operationalised	
Strengthen partnership and coordination with stakeholders	2.1	-PPPs in the health system investigated. -Improved purchaser-provider relationships between private health providers, CSOs and churches	-PPPs in the health system investigated. -Improved purchaser-provider relationships between private health providers, CSOs and churches	-PPPs in the health system investigated. -Improved purchaser-provider relationships between private health providers, CSOs and churches	-PPPs in the health system investigated. -Improved purchaser-provider relationships between private health providers, CSOs and churches	Funding is secured and released on time

Governance reform: Provincial Health Authorities (PHA) rolled out to all provinces.	3.1	PHA reforms begin. At least 5 PHAs established in 5 provinces.	PHAs established and fully operational in all provinces.	PHAs established and fully operational in all provinces.	PHAs established and fully operational in all provinces.	-Political and administrative support -Existing legislations are amended accordingly -Smooth transfer of personnel
95% children under the age of 1 immunised in accordance with childhood schedule (note that vaccines are likely to change over time in accordance with epidemiology, available vaccines etc)	4.1	-73% of all children immunised. -1 SIA completed -100% of all health centres able to provide immunisation.	-80% of all children immunised -2 SIA completed -100% of all health centres, aid posts/CHPs able to provide immunisation.	-87% of all children immunised. -100% of all health centres, aid posts/CHPs able to provide immunisation.	-95% of all children immunised. -100% of all health centres and CHPs able to provide immunisation.	-Access roads are built and maintained -Trained personnel present -Cold-chain maintained -Effective utilities -Funding is secured and released on time
450 per 1000 women of reproductive age access family planning each year (contraceptive acceptor rate)	5.1	-320 per 1000 WRA -50 % of facilities capable of delivering family planning services	-360 per 1000 WRA -75% of facilities capable of delivering family planning services	-400 per 1000 WRA -100% of facilities capable of delivering family planning services.	-450 per 1000 WRA	-Access roads are built and maintained -Trained personnel present -Communities have positive perception of family planning
95% of deliveries supervised	5.2	-80% of hospitals and health centres capable of providing quality service and support before, during and after pregnancy -55% of health facilities capable of providing supervised deliveries.	-90% of hospitals and health centres capable of providing quality service and support before, during and after pregnancy -55% of health facilities capable of providing supervised deliveries.	-100% of hospitals and health centres capable of providing quality service and support before, during and after pregnancy -58% of health facilities capable of providing supervised deliveries.	-100% of hospitals and health centres capable of providing quality service and support before, during and after pregnancy -68% of health facilities capable of providing supervised deliveries.	-Access roads are built and maintained -Presence of reliable means of transportation -Trained personnel present -Effective utilities -Funding is secured and released on time
All households have access to at least 1 mosquito net.	6.1	70%	80%	90%	100%	-Access roads are built and maintained -Funding is secured and released on time
100% of provinces with TB Dots	6.2	50%	75%	100%	100% of provinces with TB Dots	-Access roads are built and maintained -Funding is secured and released on time

Responsibility	Department of Health								
Estimated inputs (K million)	Focus Area	Budget line	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
	Personnel (all)	Recurrent	397	397	397	397	397	1,985	GoPNG/Donors
	Medical supplies (1.2,4.1)	Recurrent	177	177	177	177	177	885	GoPNG/Donors
	Operating costs (all)	Recurrent	410	410	410	410	410	2,050	GoPNG/Donors
	Rural health services (1.3,1.4)	Development	78	78	78	78	78	390	GoPNG/Donors
	Rural water supply	Development	22	22	22	22	22	110	GoPNG/Donors
	General hospitals (1.5,1.6,1.7,1.9)	Development	150	350	250	250	250	1,250	GoPNG/Donors
	Central (3.1)	Development	6	6	6	6	6	30	GoPNG/Donors
	<b>Total</b>		<b>1240</b>	<b>1440</b>	<b>1340</b>	<b>1340</b>	<b>1340</b>	<b>6700</b>	

### **3.4 Primary and Secondary Education**

**Goal:** Achieve a better future by promoting and enhancing integral human development.

#### ***Introduction***

Since 1995 the education systems has faced difficulties in the effective delivery of its reform agenda. While access to education has improved significantly, the quality of education has become a concern as the school population has increased and the system has struggled to adequately plan for, fund and administer those increases. There is considerable pressure in areas such as infrastructure and teacher numbers, teacher training, materials development and distribution, and the capacity at all levels to monitor and administer the education system. Moreover, there are now greater community and parental demands for access to education. Other challenges for the education system include: improving retention through the years of basic education; improving delivery of education services in rural and remote areas; completing reform of the secondary curriculum and supporting effective implementation of the curriculum at all levels; strengthening the vocational education and training sector; make better use of partnerships with the private sector and community agencies; and securing adequate government budget support to match the growth in enrolments.

The net enrolment ratio in grade 1 was 52.9 per cent in 2007, while the net admission rate for children between ages 6-14 years was only 11.5 per cent. The average class size in 2007 was large at 45 students, calling into question whether teachers are able to attend effectively to the needs of individual students. The Government aims to develop a highly literate and numerate workforce within the next 20 years by providing universal access to quality basic education. This will require building capacity within the education system through investment in the training of teachers, rehabilitation of existing primary and secondary school infrastructure, investment in new classrooms and dormitories, and a phased reduction in school fees. The Government will also rehabilitate the existing National high schools to ensure that students entering university are well prepared. Secondary schools in turn will be well integrated with vocational and technical colleges to ensure students have the opportunity to acquire much needed skills.

#### ***MTDP 2011-2015***

The immediate focus of the Government within the next five years will include: implementing education reforms to improve service delivery; strengthening and coordinating partnerships with stakeholders at all levels; enhancing universal access to primary education, ensuring effective distribution of education materials and supplies and implementing necessary legislative reforms. These interventions will be supported by curriculum reform across all levels of schooling and legislative changes to ensure educational materials can be easily distributed throughout the country. Another legislative change critical during the next five years is the centralising and standardising of education functions as part of a process of developing effective management and administration.

The costs and benefits of publishing uniform exam results will be investigated through trials with interested provinces. Similarly, an incentive fund to reward well-performing schools will be piloted during this 5 year period. Partnerships with the private sector, churches and the International Education Agency will also be pursued. Interventions in the 2011-2015 period will strengthen education pathways into higher education institutions and technical and vocational colleges. In particular, the flexi-high school system will be developed during this period and will be rolled out to secondary school students as well as to school leavers. Moreover, National high schools will be rehabilitated and re-established in order to improve the standards of year 12 students entering university.

#### ***Building on MTDP 2011-2015***

The Government will in the next 15 years continue to build the capacity of the education system through the expansion, rehabilitation and upgrading of education institutions. Moreover, the Government will provide quality educational materials and supplies across the country, taking advantage of prior investment in the transport and utilities sector. Universal access will be expanded to encompass secondary education through to year 10 and mechanisms that retain students to year 12 will be improved and expanded.

#### ***Challenges in implementation***

For effective implementation of deliverables within 2011-2015, the education and training of teachers, improved transport links, the provision of safe learning environments free from violence, land reform to enable construction of new classrooms and teachers' houses and effective management and administration of the entire education system are of utmost importance.



DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Achieve a better future by promoting and enhancing integral human development	Youth literacy rate (% of ages 15-24)	Census (indirect)	Below 64%	70%	75%	85%	90%
	Adult literacy rate (% of ages 15 and over)	Census (indirect)	forthcoming				
	Science, numeracy & literacy performance, for example on OECD's PISA test and the International TIMSS or PIRLS assessments	PISA (OECD), TIMSS/PIRLS (IEA)	n.a.	Participate in 1 or more international testing regimes		Perform above international average	Perform at level consistent with middle income countries.
	Net admission rate (% of ages 6-14)	SS-DOE	11.5%	30%	50%	60%	Close to 70%
	Gross enrolment ratio in first grade of primary school (start age is 6)	SS-DOE	52.9%	74.3%	85%	100%	100%
	Gross enrolment ratio in grade 1 to 8	SS-DOE	forthcoming				
	Net enrolment ratio in grade 1 to 8 (see Appendix table for regional/provincial targets)	SS-DOE	53%	72%	90%	95%	100%
	Cohort retention ratio (%) between grade 1 and grade 8	SS-DOE	30%	40%	50%	60%	70%
	Gender parity ratio of students in basic education	SS-DOE	91%	97%	100%	100%	100%
	Pupil-teacher ratio	SS-DOE	1:45	1:44	1:43	1:42	1:40
Completion rate to level 8		45.4%	49.4%	77.5%	80-90%	Close to 100%	
Lead government department	Department of Education (DOE)						

No.	Sector Strategy
1	Education reform
2	Universal access to quality education
3	Effective distribution of school materials and supplies
4	Partnering with the private sector
5	Other legislative reforms

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Quality elementary, primary and secondary curriculum developed, implemented and monitored	1.1	–English literacy, and not local vernacular will be taught in elementary schools. –Quality primary curriculum developed. –Secondary curriculum panel established with university and technical college representation	Quality primary and secondary curriculum implemented and monitored	Quality primary and secondary curriculum implemented and monitored	Quality primary and secondary curriculum implemented and monitored	Curriculum reform is supported by legislative changes
Publish school results each year from all national exams	1.2	Publish school results annually from all national exams in newspapers.				Reform is supported by legislative changes; funds are available

Establishment of incentive fund for performing schools	1.3	Incentive fund piloted	Learn from pilot project and expand incentive fund to other schools	National incentive fund established and functioning	Incentive fund established and functioning	Funds are available
Reinvigoration of National high school system	1.4	National high schools will be well resourced to prepare students for higher education. Selection for entry into National high schools will be by performance in national grade 10 exams on academic subjects.	National high schools will be the main source of university entrants. National high school students will not pay school fees.			–Consistent government funding towards national high schools; –No land issues; –Students take their studies seriously
Science and technology research incorporated into National high school curriculum and into all schools through libraries	1.5	National high schools will be equipped with high standard laboratories to train students in science research. All schools will be equipped with libraries to train students in research and technology.				
Universal education access: elementary and primary –Sufficient primary schools established –An appropriate amount of teacher housing	2.1	–Primary school entry age will be 6. –Existing primary schools will be extended to accommodate growth. –Existing public elementary schools will be converted into primary schools	Sufficient number of primary schools established			–Access roads are maintained and built –Sufficient resources (financial and human) are made available
Universal education access: secondary –An appropriate number of secondary schools established –Maintenance of all secondary schools	2.2	–Six National high schools upgraded –Existing 191 secondary schools maintained	–Upgrade 2 secondary schools to National high school status to provide 2 National high schools in every region –189 secondary schools maintained	–Sufficient number of secondary schools established –Appropriate number of secondary schools upgraded consistent with National high school system and Flexi Technical training system.	Sufficient number of secondary schools established and all well resourced.	–Access roads are maintained and built –Sufficient resources (financial and human) are made available
Development of flexi-high school / vocational training system	2.3	–Pilot the provision of technical training by colleges to secondary school students as part of their secondary studies –Review how best to develop high quality technical skills through secondary schools and technical training institutions.	Implementation of key recommendations of review in pilot projects.	Based on results from pilot projects, implement review nationally.	Flexi high school-technical institution training system that supplies young people with the skills PNG needs.	–Access roads are maintained and built –Sufficient resources (financial and human) are made available
No school fees for children aged 6 to 15 in grades 1 to 10	2.4	Abolition of primary school fees for children aged 6 to 10 years.	Abolition of school fees for children aged 11 to 15.			
Parents value education of their children	2.5	Advocate and raise awareness on value of education	Advocate and raise awareness on value of education	Advocate and raise awareness on value of education	Advocate and raise awareness on value of education	Consistent government funding; change in mind-set of parents
Quality teachers with education and training pre and in-service (refer appendix table for regional & provincial targets)	2.6	26,000 teachers	35,500 teachers	40,900 teachers	48,200 teachers	Universities expand capacity

8532 well maintained schools with safe drinking water (refer appendix table for regional & provincial targets)	2.7	5,070 schools, 40% with safe drinking water.	6,790 schools, 60% with safe drinking water.	7,620 schools, 80% with safe drinking water.	8,560 schools, all with safe drinking water.	-Access roads are maintained and built -Sufficient resources (financial and human) are made available
Enhance equity	2.8	There are schools in every major city that provide access to children with special needs.	There are schools in every province that provide access to children with special needs.	All primary aged children with special needs have access to primary school.	All children aged 6-14 with special needs have access to school and vocational training.	
All schools well resourced	3	Provision of education materials and supplies to all schools	Provision of education materials and supplies to all schools	Provision of education materials and supplies to all schools	Provision of education materials and supplies to all schools	-Access roads are maintained and built -Sufficient resources (financial and human) are made available
Partnership and coordination with stakeholders strengthened	4	Enabling environment developed and strengthened	Extend incentive fund to selected private schools	Include private schools in incentive fund	Enabling environment developed and strengthened	Political commitments
Legislative reforms	5	Legislative change to centralise and standardise delivery of education passed	n/a	n/a	n/a	Sufficient resources are made available
Salaries and other costs met	6	Recurrent budget	Recurrent budget	Recurrent budget	Recurrent budget	

<b>Responsibility</b>	<b>Department of Education, Department of Works and LLGs</b>							
Estimated inputs (K million)	<b>No.</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2011-2015</b>	<b>Funding Option(s)</b>
	1.1	n/a	n/a	n/a	n/a	n/a	n/a	GoPNG/Donors
	1.2	n/a	n/a	n/a	n/a	n/a	n/a	GoPNG/Donors
	2.1	60	60	65	70	75	330	GoPNG/Donors
	2.2	41	55	60	70	80	306	GoPNG/Donors
	2.3	14	30	35	45	60	184	GoPNG/Donors
	2.6	20	20	25	40	50	155	GoPNG/Donors
	3	60	60	60	70	80	330	GoPNG/Donors
	4	5	5	5	5	5	25	GoPNG/Donors
	5	n/a	n/a	n/a	n/a	n/a	n/a	GoPNG/Donors
	6	n/a	n/a	n/a	n/a	n/a	n/a	GoPNG/Donors
<b>Total:</b>		<b>200</b>	<b>230</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>1,330</b>	
<b>Total incl. colleges from higher education section</b>		<b>230</b>	<b>275</b>	<b>360</b>	<b>505</b>	<b>630</b>	<b>2,000</b>	

### **3.5 Higher education**

**Goal:** To develop the higher skills needed for PNG's prosperity with a world class tertiary education sector

#### ***Introduction***

Papua New Guinea's higher education institutions made significant contributions to nation building in the early years of PNG's independence. The universities and colleges adequately met the extraordinary demands that were placed on them during this time, providing well educated leaders for public institutions and skilled personnel for other important spheres of society. They can do so again but, right now, the quantity and quality of graduates is far short of what is needed due to inadequate resources and a range of governance and general service quality issues. Major changes in the institutions of higher education are necessary if PNG is to be successful in meeting the challenges set in the Vision 2050 and the PNGDSP 2010-2030. Over the next 20 years, the Government aims to develop the higher skills needed for PNG's prosperity with a world class tertiary education sector. Having a national manpower plan in place to estimate the required number of personnel in technical and professional fields — such as medical doctors, nurses, teachers and engineers — is crucial to overcome the problem of uncoordinated and fragmented provisions of higher education.

#### ***MTDP 2011-2015***

In the next five years institutions of higher education will be moving down the path towards self-financing with the establishment of a Higher Education Endowment Fund. The Higher Education Endowment Fund Trust will become a major source of funding for new capital investment, maintenance of faculties, twinning arrangements with foreign institutions, industrial partnership, course field work and a wide range of scholarships to meet the needs of both industry and the public service. The priority expenditure areas of the Fund will be clearly outlined and managed by the Commission for Higher Education, under the general supervision of the Department of National Planning and Monitoring. The Fund will be financed by contributions from the universities business' arms, contributions from the private sector, revenue from a Higher Education Contribution Scheme (HECS), the 2 per cent training levy, and assistance from development partners. The Government will provide support for the Fund during the first MTDP while the HECS scheme is set up and until the HECS scheme generates sufficient revenues.

The introduction of a government-supported loans scheme to students in the form of HECS will enable higher education students to defer the cost of their studies. The HECS scheme will provide loans to cover tuition fees imposed by universities, accommodation, plus a specified maximum "incidentals allowance". Public funding for higher education will be realigned towards targeted training scholarships. Together with other measures, the National Government will help provincial and district authorities to establish scholarship systems for their students.

Before investing in the expansion of universities and colleges, the Government will fund the recapitalisation of existing institutions and will also ensure they have the management capacity to oversee the expansion. The focus of government funding will therefore be on raising the quality of graduates. To this end, the Government will also support universities to improve internet access and communication technologies, and to forge strong partnerships with relevant stakeholders (both within and outside PNG), including dialogue with PNG industry. The Government will ensure that all training standards are aligned to the PNG National Qualification Framework by 2015.

#### ***Building on MTDP 2011-2015***

Under subsequent MTDPs, the expansion of universities, technical colleges, business colleges, polytechnic colleges, teachers' colleges, nursing colleges and vocational training institutions will be the focus of government priorities. Forging partnerships with relevant stakeholders and engaging in twinning arrangements with reputable international institutions of higher education will also be encouraged and supported.

#### ***Challenges in implementation***

The higher education sector in PNG has been faced with many challenges and difficulties relating to insufficient financing of higher education institutions, quality and access to tertiary education, staff development, skills-based training, enhancement and preservation of quality in teaching, research and services, relevance of programs, employability of graduates, establishment of efficient co-operation agreements, and equitable access to the benefits of international co-operation. External challenges include adequate provision of key utilities (water, sanitation, telecommunications, electrification and information and communication technology) for higher education institutions.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
To develop the higher skills needed for PNG's prosperity with a world class tertiary education sector	Number of graduates from institutions of higher education (including colleges)	OHE	6,496 graduates in 2008	52,000 graduates since 2010	112,000 graduates since 2010	183,000 graduates since 2010	265,000 graduates between 2010 and 2030
	Proportion of graduates absorbed into the workforce annually	OHE (Tracer Study)	n/a	More than 95%	More than 95%	More than 95%	More than 95%
<b>Lead government department</b>	Office of Higher Education (OHE)/ Department of Education / Department of Community Development						

No.	Sector Strategies
1	Higher education reform to reach international standards of good management by institutions.
2	Highest performing students funded to undertake tertiary studies to acquire skills that are required for development in PNG.
3	Education institutions recapitalised and expanded to provide the graduates and skills PNG needs for development.
4	Flexi high school system strengthened and expanded, providing linkages for national high and secondary students into tertiary and technical training.
5	Access to internet and communication technologies to improve higher education outcomes.
6	Partnerships and twinning arrangements forged with reputable international institutions of higher education.
7	Government and industrial partnerships forged to ensure courses deliver the skills required.
8	Training standards aligned to the PNG qualification framework to ensure standards are high throughout PNG.

DSP DELIVERABLES	No.	2011-15	2015-2020	2020-2025	2025-2030	Risks and assumptions
Effective coordination and oversight of institutions of higher education and trade skills colleges	1.1	Revamp Commission for Higher Education and Office of Higher Education in overseeing assessment standards and external auditing for all higher education and technical institutions. Commence annual external audits of each institution and review of legislation	-	-	-	
Improved administration and management capacity of all higher education institutions	1.2	Train officers in financial skills and from 2012 require institutions to account for funds as a precondition to funding from the Development Budget				Not being receptive to change
Courses and number of places aligned to skills requirements in PNG	1.3	Develop, implement and keep up to date the human resource strategic plan funded under Part 3.6 of MTDP "Human Resource Development and Training"				
Higher Education Endowment Fund fully functioning and supporting majority of higher education expenditure	2.1	Establish and operationalise the Higher Education Endowment Fund including legislation as required.				
University infrastructure are well maintained and universities meet international standards	3.1	Recapitalise 4 state and 2 private universities.				
21,500 university places (including open and distance learning)	3.2	Expand to 14,400 places by 2015.	17,200 places by 2020	19,600 places by 2025	21,500 places by 2030	
6,800 technical and business college places with infrastructure well maintained and high international standards of teaching	3.3	-Recapitalise 4 technical colleges, 2 business colleges and 1 polytechnic college -Expand to 3,800 places by 2015	4,900 places by 2020	5,900 places by 2025	6,800 places by 2030	
8,000 teacher places where teachers are delivering high learning outcomes in PNG's schools and infrastructure is well maintained	3.4	-Recapitalise facilities of teachers' colleges. -Expand to 6,300 places by 2015	7,200 places by 2020	7,700 places by 2025	8,000 places by 2030	

5,000 nursing places where nurses are delivering high standards of health services and infrastructure is well maintained.	3.5	-Recapitalise nursing colleges. -Expand to 1,600 places by 2015	2,700 places by 2020	3,900 places by 2025	5,000 places by 2030	
3,700 places in other training institutions including vocational colleges with high international standards of teaching and where infrastructure is well maintained.	3.6	-Recapitalise other training institutions, particularly vocational training -Expand to 2,000 places by 2015 especially in vocational training	2,600 places by 2020	3,200 places by 2025	3,700 places by 2030	
Open and distant learning used wherever cost effective to improve access.	3.7	Recapitalise open and distant learning facilities and expand delivery of services where cost effective				
Flexi high school system provides students with clear linkages to tertiary and technical training.	4.1	Funded under Part 3.4 of MTDP: "Primary and Secondary Education".				
Improved access to internet and communication technologies	5.1	Increase in procurement and installation of ICT facilities and equipment				Quality national internet services
PNG institutions performing at high standard as a result of strong connections with world leading institutions	6.1	Australian and other internationally reputable institutions provide lecturers and trainers to PNG institutions.				Donors are willing to assist.
All provinces and districts accessing higher education opportunities with the support and commitment of province and district administrations	7.1	-Establish a scholarship fund for provinces and districts. National budget will match provincial and district contributions by a standard ratio. -Scholarships only provided for priority courses as identified under deliverable 1.3		-	-	
Alignment of training standards to the PNG qualification framework	8.1	Increase in number of training standards aligned to PNG qualification framework				

Responsibility	Office of Higher Education / Department of Education / Department of Community Development							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
	1.1	10	10	10	10	10	50	GoPNG; Donors
	1.2	80	70	60	50	40	300	GoPNG; Donors
	2.1	3	3				6	GoPNG
	3.1	100	115	125	140	170	650	GoPNG; Donors
	3.2	1	5	10	20	30	66	GoPNG; Donors
	3.3	5	8	40	45	50	148	GoPNG; Donors
	3.4	5	11	20	50	70	156	GoPNG; Donors
	3.5	10	12	20	50	70	162	GoPNG; Donors
	3.6	10	14	30	60	90	204	GoPNG; Donors
	3.7	2	2	4	5	5	18	GoPNG; Donors
	5.1	2	3	15	30	40	90	GoPNG; Donors
	6.1	5	10	20	50	100	185	Donors
	7.1	10	12	20	20	20	82	GoPNG; Donors
<b>Total Tertiary</b>		<b>213</b>	<b>230</b>	<b>264</b>	<b>325</b>	<b>415</b>	<b>1447</b>	
<b>Total Technical/College</b>		<b>30</b>	<b>45</b>	<b>110</b>	<b>205</b>	<b>280</b>	<b>670</b>	
<b>Grand Total</b>		<b>243</b>	<b>275</b>	<b>374</b>	<b>530</b>	<b>695</b>	<b>2117</b>	

### **3.6 Human resource development and training**

**Goal:** Provide a workforce that is professional and skilled by developing a coherent human resource development strategy

#### ***Introduction***

Human resource development and training is a long-term investment and is central to sustainable economic development and the wellbeing of PNG. It must therefore be promoted as an integral part of any development initiative. Over the years, human resource development has become increasingly fragmented. There is a lack of coordination amongst industry, the public service and various training institutions. Consequently, investment in training and human resource development is undertaken in almost total isolation of the requirements of the private and public sector employers. In the absence of a National Human Resource Strategy tailored to development and industrial needs of the country, coordination of resource assistance is distorted.

Providing a workforce that is professional and skilled by developing a coherent human resource development strategy is the aim of the agencies that are responsible for human resource development and training. The establishment of a human resource scholarship fund for both domestic and international training will further enhance the skills and knowledge base of officers. The existing cadetship scheme will also be enhanced to allow for a systematic inflow of competent staff to replace outgoing retired or retrenched staff. Collaborative programs with the private sector and other institutions for in-country and overseas training through twinning arrangements will be fostered in order to enhance new knowledge, skills and experience of officers.

The major strategies to be employed across the sector agencies include: (i) implementing the Public Sector Reforms; (ii) improving service delivery mechanisms within and between the sectors; (iii) strengthening and formalising partnerships and coordination with stakeholders at all levels; (iv) building capacity and developing skills at all levels; (v) mobilising resources for effective service delivery at all levels; (vi) expanding and enhancing opportunities and incentives to rural areas; and (vii) enhancing and developing a coherent strategy for the sector to guide its efforts towards implementing and achieving the vision and mission of the MTDP 2011-2015, PNGDSP 2010-2030 and the Vision 2050.

#### ***MTDP 2011-2015***

PNG lacks a labour market information system. To plan for the human resource development needs of the workforce, information is needed about employment, wages, skill requirements and other labour market characteristics of various industries. Such information was compiled in 2010 by the Department of National Planning and Monitoring and the Office of Higher Education and can be combined with data on the public sector held by the Department of Personnel Management. This information will be used to form a coherent human resource development strategy that coordinates the development of institutions and training services across primary and secondary education, universities, technical colleges and on-the-job training.

This strategy will seek to improve communication between training providers and employers to better ensure that the skills needed in PNG are supplied by Papua New Guineans. Moreover, the strategy will consider how best to locate or otherwise provide services to address the training needs of rural populations and of those without the means to pay up front. Importantly, the strategy will seek to engage development partners in the critical work of developing PNG's own human resource capacity through formal training.

#### ***Building on MTDP 2011-2015***

Formulating and implementing PNG's human resource strategy will be the first step in coordinating human resource development efforts. Data must be regularly updated and then used to advance the human resource strategy. This will be the way in which PNG ensures Papua New Guineans themselves are skilled and employed throughout the country.

#### ***Challenges in implementation***

For effective development of the human resource strategy, coordination between key agencies is critical. The Department of National Planning and Monitoring, the Department of Personnel Management, the Office of Higher Education, the Department of Education and the National Training Council all have a part to play to ensure their coordinated efforts provide the nation with a clear guide to human resource development.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Provide a workforce that is professional and skilled by developing a coherent human resource development strategy	Shortage in skills	National Manpower Study					Adequate supply
<b>Lead government departments</b>	Department of National Planning and Monitoring, Department of Personnel Management Department of Education, Office of Higher Education, National Training Council, Department of Education						

No.	Sector strategies
1	Develop coherent human resource strategic plan
2	Expand and enhance human resource training in rural areas
3	Ensure private sector is well engaged in the resourcing and provision of training to better ensure private sector skills requirements are met
4	Use policy and fiscal incentives for employers to provide accessible and effective in-service training, including in the Public Service
5	Encourage the development of clear training plans with targets for all training institutions
6	By aligning training standards to the PNG qualifications framework, improve flexibility and smooth the transition between different training institutions
7	Establish a Human Resource Training Scholarship Fund

DSP 2030 deliverables	No.	2011-2015 target	2016-2020	2021-2025	2026-2030	Risks and assumptions
Human resource strategy tailored to industries and development needs	1.1	Use national manpower study to develop HRD strategic plan. Implement to better match training to skills requirements	HRD strategic plan regularly updated with new data and further analysis and implemented accordingly			-All stakeholders are consulted and committed. - Funding is released on time
Rural populations have access to training	2.1	In HRD strategic plan, strategise how to best deliver training opportunities in rural PNG and implement.				
Private sector well engaged	3.1	Private sector to have input into course development through National Training Council, colleges and universities, including by providing funding, resources and trainers. Progress through the HRD strategic plan.				Macroeconomic and political conditions remain stable, providing employers with confidence to invest in PNG.
Enhance and expand human resource training for workforce through the NTC	3.2	Subject to HRD strategic plan, increase the number of current scholarship holders co-funded by the private sector				-NTC is fully funded -All training providers are accredited;
Employers provide extensive and effective in-service training	4.1	HRD strategic plan to recommend how to encourage employers to fund in-service training for Papua New Guineans.	Implement strategies. Revise strategies towards better achieving 2030 deliverables			Macroeconomic and political conditions remain stable, providing employers with confidence to invest in PNG.
Appropriately skilled public service which is not dependent on foreign technical assistance	4.2	All training focused on the skills that officers lack but need for their work outputs. Effective training to be provided at minimum cost. Papua New Guineans to be equipped with the skills to provide the training.	Most training provided cost effectively by Papua New Guinean trainers.			-Regular appraisals are done -Recommendations are implemented;



Remuneration and conditions in the Public Service attract and retain committed and effective public servants	4.3	HRD strategic plan to advise how to attract and retain committed and effective public servants.	Implement strategic plan. Revise strategies to better achieving 2030 deliverables	Budget is well managed so that officers are remunerated according to the conditions of their employment.
There is little to no skills gap in PNG because training institutions are achieving the right targets	5.1	All training institutions are well informed about what skills they need to develop and are effective in meeting those targets		Plans and schedules are realistic, well informed and fully costed
Training standards are well aligned to the PNG qualifications framework and PNG qualifications framework aligned to HRD strategic plan	6.1	Increase in number of training standards aligned to PNG qualifications framework to the extent that the PNG qualifications framework is aligned to the HRD strategic plan.		The PNG qualification framework is always current and is sufficiently flexible to ensure PNG's skills requirements are met by training within PNG.
Skilled labour accredited by higher learning institutions	6.2	Increase in current proportion of skilled labour accredited by higher learning institutions		-Clear pathways are set by higher learning institutions -There is interest by workers to progress further
Human Resource Training Scholarship Fund	7.1	Subject to HRD strategic plan, establish Fund and award scholarships	Implement Scholarship Fund in line with HRD strategic plan.	-All stakeholders are consulted -Consistent government funding is released on time

<b>Responsibility</b>	<b>Department of Personnel Management, Department of National Planning and Monitoring</b>						
Collaborating agencies	Department of Education, Office of Higher Education and National Training Council						
<b>Estimated Inputs (Kmillion)</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2011-2015</b>	<b>Funding Options</b>
	15.5	0.5	0.5	0.5	0.5	17.5	GoPNG/ Donors

### **3.7 Research, science and technology**

**Goal: To accumulate a world standard science and technology pool through adaptation, research and development that drives strong and sustainable growth**

#### ***Introduction***

Research, science and technology will provide the basis for PNG to advance. It is fundamental for giving the country's industry and Government the understanding needed to make the most of development opportunities and to respond effectively to challenges.

At a broad level, to become a middle income economy by 2030, PNG will need to undergo rapid economic development, progressing from a primary commodity based economy to a broad-based industrialised economy. A prominent example is PNG's agricultural sector which requires effective science and technologies to protect industries against pests and diseases such as the cocoa borer, and to otherwise enhance the productivity of the sector. PNG also needs to adapt to climate change and to otherwise address challenges that constrain living standards, for example to reduce the incidence of TB. To do this, PNG requires a pool of science and technology created by a knowledgeable, innovative and entrepreneurial workforce.

Over the five year period 2011-2015, the Government will ensure that the agencies responsible for research, science and technology aim to accumulate a world standard science and technology pool through adaptation and research and development processes which can be effectively and competitively utilised to drive strong and sustainable growth. Collaborative programs with research and teaching institutions for in-country and overseas training, through twinning arrangements will be fostered in order to enhance new knowledge, skills and experience. Research institutions and universities will be encouraged to undertake innovative and applied technological research through the provision of government grants to support research.

Increased investment in new technology and knowledge will be needed to enhance the availability of a skilled workforce essential in improving the business environment and attracting more foreign direct investment to increase employment growth. The Government will also focus on developing laws on patent rights and copyright laws to safeguard the originality of discoveries, development and composition of items and prevent exploitation by foreign entities and non-related businesses for commercial purposes.

#### ***MTDP 2011-2015***

The focus of the Government in the next five years will be to establish research coordination mechanisms supported by prudent governance and administration followed by research in industrial technology, infrastructure technology, science technology and knowledge based technology including the establishment of research incentives to encourage more research in all fields.

To lay a strong foundation for sustainable and strong economic growth in the longer term, the Government will, in the first 5 years, promote and pursue strategies that increase the promotion of scientific research and development of new technologies that are relevant, affordable and easily accessible to local industries and the people of PNG. The Government will also pursue this with a global perspective to enhance its participation in global trade by using appropriate technology to raise productivity in areas in which PNG has a comparative advantage.

#### ***Building on MTDP 2011-2015***

Future plans of the Government will continue to develop and enhance the capacity of institutions that focus on research and development. Incentives in the form of research grants will be given to institutions that undertake applied and innovative technological research to encourage them to pursue further and develop innovative ideas and technologies. The Government will also continue to develop legislation on patent rights and copyright laws to protect new ideas and technologies that are endemic to PNG.

#### ***Challenges in implementation***

To set the foundation and build the capacity of science and technology and effectively implement government policy, prudent administration, improved coordination and systematic planning are essential.

DSP sector goal	Indicator	Baseline	2015 target	2020 target	2025 target	2030 DSP target
To accumulate a world standard science and technology base through research and development to drive strong and sustainable growth	Government expenditure on research and development	Lack of government investment in science and technology				At least double public and private sector investment in science and technology
<b>Lead government department</b>	Office of Higher Education / Department of Education / Department of Community Development					

No.	Sector strategy
1	Mobilise resources and strengthen capacities of all research institutions
2	Develop strategic partnerships and alliances with internal and external research and development organisations and institutions as well as PNG universities
3	Reinforce research, science and technology in secondary and tertiary institutions
4	Prioritise and coordinate funding of research and development programs aligning to PNG development needs
5	Increase private sector contribution and participation to ensure better alignment of research and technology development to industrial requirements
6	Prioritise research that involves the adaptation of existing technologies for PNG (rather than the development of world first technologies) because the returns are far higher for PNG
7	Enforce auditing of all research and development expenditure
8	Ensure researchers and end users of research have ready access to relevant information and technologies
9	Develop "Patent right" and "Copyright" laws to protect scientific and technological discoveries, including the protection of rights over traditional herbs and information

DSP Deliverables	No	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
-Increase capacity of research institutions to conduct research, communicate results and to encourage young researchers -All research and development expenditure fully accounted and all research institutions satisfy external auditing standards.	1, 7	Allocate research funding to research agencies that satisfy external financial audit standards.				Consistent increase in government funding
PNG research institutions, including universities, have strategic alliances with local and international institutions	2	Encourage research institutions to work with PNG universities and international research and development organisations, to help develop local outcomes.				Consistent increase in government funding
Research, science and technology are part of secondary school curriculum and tertiary institutions are contributors to research.	3	Outlined already in the deliverables of the sections on primary and secondary education and higher and technical education				Consistent increase in government funding
Private sector is well engaged in research and development.	4.1, 5	Trial measures to increase private sector funding of research				Consistent increase in government funding
Research concentrated on adapting existing technologies. Funding allocated to institutions with strong financial management record.	4.2, 6, 7	Prioritise expenditure on adapting existing science and technologies to the needs of PNG. Funding provided to research agencies that satisfy external financial audit standards				
Information and technologies are readily accessible to researchers and end users of research	8		Co-fund internet and effective technologies for information and communication purposes			Consistent increase in government funding
Scientific and technological discoveries are protected, including the rights over traditional information passed down by ancestors	9	Develop patent and copyright Law.	Implementation and awareness of patent and copyright laws			Consistent increase in government funding

Responsibility	Office of Higher Education / Department of Education / Department of Community Development/							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
	1, 4.2, 6 and 7	10	10	17	17	27.9	<b>81.9</b>	GoPNG/Donors
	4.1	0.4	0.4	2	2	2	<b>6.8</b>	GoPNG/Donors
	9.1	0.5	0.5	1	1	0.1	<b>3.1</b>	GoPNG/Donors
<b>Total:</b>		<b>10.9</b>	<b>10.9</b>	<b>20</b>	<b>20</b>	<b>30</b>	<b>91.8</b>	

## 3.8 Road transport

**Goal:** Establish a transportation network that links all of PNG

### **Introduction**

Transport infrastructure facilitates social development and economic growth. It enables improvements in international competitiveness, exports, imports, investment, employment, accessibility to vital services and markets, and increases in household incomes. Poor transport infrastructure is an impediment to these improvements and imposes high economic and social burdens, especially on the poor.

Well-maintained transport infrastructure is essential for the efficient flow of produce to markets and for the flow of consumer goods and services to village communities. The decline in the quality of PNG's transport infrastructure over the years has had a major adverse impact on service delivery and on the capacity of Papua New Guineans to earn cash incomes.

As part of the MTDP 2011-2015, policies will be developed to grow the capacity of local industry. This will be assisted by the introduction of appropriate sized contracts and multi-year funding to create the certainty that industry needs. A full review of all transport related legislation will be completed and an efficient framework within which to operate the transportation sector will be developed.

The Department of Transport currently undertakes a coordination role for the sector. This role will continue and be strengthened.

There are approximately 30,000km of roads in PNG. Of these, 8,460km are national roads and about 22,000 km are provincial and district roads. The condition of roads in PNG is measured by the Roads Asset Management System (RAMS). Currently the national roads are assessed as 29 per cent in good condition, 37 per cent fair and 34 per cent in poor condition, while other roads are in critical need of urgent maintenance.

The transport sector will achieve the PNGDSP goal through the implementation of the MTDP sector strategies and deliverables. The MTDP 2011-2015 will lay the foundation for further expansion of the national roads network that will link all of PNG. Roads will be in good condition, properly planned and with prioritised rehabilitation and maintenance. Improved road transport infrastructure will improve access to markets and improve the flow of essential goods and services (including basic services such as health, education and law and order) to both rural and urban communities. Specifically, improved transport infrastructure will help address the Millennium Development Goals (MDGs) for poverty alleviation and improved education and health outcomes.

### **MTDP 2011-2015**

To achieve the 2030 target of 25,000km of national roads in good condition, work must commence immediately on several fronts. Government has identified the Economic Corridors and missing link roads as very important to the country's future. Work will commence immediately on feasibility studies, route identification, road survey and design, and land acquisition. It is likely, however, that these activities — in particular land acquisition — may take some years to complete.

It is possible to commence work immediately to bring the existing national roads (8,460km) to good condition. Maintenance, rehabilitation and an upgrade of the existing network will be a significant contribution to the final target and will quickly deliver real improvements to citizens. Routine maintenance of roads already in good condition provides a very large return to the people of PNG, sustaining the value of PNG's investments in road rehabilitation and construction. Routine maintenance of national roads will therefore be fully funded under each MTDP.

The focus of the land transport sector is primarily on roads which are strategically aligned to the overall development of PNG and are of national importance. The roads that are inherent in the deliverables for the PNGDSP 2030 have been selected based on the populations served and economic potential.

### **Building on MTDP 2011-2015**

There are four sector strategies which are consistent with the overall PNGDSP goal of expanding the national road network to good condition. These are as follows.

- Rehabilitate and upgrade priority national roads and other national roads to good condition.
- Undertake feasibility studies and construct missing link roads to good condition.
- Undertake feasibility studies and construct Economic Corridor roads to good condition.

- Rehabilitate and upgrade provincial and district roads.

The PNGDSP 2030 deliverables as per the MTDP sector strategies are as follows.

- Rehabilitate, upgrade and maintain 16 priority national roads.
- Rehabilitate and maintain other national roads.
- Construct and maintain 16 missing link roads.
- Construct and maintain 4 additional Economic Corridor roads.
- Develop road safety initiatives.

### ***Challenges in implementation***

The major challenge facing the transport sector is the Government's funding priorities. Past experience shows that where resources were diverted to other non-core areas, development was not being achieved. The other challenge is for Government to demonstrate adequate funding to the sector so that donors and the private sector will be able to commit their financial and technical resources to achieving the deliverables by 2030.

Compensation claims and availability of land are also development constraints with 97 per cent of PNG's land held under customary tenure. The challenge is for the Government to ensure certainty and gain prompt access to land for Government use in road transport. Fully implementing the National Land Development Program will be crucial for this.

The capacity for local contractors in PNG to implement large and multiple projects is limited and, as such, there are inevitable delays in completion of projects. A commitment to longer term program funding will provide the confidence industry needs to build its capacity.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Expand PNG's national road network that links all of PNG and maintain it in good condition.	Length of network	NTDP (2006-2010) PNGDSP	2010: 8,460km of national roads	10,000 km of national roads	15,000 km of national roads	20,000 km of national roads	25,000km of national roads
	Quality of national roads – sealed, good drainage, good bridges	NTDP (2006-2010) PNGDSP	29% are in good condition.	65% are in good condition	80% are in good condition	95% are in good condition	100% are in good condition
Lead government department	Department of Works and Implementation						

No.	Sector strategy
1	Improve conditions of 16 priority national roads and other national roads to good condition
2	Construct 16 missing link roads
3	Construct 8 Economic Corridor roads
4	Construction of additional provincial/district roads and upgrade existing roads to attain an overall length of national roads in good condition of 25,000km by 2030
5	Enforce road safety and awareness

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Rehabilitate and upgrade the 16 national priority roads to a good condition (4216km)	1.1	2500 km sealed and in good condition	3500 km sealed and in good condition	4000 km sealed and in good condition	4216 km sealed and in good condition	-Adequate funding -Industry capacity
Rehabilitate and upgrade the remainder of the current national road network to a "good" condition (4244 km)	1.2	1000 km sealed and in good condition	2000 km sealed and in good condition	3000 km sealed and in good condition	4244 km sealed and in good condition	-Adequate funding -Industry capacity
Construct the 16 "missing link" roads to good condition (approximately 2,280 km)	2.1	Undertake survey and feasibility studies for 16 missing links roads. Acquire land. Construct 1 road	5 missing link roads constructed	5 missing link roads constructed	5 missing link roads constructed	-Land is secured -Adequate funding -Industry capacity
Construct the 4 additional Economic Corridor national roads to good condition	3.1	Undertake survey and feasibility studies for 4 Economic Corridor roads. Acquire land. Construct 1 road	2 roads constructed.	1 road constructed.	1 road constructed.	-Land is secured -Adequate funding -Industry capacity
Construction of additional provincial/district roads and upgrade existing roads	4.1		2000 km upgraded and sealed	3000 km upgraded and sealed	4000 km upgraded and sealed	-Land is secured -Adequate funding -Industry capacity
Conduct regional awareness, enforcement and road safety audits	5.1	Conduct road safety education, road safety promotion, random vehicle inspections	Conduct road safety audits on national roads	Conduct driver education	Traffic rules enforcement	-Adequate funding

Responsibility	Department of Works						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
	1,569.8	3,832.6	4,922.3	5,267.6	5,764.9	21,357.2	GoPNG/Donors

### **3.9 Water transport**

**Goal: Establish a transportation network that links all of PNG**

#### ***Introduction***

With its dispersed population, PNG's coastal shipping services take on special significance in providing access to rural communities. PNG's maritime infrastructure also supports the nation's domestic and international trade. Seventeen commercial ports, mostly very small, and innumerable small wharves, jetties and beach landings provide the basic infrastructure for maritime services, but the majority of these are in poor condition and carry very little traffic. Based on the current schedule of fees and user charges, only Lae and Port Moresby ports are financially viable. The other 15 ports are smaller and subsidised by these two operations.

The international port turnaround time is currently about three days and only five per cent of shipping route services are being provided. The current conditions of the international ports limit the accommodation of an increased number of vessels and as such the handling time for transiting vessels is high.

#### ***MTDP 2011-2015***

There are three sector strategies for achieving the PNGDSP sector goal of a reliable water and sea transport system.

- Rehabilitate and upgrade all national ports and associated facilities where this is necessary to cater for increased traffic and cargo.
- Improve inland and coastal water transport infrastructure for marginalised communities.
- Provide an adequate system of navigational aids and otherwise ensure safety compliance of maritime vessels and facilities.

The total estimated cost of upgrading the maritime transport sector is K2.0 billion, K1.4 billion of which will be funded in the MTDP 2011-2015 and the remainder carried over into MTDP 2016-2020. At K1.3 billion, rehabilitation and upgrade of ports comprise the bulk of the cost. The expenditure is targeted at urgent maintenance and rehabilitation of the priority ports in the first MTDP. Feasibility and design studies will also be funded for the relocation of the Port Moresby port with construction to follow in the next MTDP. The other expenditure area is the completion of the ADB Community Water Transport Project which will see the rehabilitation of jetties to serve the commuting public.

#### ***Challenges in implementation***

The major challenge facing the maritime sector is adequate resourcing for port rehabilitation and extension. Due to the magnitude and urgency associated with port development, resources need to be secured in the first MTDP to avoid rapidly increased costs in the following MTDPs and to prevent the prospect of severe capacity constraints. Compensation claims are also a hindrance but will be addressed by the Government.

As only two ports are financially viable, the remaining fifteen ports are serviced as a community service obligation (CSO). Adequate budget funding is required until trade levels increase to the point where these ports are financially self supporting.

DSP sector goal	Indicator	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Establish a water and sea transport system that links all of PNG and is secure, safe and efficient	Domestic Water transport capacity		-25% increase in the number of routes and vessels -25% of ports upgraded	-75% increase in the number of routes and vessels -50% of ports upgraded	-Double the number of routes and vessels -75% of ports upgraded	-Triple number of routes serviced and, number of vessels -all ports upgraded
	International port turnaround time	3 days turnaround	2½ days turnaround	2 days turnaround	1½ days turnaround	1day turnaround
Lead government department	PNG Ports Limited, Department of Transport, IPBC and NMSA					

No.	Sector strategy
1	Rehabilitate and upgrade all national ports facilities
2	Provide community water transport services
3	Rehabilitate navigational aids

DSP 2030 deliverables	No.	2011-2015	2015-2020	2020-2025	2025-2030	Risks and assumptions
Rehabilitate and upgrade 16 national ports	1.1	4	4	4	4	-Adequate funding -Industry capacity
Ports relocated where cost effective	1.2	Undertake feasibility study for relocation of POM port	Relocation of POM port	Undertake feasibility study for relocation of Madang port	Relocation of Madang port	-Adequate funding -Industry capacity
Rehabilitate 200 jetties	2.1	10	50	60	80	Adequate funding
Rehabilitate and restore small navigational aids	3.1	Restore 47 small navigational aids				Adequate funding

Responsibility	PNG Ports Ltd, Department of Transport, IPBC, NMSA						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
	167.2	145.7	210.6	131.7	721.5	1376.7	GoPNG/Donors



### **3.10 Air transport**

**Goal: Establish a transportation network that links all of PNG**

#### ***Introduction***

Airports play an important role in linking PNG's widely fragmented population. The Government of PNG has adopted a system of certification that requires airports to achieve and maintain compliance with minimum operating standards. Compliance with these certification standards is required for all 22 national airports. Airport certification is a process whereby the Civil Aviation Authority Regulator approves airports for use by civil aircraft. Currently 12 airports are certified out of the 22 national airports. In addition, almost 95 per cent of rural airstrips are closed.

Properly planned and prioritised rehabilitation and maintenance of the existing air transport infrastructure is an essential part of PNG's relationship with countries in the region and indeed the global perception of PNG. A quality air transport industry is critical not only for access to services by citizens but in attracting tourists and foreign investment to help build the future.

#### ***MTDP 2011-2015***

Maintenance and rehabilitation of all national airports will be central for the MTDP 2011-2015. This will include navigational aids and communication and surveillance systems to ensure compliance with international operating standards. In addition, rehabilitation of rural airstrips will be undertaken to allow access to populated rural areas that are inaccessible by road or sea. Regional airports will be upgraded to allow higher seating capacity jets to cater for the anticipated increase in the number of passengers as a result of increased economic activities.

With the timely support of the Asian Development Bank (ADB), the Government is investing close to K2.0 billion to rehabilitate and upgrade the 22 national airports to comply with international safety and security standards and to serve future needs. This will help to realise the majority of the deliverables. This program is implemented in three phases with the first phase in the MTDP 2011-2015.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Improve and expand air transport services so that it is safe, dependable, affordable and accessible to all sections of the community	All national airports complying with international safety and security standards		15 airports certified	22 airports certified	22 airports certified	22 airports certified	22 national airports complying with safety certification
	Number of unused airstrips rehabilitated to basic safety levels		10	10	20	20	50 airstrips rehabilitated
	Number of regional airports upgraded for higher seating capacity jets		1	3	3	4	10 airports upgraded for larger jets
Lead government department	National Airports Corporation						

No.	Sector strategy
1	Rehabilitate and upgrade all national airports to international safety standards
2	Regional airports upgraded for larger seating capacity jets
3	Upgrade annual routine maintenance for national airports
4	Rural airstrips rehabilitated to basic safety operational levels

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Rehabilitate and upgrade all national airports	1.1	22 national airports certified				-Adequate funding -Industry capacity
Rehabilitate and upgrade all navigation aids, surveillance and communication systems in all national airports	1.2	-Replace ATM at POM -Install ADS at Wewak, Tokua, Momote, Alotau & Nadzab -Install GNSS in 20 national airports -Upgrade Radio Navigation Aid in POM, Madang, Gurney, Buka, Momote, Girua and Finschafen				-Adequate funding -Industry capacity
Upgrade, extend and expand regional airports for larger jets	2	2	2	3	3	-Adequate funding -Industry capacity
Annual routine maintenance for national airports	3	Selected national airports	Selected national airports	Selected national airports	Selected national airports	
Rehabilitate rural airstrips to basic operating levels	4	Rehabilitate 10 airstrips	Rehabilitate 15 airstrips	Rehabilitate 15 airstrips	Rehabilitate 10 airstrips	-Adequate funding -Industry capacity

Responsibility	National Airports Corporation							
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding option(s)	
	378.8	395.5	383.4	386.1	375.0	1918.8	GoPNG/Donors	

### **3.11 Utilities**

**Goal: All citizens and visitors to have access to reliable and affordable public utilities by 2030**

#### ***Introduction***

Access to public utilities such as water and sanitation, postal services, electricity and communication are becoming an increasing necessity in today's modern society. PNG's ability to provide these services is well below international standards for a developing country. The goal for the utilities sub-sectors is to ensure that there is wide access to reliable and affordable public utilities for all citizens and visitors by 2030. Papua New Guinea is ranked low in terms of access to clean water and safe sanitation in the Pacific Region. Only 30 per cent (3.5 million) of the total population have access to clean water and just 22 per cent have access to adequate sanitation services. Unsafe drinking water and poor personal hygiene practices contribute to water and food borne diseases including diarrhea, dysentery and typhoid. Diarrhea accounts for 1,610 per 100,000 deaths in the country and is ranked as one of the main causes of deaths. Typhoid accounts for 2.9 per cent of all deaths as indicated in the National Health Plan 2001-2010. The limited access to clean water and safe sanitation poses major risks of cholera and other related epidemics. Just 20 per cent of the rural population have access to clean and safe water and 15 per cent have access to safe sanitation disposal options. Only 60% of the urban population have access to safe water, while only a minority has access to proper sanitation disposal facilities and services. The delivery of postal services in PNG is also an area that needs considerable improvement and the Government is committed to providing a reliable service to all the 89 districts in the long term.

#### ***MTDP 2011-2015***

In the next five years, the main focus will be on access to safe water and sanitation by the urban and rural populations. Access to clean water and sanitation will increase the standard of living in PNG by reducing the incidence of diseases. To this end, a clear water and sanitation strategic plan is required. As a first step in implementation, the provision of services in urban areas to paying customers is important. However, much more is required to realise the PNGDSP targets which aims to increase the proportion of the population having access to improved water and sanitation to over 70 per cent. A second aim of the PNGDSP is that all education institutions will have access to safe water. These targets are ambitious, but are achievable, particularly with Public Private Partnerships (PPP) where the private sector will partner with the Government to invest in the expansion of the reticulated water and sewerage system, especially in the burgeoning urban centres. The vast majority of the population does not have the capacity to pay for the critical services of clean water and sanitation. Under the Community Service Obligation framework, State owned institutions vested with the responsibility to provide water and sanitation services will be strengthened and accountable to provide services that are not commercially viable. Under the first MTDP, the provision of utilities to education institutions will be provided on request from institutions with the ability to pay. Postal services are important for communications and trade. Cost effective extension of postal services will therefore be supported. A postal service policy will provide the framework for guiding development.

#### ***Building on MTDP 2011-2015***

The subsequent MTDPs will concentrate on developing rural water and sanitation infrastructure to achieve the PNGDSP targets. Partnership with communities and provinces to improve rural and peri-urban communities with proper water and sanitation methods and technologies will also be pursued. Investigations and feasibility studies will be undertaken to pilot and implement water and sanitation services in urban settlements. Septic and waste treatment methods that address environmental and health issues will also be implemented in rural areas. Sanitation and safe water services will be extended to all education institutions.

#### ***Challenges in implementation***

The rugged terrain and remoteness of most districts in PNG pose a real challenge to roll out basic services such as utilities. In rural areas, rainwater, shallow wells, springs and creeks are the main sources of potable water but they have their own water quality problems. Rainwater stored in tanks is potentially the safest, most cost efficient and sustainable option for improving rural water access. However, the average rural household finds the cost of owning and maintaining water tanks unaffordable. Large water tanks located at public buildings may therefore be provided as a community service. The issue then is whether a small access fee will generate enough revenue to cover the cost of the infrastructure, including maintenance. Reticulated water supply services are provided in most rural district centres but most of those reticulated services need urgent maintenance and upgrading. This highlights the issue of ensuring that infrastructure is maintained.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Citizens and visitors to have access to reliable and affordable public utilities by 2030	Access to improved water source	PNG Water Board	39% of total population (30% of rural population in 2008)	47% of total population	55% of total population	62% of total population	70% of total population
	Access to improved sanitation	PNG Water Board	44% of total population	51% of total population	57% of total population	63% of total population	70% of total population
	Proportion of education institutions having access to safe water	DOE Eda Ranu	30% of education institutions in 2008	50% of education institutions	75% of education institutions	100% of education institutions	100% of education institutions
	Access to reliable postal services	PNG Post	72 districts have access to formal postal services	77 districts	82 districts	86 districts	89 districts
Lead government department	PNG Water Board, IPBC, Post PNG						

No.	Sector strategy
1	Increase in access to proper and safe water supply
2	Increase in access to proper sanitation system
3	Increase in proportion of education institutions having access to safe water supply
4	Increase in number of districts having access to formal postal services.

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
70% of population with access to clean water	1.1	Develop water strategic plan to guide sector development and implement	Provide clean water services throughout major cities and in densely populated rural areas of key Economic Corridors.	Provide clean water services in major cities and densely populated rural areas of Economic Corridors	Provide clean water services in all cities, major towns and densely populated rural areas of Economic Corridors.	Lack of funding and delay in implementation
70% of population with access to improved sanitation	2.1	-Develop sanitation strategic plan to guide sector development and implement -Rehabilitate and expand Port Moresby sewerage system	Provide sanitation services in major cities and densely populated rural areas of key Economic Corridors.	Provide sanitation services in major cities and densely populated rural areas of Economic Corridors.	Provide sanitation services in all cities, major towns and densely populated rural areas of Economic Corridors.	Lack of funding and delay in implementation
All education institutions with access to safe water and sanitation	3.1	Dept of Education to ensure all institutions have access to safe water, with priority given to those in communities with the greatest need. Coordinate with deliverable 1.1.	All education institutions in cities and in key Economic Corridors have access to safe water and sanitation.	All education institutions have access to safe water and sanitation.	Maintain high standard.	Lack of funding and delay in implementation
Postal services in all 17 districts	4.1	Develop postal services policy to guide sector development and implement.	Implement policy and revise as needed.	Implement policy and revise as needed.	Implement policy and revise as needed.	Lack of funding and delay in implementation

Responsibility	PNG Water Board, IPBC, Post PNG							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
		1.1, 4.1				25	25	50.0
	2.1	41.8	41.8	41.8	66.8	25	217.2	GoPNG/Donor
<b>Total:</b>		<b>41.8</b>	<b>41.8</b>	<b>41.8</b>	<b>91.8</b>	<b>50.0</b>	<b>267.2</b>	

### **3.12 Information communication technology**

**Goal:** A modern and affordable information and communications technology that reaches all parts of the country

#### ***Introduction***

Information Communication Technology (ICT) has transformed the world. Many countries have harnessed technology to improve business, open access to market places, access a wealth of information, enhance social interaction and enable far greater community participation. For PNG to achieve the level of development envisaged in the PNGDSP there must be efficient ICT infrastructure with the use of technology that is appropriate to PNG's circumstances. The objective of ICT policy is centred on ensuring availability of ICT infrastructure to as many Papua New Guineans as possible and at affordable prices. This will assist the people of PNG to face the many challenges associated with the economy and geographical isolation, and will facilitate education, health and the delivery of other services of the Government.

#### ***MTDP 2011-2015***

Proper planning and implementation of ICT policy in a timely manner is critical in the first MTDP. The targets set for the next five years are ambitious and involve a lot of challenges considering the current low geographical coverage of telecommunication services including in larger population centres, the poor quality of service and the lack of institutional capacity. These limitations result in the high retail charges associated with ICT which impede the development of broadband services. Consequently, PNG has one of the lowest levels of voice and internet penetration in the world and there are very limited broadband services available. With the launch of the ICT policy in 2008, a number of reforms have taken place. The Government allowed private sector competition in the mobile phone sector and this resulted in a dramatic increase in the use of mobile phones. Since entering the market in 2007, Digicel now has over 4 million active subscribers and 1.5 million Digicel phones are used, on average, every day. Furthermore, B-mobile currently has 300,000 subscribers, having been established in 2008.

Given that mobile phone infrastructure can support wireless broadband services, radio and even TV, the extensive provision of mobile phone services represents an enormous potential for rolling out competitive and low cost access to internet broadband and for realising the PNGDSP goals for radio and television coverage. Currently the cost of broadband access is high, at about 20 times that of Australia for example. To remedy this, under the phase 2 reforms of the Government's ICT policy, access to mobile phone and broadband internet services will be promoted through a competitive market. In particular, access to the international gateway will be opened and other measures to raise private competition will be taken so that internet access can be raised from the current 2.3 per cent to 70 per cent of the population by 2030. PNG's ICT sector will be well integrated with ICT internationally, and in that way the Government will ensure compliance in PNG with international conventions, standards, practices and trends. A potential project is to have all government departments and agencies integrated into one government information platform. The cost benefit of this project will be analysed and, where possible, quantified in a feasibility study. Pending the outcomes of the feasibility analysis and subject to budget priorities, this will be implemented in subsequent MTDPs.

#### ***Building on the MTDP 2011-2015***

By promoting private sector competition, the first MTDP will provide the foundation for realising the PNGDSP targets for phone and internet access, and will contribute to PNGDSP targets for radio and television access. If it becomes apparent that the PNGDSP targets for ICT access will not be achieved by 2030, then the Government will utilise Public Private Partnerships to invest in further extending services. To this end, the feasibility of satellite access will be investigated and implemented accordingly to further the interests of PNG. Subsequent MTDPs will ensure the regulatory environment remains conducive for investment so that PNG keeps abreast of international ICT technologies. An emphasis in future MTDPs will be on delivering Government services to rural PNG through the extensive mobile phone and internet coverage.

#### ***Challenges in implementation***

Despite marked progress in mobile phone access, the level of access to fixed telephone and internet services across PNG is very low by world standards. Remedying this is a key challenge of the first MTDP. Specific challenges include accessing land, political support for policies and strategies that promote ICT development, resource availability, and potential legal issues.

DSP sector goal	Indicators	Source	Baseline in 2010	2015 target	2020 target	2025 target	2030 DSP target
A modern and affordable information and communication technology that reaches all parts of the country.	Access to a telephone (mobile subscribers per 1000 people)	DCI	650	700+	750+	780 +	800+ mobile subscribers per 1000 people
	Percentage of population with access to internet	DCI	2.3%	20%	50%	60%	70% of people using internet
	Percentage of population with media coverage	DCI DPM	55% access to radio; 26% access to television, mostly in urban areas.	-Radio: 65% -Television: 45%	-Radio: 75% -Television: 65%	-Radio: 85% -Television: 85%	100% access to radio and television
Lead government department	Department of Communication and Information (DCI)						

No.	Sector Strategies to achieve goal
1	Carry out phase 2 reforms of the Government's ICT policy, introducing a competitive market in the provision of internet and fixed landline services
2	Utilise PPP to provide services where they are otherwise commercially unviable in order to achieve the PNGDSP targets by 2030
3	Maintain mutually beneficial relationships with international ICT organisations. Ensure compliance with international conventions, standards practices and trends
4	Expand government services to rural communities using mobile phone and internet technologies

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Close to 100% of population with access to phone and 70% with access to internet	1.1	Establish NICTA to oversee competitive rollout of phone and internet services. Ensure regulatory framework is conducive for private sector investment.	If access to phone and internet services do not meet 2030 target, undertake feasibility of options for extending access including satellite and telecentres.	Implement findings of feasibility study to achieve PNGDSP targets.		-Land is secured -Improve project management unit and capacity -Policies and legal issues are addressed with political support
100% of population with access to radio and television service.	1.2	Rehabilitation of provincial radio stations on the basis of satisfactory performances.	Continue rehabilitating provincial radio stations.	Sustainable level of management		-Sustainable management performances -Sufficient funds are allocated
Integration of Government Information Systems (IGIS) and E-Government	1.3	Cost benefit scoping study of IGIS network infrastructure and data management centre in NCD and 6 selected provinces.	Full integration of management Information system at national level	Management information systems fully integrated at provincial and district level		Policy and legal issues are addressed
<b>Responsibility</b>		<b>Department of Communication &amp; Information,</b>				

Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
	25.2	29.0	5.0	5.0	5.0	69.2	GoPNG

### **3.13 Energy development**

**Goal:** All households have access to a reliable and affordable energy supply, and sufficient power is generated and distributed to meet future energy requirements and demands

#### ***Introduction***

Electricity is a crucial input to production and modern society cannot function without it. Electricity is essential for improving living standards by supporting economic growth and providing access to technology and services that otherwise would not be available. PNG currently has four main sources for electricity generation: gas, hydro, geothermal and diesel. With the anticipated rise in demand due to economic growth and an increasing population, the current capacity of energy is lacking and in urgent need of upgrading and rehabilitation. Approximately 90 per cent of the population do not have access to electricity, and the progress in providing electricity to rural PNG has been slow. In some cases the level of electricity services has been deteriorating because of insufficient funding for maintenance.

#### ***MTDP 2011-2015***

The MTDP 2011-2015 will focus on increasing access to electricity for all households in the country. There will be a focus on infrastructure that is quick to construct, while at the same time feasibility studies will assess large scale developments. Electricity will be provided to rural aid centres and schools by using renewable energy such as solar, wind and micro hydro. Diesel will also be used but only as an interim measure while renewable sources are developed. The MTDP will also address the establishment of clear and specific frameworks for utilising gas in electricity generation. New investment from the private sector in solar technology is also expected during the period of the first MTDP.

A feasibility study will be undertaken as a first step to developing a national grid. While this study is underway, major maintenance work will be undertaken on the existing regional grids — the Port Moresby Rouna grid, the Ramu grid and the Gazelle grid. Priority will be give to Rouna, followed by Ramu and then Gazelle. The maintenance work will help prepare the grids for national connection. Pending the outcome of the feasibility study and available resources, work may commence on the national interconnection in the first MTDP, but will otherwise commence in the second MTDP period. Importantly, the viability of the national grid will be boosted with the prospect of exporting electricity, particularly to Australia. Planning for export will commence during the first MTDP.. The connection of PNG's national grid to the eastern Australia grid will provide tremendous potential for export earnings while locking in low cost electricity for Papua New Guineans.

Comprehensive analysis is also required into the cost effectiveness of various alternative sources of power. This analysis will then form the basis for investment planning in generation and distribution capacity. The emphasis will be establishing hydroelectric, geothermal and other renewable energy technologies to replace diesel. For the transport sector, bio-fuel will be assessed as a low cost alternative to diesel. Inefficiencies in the electricity systems will also be addressed in the first MTDP. In particular, 50 per cent of technical losses in electricity systems will be rectified and a framework will be established for eradicating non-technical losses.

#### ***Building on MTDP 2011-2015***

Subsequent MTDPs will progress the initiatives of the first MTDP. Establishing the national grid for the country and connection to international grids will be a priority of the second MTDP. In all MTDPs there will be a focus on expanding gas, hydro and other renewable generation capacity and on increasing provision to domestic customers through the easipay system. Research and development will have a key role in identifying appropriate and feasible technology options in various locations.

#### ***Challenges in implementation***

There is a lack of investment in maintaining infrastructure and performing operational maintenance on existing generation, transmission and distribution assets. This contributes to the frequency of power shortages and ultimately means higher social and economic costs are borne by the country. Revenues raised by PNG Power Limited need to be fully reinvested into the sector so that PNG Power can better achieve its objectives. Engaging the private sector through PPP will provide the investment capacity required to achieve the objectives for energy supply. The private sector will play a dominant role in electricity generation and in building the infrastructure for the export of electricity. Hence, maintaining an environment conducive to private sector investment will be crucial. Inefficient operation by power companies contributes to higher costs and reduces the monies available in the sector for reinvestment.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
All households have access to reliable and affordable energy supply and sufficient power is generated and distributed to meet current and future energy requirements and demands.	Access to electricity	PNG Power, DPE-ADB Power Sector Report	12.4% of households	27 % of households	41% of households	55% of households	At least 70% of households
	Capacity of gas generation	PPL	70 MW	130 MW	280 MW	390 MW	390 MW
	Capacity of hydro generation	PPL	215 MW	430 MW	580 MW	750 MW	1020 MW
	Capacity of geothermal generation	DPE	56 MW	63 MW	112 MW	196 MW	350 MW
	Capacity of solar installations	DPE	0 MW	4 MW	8 MW	14 MW	25 MW
	Capacity of wind power technologies	DPE	0 MW	7 MW	13 MW	22 MW	40 MW
	Capacity of biomass generation	DPE	0 MW	14 MW	24 MW	42 MW	75 MW
	Capacity of biogas generation	DPE	0 MW	2 MW	3 MW	6 MW	10 MW
	Capacity of diesel- generation	PPL	160 MW	100 MW	60 MW	40 MW	30 MW
	Capacity of coal-generation	DPE	0 MW	30 MW	30 MW	30 MW	30 MW
	Existence of a national grid	DPE	NIL	nil	nil	nil	exists
	Percentage of households installed with easipay (pre-paid) system	PPL	4%	9%	18%	23%	>50%
Lead government department	Department of Petroleum and Energy (DPE)						

No.	Sector strategy
<b>1</b>	1.1 Increase the number of independent power producers (IPPs) in generation market to feed power into existing electricity systems. 1.2 Increase numbers of private sector investments in isolated market pockets/enclaves, (with state subsidies provided where necessary). 1.3 Increase public investments in rural electrification (by the Government) in target areas and groups (schools and health posts) where commercial investments are not viable.
<b>2.1</b>	Increase capacity of gas-based electricity generation.
<b>3.1</b>	Increase electricity-generation capacity utilising hydro.
<b>4.1</b>	Increase electricity-generation capacity utilising geothermal.
<b>5.1</b>	Increase use of solar photovoltaic technology for electricity generation.
<b>6.1</b>	Increase electricity generation capacity utilising wind.
<b>7.1</b>	Increase biomass-based electricity generation capacity.
<b>8.1</b>	Promote/increase biogas-based electricity generation capacity.
<b>9.1</b>	Relegate the importance of diesel-based power generation to strategic niches of “rapid-response capacity”, buffer-capacity and/or backup (standby) capacity.
<b>10.1</b>	Introduce clean coal generation technology that underpins both energy security and competitive electricity tariffs.
<b>11.1</b>	11.1 Rehabilitate the three main grids of Rouna, Ramu and Gazelle. 11.2 Feasibility study into establishing a national grid. 11.3 Establish a national grid.
<b>12.1</b>	Increase number of households utilising easipay (pre-paid) system for payment of electricity charges.
<b>13.1</b>	Create, establish and operate a robust system for data collation, analysis and storage to inform policies and strategies.



DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Conclusion of feed-in tariffs, access arrangements, and regulatory contracts and issuance of licenses for new IPPs feeding electricity into Port Moresby system	1.1(a)	Advent of 2 IPPs employing “rapid response” sources of power generation such as diesel generators under feed-in tariff arrangements and short-term regulatory contract	Advent of 2 new IPPs with established feed-in arrangements and regulatory contract	Advent of 1 new IPP with established feed-in arrangements and regulatory contract	Existing 5 IPPs increase their generation capacities by the quotas allocated by the Government to meet growing demand	–EIP is approved by NEC and its implementation, monitoring and evaluation framework is established before end of 2010 –The feed-in tariff, access arrangements and regulatory contracts are accepted and implemented
Conclusion of feed-in tariffs, access arrangements, and regulatory contracts and issuance of licenses for new IPPs feeding electricity into Ramu system	1.1(b)	As above	As above	As above	As above	As above
Conclusion of feed-in tariffs, access arrangements, and regulatory contracts and issuance of licenses for new IPPs feeding electricity into Gazelle System	1.1(c)	Advent of 1 IPP employing “rapid response” sources of power generation such as diesel generators under feed-in tariff arrangements and short-term regulatory contract	Existing IPP increases its capacity by the quota allocated by the Government to meet growing demand	Advent of 1 new IPP with established feed-in arrangements and regulatory contract	Existing 2 IPPs increase their capacities by the quota allocated by the Government to meet growing demand	As above
Isolated market enclaves developed using the CSO model under the EIP, and appropriate licenses issued to IPPs	1.2(a)	5 isolated market enclaves developed and established	15 new isolated market enclaves developed and established	15 new isolated market enclaves developed and established	15 new isolated market enclaves developed and established	–CSO model well promulgated to the acceptance of stakeholders –Funding is available from the State to finance the capex subsidy component of the construction phase of CSO projects –Markets are assessed and proven to be feasible for the CSO model –Provincial governments are willing to allow this model to be implemented at “C” centres
Large load power purchase agreements (PPAs) with existing IPPs or PPL, and appropriate licenses issued	1.2(b)	2 new large load markets established	2 additional large-load markets established	2 additional large-load markets established	2 additional large-load markets established	–Large loads are conducive for attracting IPPs to supply the markets –IPP are keen to invest in large load markets
Rural schools have access to electricity from small renewable energy systems (solar, wind, and micro/pico- hydro)	1.3(a)	200 rural schools electrified through renewable energy systems	400 rural schools electrified through renewable energy systems	600 rural schools electrified through renewable energy systems	800 rural schools electrified through renewable energy systems	–Funding is available from the Budget to carry out these projects –Costs of generation technologies do not rise significantly over the years –Sufficient manpower in the DPE to implement these projects
Rural health posts have access to electricity from small renewable energy systems (solar, wind, and micro/pico- hydro)	1.3(b)	200 rural health posts electrified through renewable energy systems	400 rural health posts electrified through renewable energy systems	600 rural health posts electrified through renewable energy systems	800 rural health posts electrified through renewable energy systems	As above

Increased electricity output generated from gas using efficient and modern technology	2.1	approx. 130 MW	approx. 280 MW	approx. 390 MW	approx. 390 MW	-Private sector is willing and prepared to invest in gas fired power plants -There is sufficient gas made available for use in PNG
Increased electricity output generated from hydro, using cost-effective means and appropriate technology	3.1	approx. 430 MW	approx. 580 MW	approx. 750 MW	approx. 1020 MW	-Private sector is willing and prepared to invest in hydroelectric plants
Export of clean electricity to neighbouring countries	3.2	Feasibility study of export of hydro power to Australia. Commence construction subject to findings,.				
Increase electricity output from other renewables (geothermal, solar, wind, biomass, biogas, wave, etc)	4.1 to 8.1	approx. 90 MW	approx. 160MW	approx. 280MW	approx. 500MW	Government, development partners and private sector are willing and prepared to invest in renewable energy development
Significant reduction in diesel-thermal generation, replaced by renewable energies and other sources of electricity	9.1	100 MW of diesel-thermal plants operational in PNG	60 MW of diesel-thermal plants operational in PNG	40 MW of diesel-thermal plants operational in PNG	30 MW of diesel-thermal plants operational in PNG	-Options for replacing diesel plants are economically more attractive -Finance is available to fund capital intensive renewable
Introduction of clean coal technology	10.1	0 MW	30 MW	30 MW	30 MW	Coal is economically more attractive than alternatives and is otherwise accepted by PNG.
National electricity grid established	11.1	-Rehabilitate the three main grids. -Conduct feasibility study to guide development of national grid.	Link the three main grids, subject to findings of feasibility study.	Expand national grid to service Economic Corridors.	National grid is established	-A national electricity grid is feasible -Private sector is willing and prepared to enter into PPP arrangement with PPL to develop national grid
Growth in share of households with easipay systems installed	12.1	9% of households	18% of households	23% of households	More than 50% of households	Household capacity to pay supports this growth in easipay installations.
Establish systems and processes of energy data collation, analysis, storage and use (retrieval)	13.1	-Develop systems and processes for data collation, analyses, storage and use -Develop and "operationalise" work plan for data collation, processing and use	-Review systems and processes for data collation, analyses, storage and use -Review and "operationalise" work plan for data collation, processing and use	-Review system and process for data collation, analysis, storage and use -Review and "operationalise" work plan for data collation, processing and use	-Review system and process for data collation, analysis, storage and use -Review and "operationalise" work plan for data collation, processing and use	-Capacity is available to establish the systems and processes of data collation -Constraints relating to data collation are removed (e.g. reluctance by private sector to release data)

Responsibility	Department of Petroleum and Energy (DPE)						Funding options
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	
	59.9	59.9	59.9	59.9	59.9	<b>299.5</b>	GoPNG/donors/public private partnership/ Private sector investments

### **3.14 Rural Development**

**Goal: Rural prosperity**

#### ***Introduction***

Economic development in rural areas has been slow and stagnant since independence, despite the fact that the vast majority of the population lives in rural PNG.

The Government's priority is to improve service delivery in rural areas. For this reason, deliverables in all sectors of the MTDP are focused on rural communities. Rural prosperity can therefore be seen as an overarching goal of the PNGDSP and hence of the MTDP 2011-2015. Therefore, the resourcing of rural development is captured under almost all of the sectors and comprises the bulk of expenditure under the MTDP.

#### ***MTDP 2011-2015***

In the first five years of the PNGDSP, service delivery to rural PNG will be enhanced. Roads will be rehabilitated and maintained to ensure that communities have reliable access to markets so that their business ventures are profitable. Reliable access to services will also be important, supporting higher health and education outcomes. These will also be delivered by improving and properly resourcing rural health services and rural education opportunities.

Services to rural PNG will be expanded. New maritime services will support coastal, island and river communities. New roads will be planned to provide access to new markets and key service centres. Land development opportunities will arise as the National Land Development Program is implemented, particularly in Economic Corridors. The provision of rural electricity will support entrepreneurs in rural PNG and the supply of clean water and sanitation will significantly improve rural health and lifestyles.

Many of these developments will be implemented through Economic Corridors, including the *Petroleum Resource Area Economic Corridor* (PRAEC) which will be the first of the ten Economic Corridors identified in PNGDSP.

#### ***Building on MTDP 2011-2015***

Building on the foundation of the first MTDP, subsequent MTDPs will expand services, particularly in the Economic Corridors. Within the Economic Corridors, the priority regions will be the hot spots where population density and income potential or low health and education indicators warrant investment. Public private partnerships (PPPs) and partnerships with non-government organisations (NGOs), churches and civil society will assist to progress such development in the remotest areas where the Government cannot reach.

The construction of the national road network integrated with the development of water and air transport linkages will support economic development in rural PNG, connecting fertile lands and fishing communities with major markets. In addition, a national, well maintained electricity grid will support the investment of entrepreneurs in rural locations. Social indicators will also improve as communities are provided with access to well resourced health and education facilities, as well as to clean water and sanitation.

#### ***Challenges in implementation***

The major challenges to providing better services and economic opportunities in rural PNG are achieving effective financial management of resources by the Government, obtaining sufficient access to customary land, and the commitment of local communities to maintain the infrastructure that is provided.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Rural prosperity	Household income and wage rates	NSO					Parity with urban areas, adjusted for the cost of living
	Proportion of population under the national poverty line in PNG	HIES	forthcoming				
	Poverty gap ratio		forthcoming				
	Gini Coefficient	HIES	forthcoming				
	Share of poorest quintile in national consumption	HIES	forthcoming				
	Proportion of population under the poverty line in rural areas	HIES	forthcoming				
	Access to electricity	PNG Power Limited	Only 3.7% of PNG's rural population have access to electricity				More than 60% of PNG's rural population will have access to electricity
Lead government department	Office of Rural Development						
Collaborative dept/agency	Department of Personnel Management, Office of Higher Education, Labour Department, and DNPM						

No.	Sector strategy
1	Strengthen lower levels of government
2	Extend basic services to all districts
3	Promote cooperative societies in all rural areas as an effective mechanism for developing agriculture and fishing enterprises
4	Establish microfinance banking agencies in all districts by 2030
5	Encourage eco-tourism and cottage industries as these open up opportunities for employment and income for many locals
6	Deliver specific training programs at the district level
7	Create growth centres in all key areas in all districts
8	Ensure that programs introduced by foreign stakeholders are culturally sensitive and consistent with traditional structures, PNG values and local ways of life

Note: Rural development is the core of MTDP expenditure and therefore there are no specific expenditure measures in the rural development section of the MTDP. Instead, rural development initiatives are shown in the tables in other sections of the MTDP — for example, in the parts dealing with health (part 3.3), education (part 3.4), transport (parts 3.8-3.10), utilities (part 3.11), ICT (part 3.12), and energy (part 3.13).

### 3.15 Urban development

**Goal:** Urban centres developed according to international town planning standards in order to cater for urbanisation and socioeconomic progress and deliver quality of life for all urban people

#### **Introduction**

PNG's urban population is growing rapidly in all towns and major cities. The estimated urban population of PNG was 1 million persons in 2010, with many migrating from rural villages to towns and cities. The large flow of people into cities and towns is giving rise to urban settlements, which in turn makes urban planning complex and challenging.

It is likely that the urban population will more than double between 2010 and 2030 — the NRI (2010) estimates the urban population as being 3.5 million persons by 2030 — putting greater pressure on urban services and urban management. Land and housing prices in urban centres are already extremely high, exacerbated by a dysfunctional land titling system. Accessing customary land in urban centres is problematic. As a result, most city residents, including many public servants, are forced to live in settlements, many with inadequate access to electricity, water and sanitation, and secure land tenure.

#### **MTDP 2011-2015**

The Government adopted its National Urbanisation Policy for PNG, 2010-2030, in June, 2010, and this sets the framework for the proper planning and development of town and cities, including those in rural areas, over the next 20 years. The National Urbanisation Policy is based around coordinating the implementation of projects and programs addressing the following five components.

- The provision of primary and trunk infrastructure and services such as water supply, power, roads, and sanitation.
- The development of sites and services on freehold and customary land, including upgrading of unplanned settlements.
- The development, rejuvenation and strengthening of provincial and district service centers, especially investments enhancing the economic base of the towns.
- Building local and community capacity to better manage urbanisation, urban management and urban development at national, district, provincial and local levels.
- The development of local urbanisation, urban management and urban development policies, plans and programs.

The implementation of reforms of the land titling system is also needed as a matter of urgency, to release land and thereby relieve the extreme shortage of adequate housing. Regulatory and legislative reforms are also needed to facilitate developments, for example, by allowing for strata title.

Private sector investment is needed, not just in the construction of homes, but also in the construction of residential estates whereby accommodation will include sewerage, water, road and electricity infrastructure. The Government's role in defining and enforcing property rights will also be important for giving businesses confidence to invest in expanding PNG's cities. In this context, foreign investors will bring considerable experience in large scale residential estate developments, resources and financing, and will therefore be encouraged.

Given that constrained access to land and adequate housing is an issue for many people in urban centres, including public servants, a national coordinated response is warranted. In urban locations, public private partnerships will be trialed to sub-divide and develop affordable accommodation exclusively for purchase or rent by public servants. The government agency responsible for public service housing will have high standards of transparency and efficiency so that funds are well managed. It will be accountable for achieving the rapid growth in housing for public servants that is required. Individual agencies will determine what assistance they provide to public servants in purchasing or renting housing that is made available under this scheme.

Many who live in urban areas have low incomes and about 50 per cent of Port Moresby's population live in settlements. This presents a major challenge for housing affordability. Careful research and management is needed to devise, pilot and implement economically, politically and socially sustainable approaches to ensuring the health of low income communities through the provision of basic sanitation, water services and other infrastructure.

### ***Building on MTDP 2011-2015***

Subsequent MTDPs will learn from the implementation of the National Urbanisation Policy for PNG, 2010-2030 and continue to enhance the quality of living in PNG's cities. This includes the pilot projects undertaken under the NLDP. If land reforms have been implemented effectively and the private sector has responded well, then attention may need to turn to monitoring the release of land so as to avoid boom-bust cycles. Under the National Urbanisation Policy, greater emphasis may be given to the evolving standards of housing and infrastructure that city populations may come to expect.

### ***Challenges in implementation***

The immediate challenge for implementation is twofold. Firstly, adequate budget resources are needed to implement the approved National Urbanisation Policy and secondly, realigned institutional arrangements need to be put in place to address an integrated approach to resolve urbanisation, physical planning, land mobilisation, land development and housing issues. A national approach is urgently needed to ensure priority towns and cities have an adequate supply of land, infrastructure, services and housing. A national physical plan is needed to give a spatial dimension to the economic policies contained in the MTDP, the PNGDSP and the National Urbanisation Policy, including the mega cities concept. Access to securely titled land remains the central risk in achieving the aspirations of the urban development plan, hence the need for a national coordinated response. Within the peripheries of the metropolitan centres, land owners must be willing to lease their land in order for urban planning to be effective. They will remain unwilling until the DLPP that administers land titles demonstrates the capacity to facilitate land registration and land transfers with integrity and efficiency.

A second challenge arises from the large disparity in living standards within PNG's cities. Catering for the needs of all income levels is important not only to realise the Constitutional goals of integral human development and equality and participation but also to promote social harmony. How to plan and provide services for very low income earners is financially, politically and socially challenging and raises issues regarding the distribution of GDP and how best to support human development in PNG. Urban areas are increasingly becoming a focus for poverty, and poverty reduction strategies will need to address this in parallel with development in rural areas.

If these challenges can be met, the standard of living will dramatically improve for all Papua New Guineans living in urban areas.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Urban centres developed according to the National Urbanisation Policy for PNG in order to cater for urbanisation and socioeconomic progress and deliver quality of life for all urban people	Population living in urban settlements	Census	28% of the urban population live in settlements	25%	20%	15%	Less than 15% of the urban population live in settlements
	Proportion of population under the poverty line in urban areas	HIES	forthcoming				
	The supply of affordable housing		Rent and purchase prices very high relative to average earnings				Adequate supply of affordable housing
	Town spatial planning		Very weak	Urban development plans in the major city or town of each province	Urban development plans in all cities and towns	Urban development plans in all cities and towns	Meet minimum international standards
Lead government department	NCDC and Provincial Government Town Councils						

No.	Sector strategy
1	City authorities to plan urban development, to zone land, to work with customary land owners and to ensure coordination of infrastructure providers
2	Increase private sector investment in housing by implementing National Land Development Program, enforcing clear property rights and facilitating foreign investment
3	National response to public service need for adequate housing, including by taking advantage of PPP
4	Research and carefully implement sustainable service delivery to low income communities
5	Legislate the National ID card system

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Number of 5 year urban development plans	1.1	21	In every city and major town	In every city and major town	In every city and major town	DNPM to guide the development of these plans
Number of residential estates on customary land in urban areas	1.2	At least 2 in the major cities of each region	At least 5 in each region in response to demand	As needed	As needed	Land title agency becomes effective.
Effective housing policy for sustainably relieving housing shortage	2.1	Housing policy in place and implemented	Review of housing policy (amended if necessary)	Housing policy kept current and implemented.	Housing policy kept current and implemented.	
Adequate private sector investment, including foreign investment, in the construction of new residential estates and accommodation generally.	2.2	Clear and well enforced property rights giving investors confidence in this sector.	–Several large scale residential developments in each city alleviates housing shortage. –Low income housing also provided on large scale.	Housing shortage alleviated.	Housing situation remains stable.	Land title agency becomes effective.

Public servants are housed in safe, hygienic and well serviced conditions	3.1	-Trial PPPs to supply accommodation that public servants can purchase. -The accommodation offered equals half the number of public servants.	The accommodation offered equals 80 per cent of the number of public servants.	Housing shortage alleviated and living conditions suitable for all public servants.	No longer a need for a housing program for public servants.	Agency overseeing public servant housing program transparent and efficient and committed to achieving its objectives.
Sanitation and clean water services are provided throughout all cities and major towns	4.1	Research how best to extend sanitation and clean water services to low income communities, integrating with water and sanitation strategic plans. Pilot projects including a major town in PRAEC.	Expand on pilot projects, learning from experience. Focus investment in major cities and key economic corridors.	Extend clean water and sanitation services throughout major cities and in economic corridors.	Extend clean water and sanitation services throughout all cities and major towns and in economic corridors.	
Number of urban areas fully utilising the National Identification System	5.1	2	5	10	21	

<b>Responsibility</b>	<b>Office of Urbanisation, Department of Treasury</b>						
<b>Estimated inputs (K million)</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2011-2015</b>	<b>Funding option(s)</b>
<b>Total:</b>	10	15	14	10	8	<b>57</b>	GoPNG



## Part 4

# Economic sectors

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The overall objective of economic sector strategies is to diversify the economy so that production is not overly reliant on any one sector, for example, the minerals sector.

Parts 2 and 3 of the first MTDP 2011-2015 set the policy and legislative framework for enabling economic development. However, direct government involvement is also needed in the economic sector to ensure the development and progress required to deliver jobs and sound investment opportunities. Guided by the PNGDSP, the MTDP 2011-2015 has identified key deliverables for agriculture and livestock, fisheries, petroleum, minerals, manufacturing, small and medium enterprises, tourism, and the non agricultural informal sector. Major projects within the economic sector that will have a significant impact are the PNG LNG Project, Pacific Marine Industrial Zone and special free trade and export zones within the Economic Corridors.

### 4.1 Agriculture and livestock

**Goal:** A world class agricultural sector that is responsive to international and domestic markets for a diverse range of products and provides the best available income and job opportunities

#### *Introduction*

The agricultural sector in PNG continues to be the backbone of the economy. This sector provides employment, income earning opportunities and subsistence consumption for the rural majority. In addition, the sector generates significant revenue for the country from its commodity exports. Of the tree commodities, the main exports are timber, oil palm, coffee, cocoa, rubber and coconuts. The sector contributes 19 per cent of total exports and 25 per cent of GDP. Though an estimated 30 per cent of the land in PNG is suitable for agriculture, only 4 per cent is currently being utilised for commercial agricultural production. In addition, PNG's agricultural sector is generally less productive, and thus less profitable, compared to many other countries due to poor key infrastructure like roads.

#### **MTDP 2011-2015**

To achieve the agricultural sector goal, the first MTDP will focus on a number of key strategies. One that is critical is the Government's current land development program which will ensure that appropriate incentives are provided to customary landowners in order for them to release their land for agricultural purposes.

Providing adequate extension services will assist landholders to replant with new, high yielding varieties of cash crops. At an institutional level, the roles and functions of the Department of Agriculture and Livestock (DAL) and other agencies within the sector need to be clarified. Role clarity will improve the delivery of the essential support functions of providing extension services, credit services and training.

Developing and improving roads and other agricultural infrastructure in the first MTDP is also crucial for the sector's development. Roads are critical in connecting fertile regions of PNG with markets. Without roads, fertile land will remain idle or under-utilised, despite extension services. The better the roads, the easier it is for farmers to supply markets, and the more profitable farmers will be. Other strategies for implementation are major rehabilitation and development programs in the tree crops and livestock industries, control and eradication of exotic pests and diseases and enforcing Codex food safety and fair trade standards which, in turn, will support the marketing of PNG's food exports

#### **Building on MTDP 2011-2015**

Subsequent MTDPs will focus on transforming the subsistence rural agricultural sector into semi-commercial and commercial farming. Priority will be given to extension services to continue improving and maximising output of all agriculture and livestock enterprises. Research will focus on producing high yielding varieties of commodity tree crops and improved breeds of livestock. Extension services will impart adaptable practices to farmers with the latest technologies and information. Further research and extension strategies will be directed towards the containment and eradication of pests and diseases currently affecting the tree crop industry. Major quarantine facilities will be built to ensure that exotic pests and diseases are identified immediately and contained.

Organic certification will be required for both organically produced crops and processing facilities to attract organic markets. The MTDPs will ensure that organic certification is awarded to areas where it is due and institutions such as NARI will be expanded to facilitate internationally recognised organic certification. Commercialisation of agricultural products, with a greater emphasis on accredited handling and packaging methods, are a norm in food processing. To ensure a high level of food security, increased production and downstream processing of staples that have a competitive advantage will be promoted for domestic demand and international markets. The National Food Authority will be established to enforce Codex food standards that will enable access of PNG's food products competitively to global markets.

The impact of the current and future MTDPs on the agricultural sector will be a five-fold increase in the level of production by 2030, worth K7.2 billion and contributing 267,000 additional jobs.

### ***Challenges in implementation***

Land accessibility and land administration, along with the lack of infrastructure development, remain key sector challenges. Establishing a well coordinated transport network is a pre-requisite to ensure growth in the sector. Continuity of government funding to fully implement sector strategies will be another challenge to address. Complementing this is the need to ensure impact evaluation, monitoring and reporting of achievements in the sector to be done regularly so that government funding is justified and sustained.

Lack of role clarity and lack of compliance in institutional responsibilities and mandates between DAL and subsidiary agencies compound the implementation challenges. Collaboration between DAL and its subsidiary agencies still remains weak.

Exotic pests and diseases can adversely reduce the potential of commodity crop production. Containment and eradication is of great importance prior to redevelopment and expansion of current and new plantations and smallholder establishments. Climate change remains a key challenge in this sector. The El Nino and various other climatic extremes continue to have significant implications.

Uncoordinated development is also a key issue. For instance construction of dams and mining development effects will have direct negative impacts on land area and water systems. A consultative approach with other sectors is thus necessary in the implementation of the PNGDSP so that all sectors, including agriculture, benefit from integrated development. Further, global commodity price fluctuations will remain a major influence on growth of the sector.

DSP sector goal	Indicator	Source	Baseline	2015	2020	2025	2030 DSP target
A world class agricultural sector that is responsive to international and domestic markets for a diverse range of products and provides the best available income and job opportunities	Meat production, including organic	LDC, DAL	407,000 tonnes in 2007				4 million tonnes.
	Coffee production	CIC, CRI, DAL	63,000 tonnes in 2008				500,000 tonnes.
	Oil Palm production	OPIC, OPRA, DAL	556,000 tonnes in 2007				1.6 million tonnes.
	Cocoa production	PNGCB, PNGCCI, DAL	56,000 tonnes in 2008				310,000 tonnes (minimum of 100,000 tonnes required for a local processing industry).
	Copra production	KIK, PNGCCI, DAL	110,000 tonnes in 2007				440,000 tonnes.
	Horticulture production, including organic	DAL, NARI	10,000 farmers				Increased by 5 times.
	Rice production	NARI, DAL	Domestic market dominated by foreign products				Strengthen the bargaining power of local growers and encourage local processing.
	Sago production	DAL	Nil				Establish 2 large sago plantations by 2030 and venture into full commercialisation.
	Staples (potato, cassava, taro, banana) production	DAL, NARI	Nil				Increase production to levels sufficient to feed the population and supply downstream industries
	Subsistence agriculture	DAL, NARI	80% of population in subsistence agriculture				70% of subsistence farmers will expand into small and medium primary agricultural enterprises
	Land use for agriculture	DAL, DLPP	Less than 4% currently used for agriculture				Over 50% of available potential land for agriculture utilised.
	Organic certification	NARI	Nil				1 globally accredited institution that can facilitate organic certification
	Codex standards	NAQIA, NISIT	Nil				All processing facilities adhering to Codex standards
Lead government department	DAL, PNGCCI, KIK, Cocoa Board, NARI, NAQIA, OPIC, OPRA, CIC, CRA, Rubber Board, LDC, Spice Board						

No	Sector strategy
1	Achieve efficient institutional structure in industry
2	Efficient land administration – enabling environment for people to engage in agriculture – allowing land owners to profit from their land
3	Develop roads and key agricultural infrastructure (mills, factories, downstream processing plants) – supply chains to generally link producers to markets.
4	Adequate extension services (including control and eradication of pests and diseases, research and development)
5	Enforcing CODEX marketing standards to facilitate processed food exports
6	Utilisation of Economic Corridors for agricultural development
7	Ensure interventions are transparent, cost effective and non-discriminatory

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Efficient institutional structure serving the agricultural industry	1	Review roles of agricultural agencies and restructure, ensuring all agencies fulfill their roles effectively.				
Access to land for agriculture	2	Provide input and assistance to implement the NLDP				
Adequate transport services	3	Provide input and assistance to the national transport strategy				
Smallholder livestock industry	4.1	Rehabilitation of breeding centres and introduction of improved breeds.				Land issues
Smallholder coffee industry	4.2	Efficient regulations and effective information dissemination.				World commodity prices fluctuations and lack of government support
Pest and disease free oil palm industry	4.3	Capacity for regulation and control.	50% of pests under control.	100% pest management.	Focus on upgrading pest control facilities.	Pest mutations and resistance
Eradication of cocoa pod borer	4.4	Containment strategies to be concentrated in affected provinces.	CPB eradication strategy commences.	100% CPB eradication.	Focus on upgrading quarantine facilities.	CPB resistance and adaptation
Eradication of the coconut beetle	4.5	Containment strategies to be concentrated in affected provinces.	100% eradication of coconut beetle and other pests	100% Coconut Beetle Eradication and other potential pests.	Focus on strengthening quarantine facilities.	Pest mutations and resistance
Other commodities (rubber, sago, spices, apiculture, etc)	4.6	Capacity building and regulation of the industry.				Land access and commodity prices
Vibrant rice farming industry with rice becoming a dominant alternative crop	4.7	Capacity in research for adopting rice farming in rural PNG.	Schools, prisons, etc. grow own rice for consumption.	Economic Corridors introduced to rice farming.		
Downstream processing and export of staples such as potato and banana	4.8	Research into improving quality and yields of local staples and to enhance capacity of downstream processing			-	Continuous government support and capacity issues.
Agriculture survey with NSO	4.9	Undertake agriculture survey in 2012				
Establishment of Codex certification	5	-Improve capacity to undertake the process of facilitating Codex standards. -Establish a National Food Authority.	Establish global links for Codex standards	Establish institutions in PNG controlling Codex	Codex standards a norm in agriculture and processing	Appropriate policy to avoid duplication of functions
Global standard quarantine facility	7.1	Capacity upgrading of current quarantine facilities.	One major global standard facility to be built in Port Moresby	Regional/provincial quarantine facilities to be built.	Quarantine facilities established and strengthened.	Funding support
Regional organic certification establishments	7.2	Facilitate process in which an institution in PNG can be accredited with organic certification	One internationally recognised organic certification institution in PNG			

Responsibility	DAL, PNGCCI, KIK, Cocoa Board, NARI, NAQIA, OPIC, OPRA, CIC, CRA, Rubber Board, LDC, Spice Board							
Estimated Inputs (Kmillion)	No	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
	4.9	50.0	50				100	GoPNG/Donors
	7	44.5	44.5				89	GoPNG/Donors
	Others	14.8	14.8	14.8	14.8	14.8	74	GoPNG/Donors
<b>Total:</b>		<b>109.3</b>	<b>109.3</b>	<b>14.8</b>	<b>14.8</b>	<b>14.8</b>	<b>263</b>	

## **4.2 Fisheries**

**Goal: Develop fishery sector that is both sustainable and highly profitable for PNG, with PNG becoming a world leader in the supply of tuna**

### ***Introduction***

PNG has abundant marine resources with the largest fisheries zone in the Pacific, covering an area of 2.4 million square kilometres. The fisheries sector is extensive and includes inland river fisheries, aquaculture, coastal beche-der-mer, reef fisheries, prawn trawl and large scale deepwater tuna fisheries. The sector ranges from artisanal communities to medium sized domestic prawn and tuna long line operators to large international purse seine fleets. The key strategy in this sector is to promote downstream processing, especially in the tuna industry for both domestic and export markets.

### ***MTDP 2011-2015***

Developing PNG's fishing industry will be a high priority for the Government. But this will be done in a manner that ensures that the sector's potential is realised and the resource is managed in a sustainable way. The first MTDP will look at reviewing existing legislative framework and policies of the sector to strengthen and enhance the capacity of the National Fisheries Authority (NFA) to promote development of the sector. The capacity of the NFA to do stock assessment on commercial species and conduct policy enforcement will be strengthened and enhanced. Research, extension services and marketing capacities will be further developed to support the industry in managing risks and in providing direction to the industry. To meet the skills requirement of the industry, the existing Fisheries College needs to be rehabilitated and the curriculum upgraded. A degree course in fisheries management will be established at the Maritime College and coordinated with NFA to boost experts in the whole fisheries sector. In addition, the current lack of maritime surveillance capacity is resulting in the loss of millions of Kina in illegal or under-reported fishing activities. Development of the maritime surveillance capacity of appropriate agencies is critical. It is essential that the responsible agencies be adequately resourced to effectively undertake surveillance activities.

In the period 2011-2015, a number of marine industrial parks will be established in the maritime provinces of PNG. These will provide an outlet for local fishers which will support fishing incomes. The marine industrial parks will also support the development of onshore processing; adding to PNG's manufacturing capacity. The first development of the maritime park is the Pacific Marine Industrial Zone (PMIZ) in Madang. The Coastal Fisheries Development Authority (CFDA) through the concept of fish port development will help mobilise and enable local fishermen to improve traditional fishing methods and increase their catch. CFDA will also facilitate downstream processing of the catch supplied by rural fishing communities, including inland aquaculture. Licenses will be reviewed in terms of property rights to bring greater certainty to the holders. License fees, excise and other revenue raising arrangements will be revised to ensure that PNG is raising revenue efficiently yet without discouraging domestic production. It is estimated that to implement these strategies in the first MTDP and to achieve the sector targets, it will cost approximately K165 million in the period 2011-2015.

### ***Building on MTDP 2011-2015***

Most of the projected revenues are derived from the license fees that will be received from foreign boats based domestically and license fees from tuna fisheries. A typical processing/fishing company in PNG offloads about 60 per cent of its catch as exports to overseas markets. The balance is utilised by the onshore processing facilities. Increasing and upgrading onshore processing facilities provides the opportunity to value add the product in PNG and create large numbers of additional local jobs. As well as optimising returns from wild catch fisheries, the sector will investigate and seek to establish large and small aquaculture enterprises which can be built on PNG's unique marine life. There is, for example, a significant global market for tropical aquarium fish, the propagation of which may well suit small scale local producers.

### ***Challenges in implementation***

A potential challenge will be the establishment of a well coordinated baseline database by 2010-2011. It will be important for stakeholders in the sector, such as the Ministry of Fisheries, NFA and PNGDF, to liaise and coordinate efforts and resources to undertake this task. The PNGDF navy will provide support through updating monitoring and controlling surveillance equipments and technology. There is a possibility that sections of the industry may initially resist the increased monitoring and surveillance of their industry. As their rights increase and additional investment capital is attracted a secure and mature industry will develop.

DSP sector goal	Indicator	Source	Baseline	2015	2020	2025	2030 DSP target
Develop a fisheries sector that is both sustainable and highly profitable for PNG, including the establishment of PNG as a world leader in the supply of tuna.	License/access fees generated from tuna fisheries	NFA	K60 million in 2008	K100 million	K100 million	K100 million	K100 million in 2008 prices.
	Stock assessment of the Gulf prawn fisheries.	NFA	Stock assessment is currently “under exploited”	Revive the GOPPF			Increase catch by 25% and raise stock assessment to “fully exploited”
	PNG processed fisheries exports	NFA	K189 million (21,940 tonnes in 2007, and 34% of total fisheries exports).	K450 million	K1 billion	K2 billion	Triple volume and real value of processed fisheries exports
	Quantity share of catch caught by PNG vessels	NFA	Less than 1% in 2007	5%	10%	15%	Increase to at least 20% by 2030.
Lead government department	National Fisheries Authority						

No.	Sector strategy
1	Stock assessments for all commercial, artisanal and recreational fisheries to calculate Maximum Sustainable Yield (MSY)
2	Revamp fisheries licenses providing greater property rights but with additional development conditions
3	Establish a system of monitoring and enforcement to reduce illegal, unreported and unregulated (IUU) fishing and to assist with research
4	Pursue fisheries development for aquaculture and other small wild capture fisheries such as trepang or aquarium
5	Fully rehabilitate fisheries colleges and upgrade the curriculum.

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Stock assessments for all fisheries	1	Assessments for all fisheries	Annual assessment reports	Annual assessments	All fisheries graded sustainable	-Lack of quality data -Illegal fishing
New licensing system delivering greater property rights to holders but greater returns to GoPNG via increased fees and license conditions (e.g. local processing of catch)	2	Revamped licenses in place for tuna industry	Revamped licenses in place for Gulf prawn fishery	Revamped licenses in place for all commercial fisheries	Fisheries Act amended to license for artisanal and recreational fisheries	Existing license holders may resist change and new conditions
Effective monitoring and enforcement unit established with the support of the PNG Navy.	3	Data for monitoring and fee calculation	IUU fishing reduced and deterred	Industry efficiency improved	Fisheries profitable and sustainable	Lack of capacity to monitor all PNG's waters
Smaller fisheries developed i.e. aquaculture, aquarium, pearls, live fish export	4	Development opportunities identified	Pilot projects completed	New ventures established	Aquaculture production tripled; 3 new fisheries	Lack of capital
Fully rehabilitated fisheries colleges and curriculum upgraded	5	Existing colleges rehabilitated	Cooperation agreements with other regional institutions	Highly skilled PNG industry sector	Highly skilled regional industry sector	Funding available

Responsibility	National Fisheries Authority, Department of Trade and Industry, Investment Promotion Authority, Department of Environment and Conservation, Boarder Development Authority, Internal Revenue Commission, PNG Defence Force, Customs						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding options
Total	76	76	5	5	5	167	GoPNG

## 4.3 Forestry

**Goal:** Build a forestry sector that is sustainable and highly profitable.

### ***Introduction***

The forestry sector continues to contribute immensely to the national economy, as well as improving the livelihoods of the rural people. The sector operates in the most remote areas of the country, thus creating opportunities for rural communities to engage in formal employment to improve their living standards. Companies involved in the sector have provided the basic social and economic infrastructure services like roads, bridges, schools and health centres. In the absence of government services and support, the presence of the forest industry in rural communities is vital since they provide some of the basic services which the Government should typically provide.

### ***MTDP 2011-2015***

The first MTDP will mainly focus on improving the forest policy and regulation as it will lay a strong foundation for other strategies in subsequent MTDPs. The PNG forestry sector will move forward to build constructive and progressive aspects of forest policy and regulation in order to wisely use and develop its forest resource. A strong regulatory and policy framework is vital since it will give full effect to government policy in the forestry sector so as to achieve the overall goal of building a forestry sector that is sustainable and highly profitable.

A review of all existing policy documents within the framework of objectives and practices of the PNG Forest Authority (PNGFA) is required. This includes:

- an overview of the National Forest Policy to better address operating challenges of new initiatives related to international environmental issues;
- the progressive evolution of PNGFA activities in areas such as the phasing out of log exports, research, carbon trading, operation of the State Marketing Agency, revenue arrangements under financial autonomy, etc;
- continuous review of the PNGFA's corporate plan to ensure it is in line with government policy and the needs of PNG;
- the development of national enterprises within the forestry sector; and
- preparation of all subordinate policy documents including for reforestation and processing and phasing out of log exporting.

The PNGFA will continue to improve field manuals to assist field officers in their duties. Operational reviews of field practices should be of a procedural and structural nature to improve management of the nation's strategic forest resources. The establishment of financial autonomy will significantly assist capacity development of the PNGFA's role under the objectives of the Forestry Act. It is anticipated that financial autonomy will assist greatly in reversing the current negative trends in PNGFA capacity and enable much needed sustainable reform to proceed with significant dividends directed to the National Government.

### ***Building on MTDP 2011-2015***

The application of the National Forest Policy and Forestry Act has resulted in the development of existing systems and practices. This transition phase is now over and it is time to move forward to provide better services and to prepare for the challenges of the future. The forestry sector is tasked to: increase processed timber exports to 80 per cent of all forestry exports by 2030 from the current rate of 20 per cent; have plantations produce all logs and manage forests by 2030; and increase plantation forests from 62,000 hectares to well over 150,000 hectares by 2030. The policy and regulatory framework will form the basis for other strategies to be implemented in subsequent MTDPs.

### ***Challenges in implementation***

There are certain challenges that need to be addressed in order to implement strategies in the forestry sector. These include: land, finance, manpower, equipment, infrastructure and technology. However, some of these issues will be addressed when the LNG project and the Economic Corridor system is in operation. The availability of secure land tenure is one of the important challenges in the forestry sector and remains a continuing obstacle which must be addressed.

DSP sector goal	Indicator	Source	Baseline	2015	2020	2025	2030 DSP target
Build a forestry sector that is sustainable and highly profitable.	Share of processed timber increased from 2007 base year	PNGFA	20% of log harvest in 2007 processed for export and domestic markets	30% of total harvest to be processed for export and domestic markets	40% of total harvest to be processed for export and domestic markets	50% of total harvest to be processed for export and domestic markets	60% of total harvest to be processed for export and domestic markets
	Decrease share of log harvest coming from natural forest	PNGFA	8% from plantations				Logs will be provided by plantations and managed forests
	Increase area of plantation forests	PNGFA	62,000 hectares	80,000 hectares	100,000 hectares	150,000 hectares	Substantial increase in plantation forest
Lead department	PNG Forest Authority						

No.	Sector strategy
1	National forest inventories shall be undertaken every ten years to ensure policy decisions are well informed
2	Promote sustainable forest management through the establishment of permanent forest estates
3	Prevent felling of natural forests unless the land is developed to provide sustainable jobs and income, whether through agriculture, plantation or other profitable land use
4	Pursue downstream processing of forest products such that 60% of PNG timbers are processed in-country by 2030
5	Strengthen the regulatory and policy framework, including ensuring compliance in order to give full effect to government policy
6	Enhance the research and extension services of the forest industry so that the industry is profitable and sustainable to benefit current and future generations
7	Develop forest plantations to meet the impact of climate change and to meet future timber demand for both domestic and international markets
8	Promote community forestry activities with the view of empowering rural communities and alleviating poverty
9	Promote the international initiative Reducing Emissions from Deforestation and Forest Degradation (REDD+) to assist with mitigation adaptation measures in climate change

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
80% of processed timber to be exported	1					All strategies are achieved
Logs to be provided by plantations and managed forests	2					All strategies are achieved
Substantial increase in plantation forests	3					Insecure land tenure

Responsibility	PNG Forest Authority						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
	1	1	1	1	1	5	GoPNG



## 4.4 Petroleum

**Goal:** Build a world leading petroleum industry that maximises benefits to PNG and landowners, minimises impacts on the environment and social welfare, and provides PNG with energy security

### *Introduction*

Petroleum sector development started in 1991 with crude oil production at the Kutubu fields. After reaching peak levels in 1993, oil production has been declining due to natural depletion. In 2005, PNG's first oil refinery commenced production, sourcing crude oil from both local oil fields and from abroad. The Kutubu fields are rich in gas resources but the focus so far has been on the extraction of crude oil. This will change as they become predominantly gas fields, exporting condensate and wet gas and processed petroleum.

### *MTDP 2011-2015*

Achieving the goal for petroleum requires a strengthening of the state institutions responsible for policy making, administration and enforcement of regulations within the first MTDP. An important strategy is to have an efficient and effective delivery mechanism established to achieve the targets. A deliverable identified to contribute to the sector goal is to raise the capacity of the agency responsible for developing global industry standards. This will involve training staff and purchasing and installing state of the art equipment so that all regulatory and administrative processes can be followed with efficiency.

Gas production has a huge potential for contributing to the economy in terms of tax and export revenues. However the Government cannot develop this resource on its own as it will involve specialised expertise and substantial resources. The private sector will be needed to combine their expertise and resources with that of Government and to take the lead in exploration and investments in the petroleum industry. There are currently two commercial gas projects — the Liquefied Natural Gas (LNG) project headed by Exxon Mobil, which is at construction phase, and the LNGL project headed by InterOil which is at the planning stage.

The LNG project is expected to bring considerable revenues annually to PNG from 2014 onwards. A clear challenge for the Government is to invest these revenues through the respective MTDPs and the PNGDSP to address the development needs of the current and future generations. Investment in the PNGDSP priorities such as schools, hospitals, roads and ports is an investment in PNG's prosperity from which future generations will benefit. Such investments will convert non-renewable revenues into sustainable and renewable development.

### *Building on MTDP 2011-2015*

Development of the petroleum sector also depends on other crucial sectors like law and order, land, and transport infrastructure. It is important for the Government to ensure key infrastructure is provided so that developers can progress the project and benefits to both landowners and the country are fully realised. Further delays in the construction phase of the project as a result of landowner issues will be detrimental to the entire project. It is also critical for the Government to meet its obligations to the project landowners under the Umbrella Benefit Sharing Agreement (UBSA) and the License Based Benefit Sharing Agreement (LBBSA). Failing to meet landowner commitments will threaten the project from progressing in the construction phase and reaching production. Between 2016 and 2020, the LNG project is expected to be fully operational and contributing significant tax and dividend revenue to the Government. These revenues will support the Government's nation building investment through the second MTDP and subsequent MTDPs. The Economic Corridor concept will be set up and used to develop and link provinces where poverty is common and convert them into areas of opportunity. The Petroleum Resource Area Economic Corridor (PRAEC) will be the first Economic Corridor to be implemented and covers the resource rich provinces of Central, Gulf, Western, SHP and Enga. Much of the resources from the LNG project will be used to develop this corridor.

### *Challenges in implementation*

Potential challenges to this sector are governance and landowner issues. Without good governance, revenues and other benefits from the petroleum sector may not be converted to investments in development through the PNGDSP. There is also a possibility in future years of political manipulation for their own gain of the project benefits. Another major risk relates to the global market price of gas and oil which can be volatile in nature. Other potential risks include supply disruptions through landowner disputes, employee strikes and weather related problems.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Build a world leading petroleum industry that maximises benefits to PNG and landowners, minimises impacts on the environment and social welfare, and provides PNG with energy security.	Total number of petroleum licenses	DPE	75 licenses in 2009	Issue at least 5 or more new exploration licenses and maintain work program for existing licenses	Issue at least 5 or more new exploration licenses and maintain work program for existing licenses	Issue at least 5 or more new exploration licenses and maintain work program for existing licenses	120 petroleum licenses and expanded exploratory work in the remaining 4 basins (North New Guinea, Cape Vogel, Bougainville and New Ireland)
	Petroleum license expenditure	DPE	K720.5 million in 2009	Acquire at least 5 new licenses, maintain existing exploration incentives and increase 2009 expenditures by 10%	Acquire at least 5 new licenses, maintain existing exploration incentives and increase 2015 expenditures by 10%	Acquire at least 5 new licenses, maintain existing exploration incentives and increase 2020 expenditures by 10%	33% increase in exploration expenditures from 2009 expenditure level to K960 million
	Volume of crude oil production	DPE	13.7 million barrels produced in 2009	Produce more than 13.7 million barrels	Produce more than 13.7 million barrels	Produce more than 13.7 million barrels	Sustain crude oil production 2009 levels
	Remaining oil reserves	DPE	575.5 million barrels in 2009	Increase proven reserves by 20%	Increase proven reserves by 20%	Increase proven reserves by 20%	Increase proven reserves by 70% compared to 2009
	Refinery production	DPE	5.8 million barrels of oil processed in 2009	Increase 2009 feedstock level by 1 million barrels	Increase 2015 feedstock level by 1 million barrels	Increase 2020 feedstock level by 1 million barrels	9 million barrels processed
	Refinery sales volume	DPE	6.3 million barrels of refined products sold in 2009	Increase 2009 dispensed products by 1 million barrels	Increase 2015 dispensed products by 1 million barrels	Increase 2020 dispensed products by 1 million barrels	9 million barrels of finished products sold
	Number of LNG projects	DPE	3.6 MTA LNG plant under construction for commission in 2014	6.3 million tonnes of LNG produced and exported	6.3 million tonnes of LNG produced and exported	More than 6.3 million tonnes of LNG produced and exported	At least 3 LNG projects and more than 6.3 million tonnes of LNG produced and exported
	No. of petrochemical plants	DPE	Nil	Petrochemical plant proposals	Petrochemical plant Proposals	Petrochemical plant Proposals	1 Petrochemical plant
	Number of gas-to - electricity plants	DPE	2 Medium Scale (Stanley and Hides)	1 new gas to electricity plant	1 new gas to electricity plant	1 new gas to electricity plant	5 gas to electricity plants
Revenue from petroleum projects	DPE	K2.6 billion in 2009	K0.4 billion increase in revenues	K2 billion increase in revenues		At least K5 billion a year	
Lead government department	Department of Petroleum and Energy						

No.	Sector strategy
1	Strengthen state institutions responsible for policy, administration, regulation, and enforcement of the gas industry.
2	Promote investment in petroleum/oil/gas exploration.
3	Ensure the fair and equitable distribution of benefits from the petroleum industry
4	Ensure that revenue from the petroleum industry is sustainably invested for maximum benefit for current and future generations through the PNGDSP and MTDPs

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
DPE capacity improved to world standards	1.1	-5 officers to be on technical training -Job twinning programs of personnel	-5 officers to be on technical training -Job twinning programs of personnel	-5 officers to be on technical training -Job twinning programs of personnel	-5 officers to be on technical training -Job twinning programs of personnel	-Skilled government officers are easily lured by private petroleum firms offering attractive salary packages -Most gas-based technical training programs and institutions are overseas-based and expensive
Increase investments in the industry	2.1	Provide new incentives for exploration				-Incentives may not achieve the target envisaged -Incentives often favour foreign firms, costing PNG revenue -Incentives can be misplaced resulting in unsustainable resource extraction, and environmental and social degradation. -Most of PNG's prospective hydrocarbon basins may be explored by 2030 and it is possible that these basins are not commercial -Weak investment environment due to law and order, land tenure political dynamics, etc
	2.2	Market PNG as a highly prospective country for the petroleum industry				-PNG needs to expand its understanding of its sedimentary basins to properly market its prospects to the outside world -Marketing efforts will depend on a positive overall investment climate for PNG
Equitable distribution of benefits to landowners as well as to the broader economy	3.1	2 Economic Corridors (PRAEC & Border Corridor)	2 new Economic Corridors (South Coast Corridor & Enga Sepik Corridor)	2 new Economic Corridors (Central Corridor and Madang-Baiyer-Karamui-Gulf Corridor)	3 Economic Corridor (Momase and Solomons and Free Zone Corridors)	-Landowner issues -Legal or confrontational opposition -Greed, corruption and misrepresentation amongst landowners, may prevent equitable distribution of project development benefits amongst landowners and nationally.
	3.2	Fund district development plans				
Sustainable investment of revenues to benefit current and future generations	4.1	A Future Generations Fund	A Future Generations Fund	A Future Generation Fund		-Funds are susceptible to misuse by politicians and bureaucrats, if not protected by appropriate laws or policies -Investment risks of funds such as world economic crises -Funds can be vague and unclear on who the beneficiaries are and when and how these funds will be used -Political manipulation of fund can be possible if PNG politics becomes volatile and unstable
	4.2	Establish a Sovereign Wealth Fund				As above
	4.3	Funds for the MTDPs				
Government obligations well managed	5	Pay MOAs, LNG allocations & SSG				

Responsibility	Department of Petroleum and Energy						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding options
	220.1	223.1	188.1	375.1	425.1	1431.5	GoPNG

## **4.5 Minerals**

**Goal: Double mineral exports, while minimising the adverse impacts on the environment**

### ***Introduction***

The minerals sector has been the key source of exports and revenue to the Government over the years. There remains considerable mining potential so the sector will continue to play a critical role in PNG's development.

### ***MTDP 2011-2015***

The first MTDP will be about setting the right foundation for subsequent MTDPs to successfully build on. In the minerals sector a number of strategies will be implemented. Capacity building of key stakeholder agencies in the sector will be critical. This will involve recruitment and training of staff and purchasing and installing technical equipment so as to effectively administer and enforce government policies and regulations in the industry. Reviews of the mineral policies will also be necessary to better address landowner participation in the industry. In addition, the Government's environment policies and regulations will be reviewed to capture relocation, sea-bed mining and downstream processing matters.

Moreover Economic Corridors will be located in the poorest regions of PNG with the aim of extending the benefits of development to the most disadvantaged regions. They will be located where the gains are likely to be greatest, particularly where land is fertile or where the three modes of transport – air, sea and land – are able to come together to provide efficient trade hubs.

There are currently nine mines in operation: Tolukuma, Ok Tedi, Porgera, Kainantu, Simberi, Ramu Nickel, Lihir, Mt. Sinivit and Hidden Valley. Those that will commence production and contribute resources within this MTDP period are Ramu Nickel and Hidden Valley. However, efficient development of the minerals industry hinges largely on the provision of key infrastructure such as roads.

### ***Building on MTDP 2011-2015***

Subsequent MTDPs will build from sectoral strategies implemented in the first MTDP. These include capacity strengthening of key state institutions that administer and enforce regulations in the industry. It will also be necessary to ensure compliance with national environmental and other relevant policies to develop an industry that is sustainable. In order to encourage further exploration, regulatory procedures will be simplified to reduce costs. The degree of exploration activities will determine future production.

Proper stakeholder consultation will be critical to review existing environmental policies. This is to ensure all parties take ownership of proposed changes that capture current development issues. However, the underlying objective is to protect the environment from damages caused by the industry, for example from tailings disposal.

### ***Challenges in implementation***

Some major challenges to implementing mineral sector strategies are poor governance and volatile global mineral prices. Resources coming from the mineral sector will need to be used better by making productive nation building investments through the PNGDSP to realise broad-based growth. The possibility of lower prices of minerals in the future would possibly discourage further exploration and also reduce the profitability and viability of existing and planned mines.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Double mineral exports, while minimising the adverse impact on the environment	Mineral exports		K9.2 billion in 2007	Unable to predict	Unable to predict	Unable to predict	At least K18 billion
	Exploration expenditure		K213 million in 2008	K218 million	K200 million	K180 million	Sufficient exploration to reach production target.
	Exploration licenses		241 exploration licenses in 2009	250 exploration licenses	370 exploration licenses	400 exploration licenses	Ongoing high level of exploration activity
	Number of mine sites		9 in operation, 4 under development, 11 at advanced stage of exploration	12 in operation, 4 under development and 10 at advanced stage of exploration	15 in operation, 5 under development and 8 at advanced stage of exploration	18 in operation, 2 under development and 5 at advanced stage of exploration	Around 20 in operation
	Government revenues from minerals projects		K2.2 billion in 2007	Unable to predict	Unable to predict	Unable to predict	At least K3 billion a year
	Sustainable deep sea mining in PNG waters		nil	1 project in operation	2 projects in operation	3 projects in operation	A number of projects to have commenced
<b>Lead government agency</b>	Mineral Resource Authority and Department of Mineral Policy and Geo-hazards Management						

No.	Sector strategy
1	Strengthen institutional capacity to administer and enforce regulations
2	Provide regulatory and policy framework that is simple, effective, has low industry compliance costs, protects the environment and ensures landowners and all stakeholders benefit
3	Facilitate further exploration by simplifying and speeding up regulatory procedures
4	Promote an integrated approach to mine development, rather than an enclave approach, with the use of Economic Corridor zones to direct revenues
5	Develop and review appropriate mechanisms to address landowners' participation and industry issues
6	Pursue strategies for manufacturing and SMEs that encourage downstream processing of minerals to add value to PNG's mineral as well as supplying the gold bullion needs of PNG

DSP 2030 deliverables	No.	2011-15	2016-2020	2021-2025	2026-2030	Risks and assumptions
DMPGH and MRA capacity to be improved.	1.1	More staff recruited and trained.	Continuous training of staff to meet high class standards.	Up-to-date training including overseas training.	Continuous and up-to-date training.	Poor governance.
	1.2	Technical equipment purchased and installed	State of the art equipment purchased and installed	Up-to-date equipment purchased and installed	Up-to-date equipment purchased and installed.	
Regulatory and policy frameworks provided	2.1	All regulatory and policy frameworks reviewed.	Frameworks in place and used by all stakeholders	Review of frameworks.	Review of frameworks.	Poor governance.
High level of exploration	3.1	Regulations simplified.	Increase in exploration.	Ongoing exploration	Ongoing exploration	Poor governance
Landowners' participation addressed	4.1	Acts and frameworks for landowner issues.	Continuous involvement of landowner participation.	Continuous involvement of landowner participation.	Continuous involvement of landowner participation.	Poor governance
Use of Economic Corridors to direct mining revenues	5.1	Economic Corridors set up and working closely with the mining industry.	Mineral revenues used in Economic Corridors to bring development.	Increased and sustained development	Increased and sustained development	Poor governance
Downstream processing	6.1	Policy developed.	Processing starts	Policy reviewed.	Policy reviewed.	Poor governance
Government obligations well managed	1.3	MOAs & SSG obligations met effectively				

Responsibility	Department of Mineral Policy and Geo-Hazards Management							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
	1.3	33	37	62	70	70	272	GoPNG
<b>Total</b>		<b>43.6</b>	<b>47.5</b>	<b>72.5</b>	<b>80.5</b>	<b>80.5</b>	<b>324.5</b>	

## 4.6 Non-Agricultural informal sector

**Goal:** To promote the non-agricultural informal sector (urban informal sector) to secure a livelihood for indigenous entrepreneurs and to encourage progression into the formal sector, thus alleviating illicit activities that demean moral values and create disharmony in the major cities and townships

### *Introduction*

PNG's economy is predominantly agricultural with this sector contributing immensely through export revenue, generating income and employment opportunities, and sustaining rural livelihoods through subsistence farming. However, a rapidly increasing population has led to a growing number of Papua New Guineans who are becoming landless and are faced with fewer income earning opportunities in this sector. The non-agricultural informal sector (NAIS) provides the opportunity for people to venture into other informal ways of earning income and thus promote development of informal micro-enterprises. The informal micro-enterprise business concept is a step towards progression from an informal business activity to a commercially viable formal business.

### *MTDP 2011-2015*

The first MTDP introduces the strategies for development of the non-agricultural informal sector as a measure against the rise in social ills such as crime and prostitution. Lack of accessibility to agricultural land has resulted in limited opportunities for employment and wealth creation and for overall improvement in the quality of life for Papua New Guineans.

The key strategy of the Government in facilitating entrepreneurial micro-enterprise activities is to ensure that the informal sector is an effective livelihood security for the landless while at the same time providing the basis for the development of a vibrant private sector. Hence, within the period 2011-2015, the first MTDP directs responsible agencies to set the legislative and policy framework for the industry to flourish and to enhance the capacity of the indigenous population engaged in this industry. Specifically, appropriate training programs will be set up for facilitating development of the informal sector and cottage industries. In addition existing policies will be improved and developed, including the Informal Sector Policy administered by the Department for Community Development (DfCD), and the Small and Medium Enterprises Policy implemented by the Small Business Development Corporation (SBDC). To facilitate and foster growth of the sector, specific targets and measurable indicators will be identified to monitor implementation progress of the informal industry.

### *Building on MTDP 2011-2015*

Through the strategies identified by the Government for the non-agricultural informal sector, subsequent MTDPs will build on improving capacity and developing a specific credit line with agencies such as the National Development Bank (NDB) to promote growth of micro-enterprises and establish information and public assistance programs in the various locations across PNG. The subsequent MTDPs will ensure these programs and other incentives are further rolled out, paving ways for progression from an informal business to a commercially viable formal SME.

### *Challenges in implementation*

Funding inconsistency and ineffective implementation will be important challenges in progressing informal business activity into commercially viable formal businesses. Lack of awareness and marketing will also play a major role in the underdevelopment of this sector. Government regulations can also play a role in inhibiting this sector.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Promotion of the non-agricultural informal sector to secure a livelihood for indigenous entrepreneurs and to encourage progression into the formal sector.	Number of urban/rural people engaged in informal sector						
	Number of people with access to financial credit						
	Number of graduates from Informal Sector training programs						
	Number of market facilities						
Lead government department	Department for Community Development						

No.	Sector strategy
1	Develop credit line with the National Development Bank /SBDC
2	Develop appropriate training programs for facilitating development of the informal sector and cottage industries
3	Establishment of information and public assistance programs across PNG
4	Development of policy to facilitate and foster growth of the sector
5	Establish at least one well resourced market for informal sector in every district.

DSP 2030 deliverables	No.	2011	2012	2013	2014	2015	2011-2015	Risks and assumptions
Number of credit facilities established across the 23 provinces	1.1							
Number of training programs held in 23 provinces	2.1							
District markets	5.1	20	20				40	

Responsibility	Department for Community Development							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
	1	22	22	2	2	2	50	GoPNG

## **4.7 Small and medium enterprises**

**Goal: Develop and promote small and medium enterprises**

### ***Introduction***

Economic growth based on extracting natural resources is unsustainable in the longer term. Therefore there needs to be a strong focus on developing other sectors of the economy through the private sector and small and medium enterprises (SME) in particular. SMEs are vital if PNG is to realise development that is broad-based and sustainable. SMEs generate enormous benefits at many levels, such as jobs and wealth creation. They also help to promote self-reliance and reduce poverty by supporting sustainable livelihoods.

The development of SMEs in PNG has not been robust due to policy, institutional, environmental and structural impediments. In promoting SMEs, the Government has to create an enabling environment and improve support services. Currently, the number of SMEs in PNG, which mostly comprises of tucker shops (48%), is 16,500. None of these SMEs unfortunately are involved in overseas operations.

### ***MTDP 2011-2015***

The first MTDP 2011-2015 will set the policy and legislative framework to establish an enabling environment for SMEs to prosper. It will focus on reviewing and improving the existing SBDC Act 1990, SME Policy 1998 and trade policies with a view to facilitate an export driven focus and SME promotion. In addition to developing robust SME policies and establishing the legislative framework to guide the growth of SMEs, the MTDP 2011-2015 also aims to build capacity through existing training programs such as “Know About Business” (KAB), “Start, Improve your Business” (SIYB), SIC and “Women in Textile Training.” Compared to baseline data of 16,500 SMEs employing 82,500 people, the first MTDP has a set target of achieving 21,000 SMEs employing 105,000 people by 2015, with 3 SMEs operating overseas by 2015.

The SBDC is the Government’s support agency under the coordination of the Department of Commerce and Industry (DCI) in promoting SME development.

### ***Building on MTDP 2011-2015***

Subsequent MTDPs will focus on achieving the targets set for 2015 and onwards with the sector strategies identified in the PNGDSP 2010-2030 to promote SME development. They will play a vital role in improving support services for SMEs, drawing from the deliverables outlined in the first MTDP 2011-2015. Under the existing business development programs of SBDC, successive MTDPs will continue to improve SMEs access to credit finance, with the expansion of microfinance facilities across the provinces. There will also be increased marketing and promotion of SMEs towards a competitive industry that is able to participate in a globally challenging environment.

Subsequent MTDPs will enable creation of jobs, wealth and sustainable livelihoods in reducing poverty and promoting self-reliance, thus ultimately achieving the overarching goal of the PNGDSP 2010-2030 which is “a quality of life for all Papua New Guineans”.

### ***Challenges in implementation***

There are several constraints that will impinge on development and growth of SMEs. These are identified as:

- lack of human resource capacity and development;
- lack of information dissemination and knowledge of business opportunities;
- lack of access to markets and financial credit;
- lack of financial and appropriate technological resources;
- lack of adequate infrastructure;
- policy incoherence; and
- complexity of administrative procedures.



DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Develop and promote small and medium enterprises (SMEs)	Number of SMEs	WB Messer Hamid Alive and Max Aitker presentation on SME risk share facilitator project	16,500	21,000	30,000	45,000	Four fold increase at least
	Employment in SMEs	As above	82,500	105,000	150,000	225,000	Four fold increase at least
	PNG SMEs with overseas operations		Nil	3	5	10	A significant number
Lead government department	Department of Commerce and Industry (DCI), Small Business Development Corporation (SBDC)						

No.	Sector Strategy
1	Expand microfinance banking services
2	Reduce bureaucratic red tape to simplify processes in establishing and maintaining a business
3	Establish SME training institute that modernises businesses and develops skills for a successful SME
4	Facilitate transfer, adaptation, and development of relevant technologies through research and promote partnerships with foreign businesses
5	Encourage the development of designated facilities for SMEs to sell and market their products to the public and to tourists
6	Develop plans and policies to encourage SMEs to focus on export markets

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Microfinance banks established in 23 provinces	1.1	-4 banks established -Facilitate and assist indigenous SME to establish micro bank	-10 banks established -Facilitate and assist indigenous SME to establish micro bank	-20 banks established -Facilitate and assist indigenous SME to establish micro bank	-23 banks established Facilitate and assist indigenous SME to establish micro bank	-Government/political support -Sufficient funding available -Land and resources available
Number of skilled personnel employed in Microfinance Bank	1.2	48	60	80	96	-Government/political support -Sufficient funding available -Skilled labour and resources available
Low cost user-friendly mechanism policy developed to assist in establishing and maintaining a business, including foreign direct investment (FDI)	2.1	Partner with IPA, Labour Industrial and Immigration and customers to reduce time involved to promote both domestic SME & FDI	Partner with IPA, Labour Industrial and Immigration and customers to reduce time involved to promote both domestic SME & FDI	Partner with IPA, Labour Industrial and Immigration and customers to reduce time involved to promote both domestic SME & FDI	Partner with IPA, Labour Industrial and Immigration and customers to reduce time involved to promote both domestic SME & FDI	-Government/political support -Sufficient funding available -Skilled labour and resources available
Number of SME training centres established	3.1	2	5	7	10	-Government/political support -Sufficient funding available
Number of SME specialised trainers engaged in training	3.2	5	10	15	20	-Government/political support -Sufficient funding available
Number of graduates from SME training	3.3	500	1500	3000	5000	-Government/political support -Sufficient funding available
Number of certified trainers in 23 provinces	3.4		180	200	300	-Government/political support -Sufficient funding available

Master trainers per region	3.5		6 certified international master trainers	8 certified international master trainers	10 certified international master trainers	-Government/political support -Sufficient funding available
Coordinating body developed to coordinate research centres in the field of SME	4.1	4	4	4	4	-Government/political support -Sufficient funding available
Number of international expositions or trade fairs conducted to promote foreign investment	4.2	1 – Co-host with IPA	2 Co-host with IPA	2 – Co-host with IPA	3 Co-host with IPA	-Government/political support -Sufficient funding available
Number of SME market/trade centres established to facilitate production and marketing and encourage local participation	5.1	1	3	4	4	-Government/political support -Sufficient funding available
Number of advertisements through local media and internet on SMEs	5.2	10	20	20	10	-Government/political support -Sufficient funding available
Review existing SME policy and improve on existing policy to facilitate export driven focus	6.1	Amendment of SBDC Act 1990 and simultaneously review SME Policy of 1998	Improve existing trade policy and other related policy to facilitate exports	Review other related policy on SME sub sector and develop conducive policies for SME promotions	2	-Government/political support -Sufficient funding available

<b>Responsibility</b>	<b>Department of Commerce and Industry, and Small Business Development Corporation</b>							
<b>Estimated inputs (K million)</b>	<b>No.</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2011-2015</b>	<b>Funding option(s)</b>
		1	1	1	1	1	<b>5</b>	GoPNG/Donors

## **4.8 Manufacturing sector**

**Goal:** To achieve a competitive manufacturing sector through the development of higher value chains and appropriate technologies to manufacturing that will lead to the generation of higher income and employment

### ***Introduction***

Manufacturing will be a key sector in transforming the economy from primary industry into higher value-added downstream production. The dominant manufactured export commodities are palm oil, copra oil, processed timber and refined petroleum products, while processed tuna continues to emerge as another growing export industry. A key focus in the manufacturing sector will be to convert large primary agricultural and resource based exports into processed products. This will, in turn, generate higher incomes and employment opportunities for the bulk of Papua New Guineans.

### ***MTDP 2011-2015***

The key strategy is to encourage and increase exports in the manufacturing sector to facilitate growth and diversification. An export focus is vital because the global economy offers an incomparably larger market than the domestic economy, allowing local producers to specialise in those industries where they are most adept. Central to achieving increased exports will be addressing the supply-side constraints such as transport and energy infrastructure. Transforming the sector from current light manufacturing industries into higher value production can be achieved by articulating proper backward and forward linkages and adapting appropriate technologies. Also in the first MTDP, land and law and order issues will be addressed as these will lower the cost of business in PNG. It will otherwise be necessary to remove regulatory constraints, particularly for export-oriented businesses.

### ***Building on MTDP 2011-2015***

The Government will ensure that a conducive business and investment environment is created and sustained to enable and encourage more growth of manufacturing and other industries. Joint ventures between local and foreign investors will also be promoted as a means of combining local knowledge with foreign technology, capacity, and market linkages so that business partnerships will be more successful and local capacity will be improved.

### ***Challenges in implementation***

Lack of funding is a serious concern as this may cause delays in implementing the strategies to achieve the key deliverables for this sector. Apart from funding, shortage of necessary entrepreneur skills will limit the ability of many people to participate in the industry. It is thus necessary for the Government to provide more opportunities for people to acquire these skills.

Climate change could become a major challenge. The El Nino climate pattern predicted for 2012 would alter the breeding cycle of tuna which would impact upon production of processed tuna. Exported manufactured goods are subject to fluctuations in global prices posing a challenge and at times an impediment for expansion of the manufacturing sector.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
A competitive manufacturing sector through the development of higher value chains and appropriate technologies that will lead to the generation of higher income and employment.	Value of manufacturing production	DCI	K4 billion (2009)		25%		K12billion in 2009 prices
	Value of manufacturing exports	DCI	K1.4 billion (2009)				K5 billion
	Manufacturing – foreign equity	DCI	K382 million (2007)				Triple the current investment
	Employment in manufacturing	DCI	38,000 (2009)				Triple employment to 114,000
Lead government department	Department of Commerce and Industry (DCI), Industrial Centre Development Corporation (ICDC)						

No.	DCI strategy
1	Promote export orientation in manufacturing industries
2	PNG to be a world tuna capital and leader in related marine based products (see part 4.2)
3	Attract foreign investment in PNG manufacturing, particularly through joint ventures
4	Remove inefficiencies in regulation and otherwise ensure low business costs in PNG
5	Facilitate the expansion of a strong industrial base through an integrated manufacturing industry

DSP deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Treble the real value of manufacturing exports	1	–Initiate PNG export incentive award for PNG owned manufacturers that exports over 50% of output. –Implement CODEX food safety and fair trade standards for processed foods. –Facilitate organic certification in processed food manufacturing to increase export demand	–Trade missions to key destinations for PNG exports –Commission research into marketing of products	-	-	
PNG to be a leader in marine products with the Pacific Marine Industrial Zone (PMIZ)	2	–Construction and installation of physical infrastructure (phase 1) –Phase two of the project to be completed, ready for operation	PMIZ in full operation attracting investment	-	-	–Social problems (HIV/AIDS, etc), –High red tape restrictions
Encourage joint ventures	3	Provide incentives for new foreign manufacturing businesses to form joint venture with PNG businesses	-	-	-	– impediments in access to land
Provide a low cost environment for business to operate	4	–Coordinate government actions to improve enforcement of contracts, improve land administration, and reduce red tape –Survey manufacturers to identify regulatory impediments or costs and use results to prioritise further Government action.	-	-	-	
Facilitate an industrial base through integrated manufacturing networks	5	Road and other transport networks, particularly in Economic Corridors will connect primary inputs to factories and will link industry to export markets	-	-	-	

Responsibility	Department of Commerce and Industry (DCI), Industrial Centre Development Corporation (ICDC)								
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options	
	1	1.1	1.1	1.0	1.0	1.0	5.2	GoPNG	
	2	Costed under fisheries sector							GoPNG/Donor
	3	0.1	0.1	0.2	0.2	0.2	0.8	GoPNG	
	4	0.8	0.8	0.8	0.8	0.8	4.0	GoPNG	
	5	Costed under transport sector							GoPNG
<b>Total</b>		<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>10</b>		

## 4.9 Tourism sector

**Goal: Build a strong, vibrant, world class tourism sector**

### ***Introduction***

Tourism is one of the fastest growing industries globally as it plays a major role in increasing the wealth of nations. It is an important broad-based sector for developing countries like PNG since it can provide more income and employment opportunities which, in turn, can improve the living standards for many people. This broad-based sector can contribute valuable foreign exchange earnings to the direct benefit of a broad spectrum of people in the community.

### ***MTDP 2011-2015***

PNG has enormous unexplored tourism potential compared to many countries, including our South Pacific neighbours. Despite this, the number of tourists visiting the country has always been much lower than what would be expected. PNG's share of the regional tourist market is very small at only 5 per cent of total arrivals, and less than 2 per cent of the holiday market compared to neighbouring island nations.

Given this scenario, the MTDP 2011–2015 will initiate a process of transforming PNG tourism into a growing and sustainable industry by 2030. This will involve creating an enabling environment through the formulation of key strategies like developing human resources, promoting institutions and industry partnership, building economic and social infrastructure and importantly, marketing PNG as a tourist destination. Expansion of the opportunities within these market segments will be a critical component of the development of the sector. The tourism sector will need to be developed cost effectively and within a safe and secure environment as it is a highly competitive international industry.

Development of the tourism sector in PNG will generate many benefits to both the rural and urban areas of the country. Some of these benefits include:

- higher employment opportunities;
- income generation activities which will lead to a reduction in poverty levels and in law and order problems;
- a decline in rural-urban migration as rural economies become developed through tourism and become part of the mainstream economy;
- a sustainable alternative which contributes to the management and preservation of PNG's natural resources;
- contributing to growth of sectors like agriculture and fishing that provide inputs to tourism; and
- direct and indirect tax revenue to government.

### ***Building on MTDP 2011-2015***

Addressing the supply side constraints in this MTDP's key enablers will pave the way for a dynamic tourism industry in PNG. Before any major marketing and road-show initiatives in the international arena for selling PNG as a tourist destination, key investment in transport infrastructure, law and order, utilities, skilled manpower, and other complementing services are to be addressed. This is to ensure the tourism sector in PNG has the capacity and a competitive advantage. Cost effective tour packages with upgraded maintenance of infrastructure and transport will help to increase market demand and improve visitor satisfaction levels.

Importantly, the MTDP will strengthen the capacity of human integral development through facilitating training and quality education programs which will meet industry needs, improve skill levels and create greater awareness of the benefits of tourism.

Subsequent MTDPs will focus on the transformation of the trend set by the first MTDP for a more developed and sustainable tourism industry over the next 20 years.

### ***Challenges in implementation***

First and foremost is the challenge of how to deal with law and order problems, energy and land issues, and to improve the image of PNG internationally. Transport and accommodation are core infrastructure needs of tourists. Some of the key infrastructures and facilities such as airports, roads, wharves and water are in need of significant upgrading to match international standards. Without addressing these constraints tourist numbers coming into PNG will continue to be low.

DSP sector goal	Indicator	Source	Baseline (2009)	2015 target	2020 target	2025 target	2030 DSP target
Increase the overall economic value of tourism to the nation by nearly doubling the number of tourists on holiday in PNG every five years and maximising the sustainable tourism growth for the social and environmental benefit of Papua New Guineans.	Number of foreign visitors	Arrival cards (Immigration)	125,000	240,000	450,000	850,000	1,500,000
	Total tourism receipts	Visitor Survey (sampling method)	K1.7 billion	K3 billion	K5 billion	K9 billion	K13 billion
	Employment	TPA Research & Survey	13,500 jobs (skilled, semi-skilled)	25,000	45,000	70,000	120,000
Lead government department	PNG Tourism Promotion Authority						

No.	Sector strategy
1	MARKETING: Increase tourism demand by raising market awareness of PNG as a destination and increasing product information and distribution.
2	PRODUCT DEVELOPMENT & INVESTMENT: Encourage investment in new and existing tourism products, that meet market needs, by increasing sector competitiveness and industry standards and profitability
3	TRANSPORT and INFRASTRUCTURE: Improve competitiveness and standards of transport and infrastructure, to increase market demand and improve visitor satisfaction levels.
4	HUMAN RESOURCE DEVELOPMENT: Facilitate training and quality education programs to meet industry needs, improve skill levels and create awareness of the benefits of tourism.
5	INSTITUTIONS & INDUSTRY PARTNERSHIP: Develop institutional structures and capacity within the public and private sector to facilitate tourism development at a national and provincial level.

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
MARKETING THE DESTINATION: Increase tourism demand by raising market awareness of PNG as a destination and increasing product information and distribution.	1	<ul style="list-style-type: none"> <li>-Expanded annual market research program</li> <li>-Review/amend arrivals/departure card data</li> <li>-Review PNGTPA website and develop and implement internet marketing strategy</li> <li>-Build internet marketing capacity in the provinces</li> </ul>	<ul style="list-style-type: none"> <li>-Conduct external audit to review effectiveness of PNGTPA marketing activities</li> <li>-Review PNGTPA Act to reflect new functionality and structure</li> <li>-Review and revise legislation for functions of PNGTPA</li> <li>-Restructure PNGTPA: establish new separate marketing and policy &amp; planning bodies</li> </ul>	<ul style="list-style-type: none"> <li>-Prepare and sign MOUs with regional and international partners and undertake joint promotions.</li> <li>-Leverage global &amp; regional memberships with South Pacific Travel, PATA and WTO.</li> </ul>	<ul style="list-style-type: none"> <li>-Establish a special and sporting events unit</li> <li>-Establish a special events working group and prepare marketing strategy and incorporate into annual marketing program</li> </ul>	
PRODUCT DEVELOPMENT & INVESTMENT: Encourage investment in new and existing tourism products, which meet market needs, by increasing sector competitiveness and industry standards and profitability	2	<ul style="list-style-type: none"> <li>-Revise existing regulations in relation to tourism investment incentives</li> <li>-Review and revise legislation and regulations in relation to cruise ships</li> <li>-Review and revise legislation and regulations for pre-approved visa exemptions</li> <li>-Design community project components</li> <li>-Design standards system, pilot test and develop legislation &amp; regulations for accommodation sector</li> <li>-Undertake provincial training and awareness program</li> </ul>	Develop Provincial Tourism Plans	<ul style="list-style-type: none"> <li>-Develop criteria for funding tourism projects</li> <li>-Establish tourism conservation committee and hold annual forum</li> </ul>	<ul style="list-style-type: none"> <li>-Identify key sites for funding tourism projects</li> <li>-Develop processes for securing land for tourism development</li> </ul>	

TRANSPORT & INFRASTRUCTURE: Improve competitiveness and standards of transport and infrastructure, to increase market demand and improve visitor satisfaction levels.	3	<ul style="list-style-type: none"> <li>-Develop new market opportunities created by new air services</li> <li>-Implement Cruise Ship Strategy targeting potential new operators and introduce regulations to remove charges</li> <li>-Coordinate annual infrastructure maintenance plans with priorities identified in Provincial Tourism Plans</li> <li>-Review existing infrastructure and develop and implement upgrading program</li> </ul>	Provincial Authorities to develop maintenance program based on Provincial Tourism Plans	Enforce roadworthy regulations for tour operator vehicles and taxis		
HUMAN RESOURCE DEVELOPMENT: Facilitate training and quality education programs, which meet industry needs, improve skill levels and create awareness of the benefits of tourism.	4	<ul style="list-style-type: none"> <li>-Implement Tourism Training Needs Analysis &amp; HRD Plan</li> <li>-Establish Industry Advisory Committee (see below)</li> <li>-Review existing TVET course content</li> <li>-Review existing material and conduct train the trainer program for Provincial tourism officers</li> </ul>	<ul style="list-style-type: none"> <li>-Produce development program for existing technical institutions for facility upgrade and capacity building</li> <li>-Review outcomes of TNA and existing course content</li> <li>-Develop short technical courses</li> </ul>	Incorporate competency based training principles into all technical training		
INSTITUTIONS & INDUSTRY PARTNERSHIP: Develop institutional structures and capacity within the public and private sector to facilitate tourism development at a national and provincial level.	5	<ul style="list-style-type: none"> <li>-Revise the functions of the PNGTPA</li> <li>-Review PNGTPA Act and draft new legislation</li> <li>-Establish a Tourism Policy Secretariat.</li> <li>-Develop business plans for all registered tourism industry associations and fund key initiatives</li> </ul>	<ul style="list-style-type: none"> <li>-Design and implement a capacity building program in tourism development and marketing at a central and provincial agency level</li> <li>-Liaise with operators and create networks</li> <li>-Develop standard constitutions for Provincial Associations</li> </ul>	Establish a national Hotels Association	Establish a Tourism Police Concept	

Responsibility	Tourism Promotion Authority							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
		2	2	2	2	20	28	GoPNG

# Part 5

## Cross cutting sectors

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### 5.1 Population

**Goal:** Achieve a population growth rate that is sustainable for society, the economy and the environment

#### **Introduction**

In the last three decades, PNG's population growth rate was higher than the economic growth rate, resulting in serious resource implications for demographic investment (in health, education and employment creation etc). Although declining, fertility rates remain high by international standards resulting in a very broad-based age and sex structure with 40 per cent of the population under the age of 15. This means that there is a very young population that clearly has the potential to further grow. This young population is characterised by a median age of 19 years and a mean age at marriage of 23 years for males and 20 years for females. The median age is expected to increase over time as a result of increased life expectancy and a gradually decreasing fertility rate — resulting in a higher aged population and fewer births.

Mortality is decreasing but it remains at a high level. This has had a significant contribution to PNG's low life expectancy estimated to be 57 years. The maternal mortality ratio is very high at 733 per 100,000 live births, however, this is based on 1994 data. Most of these deaths are pregnancy-related, caused by unsupervised births and lack of access to reproductive services, high rates of illiteracy particularly in the remote areas of PNG, and lack of knowledge about contraceptives.

The increasing population also places increased pressure on PNG's environment with its rich natural resources including forestry and fisheries. In other parts of the country, particularly smaller islands, population growth is placing increasing pressure on the environment, calling for better environmental management.

Education for youths, as well as adults, will provide economic opportunities. Agriculture has the potential to grow in rural areas, while employment generation for the informal sector and small and medium enterprises is important for the urban sector. The increased labour force participation will play an important role in reducing fertility rates.

#### **MTDP 2011-2015**

The sector will depend entirely on the achievements of other key sectors that are implementing initiatives and programs over the next five years. The lead agencies in the sectors of health, education and community development, in collaboration with other agencies and partners, will implement programs that address fertility and mortality issues, whilst initiatives or programs in urban development and the Economic Corridors will attempt to address rural-urban migration and labour force participation.

Addressing issues that affect population growth and the quality of all citizens' lives is a reflection of PNG's commitment to achieve MDGs 4, 5 and 6. The broad sector strategies are related to the respective sector strategies of health, education and community development, which guide implementation of this sectors initiatives that aim to attain the following deliverables.

- Health: 100% health facilities with adequate medical supplies and equipment, upgrading of training institutions, increased family planning coverage – with outcomes of reduced mortality from preventable diseases and containment of the HIV/AIDS epidemic.
- Education: quality, primary and secondary curriculum, implemented and monitored and quality teacher education and training.
- Community development: adult literacy and entrepreneur skills development training and capacity enhancement program.
- Economic development: skills training for economic opportunities and investment in rural development and opportunities within the Economic Corridors to deliver increased labour force participation.

Moreover, given the focus of implementation over the next five years on capacity building, the respective sectors will depend entirely on the key enablers, in particular infrastructure, transport, land and education to



support interventions. The promotion of partnerships with the private sector, churches and non-governmental organisations in this case is fundamental.

### ***Building on MTDP 2011-2015***

Future plans will continue to build and enhance skills and capacity, rehabilitate and maintain old infrastructure, while at the same time construct new infrastructure and build capacity. Interventions by the key enablers over the next five years will pave the way to successful implementation to achieve the desired deliverables that will contribute to the achievement of the ultimate goal. Outcomes in 2030 will include reduced infant, child and maternal mortality, lower fertility for women and teenage girls resulting in smaller family size, and limited movement of people from the rural to urban centres. Reductions in fertility are expected to outweigh reductions in mortality resulting in a reduced rate of population growth.

These outcomes would be the result of improved road networks and connectivity, established and well equipped health and education facilities at all levels of government and communities, and a healthy and educated population able to make wise and responsible decisions to self-sustain and participate in economic activities.

### ***Challenges in implementation***

Investing in the key enablers over the next five years is crucial as this will accelerate progress across all other sectors in future plans. However, to further support effective implementation, sectoral liaison, coordination and collaboration must continue. Furthermore, issues on data limitations must also be addressed to ensure effective implementation and monitoring of the plans.

DSP sector goal	Indicator	Source	Baseline	2015 target	2030 DSP target
Achieve a population growth rate that is sustainable for society, the economy and the environment.	Population size	Census/DHS	5.2 million (2000)	7.3 million	9.8 million
	Population growth rate	Census/DHS	2.3% (2000)	2.2%	2.0%
	Total fertility rate	Census/DHS	4.4 children per woman (2006)	4.0 children per woman	3.4 children per woman
	Infant mortality rate	Census/DHS	57 deaths per 1000 live births (2006)	43 deaths per 1000 live births	17 deaths per 1000 live births
	Median age	Census	19 years (2000)	21 years	25 years
	Mean age at marriage	Census	Male: 23 years Female: 20 years	Male: 23 years Female: 20 years	Male: 27 years Female: 25 years
	Urban population	Census	13% (2000)	16%	Contained at 20%
	Dependency ratio	Census	0.73	0.69	0.61
Lead government department	Department of National Planning & Monitoring/Department of Health/Department of Education/Department for Community Development				

No.	Sector strategy
1	Enhancement of skills and capacity to equip the labour force
2	Strengthen and expand family planning and reproductive health services
3	Increase awareness to specific target populations at all levels on population issues, family planning and reproductive health
4	Improve and increase economic opportunities and conditions in the rural and the Economic Corridor areas to increase labour force participation
5	Integrate population issues and personal development into formal and informal education curriculum

DSP 2030 deliverable	No.	2011-15	2016-2020	2021-2025	2026-2030	Risks and assumptions
Institutionalise and build capacity on population	1.1	2 national counterpart officers recruited				Limited spaces and administrative bottlenecks
Integration of population issues into sectoral, provincial and district plans	2.1	23 provincial planners and 89 district administrators trained on integrating population issues into plans				Lack of government support and ownership

Responsibility	Department of National Planning & Monitoring/ Department of Health/Department of Education/Department for Community Development						
Estimated inputs (K million)	2011	2012	2013	2014	2015	2011-2015	Funding options
	1.509	1.509	1.700	1.750	1.850	8.318	UNFPA/GoPNG

## 5.2 Youth

**Goal:** A vibrant and productive youth population that has career opportunities, skills, good education, moral values and respect

### ***Introduction***

The PNG population has a youthful structure with 40 per cent aged 0-14, 20 per cent aged 15-24, and 16 per cent aged 25-34. In total, 76 per cent of the population is 34 years or younger. The recently revised National Youth Policy recognises that there are young people who are over 25 but still identified as “young people” and they maintain an active involvement in community youth activities. It must be recognised that the needs and issues of youth can vary considerably between the ages of 12 and 25 and between different life circumstances and locality. Young people are mobile; hence there is a trend of rural to urban migration of youths for reasons including: education and employment opportunities; an attraction to a different way of life; to remove themselves from the restrictions of their villages and from family obligations; abuse and violence; to access services; sports and recreation; and for pleasure. There are also young people who have been born in urban areas and raised in the city. They do not necessarily go to their family’s home villages or speak their parent’s native languages but speak PNG Tok Pisin and English. Youths also migrate from urban and rural areas to places where economic development is occurring, for example, around logging camps, mines, oil fields, and plantations.

Urban settlements have increased in size, and overcrowding and lack of services create vulnerability to communicable diseases. In settlement areas, large numbers of unemployed youths, without land or jobs, become gang members that engage in unlawful activities to earn a living, such as breaking and entering, hold ups, and shop lifting. There is a lack of educational and employment opportunities to meet the needs of young people and, as a result, poverty and unemployment are critical issues for the youth population in PNG. Moreover, young people find it difficult to access micro-finance schemes or small grants to assist them to get involved in sustainable income generation activities. Youth issues are a real threat and a challenge for the government vision of a happy, fair, wealthy and smart country by 2050. The youth are the future of PNG and the PNGDSP 2010-2030 focuses on nurturing young people so that they become agents of change in the society. The nurturing will start with families where parents take a serious role in caring for and responsibly bringing up their own offspring. Strategies for education, employment generation, crime control, and HIV/AIDS are all critical for improving the lives of young people today and in the future. In addition, sport and recreation activities need to be developed as discussed in section 5.15. Counselling programs through partnership with churches and NGOs are the way forward in creating social and spiritual opportunities for young people to identify their potential and their usefulness for positive living and advancement in life.

### ***MTDP 2011-2015***

To improve outcomes for youth, investment in education, particularly in the promotion of polytechnic programs, is paramount. Polytechnic programs will equip young people with the technical and entrepreneurial skills they require to effectively participate in the developing and vibrant PNG economy. The Government will also focus on recapitalising youth centres to provide an avenue for youth activities to be coordinated. Investment in sports and recreation, employment generation, culture and community programs through strong partnership with churches, NGOs and community based organisations are crucial mechanisms to transform the mindset of our youth population and to develop them to become vibrant and productive participants of society.

### ***Building on MTDP 2011-2015***

Future MTDPs will build upon progress in MTDP 2011-2015 and continue to invest in youth initiatives, including polytechnic training. Work will continue on development of youth skills training and personal development programs. Capacity building through the creation of training centres and facilities will act as a launch pad for increased youth participation in the future, contributing to the 2030 target. Effective investment in youths will bring about changes in their behaviour and attitudes whilst also contributing to significant economic gains in the form of employment, increased entrepreneurship, law and order, productivity and reliability of an educated healthy population.

### ***Challenges in implementation***

In order to realise positive change in youth development, effective prioritisation and sequencing of expenditure must take place. Setting the right foundation in MTDP 2011-2015 through sound investment in the key enablers is one way in which this can be done. Moreover, only by enhancing employment opportunities will our youth be able to be a truly productive and vibrant part of society.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
To have a vibrant and productive youth population that has career opportunities, skills, good education, moral values and respect.	Education for youths		500,000 youths in rural areas have never attended formal education	200,000 youths have never attended formal education			Secondary education for all youths including education through polytechnic courses
	Career for youths		80,000 youths leave school annually.	40% are employed			All youths leaving formal education are able to find work.
	Morals, crime and drugs		80% of crime is committed by youths.	15% reduction in the number of youths in crime			Youths committing crime falls by 55% and drugs and alcohol will be controlled
	Teenage pregnancies		13% of teenage girls have unwanted pregnancies.	8%	7%	6%	Less than 5%
Lead government department	Department of Community Development / Department of Education / Law and Justice Sector						

No.	Sector strategy
1	Increase programs to nurture and develop youths to become effective and become agents of change.
2	Increase youth enrolment in formal education and polytechnic trainings.
3	Increase opportunities for youth engagement in formal employment.
4	Enhance social and spiritual opportunities of youths.

DSP 2030 Deliverable	No.	2011-15	2016-2020	2021-2025	2026-2030	Risks and assumptions
Nurturing and personal development	1.1					Negative peer and social influences.
Formal education & polytechnic training	2.1					Limited spaces and administrative bottlenecks.
Youth employment	3.1					Limited job opportunities.
Social, sports and spiritual developments	4.1					Lack of government support

Responsibility	Department of Education / Department of Community Development/Law & Justice Sector							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options
		2	2	2	2	2	10	Churches, GoPNG

## 5.3 Gender

**Goal:** All citizens irrespective of gender will have equal opportunity to participate in and benefit from development of the country

### ***Introduction***

Gender refers to the socially determined roles and socially learned behaviour of both men and women in any given society. It refers to scripts people are socialised into and reflects the dimensions of power relations and status, roles and positions, access to and control over resources, and divisions of labour. Gender relations are undergoing considerable transformation with the advent of formal education, employment and the monetary economy. Women are assuming greater economic responsibility, as a matter of necessity in most cases, to supplement household incomes.

Tension and conflict seem to pervade gender relations and are often manifested in physical violence, most significantly between spouses. The high incidence of rape and other forms of sexual violence also stems from gender relations and how women are valued in society. Sexual suspicion and jealousies cloud gender relations and significantly impede women's ability to participate fully in economic development. Professional associations are constrained and women's advancement in the formal sector of employment and politics is restricted by sexual antagonism. Gender disparities are also manifested in the poor health of mothers and the high rate of maternal mortality, often due to preventable causes, as well as the high incidence of sexual and domestic violence directed at women. Efforts to achieve gender equity require a better understanding of the role of men as husbands and fathers. Young boys and men need positive role models to provide guidance and direction to meet the challenges of a society in transition.

Gender mainstreaming and gender responding planning and budgeting are critical to support many of the initiatives undertaken by the sector agencies, as well as those specific agencies and community based organisations directly dealing with women and the communities.

### ***MTDP 2011-2015***

Gender differentials in education, labour force participation, health morbidity and mortality still exist in PNG. The Government acknowledges that gender based violence is widespread and it is an impediment to effective progression towards achievement of the PNGDSP and Vision 2050. Gender based violence has clear links with other factors such as poverty, HIV/AIDS, land and property rights, race/ethnicity, age and sexual orientation. As such, initiatives over the next five years will continue to acknowledge and support protective shelters for women and children — shelters established and managed by churches and CSOs as implementing partners of the Government. Moreover, to deal with victims of gender based violence, specialised training is essential for police, welfare officers, courts and health officials.

### ***Building on MTDP 2011-2015***

To fully realise the PNGDSP 2010-2030 goal, gender mainstreaming and specific programs for women in urban and rural areas will continue to be a focus of the Government across all MTDPs. Moreover, once the enabling environment has been set and resources are more readily available, new and innovative programs that raise awareness of the roles of women and men in developing and promoting equal access to resources, information, opportunities and other services that support gender equality will receive increased attention.

### ***Challenges in implementation***

Gender inequality is a severe threat to future development in PNG, and PNG's gender culture in particular, places women in a disadvantaged position. This applies in particular to gender based violence (rape and spousal abuse) which is common in PNG. As such, for effective implementation of gender-based interventions under MTDP 2011-2015, PNG's gender culture must continue to be unpacked and interventions must be sensitive to PNG ways.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
All citizens irrespective of gender will have equal opportunity to participate in and benefit from development of the country	Gender Development Index (GDI)	UNDP	0.54	By 2015, the GDI will increase to 0.60	By 2020, the GDI will increase to 0.65	By 2025, the GDI will increase to 0.70	By 2030, the GDI will increase to 0.75
	Gender Empowerment Index (GEI)	DPM /Labour	0.15	By 2015, the GEI will increase to 0.25	By 2020, the GEI will increase to 0.35	By 2025, GEI will increase to 0.45	By 2030, GEI will increase to 0.60
	Gender parity ratio of students in primary, secondary and tertiary education	NDOE OHE	Schools = 0.9; Tertiary = 0.6	Reduce gender disparity at schools to 0.93, and in tertiary education to 0.7	Reduce gender disparity at schools to 0.95, and in tertiary education to 0.8	Reduce gender disparity at schools to 0.98, and in tertiary education to 0.9	Eliminate gender disparity at schools and in tertiary education so that the gender parity ratio is 1.0 in both.
	Gender parity ratio of literate 15-24 year old persons	Census, NDOE	0.91	Reduce gender parity ratio of literate 15-24 year olds to 0.80	Reduce gender parity ratio of literate 15-24 year olds to 0.70	Reduce gender parity ratio of literate 15-24 year olds to 0.60	Reduce gender parity ratio of literate 15-24 year olds to 0.50
	Gender parity ratio of literate adults (aged 15 and over)	Census, NDOE	0.80	Reduce gender parity ratio of literate adults to 0.70	Reduce gender parity ratio of literate adults to 0.60	Reduce gender parity ratio of literate adults to 0.50	Reduce gender parity ratio of literate adults to 0.40
	Women as a proportion (%) of persons aged 10 and over in wage employment	Census, DL&IR	29%	30%	34%	37%	45%
	Women as a proportion (%) of persons aged 10 and over with cash income from any source	Census	12%	20%	25%	30%	40%
	Proportion (%) of seats held by women in national parliament		0.9%	15%	20%	25%	33%
	Number of reported cases of domestic violence per 100,000 population in a given year	Crime statistics, Police or HIES	forthcoming				
Lead government department	Department of Family and Community Development and Department of National Planning & Monitoring						

No.	Sector strategy
1	Achieve equal access to education for all males and females
2	Increase the rate of functional literacy among girls and women
3	Increase women's access to economic opportunities and awareness of their economic rights
4	Enhancement of sustainable access of women to capital, market, information, technology and technical assistance
5	Gender mainstreaming in the bureaucracy, legislation and judicial system
6	Ensure equal access to and full participation in power structure and decision-making
7	Prevent and eliminate violence against women and children by strengthening legislation on family welfare, child and women protection

DSP 2030 deliverables/ interventions	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Implement the entrepreneur skills development training and capacity enhancement programs for women in all districts	3.1 3.2	50-100 entrepreneur skills development training courses conducted in 10 districts. 100-300 women entrepreneurs are identified and supported.	150-200 entrepreneur skills development training courses conducted in 20 districts. 300-500 women entrepreneurs are identified and supported.	250-300 entrepreneur skills development training courses conducted in 30 districts. 500-700 women entrepreneurs are identified and supported.	350-400 entrepreneur skills development training courses conducted in 40 districts. 700-1000 women entrepreneurs are identified and supported.	Implement programs
Develop women's political awareness programs before election	4.1	10,000-15,000 IEC materials on women's political participation are printed and disseminated	8,000-10,000 IEC materials on women's political participation are printed and disseminated	5,000-7,000 IEC materials on women's political participation are printed and disseminated	2,000-5,000 IEC materials on women's political participation are printed and disseminated	Secure funds
Conduct several gender sensitivity programs in the bureaucracy, legislation and judicial systems	4.1	20-30% of public servants are gender sensitised.	30-40% of public servants are gender sensitised.	40-50% of public servants are gender sensitised.	50-70% of public servants are gender sensitised.	Implement programs and secure funds
Produce and disseminate a number of gender sensitivity communication awareness materials	4.1	10,000-15,000 IEC materials on gender produced and disseminated.	8,000- 10,000 IEC materials on gender produced and disseminated.	5,000- 7,000 IEC materials on gender produced and disseminated.	2,000- 5,000 IEC materials on gender produced and disseminated.	Secure funds
Protective shelters established for women and children survivors of abuse	5.1	2-4 safe houses established	4-6 safe houses established	6-8 safe houses established	8-10 safe houses established	Secure funds
Police, welfare/CD officers and health officials trained to respond to gender based violence (GBV)	5.1	200-300 concerned officers trained to respond to GBV	300-500 concerned officers trained to respond to GBV	500-700 concerned officers trained to respond to GBV	700-1000 concerned officers trained to respond to GBV	Secure funds

Responsibility	Department for Community Development, Office for Development of Women, Department of Education,							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options
	3.1/3.2	2	2	2	2	2	10	GoPNG/Donors
	4.1	2	2	2	3	2	11	GoPNG/Donors
	5.1	2	3	3	3	3	14	GoPNG/Donors
<b>Total:</b>		<b>6</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>7</b>	<b>35</b>	

## 5.4 HIV/AIDS

**Goal: A healthy population free from sexually transmissible infections and HIV/AIDS threats**

### ***Introduction***

By the end of 2007, an estimated 5,995 people had died of AIDS related illnesses and 3,730 children had been orphaned. Based on the 2007 estimation report on the HIV epidemic in PNG, the national HIV prevalence among adults was estimated to be 1.61 per cent. At the end of 2008 there were an estimated 76,665 people living with HIV in PNG. Forty per cent of all reported cases of HIV infections are accounted for by males and 60 per cent for females. The median age for those diagnosed with HIV was 27 years for females and 33 for males. Seven provinces connected by the highlands highway accounted for approximately 94 per cent of all new cases confirmed in 2008.

Currently there is no biological surveillance in place for monitoring the epidemic among sex workers, homosexual men and higher risk groups like workers in economic enclaves. Furthermore, there is still a lack of quality epidemiological data to guide the planning of the national response.

HIV transmission in PNG is heightened by early sexual activity often in situations of coercion and abuse; multiple and concurrent sexual partnerships including polygamy, extramarital sexual partnerships and inter-generational sex, the exchange of sex for cash, goods and services; low and inconsistent condom use, high levels of sexual violence and rape, mobility, and the use of penile inserts and modifications.

The total number of sexually transmitted infection (STI) cases reported, which are known cofactors in HIV transmission, increased from 21,213 in 2000 to 30,535 in 2008, representing a growth of 44 per cent.

### ***MTDP 2011-2015***

Under MTDP 2011-2015, interventions will focus on strengthening systems, in particular the establishment of a well functioning monitoring, surveillance and evaluation system, effective coordination of all stakeholders, prevention, counselling, testing, treatment, care and support.

Effective coordination of efforts to fight HIV/AIDS under MTDP 2011-2015 will take place under the leadership of the National AIDS Council Secretariat (NACS). In particular, NACS will work towards strengthening collaboration and coordination within and across government, NGOs, CBOs, and donors in both the delivery of services and in the development and use of the monitoring, surveillance and evaluation system.

Alongside effective coordination, equipping HIV/AIDS and health centres with sufficient supplies for the treatment, care and support of those infected with HIV/AIDS will be a focus for the coming years, with efforts increasing subject to financing. Prevention efforts under MTDP 2011-2015 will include the provision of information and education in high schools, youth programs, national events and government departments and agencies.

### ***Building on MTDP 2011-2015***

Beyond 2015, MTDPs will upscale services, awareness, education and training activities. In particular in the later MTDPs the monitoring, surveillance and evaluation system will be rolled out to an expanding number of provinces, strengthening the knowledge on the HIV/AIDS situation across PNG. System strengthening will be ongoing to ensure new challenges are dealt with adequately.

Interventions in the HIV/AIDS sector will be more effectively upscaled in the later MTDPs through prior investment in MTDP 2011-2015 in the enabling environment, in particular, infrastructure, transport and utilities.

### ***Challenges in implementation***

The key challenges in effective implementation are a paucity of good monitoring data, cultural and traditional barriers and institutional and organisational capacity of implementing agencies. Moreover, access to health centres and poor existing infrastructure in the rural areas remain key issues to overcome in the coming years.



DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Healthy population free from sexually transmissible infections and HIV/AIDS threats.	Prevalence rate (%) of HIV/AIDS by sex	NHIS	0.96% in 2008	Below 0.9%	0.5%	0.3%	Below 0.1%
	Orphan children due to AIDS	NHIS	5995 in 2008	4000	3000	2000	Reverse the rise in orphans
	% of HIV positive pregnant women on ART (PPTCT)	UNGASS	3.48% in 2008	20% coverage	50% coverage	80% coverage	100% coverage
	Degree of stigma and discrimination as identified by PHA's stigma index		No baseline info	20% stigma reduction	30% reduction	50% reduction	80% reduction
	Proportion (%) of condom use by sex at last high risk sex	DHS		30%	50%	60%	70%
	Proportion (%) of persons by sex who know about HIV/AIDS	DHS	87.2% in 2006	90%	95%	98%	100%
	Prevalence rate (%) of HIV/AIDS among people aged 15-49 by sex	NHIS	No distinct baseline				
	Prevalence rate (%) of HIV/AIDS among pregnant women aged 15-24	NHIS	No baseline				
	Proportion of population (%) by sex in need of ARV drugs who receive those drugs	NHIS	17% in 2006	34%	68%	75%	98%
Lead Agency	National AIDS Council Secretariat, Department of Health, Education Department, Community Development						

No.	Sector strategy
1	A policy framework taking into account PNG ways: prevent and reduce the transmission of HIV and STIs in PNG
2	A policy framework taking into account PNG ways: counseling, testing, treatment, care and support
3	Systems strengthening: coordination, data collection and analysis

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Implement education and awareness programs	1.1	30% of high schools covered	60% of high schools covered	80% of high schools covered	100% of high schools covered	-Cultural & traditional barriers -Funding allocation
Increase access to quality STI/HIV PEP services	1.2	30% access through all health facilities	60% access through all health facilities	80% access through all health facilities	100% access through all health facilities	-Cultural & traditional barriers -Funding allocation
Adequate supply of HIV related commodities to ANC	1.3	30% of coverage to all ANCs	60% of coverage to all ANCs	70% of coverage to all ANCs	100% of coverage to all ANCs	-Access to ANC. -Cultural & traditional barriers
Implement national guidelines for standard precautions in health care settings.	1.4	30% coverage in all health care settings	60% coverage in all health care settings	80% coverage in all health care settings	100% coverage in all health care settings	-Cultural & traditional barriers -Funding allocation
Support centres to assist PHAs	1.5	30% coverage to all centres with PHAs	60% coverage to all centres with PHAs	80% coverage to all centres with PHAs	100% coverage to all centres with PHAs	-Access -Cultural & traditional barriers
Establish youth programs to raise greater awareness	1.6	30% coverage	60% coverage	80% coverage	100% coverage	-Cultural & traditional barriers -Funding allocation
All government agencies have in place workplace policies.	1.7	30% coverage of workplace policies in the public sector	60% coverage of workplace policies in the public sector	80% coverage of workplace policies in the public sector	100% coverage of workplace policies in the public sector	-Cultural & traditional barriers -Funding allocation
Implement awareness of HIV/AIDS activities during national and local social, cultural, sporting, and professional events	1.8	30% coverage in all local & national events	60% coverage in all local & national events	80% coverage in all local & national events	100% coverage in all local & national events	-Cultural & traditional barriers -Funding allocation

Increase access to quality HCT	2.1	30% access to HCT	60% access to HCT	80% access to HCT	100% access to HCT	-Cultural & traditional barriers -Funding allocation
Develop an effective quality assurance system for HCT/ART program	2.2	30% coverage	60% coverage	80% coverage	100% coverage	-Cultural & traditional barriers -Funding allocation
Expand ART and STI treatment services to all districts.	2.3	30% service coverage throughout 89 districts	60% service coverage throughout 89 districts	80% service coverage throughout 89 districts	100% service coverage throughout 89 districts	-Cultural & traditional barriers -Funding allocation
Establish district HBC support mechanism to facilitate and support HBC units.	2.4	30% coverage of support services in 89 districts	60% coverage of support services in 89 districts	80% coverage of support services in 89 districts	100% coverage of support services in 89 districts	-Cultural & traditional barriers -Funding allocation
Establish a national standard and guideline to govern HBC	2.5	National standard guideline for HBC completed & operating	National standard guideline for HBC coverage in 7 Provinces	National standard guideline for HBC coverage in 14 Provinces	National standard guideline for HBC coverage in 22 provinces	-Cultural & traditional barriers -Funding allocation
Establish National HIV/AIDS monitoring and evaluation (M&E) system and database.	3.1	National M&E System in full operation	National M&E System operational in 7 provinces	National M&E System operational in 14 provinces	National M&E System operational in 22 provinces	-Cultural & traditional barriers -Funding allocation
Establish a HIV/AIDS research, information and statistics centre.	3.2	National HIV/AIDS Research, Information and Statistics Centre established	National HIV/AIDS Research, Information and Statistic Centre established in 7 Provinces	National HIV/AIDS Research, Information and Statistic Centre established in 14 Provinces	National HIV/AIDS Research, Information and Statistic Centre established in 22 Provinces	-Cultural & traditional barriers -Funding allocation
Strengthen organisational and human capacities of NACS, DACS, PACS	3.3	30% coverage on organisation and institutional strengthening for NACS, PACS, DACS	60% coverage on organisation and institutional strengthening for NACS, PACS, DACS	80% coverage on organisation and institutional strengthening for NACS, PACS, DACS	100% coverage on organisation and institutional strengthening for NACS, PACS, DACS	-Cultural & traditional barriers -Funding allocation

Responsibility	NACS							Funding options
	No.	2011	2012	2013	2014	2015	2011-2015	
Estimated inputs (K million)	1	17	20	15	15	10	77	GoPNG/Donor
	2	30	30	20	20	25	125	GoPNG/Donor
	3	20	20	30	25	25	120	GoPNG/Donor
<b>Total:</b>		<b>67</b>	<b>70</b>	<b>65</b>	<b>60</b>	<b>60</b>	<b>322</b>	

## 5.5 Vulnerability and disadvantaged groups

**GOAL:** **Vulnerable and disadvantaged people will have the support that they require from the Government, service providers and the general public for meeting their right to a minimum standard of living**

### ***Introduction***

The vulnerable and disadvantaged group of any population is a group of society that needs special attention as they belong to the communities and have rights that allow them to fully participate in society without discrimination. Members of this group unfortunately may have become disabled and disadvantaged due to unforeseen circumstances and incidences like accidents or health-related abnormalities at birth. They may have become victims due to outcomes of socio-economic hardships and challenges including violence, abuse, exploitation and neglect brought upon them by families and other selfish and disrespectful members of society. The latter may have been due to a changing society as a result of development in the country.

People who generally face such hardship include people with disability, widows, children (orphaned, adopted and fostered children), settlers, refugees, landless and homeless people, and the elderly, including those suffering from acute poverty. In the last three decades, this particular group of the population did not stand out and as such they were given little attention. This was because of the strong traditional support systems and a small population. However, the vulnerable and disadvantaged group is likely to continue to increase in size. This is due to factors such as: a population growing at the rate of around 2.7 per cent; the ever increasing HIV/AIDS epidemic; “poverty opportunity” due to isolation and lack of access to markets, health and education; lack of employment opportunities especially for the youth; marginalisation of women; and poor housing.

### ***MTDP 2011-2015***

Supporting the vulnerable groups of society is ethical and, as such, efforts over the next five years will be focused on developing a sustainable social care and protection system which draws upon collaborative efforts — within communities, with donors and across government — and one which builds upon cultural norms and social safety nets, such as the ‘wantok system’. A collaborative approach is important and will be strengthened right down to the community level.

Moreover, during the same period, empowerment of vulnerable groups will be enhanced through proactive education and awareness programs. This will be further supported through associated legislation and the provision of rehabilitation, assistive devices and self-help mechanisms. The key enablers over the next five years will also provide the appropriate environment for much of the support programs, initiatives and mechanisms for the group.

### ***Building on MTDP 2011-2015***

Future plans will build on the enabling environment created in the first five years of implementation and will expand services provided to vulnerable and disadvantaged groups. The kind of services provided will differ according to the type of disability and the type of vulnerable group. Through a range of interventions, vulnerable and disadvantaged people will have the support they require to meet their rights to a minimum standard of living.

### ***Challenges in implementation***

Implementation of effective and appropriate interventions to support the vulnerable and disadvantaged sections of society is difficult without accurate and appropriate data. Moreover for effective implementation the strengthening and building of alliance between the government and the non government sector — often the service providers to the vulnerable — is extremely important.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Vulnerable and disadvantaged people will have the support that they require from the Government, service providers and the general public for meeting their right to a minimum standard of living	Recorded disabled persons	Census, DHS	0.9% of population				Integrated into the community with better access to services
	Number of legislations and policies protecting the vulnerable and disadvantaged	Legislation council registry	1 national disability policy	1 legislation for disability	3 legislations for disability and elderly persons	3 legislations for disability, elderly persons, children	3 legislations developed and implemented
	% of the population aware of people with disabilities and their needs	Census, DHS	No data	20% of the population made aware of the needs of disabled people and their existence	40% of the population made aware of the needs of disabled people and their existence	60% of the population made aware of the needs of disabled people and their existence	100% of the population aware of the needs of disabled people and their existence
	% increase in service providers for the vulnerable		No data	10% increase	15% increase	20% increase	30 % increase
Lead government department Collaborating agencies	Department of Community Development, Provincial Divisions for Community Development, Department of Health, Department of Education, Service organisations						

No.	Sector strategy
1	Development of a social care and protection system
2	Education and awareness
3	Policy and legislation formulation
4	Improvement in infrastructure
5	Strengthened partnerships with community based organisations and donors

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Increase awareness programs and materials on all vulnerable groups including children and disabled people at all levels of the service systems and society.	2.1	Integrate into education curriculum				
Strengthen legal instruments for the disabled and vulnerable	3.1	Enact and review legislation to protect rights of the vulnerable				
Develop and maintain appropriate rehabilitation, care and protection programs for all sectors of the vulnerable population.	4.1	Rehabilitation, care and protection services for vulnerable people				
Strengthen support for self help organisations (SHOs) for vulnerable groups and improved and maintained workplace safety policies and guidelines	4.2	Workplace safety policies and guidelines developed.				
Improve infrastructure and utilities to cater for the vulnerable	4.3	Develop vulnerable and disable friendly infrastructure in public places				
Partnerships strengthened with donors and CBOs that specialise in catering for vulnerable and disadvantaged groups	5	Established legal partnership between government and private organisations				
Develop and maintain updated records of vulnerable groups	6	Develop needs analysis for vulnerable groups.				

Responsibility	Department of Family and Community Development							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding Options
		3.5	3.5	3.5	3.5	3.5	17.5	GoPNG/Donors

## 5.6 Environment

### **Goal: Promote a sustainable environment**

#### ***Introduction***

Conservation of the environment is a fundamental pillar of the constitution and is captured under the fifth pillar of the Vision 2050 in Environment Sustainability and Climate Change. In addition, the PNGDSP 2010-2030 gives emphasis on environmental sustainability and further articulates the Nation's 20 year plan to reach the Millennium Development Goals and targets for the environment.

The environment is enshrined in the constitution and there are over 45 various regulations, acts and policies guiding environment issues, yet compliance, enforcement and adherence to standards remain a key challenge. Unsustainable logging operations, direct disposal of tailings, mangrove depletion and unsustainable fishing practices continue to be pressing environmental concerns.

Recently, economic development initiatives, in particular the Economic Corridors to address poverty, have posed new challenges on environmental sustainability. The formulation of an environmentally sustainable economic growth policy is thus essential to ensure appropriate levels of impact assessment are conducted.

#### ***MTDP 2011-2015***

In order to promote a sustainable environment, MTDP 2011-2015 will focus on interventions to minimise pollution, reduce deforestation and improve waste management, thereby resulting in a cleaner, more inhabitable environment for all. This will be done by firstly monitoring and minimising runoffs from all industrial processors and improving waste disposal methods. Emphasis will also be placed on the strengthening and utilisation of customary practices in preserving the natural environment, encouraging its conservation through sustainable development in ensuring the benefits for present and future generations. Furthermore, with the challenge of limited and outdated environmental data, a national database for environmental accounting will be established to strengthen environment protection activities. This will ensure that progress is made towards improving all indicators of MDG 7, which serves as a way of measuring progress and achievements in the environment sector.

Addressing environmental issues and achieving the goal of promoting a sustainable environment will need the support and stability of key enablers within society and the country as a whole. Building and rehabilitating infrastructure, for instance sewerage systems and hydrological stations will be achieved if land is secured and law and order issues that impede development processes are reduced. In addition, education at all levels is needed to create awareness on environmental issues and to build capacity in areas that will contribute to achieving environmental sustainability.

#### ***Building on MTDP 2011-2015***

The first MTDP 2011-2015 will focus on capacity building and improving legislative frameworks for the environment. Achieving this through the first 5 year implementation of the PNGDSP will build a strong foundation on which the other three MTDPs can build. Establishing the capacity and legislative framework within the environment sector will ensure that deliverables are appropriately administered and implemented. Furthermore, priority activities such as the expansion of water and sanitation programs to rural areas will take place under the last three MTDPs due to greater direct government expenditure and improved capacity and legislative frameworks. With good establishments in human and administrative capacity, such as for environment protection, and improved legislative framework within the environment sector by 2015, the 2030 PNGDSP targets for the environment can be achieved.

#### ***Challenges in implementation***

The main challenge faced in this sector is the unavailability of data in some areas and the available but outdated data in other areas. A decision by NEC on the Environment Protection Authority is still pending and remains a challenge to execute to ensure a strong environment protection regime.

DSP sector goal:	Indicator	Source	2010 Baseline	2015 Target	2020 Target	2025 Target	2030 DSP target
Promote a sustainable environment	Percentage of land area covered by primary forests	DEC PNGFA	59%	59%			Effective systems in place for monitoring the changes in primary forest cover
	Primary forest depletion rate per year due to; commercial agriculture, logging, mining, & urban town planning.	DEC PNGFA	2.6%	2.4%			–Prevention in the felling of virgin forests. — Logs to be provided by plantations and managed forests.
	Percentage of land area protected to maintain & improve biological diversity	DEC	3.83%	4%			Improve conservation of terrestrial biodiversity for future generation
	Percentage of marine area protected to maintain & improve biological diversity	DEC	0.00047%	0.047%			Improve conservation of marine protected areas for future generation
	Land area rehabilitated to ensure biodiversity (mines). Number of Mine Closure and Rehabilitation Plans implemented	DEC	6550ha	No change expected			Improve conservation of biodiversity for future generation
	Proportion of licensed permitted water usage as a proportion of total water resources used	DEC	37.5%	38%			Improved catchment based water use permit operating efficiently
	Proportion of pollution complaints investigated	DEC	10%	50%			Improved management of investigated waste discharge and pollution complaints
	Proportion of tuna stocks within safe biological limits	National Fisheries Authority (NFA)					Sustain tuna stock by increasing license fees to reduce incentive to overfish

No	Sector strategy
1	Institutional capacity strengthening for environmental sustainability management
2	Environmental protection and standards
3	Institutionalise implementation and management of the Global Environment Conventions to meet PNG's commitments
4	Creation of systems of protected areas management at all levels and forest and biodiversity conservation
5	Land and water resource management
6	Environmental data and information management for planning and dissemination

DSP 2030 deliverables	No	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Develop and implement the ESEG policy	1.1	Implement and build capacity to implement the ESEG policy in partnership with all stakeholders.				DEC is able to implement the ESEG Policy with CSOs, CBOs, NGOs and the Private partnership
Develop environment and natural resource development plan for Economic Corridors	1.2	Impact assessment conducted & sustainable development approach taken to minimise long term environmental damages				–Environmental damages are minimised –Economic development impeded
Comprehensive range of natural resource management guidelines that addresses drivers of deforestation	1.3		Provide training, develop and implement code of conduct for oil palm. Establish baseline data and pilot projects for other drivers of deforestation including mining, infrastructure			–Adequate funding available –Trained officers retained –Guidelines and baseline database for natural resource management established

Waste management policies and guidelines for mining and petroleum projects operations and closure	1.4		Review mining policy (oil and gas) on the guidelines for operations and closure			-Adequate funding available -Waste management policies and guidelines reviewed
Enhance management of land degraded by commercial extraction	1.5	Develop, manage and screen for land degradation and rehabilitation guidelines				Reduction in the rate of land degradation by commercial activities
Enhance the coastal zone conservation management plan	1.6		Manage the coastal zone conservation management plan			Adequate funding available
Review of the Environmental Act 2000 and new legislation to create EPA	1.7	Ensure compliance and protection of the environment				-Endorsement from DJAG and other relevant authorities. -Parliament pass the new legislation -Adequate funds available
Ensure more comprehensive waste management practices are employed	2.1	-Improve registry of pollution complaints in legal and regulatory branches of DEC and EPA -Increase attempts to address or investigate all pollution complaints -Establish pollution taxes and transferable pollution permits				Reduction in the number of pollution related complaints
Streamline EPA monitoring and compliance and build capacity	2.2		-Provide training on monitoring and compliance procedures of the development projects -Resource the EPA to effectively carry out monitoring and compliance of development projects			-Trained and experienced officers are retained -Monitoring and compliance mechanism improved
Standards and code of practices for projects category 1 and 2	2.3		Review and implement the code of practices for commercial activities in all sectors			-Adequate funding available -Code of practice for commercial activities are not adhered to
Streamline permit procedures and processes	2.4		-Review the current permit procedures and processes -Implement review findings -Provide training on procedures and processes			Might take a long time for the review Adequate funding available Trained officers are adequately resourced
Implement Multilateral Environmental Agreements (MEAs) like the UNCCD, UNCBD and UNFCCC	3.1	-Coordinate the implementation of the MEAs' obligations -Establish monitoring systems to keep track of implementation progress				-NEC approves MEAs to be ratified -DEC effectively coordinates the implementation and monitoring of the ratified MEAs
National Capacity Self Assessment (NCSA) of the global environmental conventions	3.2	-Launch the NCSA report -Implement the recommendations to build capacities for effective implementation of the MEAs				NCSA recommendations addressing the capacity issues in implementing the Rio conventions

Endangered species and habitats conservation and management plan for marine and terrestrial protected areas	4.1	<ul style="list-style-type: none"> <li>-Develop and implement the national criteria for protected area system (for both marine and terrestrial) in PNG which will leads to the development of a protected area policy.</li> <li>-Implement the plan and guidelines for protected areas</li> <li>-Undertake landscape and coastal bio-regional planning</li> <li>-Review protected areas legislation</li> <li>-Provide for new types of protected areas including REED+ forests and refuges for climate change</li> <li>-Develop biodiversity conservation initiatives with private sector, NGOs and customary landowners.</li> <li>-Establish a national endangered species inventory</li> </ul>			Availability of adequately trained officers and funding
Develop terrestrial protected area policy	4.2		<ul style="list-style-type: none"> <li>-Implement terrestrial protected area policy</li> <li>-Work through PPPs to promote conservation of terrestrial protected areas</li> </ul>		<ul style="list-style-type: none"> <li>Adequate funding and manpower available</li> <li>-Private sector aware and willing to engage in PPP</li> </ul>
Develop Marine Protected Area Policy	4.3		<ul style="list-style-type: none"> <li>-Implement marine protected area policy</li> <li>-Develop management strategies for coastal and marine resource management</li> </ul>		<ul style="list-style-type: none"> <li>-Adequate funding and manpower available</li> </ul>
Strengthen customary practices for enhancing and preserving the environment and educate landowners on the importance of conserving the environment	4.4	Make CSOs, private sector, NGOs and CBOs aware of government partnership			CSOs and private sector are aware of PPP opportunities
REED + and payment for ecosystems services (PES)	4.5	Make landowners aware of the essence of conservation and sustainable development			Landowners' support obtained
Increase water catchment and water and sanitation programs	5.1		<ul style="list-style-type: none"> <li>-Rehabilitate water and sanitation/sewerage systems.</li> <li>-Provide tanks and back-up water supply for vital government services</li> </ul>		Adequate funding is available
Maintained inventory of all licensed national water usage	5.2		<ul style="list-style-type: none"> <li>-Improve and maintain effective registration of water related environmental permits</li> <li>-Improve catchment based water permit system</li> </ul>		<ul style="list-style-type: none"> <li>-Adequate funding available</li> <li>-Improved and effective water permitting system in place</li> </ul>
Develop sustainable land management policy	5.3	Implement sustainable land management policy			Adequate funding and manpower available
Develop water resource management policy	5.6	Implement water resource management policy			Adequate funding and manpower available
Introduce land zoning systems to increase agricultural production	5.7	<ul style="list-style-type: none"> <li>-Allocate adequate land for agricultural purposes</li> <li>-Environment and natural resource development plan for Economic Corridors</li> </ul>			<ul style="list-style-type: none"> <li>-Agricultural production increased</li> <li>-Adequate funding available</li> </ul>
Minimise land degraded by commercial extractive purposes	5.8	<ul style="list-style-type: none"> <li>-Develop land degradation and rehabilitation guidelines</li> <li>-Screen and manage developments in environmentally sensitive areas</li> </ul>			<ul style="list-style-type: none"> <li>-Land degradation and rehabilitation guidelines developed and effectively implemented</li> <li>-Landowner support</li> </ul>



Build information database for natural resources and environment management	6.1	-Establish environmental database and information system -Engage external GIS expert to complete systems set up and data upgrading -Provide training for internal staff on environmental database and information management				-Adequate funds available -Internal officers are adequately trained and retained
Establish a database for environmental risk and hazard accounting	6.2			Build capacity in hazard analysis and do national stock-take of hazards		Adequate funding is available

Responsibility	Department of Environment and Conservation and other key implementing agencies responsible for environmental issues							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options
		13	17	17	17	17	<b>81</b>	GoPNG/Donor

## 5.7 Climate change

**Goal:** Adapt to the domestic impacts of climate change and contribute to global efforts to abate greenhouse gas emission

### ***Introduction***

PNG has taken a global lead in seeking to combat climate change, particularly by proposing measures to activate the carbon abatement opportunity by preserving tropical forests. Deforestation and forest degradation are major contributors to greenhouse gas emissions, through large scale logging and the conversion of forests into agricultural use. These activities continue because the value of forests as carbon sinks and a source of livelihood have not been fully recognised by market mechanisms. PNG, together with other rainforest nations, is currently working to create a mechanism for Reducing Emissions from Deforestation and Forest Degradation (REDD+), to enhance carbon stocks and manage forests sustainably in developing countries. The Copenhagen Accord of December 2009 recognised the fundamental role of REDD+ in climate change mitigation and made substantial funding available for the first time, starting with a commitment of US\$3.5 billion globally for the period 2010 to 2012. In total, funding of US\$30 billion was committed for the 3 year period to support the implementation of mitigation and adaptation actions in developing countries in line with their national development strategies.

Even with global action on mitigation, climate change has already begun and has exacerbated some hazards locally, such as coastal and inland flooding. There are now gradual shifts in the prevalence of malaria and in agricultural yields. The office of climate change and development is tasked to investigate ways to protect PNG's people and economy from these risks. The national Climate-Compatible Development Strategy prioritises actions related to climate change mitigation, adaptation, low-carbon growth and REDD+.

The Copenhagen Accord recognises that both mitigation and adaptation to climate change are inseparable from economic development. PNG supports the Accord and is now taking steps to ensure climate-compatible development for its entire people.

### ***MTDP 2011-2015***

Climate change is a complex frontier issue and PNG's response must be grounded by strong research and clear empowering legislative and regulative instruments to guide all stakeholders in a coordinated, holistic and integrated manner.

During the first MTDP, PNG will continue to engage effectively in global climate change negotiations and will ensure synergy in the climate change response amongst all stakeholders, including government agencies, private organisations, churches and local communities. Moreover, during the first MTDP, interventions will be focused on enforcing minimum technology and maintenance standards, particularly within the economic and infrastructure sectors such as forestry, agriculture and energy. The first MTDP will, at the same time, address the adverse impacts on our local communities through community based adaptation programs subject to available financial resources.

### ***Building on MTDP 2011-2015***

Subsequent MTDPs will leverage the coordination mechanism and synergies established during MTDP 2011-2015, ensuring that all stakeholders respond to climate change in an appropriate and measured fashion. REDD+ and a willingness to adapt to climate change will continue with assistance from the climate change fund. PNG will be ready to support and implement international initiatives and agreements that are forged in future years.

### ***Challenges in implementation***

Effective coordination is needed to ensure the desired results are met with regards to climate change. Coordination is not only required across sectors but amongst stakeholders. An ongoing risk is the potential for a breakdown in international negotiations for reaching agreement on tackling climate change.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Adapt to the domestic impacts of climate change and contribute to global efforts to abate greenhouse gas emissions	Number of meteorological stations	NWS	14	20	45	70	89+
	Tide Monitoring Stations	NWS	2	5	12	18	20
	Emissions intensity of electricity generation	OCCD		Reduce by 25%	Reduce by 40%	Reduce by 50%	Reduce by 65%
	Multi-temporal remote sense satellite coverage	OCCD/DEC	1 database system				20 database systems
Lead government agency	Office of Climate Change and Development						

No.	Sector strategy
1	REDD+
2	Mitigation
3	Adaptation
4	Climate resilience

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks, assumptions
Engage in global climate change negotiations	1.1	-REDD+ mechanism established -Adaptation funds accessed.				
Develop REDD+ projects	1.2	7 REDD+ pilot projects	12 REDD+ project	12 REDD+ project	12 REDD+ projects	
Develop CDM projects	1.3	2 CDM pilot projects	5 CDM projects	5 CDM projects	5 CDM projects	
Develop renewable energy policy	1.4	Renewable energy policy and 5 EF projects				
Enforce minimum technology and maintenance for vehicles and other greenhouse gas emissions.	2.1	Enforce current motor vehicle check standards. Raise standards where necessary to reduce emissions.	Equip facilities for compliance and monitoring			
Develop an innovative emissions reduction tax incentive and permit system	2.2		Establish policies and legislations; and international carbon market exchange			
Establish community-based mangrove planting to prevent coastal flooding/erosion	3.1	10,000 seedlings/yr	25,000 seedlings/yr	40,000 seedlings/yr	50,000 seedlings/yr	
Set up a landslides hazards mapping system	3.2		1 stand alone database system		Integrated into core planning systems	
Establish a coastal and flood warning system	3.3		2 tide centres, 20 met stations		20 tide centres, 89+ met stations	
Ensure reallocation and resettlement of affected communities.	3.4	Identify resettlement areas				
National climate change research including in climate resilient agriculture	4.1	1 climate change research centre				
Climate proofing of key infrastructure	4.2			Climate proofing		
Establish climate micro-financing schemes	4.3	Access for 20% of rural population	Access for 60% of rural population	Access for 90% of rural population		
Ensure public-private, church-state, CSO partnership on climate change	4.4					

Responsibility	Office of Climate Change and Development							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding option
	1.1	1	3	5	2	2	13	GoPNG/Donor
	1.2	3	2	2	1	1	9	GoPNG/Donor
	3.1	1	2	1	1	1	6	GoPNG/Donor
	3.2	0	0	0	0	0	0	GoPNG/Donor
	3.4	2	2	1	1	1	6	GoPNG/Donor
	4.1	2	1	1	1	1	7	GoPNG/Donor
	4.3	1	2	2	2	2	9	GoPNG/Donor
		<b>10</b>	<b>12</b>	<b>12</b>	<b>8</b>	<b>8</b>	<b>50</b>	

## **5.8 Natural disaster management**

**Goal: Manage the risk of natural disasters**

### ***Introduction***

Tropical cyclones, inland and coastal flooding, landslides and mudslides, volcanoes, earthquakes, tsunamis and El Nino have impacted PNG on numerous occasions. Malaria remains a major health problem in PNG, with 700 deaths and about one million infected cases recorded in 2007. With the change in climate patterns and increase in temperatures, the number of cases, particularly in the highlands, could increase.

Volcanic and seismic activity may occur at any time. Sea-level rise is now occurring coupled, with frequent sea surges affecting numerous island communities. The risk of tsunamis related to earthquakes also remains current. El Nino drought preparedness is a major program to improve food security and ensure that the 64 drought vulnerable districts develop drought coping strategies.

### ***MTDP 2011-2015***

The first MTDP will focus on improving existing early warning systems and enhancing community preparedness through public awareness and education programs. A policy and legal framework for the rapid deployment of defence forces will be developed and the capacity of the defence forces to assist in natural disasters will be increased. The role of the defence forces is elaborated upon further in section 5.14. Moreover, efforts by implementing agencies will be focused on ensuring increased cooperation and coordination between disaster management and response units, in particular civil-military cooperation. Proper coordination of foreign donors in disaster relief will also be essential.

Efforts will extend across all forms of hazards so as to minimise the overall social and economic impacts of natural disasters. Training in disaster management agencies will help strengthen PNG's response to natural disasters.

### ***Building on MTDP 2011-2015***

Subsequent MTDPs will build on the first MTDP, taking advantage of investment during MTDP 2011-2015 in the key enablers, in particular utilities, education, transport and infrastructure, and in the capacity of the defence forces.

### ***Challenges in implementation***

A coordinated approach to natural disaster management is vital. Without effective collaboration and dialogue between relevant agencies, including foreign donors, the ability to reduce the risk of disaster will be compromised.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Manage the risk of natural disasters	PNG lacks appropriate DRM policies, legislation and response capacities	National Disaster Centre and studies by stakeholders	Disaster related losses are on the rise	Appropriate legislation and policies for DRM are established	Better prepared communities resulting from awareness and education programs	Effective and efficient disaster response system established	DRM mainstreamed across different sectors and development planning takes DRM issues into consideration
Lead government department	National Disaster Centre, Department of Provincial and Local Level Government						

No.	Sector strategy
1	Develop and disseminate appropriate DRM policies and legislations
2	Enhance early warning systems and disaster response capacities at all levels
3	Enhance disaster preparedness at all levels through DRM education, awareness and training

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Promulgation and dissemination of new DRM legislation and DRM protocols	1	-Appropriate DRM legislation and policies put in place -Partnership developed with all stakeholders	Assist provinces to develop their own legislation and apply DRM protocols	Effective DRM systems and procedures established at all level	Continue capacity building of the provinces on DRM policy and legislation issues.	Appropriate policies and legislation must be in place
Early warning strengthened and disaster response capacity optimised	2	-Strengthen early warning system and response and preparedness capacities -Assist provinces in disaster management planning	Establish rapid response force and regional stock piling system, enhance the communication network, continue assisting provinces to enhance their preparedness and response planning	Continue strengthening communication network and early warning systems and capacity building of the provincial DM offices and capacities	Strengthening of provincial DRM offices completed. Establish emergency operation centres, procedures and systems in high risk provinces	Timely budget allocation and partnership established with key sectors
Informed and prepared communities through awareness and education programs	3.1	-Community based DRM programs -Production of awareness materials -Trainings and workshops	Disaster awareness programs in high risk provinces and capacity building of provincial authorities through trainings.	Various training modules pertaining to DRM developed and provincial authorities trained in those modules	Key officials at provincial level trained in key aspects of DRM to effectively manage disaster risks.	Appropriate monitoring measure in place to gauge the effectiveness of the awareness and education campaign
Establish and rehabilitate fire stations at key locations	3.2	-14 stations rehabilitated -Computer aided dispatch system installed	Gerehu Fire Station, Madang Fire Station, Kokopo Fire Station.	Alotau Fire Station, Wewak Fire Station, Goroka Fire Station,	Popondetta Fire Station, Kavieng Fire Station and Kimbe Fire Station	

Responsibility	National Disaster Centre, DPLGA							Funding options
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	
		35	17	13	13	14	92	GoPNG/Donors

## **5.9 Governance and public sector management**

**Goal:** **Attain high standards of public sector management in all levels and institutions of government**

### ***Introduction***

Governance is a broad theme, covering all facets of government systems and processes. Codes of ethics and work place conduct is no exception. The Government encourages good governance through Public Sector Reforms, Financial Management Reforms, Public Private Partnership (PPP) and electoral processes and systems. One aspect of good governance in the public machinery is to improve and strengthen public sector management.

In order to achieve the goals set by the PNGDSP, the highest standards of public sector performance and management at all levels of government must be demonstrated. The current status of PNG's position in the World Governance Indicators (WGI) compiled by the World Bank needs to be improved where practical. Collectively, all departments and agencies who execute government policies, plans and legislations must work together for improvement so that PNG can be a prosperous nation by 2030.

### ***MTDP 2011-2015***

From the PNGDSP, the MTDP provides us with workable, practical and feasible plans to address the issue of poor governance, and achieve better governance in institutions, departments and agencies through which the Government conducts its business. Reform within the public sector has to be adequately backed by the political and bureaucratic arms of the Government. Thus by 2030, the public sector must attain high standards of public sector performance and management in all tiers and institutions of government.

Under the MTDP 2011-2015, the Government will focus on public sector reform and increasing human resource capacity. Moreover, interventions will take place to improve budgeting and financial management and monitoring and evaluation mechanisms. Public servants will be trained through a public sector competency based training package to enhance their work performance. Training on the Integrated Financial Management System (IFMS) will be provided to relevant personnel with all government sector agencies and trickle down to the provincial and district levels. This will improve public financial management and ensure proper accounting and budgeting.

Audit units and committees and district treasury offices will be established in all the provinces and districts to enable effective monitoring and tracking of funds. These will be supported by regional offices of the Department of National Planning and Monitoring. Underpinning good governance and democracy is the need for free and fair elections which can be enhanced by means of strengthening the existing electoral processes and systems, as well as the delivery mechanisms.

### ***Building on MTDP 2011-2015***

Building on investment in the enablers under MTDP 2011-2015, an increased numbers of monitoring bodies in the provinces and districts will be established, coupled with an increase in the number of public servants trained in IFMS. Through PSWDP, mechanisms of accountability and transparency in service delivery will be strengthened. Good governance will be demonstrated through practical monitoring and reviews of plans and legislations that abide by codes of ethics and work place conduct.

### ***Challenges in implementation***

In order to adequately train public servants, an appropriate number of qualified trainers and training institutions must be available. To effectively establish audit units and committees in the provinces and districts, it is important to redress the structures and systems for alignment of proper channels of reporting and communication. Law and order problems have been the major impediment to effectively implement the district treasury roll-out program to most districts. As such, investment in the enablers under MTDP 2011-2015 is critical.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Attain high standards of public sector performance and management in all levels and institutions of government	Rule of law	WGI	Bottom 21% in the world	30%	35%	40%	Top 50% in the world
	Regulatory quality	WGI	Bottom 30% in the world	35%	40%	45%	Top 50% in the world
	Public service effectiveness	WGI	Bottom 25% in the world	30%	35%	40%	Top 50% in the world
	Control of corruption	WGI	Bottom 9% in the world	15%	25%	35%	Top 50% in the world
	PEFA indicators scoring A or B		34% in 2006	40%	50%	75%	100%
Lead government departments	Department of Personnel Management, Department of Finance						

No.	Sector strategy
1	Improve and strengthen public sector reform in the institutional structures and human resource capacity
2	Improve and strengthen budgeting and financial management for effective service delivery
3	Improve and strengthen procurement and service delivery mechanism
4	Strengthen electoral processes and systems
5	Strengthen partnership with the private sector and community based stakeholders for development
6	Strengthen and enforce accountability and transparency initiatives

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks & assumptions
Trained public servants through PNG public sector training package	1.1	20% of public servants	30%	50%	70%	-Availability of qualified lecturers -MOU with training institutions Centralisation of powers
Devolution – the percentage of public sector agencies that have exercised autonomy	1.2	40%	60%	80%	100%	
Institutional capacity building & training – % of public sector effectively delivering services	1.3	20%	40%	80%	100%	Capacity building programs given to officers on merits
Financial Management Improvement Program (FMIP) - implementation of IFMS at all levels of government	2.1	50%	80%	90%	95%	Slow roll-out of IFMS to the provinces
Established audit units and committees in 20 provinces	2.2	10 units in 4 regions	10 additional units in 4 regions	0	0	Lack of capacity and membership
Effective electoral processes and systems	3.1	Improved electoral processes and system	50%	75%	100%	-Ghost names remain large in roll. -Capacity and resources

Responsibility	DPM, 1.2 DPM, 1.3 DPM, 1.4 DNPM, 2.1 DoF, 2.2 DoF, 3.1 Electoral Commission							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options
	1.1	8.3	5.0	6.0	6.0	6.0	31.3	GoPNG
	1.2	1.0	1.0	1.0	1.0	1.0	5.0	GoPNG
	1.3	20.0	10.0	15.0	12.0	12.0	69.0	GoPNG
	2.1	18.4	5.0	5.0	5.0	5.0	38.4	GoPNG
	2.2	1.0	1.0	1.0	1.0	1.0	5.0	GoPNG
	3.1	51.3	6.0	0.0	0.0	0.0	57.3	GoPNG
			100	28	28	25	25	206



## 5.10 National statistics systems

**Goal:** A high quality national statistical service for development planning, policy formulation, decision making and research through the production of accurate, comprehensive and timely statistics of an international standard

### **Introduction**

Statistics is vital for socioeconomic analysis, policy formulation and population planning. However, PNG, like many developing countries, has experienced common data problems such as out-of-date records and unavailable or poor quality data. A contributing factor to the ongoing data issues over the last two decades is the lack of bureaucratic leadership and support for up-to-date quality data. This is a reflection of the lack of financial support to the national statistical agency to build their capacity and to periodically collect data and conduct timely economic surveys. The difficult geography and weak infrastructure of the country have also been key impediments to conducting surveys cost effectively. In order to progressively monitor the progress of the PNGDSP, MTDPs and MDGs, all agencies need to take a collaborative approach to addressing the data problems and issues across all sectors.

### **MTDP 2011-2015**

Over the next five years, a number of interventions will be implemented to improve the national statistics systems. These include investment in capacity building, in particular the recruitment of specialised and technical personnel to enhance the capacity within the national statistics agency, and addressing the training needs of existing officers. With these interventions, a range of critical statistical series that are currently either non-existent or of poor quality will be re-established on an annual or quarterly basis. However, without establishing strategic partnerships, the PNGDSP goal for national statistics will not be achieved. Over the next five years the current National Statistical Services Act 1980 will be reviewed and amended to promote effective, efficient and timely performance.

Decentralising statistical collections at the provincial level will be high on the agenda. This will not only improve the capacity at the sub-national level but will improve data collection and compilation in districts, local level governments and ward levels. With decentralisation, the planning and coordination of survey and census operations and the management and accountability of financial resources at the provincial level will relieve the mammoth task taken on by the national statistics agency in the last three decades. To affect this, five pilot Provincial Statistical Offices (PSO) will be established over the next five years while the rest of the PSOs will be established and fully equipped under future plans.

Prominently, a National Statistical Coordinating Board will be established to have a whole of government approach to addressing data requirements and issues. The Board will be fully functional over the next five years and will be central in implementing the National Statistical Development Strategy.

### **Building on MTDP 2011-2015**

Future plans for statistical development will build on the achievements of the sector attained over the period 2011-2015 when provincial statistical collections are decentralised. Hence, by 2020, the national census as well as the Household, Income and Expenditure Survey (HIES) will be executed by the PSOs which will have total control over the coordination and collection of statistical information. The national statistical agency will provide overall guidance to ensure consistency, high standards and quality of data. By then, periodic social and economic data will be collected at all levels of government on an annual basis or as required, for monitoring, reporting as well as decision making and policy formulation.

### **Challenges in implementation**

Potential challenges in implementation include the geographical conditions and infrastructure quality in PNG as well as the communication of data from the remotest parts of PNG to their provincial headquarters in terms of reporting data. Making national data available to the required population may not be possible due to this challenge or the limitations in communication technology (e.g. internet access) for public access to online data. Also, establishing fully equipped PSOs in all 23 provinces will be a huge exercise that will be a challenge in terms of funding.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Provide a high quality national statistical service for development planning, policy formulation, decision making and research through the production of accurate, comprehensive and timely statistics of an international standard	On-line access to official statistics	NSO	Public access to official statistics in PNG is poor with limited internet access to data				All official statistics to be free and on-line
	Census collections	NSO	The national census is conducted every 10 years, and while data collection is reasonable, processing and dissemination are weak				High quality census collections every 5 years
	Social indicators	NSO	Statistics for social indicators including health, education and crime are weak and irregular, yet crucial for understanding and monitoring social progress				Regular and high quality social survey collections
	Labour market data	NSO	Labour market data, including for the informal sector is among the most important statistics, yet regular official surveying is nonexistent				Regular collection of wage and employment data
	Economic data	NSO	The collection of official economic data is weak, including basic data such as GDP and inflation. Rural economic data is virtually nonexistent				Regular collection of all mainstream economic data series
Lead government department	National Statistical Office						
Collaborative dept/agency	Department of Information & Communication, DAL, Department of Labour & Employment,						

No.	Sector strategy
1	Improve availability of national statistics
2	Increase capacity of official statistics agency (with competent and experienced staff)
3	Conduct relevant censuses and surveys to collect required data
4	Establish effective coordination between official statistics agency and agencies that use the statistics

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Number of partnerships with international agencies	2.1	2	10 Produce findings of 2011 Census in 2013 and prepare for 2020 Census in 2017	23 Conduct 2020 Census in 2020	23 Produce findings of 2020 Census in 2023 and prepare for 2030 Census in 2027	Enthusiasm from official statistics agency
Specialised data analysis training for the official statistics agency and PSO staff	2.2	10				Training in data analysis needs to be in place
Number of statisticians per PSO	2.3	1				Absence of incentives
National Census	3.1	Conduct Census in 2011				Ensure early preparation and quality control
Demographic & Health Survey (DHS)	3.2 (a)	Disseminate and utilise DHS 2006 findings				Advanced preparation
	3.2 (b)	Prepare to conduct 2016 DHS	Localise data analysis, dissemination and utilisation in official statistics agency			
Household Income & Expenditure Survey (HIES)	3.3 (a)	Produce HIES 2010 Report	Conduct HIES in 2015	Conduct 2020 HIES through all 23 PSOs	Conduct 2025 HIES through all 23 PSOs	Advanced preparation

	3.3 (b)	Disseminate and utilise 2010 HIES findings	Produce 2015 HIES report and disseminate and utilise findings	Produce 2020 HIES report and disseminate and utilise findings	Produce 2025 HIES report and disseminate and utilise findings	Localise data analysis, dissemination and utilisation in official statistics agency
Agriculture Survey (AS)	3.4	Prepare for and conduct the 2013 AS. Produce 2013 AS, report and disseminate and utilise findings	Prepare for and conduct the AS to be an annual series from 2018. Produce AS Report annually and disseminate and utilise findings			Resources and collaboration requirements are met. Localise data analysis, dissemination and utilisation in official statistics agency
Establishment of annual economic surveys and publications	3.5	New annual publications established for labour force, wages, national accounts, energy	New annual publications established for manufacturing, building, mining, transport, housing	New annual publications established for, tourism, services, informal sector.	A focus on deepening provincial level data across all series.	Resources
Establishment of other annual surveys and publications	3.6	New annual publications established for crime, land registration	New annual publications established for migration, education.	New annual publications established for births, deaths, marriages, environment	A focus on deepening Provincial level data across all series.	Resources
Review of the Statistical Services Act 1980	4.1	Reviewed and revised	Implementation of the amended Act			
Establishment of a National Council	4.2	Body to effect the NSDS				
Partnerships signed between official statistics agency and agencies that use the statistics	4.3					

Responsibility	NSO in collaboration with all other agencies involved in respective data collection							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options
	<b>1.1</b>	45.0	20.0	10.0	30.0	20.0	<b>125.00</b>	GoPNG/Donors
	<b>2.1</b>	1.0	1.0	0.1	0.05	0.05	<b>2.20</b>	GoPNG/Donors
	<b>2.2</b>	1.0	3.0	2.0	2.0	1.0	<b>9.00</b>	GoPNG/Donors
	<b>2.3</b>	0.05	3.0	2.0	2.0	1.0	<b>8.05</b>	GoPNG/Donors
	<b>3.1</b>	25.0	20.0				<b>45.00</b>	GoPNG/Donors
	<b>3.2</b>					10.0	<b>10.00</b>	GoPNG/Donors
	<b>3.3</b>				40.0		<b>40.00</b>	GoPNG/Donors
	<b>3.4</b>	Funded under Agriculture sector		2			<b>2.00</b>	GoPNG/Donors
	<b>3.5</b>	0.5	0.5	1.5	1.5	1.5	<b>5.50</b>	GoPNG/Donors
	<b>3.6</b>	0.1	0.1	1.1	1.1	1.1	<b>3.50</b>	GoPNG/Donors
	<b>4.1</b>	0.02					<b>0.02</b>	GoPNG/Donors
	<b>4.2</b>	0.01					<b>0.01</b>	GoPNG/Donors
	<b>4.3</b>	0.01					<b>0.01</b>	GoPNG/Donors
<b>Total:</b>		<b>72.69</b>	<b>47.60</b>	<b>18.70</b>	<b>76.70</b>	<b>34.70</b>	<b>250.29</b>	

## 5.11 Foreign policy

**Goal:** Strong and pragmatic foreign relations that are in the interests of PNG and the region

### *Introduction*

Foreign policy is deemed to be a synthetic projection of all other national policies. Thus, as PNG's economy and productive capacities grow, the country needs to enhance its international standing in a way that furthers its national interests.

### **MTDP 2011-2015**

The first MTDP 2011-2015 will concentrate on strengthening PNG's current relationships both on the bilateral and multilateral fronts and further set the basis for intermittent relationships with non state institutions to harness PNGs' capability in trade and investment. Trade and investment will be the focal point of PNG's foreign policy and thus it is the Government's vision to establish the enabling framework in the first MTDP.

This shall be achieved through expanding PNG's diplomatic presence and trade projection, and the re-ignition of its bilateral and multilateral diplomatic relations with countries of the Oceania region, enhancing its role as the recognised leader among the Pacific Island countries. On the bilateral front, PNG needs to establish strong diplomatic relations with countries of the Asia-Pacific region. This includes strengthening the relationship with Australia, but with greater emphasis on the high growth countries of China and neighbouring South East Asia. On the multilateral front, PNG will boldly advocate the democratisation and reform of international organisations, giving priority to consolidating its leadership within the United Nations and boldly promoting the harmonised delivery of its agencies through the One UN Process.

Within the next five years, focus will be on the following objectives.

#### Provide Strong Leadership among South Pacific Island countries

Enhance its consistently strong bilateral and multilateral diplomatic relations with countries in the Oceania region, adopting initiatives that highlight its regional leadership.

#### Deepen its projection in the Asia-Pacific region

Further its relations in the Asia-Pacific by facilitating institutional frameworks for trade, investment and bilateral cooperation.

#### Gain greater presence and visibility in the multilateral forums

Through diplomatic action, PNG will assure that the interests and views of the South Pacific Island countries are properly voiced in the multilateral forums, and that adequate levels of assistance are provided to address the needs of its people. PNG will become more involved in discussion and decision-making regarding the reform of the United Nations system, and will continue to support proactively the One UN process as an international pioneer.

#### Improve its trade negotiation capacities and enter into new BITs and FTAs

The expansion of PNG's economy and productive capacities demands a greater integration into the international economy and the global markets. Thus, the country will pursue and enhance its trade negotiation and management capacities, and will proactively seek the adoption of new BITs and FTAs with relevant countries.

### **Building on MTDP 2011-2015**

Under subsequent MTDPs, the National Government will continue to build strong and pragmatic foreign relations and expand its international presence, both bilaterally and multilaterally.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Strong & pragmatic foreign relations that are in the interests of PNG and the region	Strong & pragmatic relations	DFAT	7 countries/ regions	7 countries	10 countries	10 countries	15 countries
Lead government department	Department of Foreign Affairs & Trade						

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Increase flows of foreign direct investment (FDI) and international trade	1	300% increase in FDI; 50% increase in international trade	200% additional increase in FDI; 50% increase in international trade	200% additional increase in FDI; 50% increase in international trade	200% additional increase in FDI; 50% increase in international trade	<b>R:</b> Political, economic or security instability may hamper growth <b>A:</b> Political, economic and security stability and improvements will take place
Engage new partnership with emerging economies in the Asia-Pacific and Latin America	2	Enhanced bilateral relationship with the South Pacific island countries	5 new missions in SE Asia and in Latin America are established	5 new missions in SE Asia and Latin America are established	5 new missions are established	<b>R:</b> PNG's institutional capacities to maximise benefits of new relations may be absent <b>A:</b> PNG's DFAT will enhance its capacity to effectively manage bigger international presence
Greater multilateral presence	3	-Continue exerting global pioneer role in the One UN Process, including investments within the One UN Fund and the building of the UN House -Actively participate in deliberations to build better governance and reform at the UN	Continue exerting global leadership in furthering the UN harmonisation and reform process; PNG will chair or be elected for important UN bodies	Continue exerting global leadership in furthering the UN harmonisation and reform process; PNG will chair or be elected for important UN bodies	Continue exerting global leadership in furthering the UN harmonisation and reform process; PNG will chair or be elected for important UN bodies	<b>R:</b> PNG's institutional capacity to maximise benefits of greater multilateral role may be absent <b>A:</b> PNG's DFAT will enhance capacity to effectively manage bigger international presence
Improve PNG's trade negotiation capacities and enter into new BITs and FTAs	4	-20 government officers become highly skilled to lead trade and investment negotiations -3 BITs and FTAs with are adopted	-20 additional government officers become highly skilled to lead trade and investment negotiations -5 additional BITs and FTAs with SE Asia and South American countries are adopted	-20 additional government officers become highly skilled to lead trade and investment negotiations -5 additional BITs and FTAs with SE Asia and South American countries are adopted	-20 additional government officers become highly skilled to lead trade and investment negotiations -5 additional BITs and FTAs with SE Asia and South American countries are adopted	

Responsibility	Department of Foreign Affairs & Trade, Department of Commerce, Department of National Planning & Monitoring							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding option(s)
		Recurrent	Recurrent	Recurrent	Recurrent	Recurrent		GoPNG

## 5.12 Immigration

**Goal:** **Effective systems that benefit PNG in the area of skills and entrepreneurial expertise, while upholding safety measures against illegal immigration**

### ***Introduction***

The immigration of large numbers of people is both a significant and positive force for the economic, social and cultural development of PNG; yet it is also a cause of concern. PNG is currently experiencing increased immigration activities as a result of not only economic and employment needs within the region, but also due to the demographic situation, political instability and economic and social inequalities.

Furthermore, PNG's economic prospects and demographic trends make migration a necessity and a key factor of future development. For this reason, clear and effective policies, legislation, organisational structures and funding is required for the social integration of the immigrant population, as well as for the protection of Papua New Guinean migrants overseas, in cooperation with countries of origin and destination. This framework will also provide for the protection of refugees.

Immigration issues have now been given priority with the establishment of a separate office from within the Department of Foreign Affairs and Trade. Infrastructure building and capacity development at all international sea and land border posts need to be further strengthened to standardise country-wide border control measures.

### ***MTDP 2011-2015***

Migration policies facilitate national development processes rather than hamper them, while ensuring adequate protection of migrants and refugees. Migratory flows, both outbound and inbound, are a reality in the global environment and can enhance PNG's connection with the rest of the international community. If properly facilitated, they can generate diverse positive benefits, including the dissemination of knowledge and wealth within PNG. To prevent negative effects, the capacities of PNG Immigration and Citizenship Services (PNGICS) and other relevant agencies need to be enhanced. Furthermore, PNG needs to align its migratory and other relevant legislation and procedures with current international laws, standards and principles.

The first MTDP will improve the recording of inbound and outbound migratory flows data. Based on the collection and analysis of data, migration policies will be strengthened to promote national security, secure investor confidence, and address human capital development in the context of labour mobility. Moreover, during MTDP 2011-2015, innovative technology, including e-passports, will be investigated and scoped in their potential to strengthen immigration services within PNG.

### ***Building on MTDP 2011-2015***

Following international trends and the increase of both inbound and outbound migratory pressures — as a natural consequence of PNG's growth and greater integration into the global arena — migratory policies will require continuous revision through a whole-of-government approach to align them to national developmental needs. Greater recognition and overseeing of the role of the Office of Immigration will be required. Reciprocal visa-exemption agreements with specific countries and for specific activities (for example, foreign aid work) will be adopted.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
The best systems that benefit PNG in the area of skills and entrepreneurial expertise, while upholding safety measures against illegal immigration	Congested timeframe of 4 weeks for processing of applications	PNGICS	Existing facilities and arrangements	Reduction in timeframe from 4 weeks to 2 weeks	Reduction of timeframe from 2 weeks to 1 week	Reduction of timeframe from 1 week to 4 days	Reduction of timeframe to 1 day
	Reception and processing centres (RPCs)	PNGICS	Existing processing facilities	Reduced timeframe to less than 2 weeks	Reduced timeframe to less than 1 week	Reduced timeframe to less than 5 days	Reduction of timeframe to less than 2 days
	Immigration services at overseas missions, consulates & trade centers	PNGICS	Existing service facilities in overseas missions	Reduced timeframe from 1 week to 4 days	Reduced timeframe from 4 to 2 days	Reduced timeframe from 2 days to 1 day	Reduced timeframe to same day service
	IT infrastructure to E-Passport and online applications	PNGICS	Existing IT facilities in the PNGICS	Reduced timeframe for E-processing from 1 week to 4 days	Reduced timeframe for E-processing from 4 to 2 days	Reduced timeframe for E-processing from 2 days to 1 day	Reduced timeframe for E-processing to same day
Lead government department	PNG Immigration & Citizenship Services (PNGICS)						

No.	Sector strategy
1	Effective immigration services
2	Reduce illegal immigrants
3	Improved ports and customs services
4	Improved E-Passport and online application systems

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Accommodation and office infrastructure built in selected locations	1	Establishment of accommodation and office infrastructure in 4 strategic locations	Establish 8 provincial immigration offices and infrastructure	Established immigration services in regional & provincial centres	An effective and efficient immigration system in place	Acquisition of land
Proper and fully kitted reception & processing centres in identified locations	2	Establishment of 6 reception & processing centers in 6 strategic locations	Establishment of border posts at most strategic locations	Partnership agreements with agencies such as Police, IRC, BDA, etc	Fully established and functional reception & processing centres	Immigrants might not cooperate with the authorities
Immigration facilities & services at overseas missions, consulates & trade centers	3	Establishment of 4 immigration service facilities in 4 strategic locations around the world	Recruitment & placement of skilled personnel in the 4 locations	Include other locations depending on whether there is demand and economic benefit for PNG	Fully established and functional immigration services in the selected locations	Distance and language could be challenges to implementation
IT infrastructures to E-Passport and online applications	4	Establish 2 main IT facilities for processing E-Passports and online applications	Recruitment & placement of appropriately skilled personnel	Introduce services to other parts of PNG and abroad	Fully established and functional IT systems in place	Future ICT policy could have implication

Responsibility	Department of Immigration, Police, Defence & PNG Ports							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding options
	1	7	2	2	2	2	15	GoPNG/Donors
	2		2	2	2	2	8	GoPNG/Donors
	3		2	2	2	2	8	GoPNG/Donors
	4	5	2	2	2	2	13	GoPNG/Donors
<b>Total:</b>		<b>12</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>44</b>	

## 5.13 Foreign aid

**Goal:**        **Advanced stage of foreign aid management and ultimately attain independence from foreign aid**

### ***Introduction***

PNG still depends on foreign aid in areas such as transport and energy, telecommunication, health and education, food security and good governance. As prescribed in the PNGDSP, external aid can be viewed from two specific angles: resources for development programs such as health, education and transport; and technical expertise and skills to provide advisors and training for delivering services and executing investment in development.

The proportion of technical assistance to aid varies between development partners but the total percentage amongst all donors is estimated to be above 50 per cent which is considered to be too high. To reduce the dependence on foreign aid, PNG will need to drastically reduce the skills gap in the first five years, and simultaneously transfer the resources expended on technical assistance into boosting technical and higher education and training, as well as into the development of infrastructure.

Over the next five years the level of technical assistance as a percentage of total foreign aid will decrease. In addition, the first MTDP intends to significantly address aid effectiveness issues. Current weaknesses in monitoring and evaluation of international aid undermine efforts to improve its effectiveness. All assistance programs of donor partners will need to be aligned to supporting the realisation of the PNGDSP in a coordinated and joint manner. In addition, an enabling environment will need to be established for PNG to graduate to a donor partner within the Pacific region.

### ***MTDP 2011-2015***

As from 2011, all foreign aid will need to comply fully with the PNGDSP and MTDP 2011-2015. This will require radical change in the way donors operate in PNG, including a dramatic shift away from the focus on technical assistance for filling the skills gap. The new direction outlined in the PNGDSP, and to be implemented in the MTDP, is for all aid to be used to help fill the resources gap in the current and future MTDPs (see Part 7 for more details). This will mean technical assistance in its current form will largely be replaced by technical assistance required to implement the strategies of boosting technical and higher education within PNG, including implementing short term training programs. It will also mean a shift away from technical assistance and towards resourcing projects in building infrastructure, including infrastructure in health and education.

By 2015, expected targets are: (a) less than 50 per cent of foreign aid will be for technical assistance, and most technical assistance will be in the areas of education and training; (b) the total value of technical assistance in education and training priority areas will increase, with a corresponding reduction in lower priority areas, and a greater utilisation of technical assistance from developing countries; (c) increased number of scholarships and quality graduates in professions identified in the skills gap analysis, consistent with the national human resource requirements; (d) a national and sectoral dialogue system established and operationalised for development partners; (e) central and line agencies of the PNG Government to meet the principles of the Paris Declaration, the Accra Agenda for Action, and the PNG Commitments to Aid Effectiveness; (f) as an expression of a mature level of aid alignment to national development strategies, a single Joint Assistance Strategy for PNG (JAS PNG) is adopted to complement the 2016-2020 MTDP, in place of individual country assistance strategies; (g) a significant and measurable reduction in aid fragmentation is achieved, and distribution of labour among development partners is agreed with the Government; (h) new modalities of aid and technical support are adopted, including the contracting by the Government of development partners to produce specific developmental outcomes and the adoption of co-financing schemes; (i) South-South Cooperation agreements are negotiated, subscribed, and substantially implemented, with proper monitoring and evaluation procedures to guarantee its value-for-money impact.

In order to achieve these, the MTDP 2011-2015 will focus firstly on taking firm measures to:

- undertake a comprehensive assessment of the skills gap and to establish — through partnership with donor partners — education, training and scholarship programs to reduce this skills gap;
- simultaneously undertake a sectoral analysis of technical assistance requirements and to redirect technical assistance away from low priority areas with a low education basis, to priority areas with capacity building through education and training;
- establish an advisory procurement and management system that is accountable to GoPNG systems;



- reform and rehabilitate tertiary and technical institutions to international standards that will produce internationally competitive graduates;
- in partnership with sectoral agencies, develop and establish a delivery mechanism and process that will strengthen and use national systems; and
- develop and establish a harmonisation system and process that promotes joint programs and investments that are consistent with the sequencing in the PNGDSP.

As a signatory to the Millennium Development Declaration, the Paris Declaration, and the Accra Agenda for Action, the goals and targets prescribed in the PNGDSP and the five year MTDPs will guide PNG's foreign policy towards independence from foreign aid once the country achieves the 50th position in the international Human Development Index produced by the UNDP.

### ***Challenges in implementation***

Developing an aid delivery process that uses PNG systems is a challenge amidst poor perceptions of accountability and transparency, good governance, security and social justice. Until the Government systems become more transparent and accountable, and are able to absorb and manage aid, development partners will prefer to continue to use their financial management, procurement and reporting systems. However, the international agreements in foreign aid should compel all donors to channel all their aid through PNG government systems before 2015.

Changing the mindset of donors to comply fully with the 2050 Vision, PNGDSP and MTDP will be particularly challenging. This will require radical change in the way donors operate in PNG, including a dramatic shift away from the focus on technical assistance for filling the skills gap. To be consistent with the PNGDSP and MTDP, donor priorities will instead need to focus on educating the people and helping to build the needed infrastructure.

The desire to progress from a donor recipient to a donor partner is a daunting task challenged by the political, social and economic developments and business dynamics in the Pacific and Asian regions, and by global dynamics. Of immediate challenge will be the relationship challenges with key bilateral and multilateral partners whose country assistance programs are at varying tenures and focus. To align all assistance programs to the PNGDSP and its four MTDPs over the 20 year period is in itself a challenge. Of most importance, PNG will need to meet the economic development targets set out in the PNGDSP to be in a viable position to change its status from donor recipient to donor. PNG will need to meet the challenge to ensure that all aid leading up to these outcomes are effective and that PNG will have established an environment conducive to becoming a significant player as a development partner in the Pacific, in partnership with Australia, New Zealand and other donors in the region.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Advanced stage of foreign aid management and attaining independence from foreign aid	Proportion of aid that is TA	DNPM	More than 70%	Less than 30%	Less than 5%	Less than 5%	Less than 3%
	Aid as a proportion (%) of GDP	DNPM, DoT, DoF	5%	4%	3%	2%	1%
	Proportion of aid that is concessional loans	DNPM, DoT, DoF					
	Proportion of aid that is untied	DNPM, DoT, DoF		100%	100%	100%	100%
	Proportion of aid for infrastructure	DNPM, DoT, DoF					
	Proportion of aid for social services	DNPM, DoT, DoF					
	Proportion of aid to help facilitate trade	DNPM, DoT, DoF					
	Number of short term (less than one year) scholarships for skills development	DNPM					
Number of long term (more than one year) scholarships for professional development	DNPM						
Lead government department	Department of National Planning & Monitoring						

No.	Sector strategy
1	Pursue diplomacies to help build trade capacity and secure untied ODA that is aligned to the PNGDSP and MTDP for infrastructure, education and basic social services
2	Develop a comprehensive system of Management for Development Results (MfDR) to assess the quality of aid, and particularly of technical assistance components to assure its quality, value-for-money, and capacity development impacts
3	Progressively eliminate all TA that bears little capacity development outcomes
4	Achieve significant levels of national ownership, leadership and alignment over aid programs
5	Enhance the national institutional framework for aid management, including staffing, legislation and policies; and maintain fully operative and updated DAD PNG, and use it to submit annual aid reports to Parliament
6	Monitor the joint implementation of the Paris Declaration, the AAA and the PNG Commitment on Aid Effectiveness
7	Enhance the dialogue and joint action with DPs, assuring the effective operation and support of the Technical Working Group on Aid Effectiveness (TWG-AE)

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
	1	Monitor aid performance and report annually to the National Executive Council	Monitor aid performance and report annually to the National Executive Council	Monitor aid performance and report annually to the National Executive Council	Monitor aid performance and report annually to the National Executive Council	R: Lack of monitoring mechanism A: Sustained commitment to monitoring exists
	1	Negotiate and implement the MfDR, and report to Parliament on outputs	MfDR fully implemented and regularly reported to Parliament	MfDR fully implemented and regularly reported to Parliament	MfDR fully implemented and regularly reported to Parliament	R: Consensus is not reached with DPs A: Commitment for consensus
	2	Elimination of TA of low capacity development impacts with new emphasis on TA for higher education	Less than 30% of total aid	Less than 5% of total aid	Less than 5% of total aid	R: Change resistance by some DPs A: Commitment for change exists
	3	All aid programs are aligned to PNGDSP and MTDP, according to a jointly agreed assessment framework; national aid policy sets parameters for alignment	All aid programs are aligned to PNGDSP and MTDP, according to a jointly agreed assessment framework; adopt a Joint Assistance Strategy (JAS)	All aid programs are aligned to PNGDSP and MTDP, according to a jointly agreed assessment framework; mid-term JAS review	All aid programs are aligned to PNGDSP and MTDP, according to a jointly agreed assessment framework; Comprehensive JAS review	R: Resistance by some DPs A: Alignment commitment exists
	4	Effective aid management legislation and policies adopted; DAD PNG fully operational.	Legislation and policies adopted; DAD PNG fully operational	Legislation and policies fully implemented; DAD PNG fully operational	Legislation and policies fully implemented; DAD PNG fully operational	R: Lack of institutional capacities or commitment hampers progress A: Institutional capacities and commitment do exist
	5	Monitor the joint implementation of the Paris Declaration, the AAA and the PNG Commitment on Aid Effectiveness	100% of implementation achieved	100% of implementation achieved	100% of implementation achieved	R: Policy or methodological disagreements with DPs exist A: Policy and methodological consensus with DPs exists
	6	TWG-AE operates and delivers	TWG-AE meets regularly and provides effective platform for PD, AAA & PNGC-AE implementation	TWG-AE meets regularly and provides effective platform for PD, AAA & PNGC-AE implementation	TWG-AE meets regularly and provides effective platform for PD, AAA & PNGC-AE implementation	R: Lack of sustained commitment to keep the TWG-AE operative A: Sustained commitment to keep the TWG-AE operative exists
<b>Responsibility</b>	<b>Department of National Planning &amp; Monitoring, Treasury &amp; Finance</b>					

## 5.14 Defence and security

**Goal:** A defence force that safeguards PNG's sovereignty and security, including by contributing to the task of nation building and to disaster relief.

### **Introduction**

The roles and functions of the PNG Defence Force (PNGDF) according to section 202 of the National Constitution are to defend PNG and its sovereignty; assist in the fulfillment of PNG's international obligations; provide assistance in the restoration of public order and security; provide for humanitarian assistance and disaster response; and to contribute to national development tasks.

The military assets and facilities are run down and barely operational. The small force of 2000 personnel is ageing and suffers from inadequate specialty training as a result of budget constraints since the 1990's. These constraints have severely restricted the PNGDF from fully delivering on its key roles and functions. With appropriate funding for an increase in military equipment, personnel and training, the PNGDF will move towards achieving its goal in accordance with its constitutional obligations, and meet the Vision 2050 fourth pillar on security and international relations. Importantly, the activities and tasks of the PNGDF will deliver benefits to PNG's development.

As outlined earlier in section 5.8, PNG is prone to disaster. Additional military equipment and strategic platforms are necessary to enable the PNGDF to respond quickly to any disaster relief operations and provide humanitarian assistance. The PNGDF is the only government agency that has platforms and trained personnel to deploy to disaster areas. Equipment used in disaster relief operations are the air platforms and navy platforms such as the LCH patrol boats. Manpower deployment includes medics and logistics. Land transport is an important requirement during such operations, however, expensive hire vehicles are commonly used. Planes and ships are crucial for deploying to disaster areas due to poor road infrastructure across PNG's rugged and archipelagic geography. Depending on the locality of the disaster area, planes are used to transport immediate supplies and manpower to the affected areas while ships are used to deliver the secondary supplies. Specialist training for disaster relief operations is very important as well so as to be prepared for any emergencies.

During deployments, including disaster relief, it is a requirement for personnel to be in full military attire, right down to personal weapons. Hence the kitting of military personnel is a requirement and not an option. Even on routine operations — whether land, maritime or aerial border patrols — a soldier is required to be fully equipped.

### **MTDP 2011-2015**

A doubling in the regular defence force strength from 2,000 to 4,000 personnel by 2015 will provide the human resources to enable the PNGDF to effectively execute its mandated roles of border surveillance and patrols and sovereignty protection, particularly if accompanied by an increase in training. The regular force will be supported by a reserve force of 1,000 by 2015. The first five years is the transitional period for the PNGDF and so recruiting should be undertaken with a priority on the transfer of knowledge and skills as 70 per cent of the current manpower is over the average age for serving in the military. Consequently, it is critical to build the reserve force to undertake nation building and UN tasks, allowing for the time taken to build human capacity and the reserve force that predominantly comprises employed specialists.

PNG has 3.1 million square kilometres of waters and seven maritime borders to monitor. A lack of surveillance capacity has contributed to an increase in illegal cross border activities such as drugs, gun smuggling, human smuggling and trafficking, money laundering, illegal fishing and poaching, and sea piracy. As a result, PNG loses millions of kina each day. For instance, in the fishing industry it is believed that fresh fish is illegally exchanged at sea. This costs PNG around K3 million a day or K1 billion a year. A proper surveillance system in place within the first five years would help protect PNG's rich fisheries and marine resources, as well as other issues of national interest. This includes the protection of oil and LNG pipelines and seabed mining activities — all of which are critical for the PNG economy. A more effective intelligence capacity will need to be developed to cover forward operating bases so as to ensure timely reporting and a response to illegal cross-border activities and therefore sovereignty protection.

To increase effective patrols of PNG's maritime borders in the first five years, there is a need to upgrade and increase the marine capacity and to be International Maritime Organisation (IMO) compliant. The various vessel types indicated in the deliverables table below serve different purposes and are for different sea pockets. Acquisition of the inshore patrol vessel (IPV) in the first five years will boost the surveillance and

patrol operations from 6 to 200 nautical miles along the 7 maritime borders whilst the assault boats are for the forward operating bases (FOBs) and LCH for logistics requirements.

Upgrading PNG's strategic air capacity will complement existing maritime operations to ensure a quick response to disaster relief and to provide effective sea and land border patrols. It will also help in responses to other government call outs — in addition to routine aerial border surveillance — to meet PNG's objectives in defence and security.

Office, housing, training, health and utilities infrastructure will also require upgrading to enable the PNGDF to better perform its roles and functions in order to achieve its sector goal. Communication is an integral part of defence operations. Improving communication by 2015 will ensure the PNGDF successfully delivers on its core functions.

The field equipment, kitting of a soldier, and other machinery are to equip the force so that it is in accordance with NATO & UN standards in preparation for international obligations (UN, etc). PNGDF's participation in international obligations will put PNG on the global decision-making arena and contribute to world peace as a member of the United Nations and therefore safeguard PNG's sovereignty and security.

Increasing PNG's land defence capacity will contribute to the effective land border patrols between PNG and Indonesia to hinder illegal cross-border activities. Greater land defence capacity will also contribute to nation building tasks and greater participation in international obligations.

### ***Building on MTDP 2011-2015***

With institutional capacity building in the first five years, much of the critical defence infrastructure and strategic equipment/capability base would have been addressed through the rehabilitation program. This will take the process of rebuilding PNGDF well into the second five year MTDP where it will gain momentum as the economy also picks up, therefore enabling the construction of required infrastructure to be financed. The stronger economy will also allow an increase in manpower strength and specialist training, thereby equipping the force in the ensuing MTDPs to a level such that the defence sector's goal will be realised. Furthermore, participation in international commitments will provide the platform for PNG to influence trade brokering/negotiations for the nation.

Appropriately resourcing the PNGDF will enable it to increase its regular periodic border surveillance and patrols to ensure sovereignty protection. This will contribute to achieving the target of a 55 per cent reduction in law and order (section 3.2) because the influx in illicit cross-border activities has contributed to the law and order problem, particularly in the area of gun and drugs smuggling. Illegal migrants not only pursue business opportunities in PNG, but occupy local jobs and this contributes to PNG's unemployment problem. It also leads to less revenue flow to the Government due to tax evasion by foreigners, which in turn results in a reduced quality of public services to the people of PNG.

The PNGDF's engagement in nation building tasks through their civic action program guarantees military presence in the rural and poverty corridor areas and in so doing contributes significantly to containing the law and order problem.

### ***Challenges in implementation***

The main challenge to the implementation phase of the defence sector will be adequate funding to meet all the expenditure requirements. Good management of funds will also be a major challenge for the defence sector thus calling for stringent measures to be in place to avoid future repetition of financial blunders. Another challenge will be the creation of an international relations and security sector — for better coordination of international relations and security — which will involve agencies such as Foreign Affairs and Trade, Immigration, Defence, PM and NEC Departments, Customs and NAQIA.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
A defence force that safeguards PNG's sovereignty and its security, by contributing to nation building and disaster relief	Ratio of PNGDF personnel to PNG's population	PNGDF /DOD	1:3,300 (2,000)	1:1,825	1:1,350	1:1,112	10000 manpower strength (1:1,000)
	Increase maritime surveillance and border patrols	PNGDF /DOD	Only PNG-Aust and PNG-RI sea and land borders manned (1/4 borders manned) at random	Quarterly surveillance and patrols of all borders and continental shelves	Monthly surveillance and patrols of all borders and continental shelves	Fortnightly surveillance and patrols of all borders and continental shelves	All 8 borders, both land and sea, are effectively monitored on a weekly basis
	Number and types of air, land and maritime equipment/capabilities	PNGDF /DOD	Current capabilities for the three elements	Rehabilitate and upgrade all existing air, land and maritime capabilities and acquire critical capabilities and equipment	Acquire new different types of air, land and maritime capabilities and equipment as required	Increase acquisition of air, land and maritime capabilities as required	More effective air, land and sea capabilities in place to respond to government call outs
	Participation in international obligations	PNGDF /DOD	Previous & current international commitments & engagements such as Vanuatu and RAMSI	Signing of MOU with UNPKM. Engagements in UNMOs & RAMSI. International obligations committee in place	UNPKMs, Regional, MSG, Bilateral, Requesting Organisations	UNPKMs, Regional, MSG Bilateral, Requesting Organisations	Effective collaboration & participation in international obligations
	Increase use of PNGDF civic action program for national building tasks	PNGDF /DOD	Past and ongoing PNGDF civic action projects	Procure and mobilise equipment to build capacity and engage in civic action programs	Commit PNGDF to all major government construction projects in the country	At least 75% of all major construction projects are fully completed	All major construction projects are fully completed
Lead government department	Department of Defence and PNGDF						

No.	Sector strategy
1	Enhance defence and security by increasing maritime surveillance capacity and activities;
2	Rehabilitate existing facilities and building infrastructure, develop human resource capacity and appropriately equip the Force;
3	Equip and use the military for international obligations (UNPKMs efforts, etc) and disaster relief operations both within PNG and abroad;
4	Increase the use of the military for nation building tasks.

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Surveillance capacity	1.1	Surveillance capability in place	Review and expand to include coast watches	Review and expand to include coast watches	Establish an effective surveillance system	Acquire and install equipment by 2012. Have arrangements in place for coast watches.
Maritime capacity (ships, equipments)	1.2	Rehabilitate existing 6 maritime capabilities and equipment as follows: 2 LCH; 4 Patrol Boats; EOD Equipment; SBT Equipment; <u>New critical purchase</u> 1 IPV; 1 LCH; 8 assault boats	Increase maritime capabilities and equipment as follows: 3 IPVs; 2 OPVs ; 1 LCH; 4 assault boats ; 2 hover crafts	Increase maritime capabilities and equipment as follows: 2 OPVs; 4 assault boats; 2 work boats; 1 LSH (Larger vessel) or Multi-Purpose Vessel (MPV)	1 LPA (Larger Vessel);	-Funding is made available on an 'at least' basis

Air capacity (equipment, machinery)	1.3	Rehabilitate & upgrade 6 existing platforms: 2 CASA CN235; 2 Arava 201; 1 UH-IH <u>New critical purchase:</u> 2 rotary wings; 1 STOL Craft;	Increase air force strategic capabilities: 4 STOL Crafts; 2 Strategic Air Lifts; 4 Rotary Wings; 4 Combat Rotary Wings (marinised)	Increase strategic air capabilities: 1 Strategic Air Lift - Persuader; 1 Strategic Air Lift; 4 Combat Helicopters (marinised); 4 trainers ; 1 VIP Jet;	Acquisition of: 2 Strategic Air lifts; 1 VIP Jet;	-Funding is made available -Enter into procurement arrangements to tap into discounts available.
Intelligence requirements	1.4	-1 restricted IT network for intelligence branch -1 intelligence communication system -5 vehicles for intelligence branch & field officers -2 boats for DSLOs (Buka & Daru)	Upgrade and acquire where critical	Upgrade and acquire where critical	Upgrade and acquire where critical	Have a compatible intelligence network in place
Forward Operating Bases (FOBs)	1.5	Upgrade existing facilities in Kiunga & Vanimo and construct new ones in Daru & Weam	Build one in Alotau , Torauto and Kiunga	Build one in New Ireland and Manus	Have at least 8 well-equipped FOBs	Bougainville peace agreement to be reviewed
Communications infrastructure and equipment	1.6	Rehabilitate existing VSAT facilities: 2 VSAT based stations; 10 unit communication centres; <u>New Purchases:</u> 12 (4x4)-VSAT mobile vehicle; 40 VSAT mobile stations; 150 long range tactical HF radio set; 150 short range tactical VHF radio set; 3 radio mounted vehicles	Upgrade existing equipment and acquire critical equipment	Upgrade and acquire critical equipment	Upgrade and acquire critical equipments	-Have an effective communication capability in place -Funding is made available
Infrastructure requirement	2.1	Rehabilitate and upgrade existing infrastructure (office, training, residence, health, etc) including: 10 barracks roads, 10 sewerage and water supply systems; relocation of 50 married quarters, 1 Comms and 1 HQ in Tarangau Naval Base; construction of a 40-men officers quarters for air transport wing, relocation of Joint Force HQ (JFHQ).	Expand, upgrade and build new land, air and maritime residential, office and training facilities to accommodate an extra 2000 personnel.	Expand, upgrade and build new land, air and maritime residential, office and training facilities to accommodate an extra 2000 personnel.	Expand, upgrade and build new land, air and maritime residential, office and training facilities to accommodate an extra 2000 personnel and build 1 new air base.	-Funding is made available -Land is made available and registered as defence state land -Building plans have to be by registered reputable draftsman and certified
Human resource capacity building	2.2	Training for: 2000 basic recruits; 175 officer cadets; 30 pilots; 30 loadmasters; 4 air traffic officers; 5 customs officers; 4 engineers; 4 Aircraft technicians; 10 technical trade training (NATTB); 20 technical trade training (PNGDF TTU); 10 professional management; surveillance training; and force exercises	Training for: 2000 basic recruits; 175 officer cadets; 10 pilots; 10 loadmasters; 2 engineers; 4 air traffic officers; 5 customs officers; 20 technical trade training (PNGDF TTU); 10 professional management; surveillance training; and force exercises	Training for: 2000 basic recruits; 175 officer cadets; 10 pilots; 10 loadmasters; 2 engineers; 4 air traffic officers; 5 customs officers; 20 technical trade training (PNGDF TTU); 10 professional management; surveillance training; and force exercises	Training for: 2000 basic recruits; 175 officer cadets; 10 pilots; 10 loadmasters; 2 engineers; 4 air traffic officers; 5 customs officers; 20 technical trade training (PNGDF TTU); 10 professional management; surveillance training; and force exercises	-Funding is made available -Defence training facilities are in place -Air force pilots to be trained overseas in the first five years

Equipping of the Force - land element (equipment, weapons, machineries)	2.3	Acquisition of land equipment: 200 vehicles; 4,500 small arms; 4,500 field equipments; 20,000 DPU uniforms; all weapon types; 200 tentage all sizes; 2,500,000 ammunition all types; 1 squadron combat engineering machinery; 1 troop armoured vehicle	Acquisition of land equipment: 200 vehicles; 6,500 small arms; 6,500 field equipments; 30,000 DPU uniforms; 100,000 CRP; all weapon types; 300 tentage all sizes; 3,500,000 ammunition all types; 1 squadron combat engineering machinery; 1 squadron armoured vehicle	Acquisition of land equipment: 300 vehicles; 8,500 small arms; 8,500 field equipments; 40,000 DPU uniforms; 200,000 CRP; all weapon types; 300 tentage all sizes; 4,500,000 ammunition all types; 1 squadron combat engineering machinery; 1 squadron armoured vehicle	Acquisition of land equipment: 400 vehicles; 10,500 small arms; 11,000 field equipments; 60,000 DPU uniforms; 300,000 CRP; all weapon types; 400 tentage all sizes; 5,000,000 ammunition all types; 1 squadron combat engineering machinery; 1 squadron armoured vehicle	Force equipment, weapons and machineries at NATO/UN standards
Force available for call out	3.1	1 company	5 Companies	8 Companies	1 Battalion	International Obligations (IO) Bill passed as an Act of Parliament in May 2010. Other legal & policy instruments enabling call outs are in place
Recruiting and training of reservists	3.2	Recruit and train 1,000 reservists	Recruit and train 3,000 reservists	Recruit and train 3,000 reservists	Recruit and train 3,000 reservists	Reserve Force Bill passed as an Act of Parliament by 2011 and recruiting begins
Regional engineering bases (REBs)	4.1	2 fully complete and equipped (HREB & IREB)	1 fully complete and well equipped (NREB)	1 fully complete and well equipped (SREB)	At least 4 fully complete	Land is registered as defence state land, and funding is made available

Responsibility	DOD and PNGDF							Funding options	
	Estimated inputs (K million)	No.	2011	2012	2013	2014	2015		2011-2015
	<b>1.1</b>		1.0	25.0	1.0	1.0	1.0	<b>29.0</b>	GoPNG
	<b>1.2</b>		6.6	4.5	5.0	2.0	90.0	<b>108.1</b>	GoPNG
	<b>1.3</b>		66.0	47.0	60.0	50.0	5.0	<b>228.0</b>	GoPNG
	<b>1.4</b>		1.1	1.0	4.7	1.0	0.0	<b>6.8</b>	GoPNG
	<b>1.5</b>		9.2	9.2	9.2	9.2	7.2	<b>44.0</b>	GoPNG
	<b>1.6</b>		5.8	4.8	4.9	5.0	0.0	<b>20.5</b>	GoPNG
	<b>2.1</b>		39.0	42.1	44.9	42.2	25.2	<b>193.4</b>	GoPNG
	<b>2.2</b>		5.6	6.1	6.6	6.1	6.3	<b>30.7</b>	GoPNG
	<b>2.3</b>		27.6	17.6	21.1	21.1	21.1	<b>108.5</b>	GoPNG
	<b>3.1</b>		5.0	5.0	5.0	5.0	5.0	<b>25.0</b>	GoPNG
	<b>3.2</b>		5.6	5.3	5.3	5.3	5.3	<b>26.8</b>	GoPNG
	<b>4.1</b>		4.5	4.5	5.0	17.0	14.0	<b>45.0</b>	GoPNG
<b>Total:</b>			<b>177.0</b>	<b>172.1</b>	<b>172.7</b>	<b>163.9</b>	<b>180.1</b>	<b>865.8</b>	



## 5.15 Sports

**Goal:** To harness the power of sport for personal development, community development, and national development.

### *Introduction*

Sports is a conduit for advocacy in nation building, healthy living, prevention of crimes, and providing career opportunities. In PNG sports is part and parcel of the society. The annual PNG games contribute to nation building and character development. The international sporting events such as the Mini-South Pacific games, the South Pacific Games, the Olympics and the Para-Olympics, sees the nation converge in support of PNG's athletes. Sports can also provide career opportunities such as in soccer, Australian rules, rugby league, basketball, netball, tennis, golf and cricket. The development of sport is integral to youth development outlined earlier in section 5.2.

Sport-oriented development programs have been recognised by the United Nations Inter-agency Taskforce on Sport for Development and Peace as viable and practical ways to enhance an individual's spiritual, emotional and physical health and provide an alternative to harmful behaviour, promote social inclusion and enhance conflict prevention and peace building processes. They can also contribute to economic development and employment. In that context, the Taskforce advocates that sport and physical activity be incorporated in the development policies of countries and programs of International Development Agencies, with particular emphasis on the MDGs and the needs of young people.

Sport is a tool for:

- **Personal development:** Being involved in sport promotes an individual's development of health, fitness, discipline, respect, leadership and confidence.
- **Community development:** Community based sporting activities help to improve the quality of community life.
- **National development:** PNG's participation in international and major national sporting events promotes national unity, national identity and national pride, and raises the international profile of PNG.

### *MTDP 2011 -2015*

The MTDP shall promote the development of sports at the community, amateur and elite levels. This will be achieved by supporting the development of sporting facilities for community, national and international sporting events, integrating sport in schools, and supporting the coordination and development of domestic sporting competitions from grassroots to elite levels.

Within the next five years, focus will be on the following areas:

- strong organisational capacity development;
- private sector engagement;
- grassroots participation and provincial and district engagement;
- sporting excellence;
- education and training;
- sport for development; and
- facilities.

DSP sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Personal development, community development and national development through sports.	Incidence of lifestyle illnesses						Keep the incidence of lifestyle illnesses and coronary disease low.
	Number of internationally accepted sporting facilities	PNG SF	Only one sporting stadium in reasonable standard	One sporting stadiums meeting international standards	Minimum two regional stadiums meeting minimum international requirements	Four regional sporting stadiums meeting minimum international requirements	Number of internationally accepted sporting facilities
Lead government department	Papua New Guinea Sports Foundation						

No.	Sector strategy
1	Support provincial authorities in promoting the PNG games, community sports, the 2015 Pacific Games and other international events
2	Support promotion and awareness through enhanced sports education and training program at schools and community levels for children, youth and adults to minimise unhealthy lifestyle diseases
3	Support and promote disabled sports and disabled athletes.

DSP 2030 deliverables	No.	2011-2015	2016-2020	2021-2025	2026-2030	Risks and assumptions
Sporting facilities that meet minimum international standards for all sporting codes for the PNG games, and in preparation for the Pacific Games and all international events hosted in PNG	1.1	-Construction of 2015 Pacific Games facilities -3 main stadium complexes refurbished				
Enhanced sports education and training programs for adults, youth and children	2.1	Sports for development program to promote the value of regular exercise and a healthy lifestyle				
A fully established national pikinini, community and disabled sports development program	3.1	Sports capacity development program				

Responsibility	PNG Sports Foundations							
Estimated inputs (K million)	No.	2011	2012	2013	2014	2015	2011-2015	Funding Option(s)
		4	12	66	6	6	94	GoPNG

## Part 6

# Modes of implementation, collaboration and logical flow of sectoral plans

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### 6.1 Economic Corridors

Economic Corridors are proposed to alleviate poverty. Corridors of poverty will be transformed into Economic corridors. Without the corridor system people in poverty will not be integrated into the mainstream economy.

An Economic Corridor is a region in which the Government provides a well planned zoning system, a comprehensive and effective network of transport and utilities, quality education, and health services. Within this region, businesses are able to operate at low cost and under well designed incentives, thereby encouraging foreign and domestic private sector investment. By concentrating the construction of essential infrastructure within certain regions, the Economic Corridor approach takes advantage of the substantial economies of scale and scope associated with large service sector infrastructure. This reduces the cost to state owned enterprises and other providers of essential infrastructure, while raising their returns. Building on this infrastructure, effective sequential and spatial planning will help to expand economic activities like agriculture, tourism and manufacturing.

#### **MTDP 2011-2015**

The Government has identified ten regions of PNG to be categorised as Economic Corridors. Within the next five years, efforts will be focused on developing four economic corridors. These are as follows.

- Petroleum Resource Area Economic Corridor (PRAEC) (Southern Highlands, parts of Enga, Gulf and Central Provinces). The PRAEC was approved by Cabinet in May 2009.
- Central Corridor (Central, Milne Bay, Oro and Morobe).
- South Coast Corridor (East New Britain and West New Britain).
- Momase Corridor (Madang, East Sepik, and West Sepik).

Development of these corridors will be coordinated by Economic Corridor Implementation Authorities (ECIAs). Legislation will set out the powers, functions and responsibilities of an ECIA in mobilising, planning and managing development in the Economic Corridor. Until the ECIA's are well established as a separate entity, they will operate under the Department of National Planning and Monitoring.

Over the next five years, implementation of the Economic Corridors and establishment of the ECIA's will be sequenced through a number of phases. During the first phase, policy, legislation, ECIA governance and reporting mechanisms will be in place to support a fully functional ECIA. The first ECIA will be the PRAEC ECIA. The second phase will produce targeted sectoral studies with geographical overlay. An integrated development strategy and plan will be developed during phase three, alongside a proposal of specific projects and programs to be implemented within each corridor, in line with government priorities identified in MTDP 2011-2015 and PNGDSP. Phase four will focus on the implementation and monitoring of selected projects and programs. ECIA's will work closely with provincial, district and town authorities to harmonise development initiatives, coordinating efforts in order to bring about greater results in the corridors. ECIA's will only initiate flagship projects of national interest in their various corridors, specifically in economic infrastructure (transportation, energy and telecommunication), social infrastructure (health, education, and research and development), and projects for economic pursuit (agriculture, fisheries, forestry, downstream processing, and small-medium enterprise development). ECIA's will not implement development initiatives at provincial and local levels, rather this will be the responsibility of provincial and lower level authorities.

## **6.2 Partnership and collaboration**

Implementation of the sector strategies over the next five years requires a collaborative effort among all major stakeholders. This includes the whole of government, the private sector, development partners, churches, civil society and community based organisations. Over the next five years, development efforts of donor agencies, churches, civil society and community based organisations should be aligned with the Government in order to achieve tangible results.

### **6.2.1 Whole of Government collaboration**

**Goal:** **A unified and dynamic public sector that effectively delivers on government goals with all central government agencies working in collaboration**

It is the aspiration of the Government for a “whole of Government” approach to improve the efficiency and effectiveness of the public sector to deliver the desired goals and targets of the MTDP 2011-2015. Strengthening and enhancing the capacity of the central agencies to effectively coordinate the line agencies and the provincial administrations to implement the Governments development policies and plans is the key strategy to realising this goal.

Within the next five years, a “whole of Government” approach will be fostered through a review of key legislations, such as the 1995 Organic Law on Provincial and Local Level Governments, and relevant regulations that guide agencies to ensure there is a clear demarcation of responsibilities between all government agencies and provincial administrations. In addition, resourcing and enforcing the coordination functions of central agencies to ensure that public institutions comply with directives and work towards achieving the development agenda of the Government will be critical over the coming years.

Other strategies for achieving whole of Government collaboration include: public servant networking and cooperation; imparting knowledge and information through reliable communication mechanisms such as the internet and e-government resources; through better communication, to learn from best practices within other agencies; and to encourage a global search for ideas and expertise to solve local problems.

### **6.2.2 The private sector**

**Goal:** **Partnership between the Government and the private sector to provide services and public infrastructure**

Within the next five years great strides will be taken to cement and enhance the relationship between the Government and the private sector to provide services and public infrastructure. This includes implementation of the private sector growth strategy and the Public Private Partnership (PPP) policy.

PPPs are a method to procure and deliver infrastructure and services through cooperation between a public institution and one or more private enterprises. PPPs are most frequently used for major infrastructure projects and as such will form a cornerstone of investment in effective service delivery. Over the next five years the Government will establish the PPP centre, an entity which will have the capacity to support line agencies and state owned enterprises in developing robust and credible PPP proposals. Moreover, the procurement and development of select infrastructure and services will take place under PPP arrangements.

Many private sector entities engage voluntarily in development activities. Telecommunications companies, for example, donate substantial resources towards education. As another key example, PNG Sustainable Development Ltd exists to enhance development in Western Province and throughout PNG. The pro-development activities of private entities are commendable, but they would be more effective if well coordinated, including with government activities. A high degree of coordination through the MTDP will greatly enhance PNG’s development outcomes during the MTDP period.

### **6.2.3 Development partners**

**Goal: Strong and decisive leadership in driving the aid program forward to achieve sustainable economic growth**

Currently, PNG receives overseas development assistance from five bilateral donors — Australia (AusAID), Japan (JICA/JBIC), New Zealand (NZAID), People's Republic of China, and People's Republic of Korea — a number of multilateral donors, including the European Union, World Bank and Asian Development Bank, and a number of agencies of the United Nations (UNDP, UNICEF, UNFPA, UNHCR, FAO, WHO, GEF, UNIFEM and UNHABITAT). Funding and technical support is also channelled through both international and local NGOs, private foundations and sector specific vertical programs.

In an effort to make aid more effective and to move towards a more sustainable broad-based economy with improved service delivery, the Government and all development partners signed the PNG Commitment on Aid Effectiveness in 2008. This commits PNG to the implementation of the international principles of ownership, alignment, harmonisation, managing for results, and mutual accountability, as set out in the Paris Declaration on aid effectiveness. It is through this agreement that PNG and the development partners have committed to work in the spirit of partnership and mutual accountability to build on the ongoing efforts and experiences of PNG.

As outlined in Part 5.13, over the next five years the Government will improve monitoring and reporting on the PNG commitment on Aid Effectiveness. Moreover, the Government will continue to focus on reducing technical assistance as a proportion of foreign aid, whilst continuing to welcome initiatives of development partners to fund investments and essential services. Crucially, the Government will direct development partners to support government priorities, as set out in the MTDP and PNGDSP. Additionally, over the next five years, support from development partners will be documented in the Development Assistance Database (DAD PNG), strengthening PNG's commitment to the aid effectiveness agenda.

### **6.2.4 Churches**

**Goal: Effective health, education and community service delivery through a close and sustainable partnership with PNG's churches**

Churches have contributed to the development of PNG for over 100 years and continue to play an important role in nation building by fostering spiritual, social and economic growth. The Government has recognised the efforts of churches in partnering with the Government to provide basic social services such as health and education under difficult circumstances in many parts of the country, especially in the rural areas where the majority of the population lives, but where government services are either inadequate or lacking.

Over the next five years the Government will continue to support PNG's churches through the Church-State Partnership. At least K60 million will be directed by the Government through PNG's churches to help deliver health and education services. Within the period 2011-2015, it is the Government's commitment to ensure that a close working relationship is maintained with PNG's churches through establishing joint coordination meetings, establishing independent monitoring mechanisms to assess performances, and continuing to maintain and strengthen development partnerships.

### **6.2.5 Civil societies and community based organisations**

**Goal: Civil societies and community based organisations will complement the Government in service delivery.**

Civil society organisations (CSOs) and community based organisations (CBOs) provide basic services to communities, addressing a host of development issues. The Government recognises the work that these organisations do to support the citizens of PNG, and has therefore developed a partnership framework. Over the next five years this partnership framework will be implemented, strengthening the relationship between the Government and CSOs to effectively implement development plans and policies of the Government. In particular, the Government will direct around K60 million through the CSO-State Partnership to help deliver basic health and education services to improve the lives of the people of PNG.

Over the coming years greater monitoring by the agency responsible for planning and development will take place, to ensure effectiveness. Furthermore, the effectiveness of the CSOs will be enhanced by improving the

coordinated flow of information among CSOs and stakeholders including the Government and development partners and through the promotion of public forums.

### 6.3 Alignment of sector al, provincial and district p lans to MTDP

The National Executive Council (NEC) endorsed the PNGDSP in 2010 and directed DNPM to coordinate all sectoral and provincial plans in line with the PNGDSP through the four five year MTDPs. As stipulated under the Organic Law on Provincial and Local Level Government, (Section 33A) all provinces and districts are to have five year development plans aligned to national policy.

As stated in the preceding chapters, the MTDP 2011-2015 is an action plan detailing what agencies are to implement in line with the policy direction and enabling programs stated in the PNGDSP.

Therefore, it will be the responsibilities of the implementing agencies and provincial governments to clearly articulate their strategies, policies and plans in line with the priorities set out in the MTDP and PNGDSP. The Department (DNPM), through its regional offices, will provide leadership in coordinating and guiding the identification of development priorities, formulation of sector, provincial and district plans, administration of budget appropriations under the Public Investment Program, and the overall supervision of monitoring and assessment of development programs and projects.

#### **Alignment strategies by sector IAs, provincial governments and local level governments**

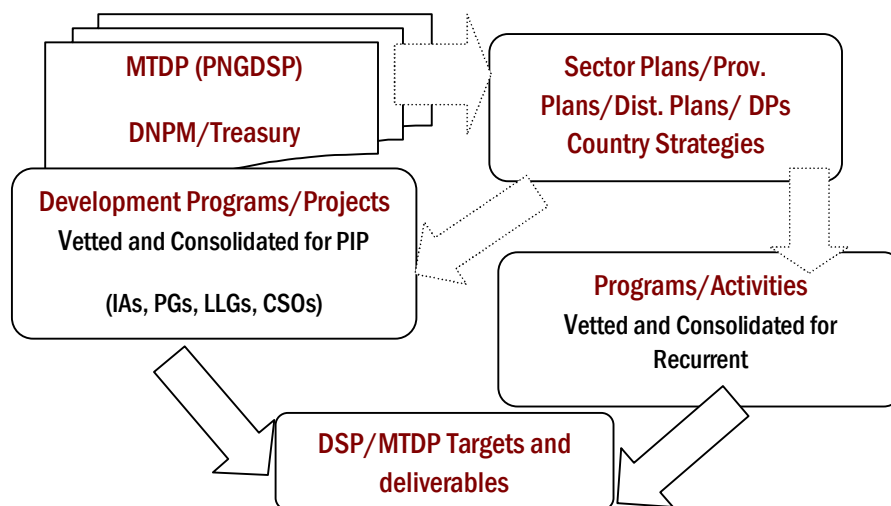
At the National Government level, the PNGDSP is translated through the MTDP — a five year action plan. This plan will guide all sector agencies in their respective sector plans and strategies to achieve the desired goals and deliverables of each sector within the first five year period.

Development partners are expected to align their country development programs and strategies with the National Government’s endorsed strategy — the PNGDSP. DPs are urged to support development programs and projects in line with the priorities and goals set out in the MTDP. Programs and submissions of CSOs and other non-state organisations will be supported through the Development Budget by the National Government, provincial governments (PGs), local level governments (LLGs) and donors according to the MTDP.

The provincial and local level governments will also implement the MTDP through programs and projects which will be prioritised according to their local environment and their order of priorities. Support through the Development Budget will be sequenced to maximise output for core and key enabling outputs.

The MTDP also calls for all IAs, PGs, LLGs and DPs, as core players, to effectively coordinate the translation, understanding and implementation of relevant prioritised programs and strategies. This means that the achievement of sector goals, provincial visions and districts’ aspirations will only come about when resources from both the recurrent and development budgets are properly managed.

The alignment of various plans to the MTDP and PNGDSP requires the mobilisation of resources and appropriation to each sector and province and the coordinated implementation by all players.



## Part 7

# Resourcing the MTDP 2011-2015

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### 7.1 Policy settings

The medium term resource framework is the resource envelope of the Medium Term Development Plan (MTDP). It is determined by the Medium Term Fiscal Strategy (MTFS) and the related Medium Term Debt Strategy (MTDS) which were revised to ensure they are consistent with economic realities and to accommodate development investment decisions by the Government. This framework provides for medium term debt financing during the initial PNGDSP period, while ensuring the Government Budget is balanced over the long term. In this regard, a key factor is that Government revenues from the LNG project will commence around the beginning of the second MTDP.

The focus of the medium term fiscal policy framework is to maintain fiscal discipline, maintain low levels of debt and reduce high risk foreign debt. This focus remains a sound fiscal strategy. However the way in which this is pursued needs to account for changing financial and economic conditions. As discussed in Part 2, the 2006 policy of using 30 per cent of windfall revenues to reduce debt is no longer appropriate now that PNG debt levels are sustainable. Such a narrow policy is only appropriate when debt levels are high.

The public finance and investment strategy outlined in the PNGDSP is a more prudent approach to managing windfall revenues, encompassing the need to maintain low debt levels while also ensuring revenues contribute to development when debt levels are low. The Government will continue to support fiscal discipline, but through the public finance and investment strategy.

The Medium Term Debt Strategy has also been revised to ensure it is consistent with economic realities and to accommodate development investment decisions by the Government. For instance, the sequencing principles in the PNGDSP entail undertaking huge investments in the 'enablers', such as in the transport network and in law and justice, which can be financed through State borrowing by leveraging future revenues from the minerals sector. The PNGDSP also emphasises policy measures that will generate large net revenue gains, for example the introduction of competition in ICT, freeing up private and foreign investment in critical infrastructure, and ensuring that land administration is functioning. These measures will generate economic activity and tax revenues that will support a greater capacity to borrow.

Therefore, rather than waiting for the second MTDP to invest in key infrastructure, the medium term resource framework allows for borrowing during the first MTDP against the income expected in later years, and thereby investing now in critical infrastructure to develop PNG's economic potential. Infrastructure investment will in turn lead to faster growth in government revenues, financing the repayment of debt and ongoing high levels of infrastructure investment in future MTDPs.

### 7.2 Financing MTDP 2011-2015

The National Government's resource envelope over the period of the first MTDP will approximate K68 billion (table 7.1). This constitutes funds from National Government tax revenues, support from donors, debt financing and off-budget support from other development stakeholders in PNG including for example, the private sector who may contribute through the tax credit scheme.

The National Government's financial resources will be allocated between the Development Budget and the Recurrent Budget. Preliminary estimates indicate that National Government development expenditure over the first MTDP period will approximate K32 billion. Recurrent expenditure will approach K31 billion over this same period. However recurrent expenditure may need to account for a higher share of the resource envelope than estimated here. Importantly, recurrent expenditure will grow over time as the extent of Government services expands under the Development Budget. For example, the construction and rehabilitation of community health posts will result in additional recurrent expenditure on routine maintenance and operating costs. Hence there is a need for close coordination between the development and recurrent Budgets.

In this context, it is noted that there are outstanding issues that need to be accounted for in order to finalise the allocation between the Recurrent Budget and the Development Budget. For example, DSG grants are funded through the Development Budget even though they are recurrent by nature. Furthermore, to the extent the Recurrent Budget adequately funds routine maintenance of infrastructure, the burden on the Development Budget of rehabilitating national infrastructure will decline over time. Accounting for these and other issues would increase the share of funds allocated to the Recurrent Budget.

**Table 7.1 – Resourcing the first MTDP**

	2011 K million	2012 K million	2013 K million	2014 K million	2015 K million	2011-2015 K million
<b>MTDP Resource Envelope</b>	<b>9,543</b>	<b>12,314</b>	<b>13,877</b>	<b>15,151</b>	<b>17,163</b>	<b>68,048</b>
<b>Total Development Expenditure</b>	<b>4,500</b>	<b>6,899</b>	<b>7,650</b>	<b>8,434</b>	<b>9,783</b>	<b>37,267</b>
<b>Development Budget</b>	<b>4,500</b>	<b>6,099</b>	<b>6,450</b>	<b>7,034</b>	<b>8,383</b>	<b>32,467</b>
GoPNG (direct finance & tax credit)	2,815	3,486	3,716	4,701	6,361	21,080
Grants	1,526	1,453	1,403	1,387	1,387	7,156
GoPNG financing requirement	159	1,160	1,331	946	635	4,231
<b>Other stakeholders (off-budget)</b>	<b>0</b>	<b>800</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>	<b>4,800</b>
<b>Recurrent Budget (GoPNG)</b>	<b>5,043</b>	<b>5,415</b>	<b>6,227</b>	<b>6,717</b>	<b>7,380</b>	<b>30,781</b>

Note: other stakeholders in the development of PNG include provincial and local level governments, churches, NGOs, CBOs, the private sector and PNG Sustainable Development.

Government revenue is forecast to be almost K52 billion in the first MTDP period of 2011-2015 (figure 7.2 and figure 2.2 in Part 2). However, this is a shortfall against MTDP expenditure requirements which means that other sources will be required to fully finance the first MTDP.

It is anticipated that donor grants directed through the national budget will exceed K7 billion over the five year period from 2011 to 2015. To the extent that these funds are coordinated with the MTDP and focused on the key enablers of higher education, primary and secondary education, law and order, land administration, transport infrastructure and other critical infrastructure such as power, water and sanitation, the returns to aid assistance will be substantial.

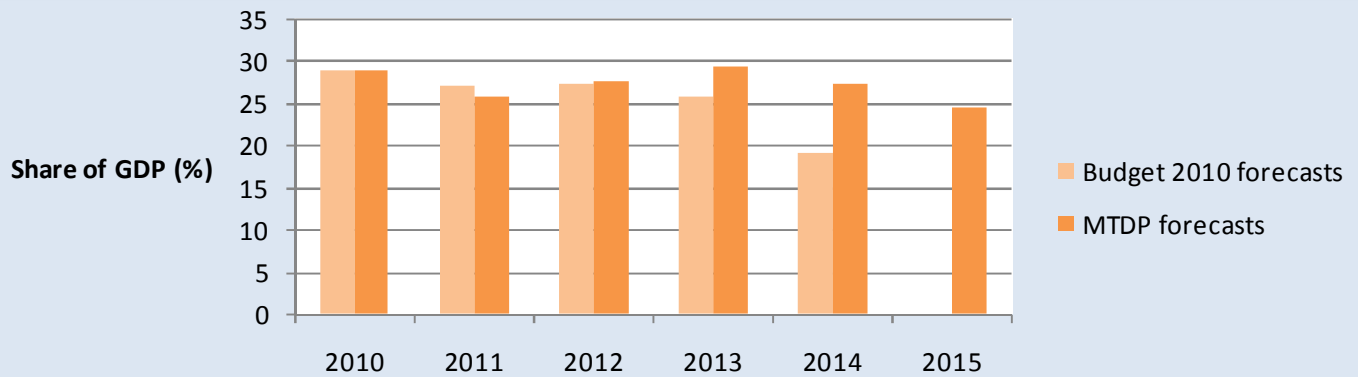
The Government will also look to other stakeholders in PNG's development to work towards the vision of a prosperous, united nation. Such stakeholders include provincial and local level governments, churches, civil societies and community based organisations. They all have a pivotal role in the development of PNG. Likewise, private sector contributions through the public private partnership framework and through such enterprises as PNG Sustainable Development will be necessary. It is anticipated that such stakeholders could contribute up to K5 billion over the MTDP period.

To the extent that there remains a finance shortfall, it will be necessary to rely on debt to fund the MTDP. For the first MTDP, it is anticipated that around K4.2 billion will be borrowed. This does not require any new loan agreements. At the very least, it will involve the drawing down of concessional loan facilities that have already been agreed upon in the infrastructure sector. This level of borrowing will ensure that the PNG Government will remain in low debt. Figure 7.1 shows that despite the additional borrowing, public debt as a share of GDP will fall to below 25 per cent of GDP by 2015. This is because growth in GDP is forecast to outpace growth in public debt.



## 7.1 Forecast public debt, 2010-2015

Public debt as a share of GDP



Source: MTDP forecasts are based on PNGGEM modelling forecasts for GDP and the criteria that an additional K4.2 billion will be borrowed compared with the level in the 2010 Budget. Budget 2010 forecasts are for 2010-2014.

In the context of considering financing options, it is important to look at the longer term projections in tax revenues. In particular, because of the focus of the first MTDP on developing the nation's productive capacity, the growth in tax revenues will continue to accelerate under subsequent MTDPs. In addition, revenues from the PNG LNG project will increase substantially during the second MTDP period. For these reasons, it is expected that tax revenues will increase substantially from K52 billion in the first MTDP to around K84 billion in the second MTDP. With the successful implementation of the PNGDSP, tax revenues will continue to expand to 2030, supporting a rapidly expanding medium term resource envelope. For this reason PNG is able to borrow now, invest wisely and repay the loans under subsequent MTDPs.

Table 7.2 details the sectoral allocation of Development Budget expenditure under the first MTDP. The strong emphasis on infrastructure is necessary to achieve the ultimate aim of the MTDP of providing jobs, income and a higher standard of living for all Papua New Guineans. Access to markets and essential services will be provided through investment in infrastructure. Training of Papua New Guineans with the skills they need to prosper is an investment in the social sector. Providing a safe and secure society to live and do business in is an investment in law and justice. Private expenditure in the economic sector will then grow rapidly as a result of Papua New Guineans being provided with training, services and access to key markets. This in turn will generate the tax revenues to support ongoing expansion in the nation's productive capacity.

Not all government commitments can be allocated according to sector. DSG funds, for example, are paid directly to district level governments to be spent according to their priorities. These types of commitments are represented in table 7.2 under "other government commitments".

Under the MTDP, donor support will be directed towards programs that will generate high returns in terms of development. In particular, donor funding on technical assistance in bureaucratic positions will be redirected towards the provision of expert training assistance in PNG's universities and technical institutes.

The MTDP will also reorient debt funding towards transport infrastructure that is critical for attracting investment and supporting businesses. Furthermore, the investment of loan funds will be focused in the Economic Corridors and in the cities of PNG to ensure they realise the benefits of economies of scale and scope.

**Table 7.2 – Expenditure by sector under the Development Budget**

	2011 K million	2012 K million	2013 K million	2014 K million	2015 K million	2011-2015 K million
<b>Economic sector</b>	<b>532</b>	<b>521</b>	<b>316</b>	<b>503</b>	<b>570</b>	<b>2,441</b>
GoPNG (direct financing & tax credit)	334	329	202	390	457	1,712
Grants	124	118	114	113	113	582
GoPNG Financing requirement	74	74	0	0	0	148
Other stakeholders (off-budget)	0	0	0	0	0	0
<b>Social sector</b>	<b>726</b>	<b>972</b>	<b>1,001</b>	<b>1,207</b>	<b>1,432</b>	<b>5,337</b>
GoPNG (direct financing & tax credit)	169	343	351	447	662	1,971
Grants	518	540	550	560	570	2,738
GoPNG Financing requirement	39	39	0	0	0	79
Other stakeholders (off-budget)	0	50	100	200	200	550
<b>Infrastructure sector</b>	<b>2,253</b>	<b>4,519</b>	<b>5,637</b>	<b>5,952</b>	<b>6,984</b>	<b>25,345</b>
GoPNG (direct financing & tax credit)	2,013	2,323	2,796	3,386	4,729	15,246
Grants	240	400	410	420	420	1,890
GoPNG Financing requirement	0	1,047	1,331	946	635	3,959
Other stakeholders (off-budget)	0	750	1,100	1,200	1,200	4,250
<b>Law &amp; justice sector</b>	<b>170</b>	<b>175</b>	<b>175</b>	<b>270</b>	<b>320</b>	<b>1,112</b>
GoPNG (direct financing & tax credit)	87	90	90	160	200	629
Grants	83	85	85	110	120	483
GoPNG Financing requirement	0	0	0	0	0	0
Other stakeholders (off-budget)	0	0	0	0	0	0
<b>Cross cutting sector</b>	<b>504</b>	<b>398</b>	<b>410</b>	<b>392</b>	<b>367</b>	<b>2,070</b>
GoPNG (direct financing & tax credit)	4	147	223	263	259	895
Grants	500	251	187	128	108	1,175
GoPNG Financing requirement	0	0	0	0	0	0
Other stakeholders (off-budget)	0	0	0	0	0	0
<b>Administration</b>	<b>62</b>	<b>59</b>	<b>57</b>	<b>56</b>	<b>56</b>	<b>289</b>
GoPNG (direct financing & tax credit)	0	0	0	0	0	0
Grants	62	59	57	56	56	289
GoPNG Financing requirement	0	0	0	0	0	0
Other stakeholders (off-budget)	0	0	0	0	0	0
<b>Other government commitments</b>	<b>255</b>	<b>255</b>	<b>55</b>	<b>55</b>	<b>55</b>	<b>673</b>

### 7.3 Legislative reform for resourcing the MTDP 2011-2015

Legislative reform will be required to facilitate the medium term resource envelope of the MTDP, 2011-2015. In particular, the medium term debt strategy must take into account the prudence of borrowing to invest now in lieu of future income streams from the PNG LNG project.

Further, the medium term fiscal strategy must put emphasis on expenditure on the key enablers, at least during the first MTDP. This will require legislation that ensures the budget is compiled and expended according to the MTDP, subject to any changes in the policy priorities of the Government. Legislation is also required to define the role of the Department of National Planning in coordinating planning efforts.

### 7.4 The range of the resource envelope

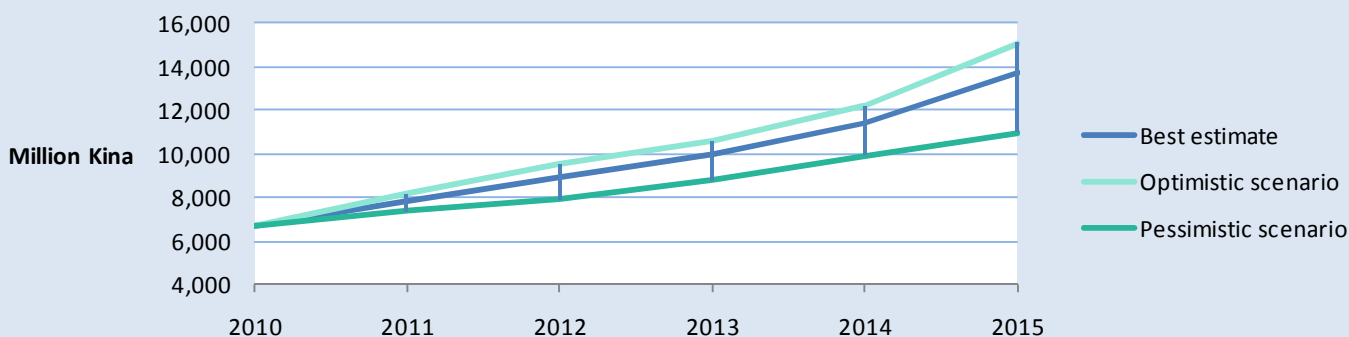
Volatile and unpredictable revenues are an unavoidable reality for PNG, as discussed in Part 2. The government revenue forecasts outlined in figure 2.2 of Part 2 represent the best estimates for the MTDP period. They incorporate a range of assumptions including official Australian Government commodity price forecasts, expected production profiles in mining and petroleum based on existing operations and new operations anticipated to commence production during the period, and a range of assumptions relating to implementing the MTDP.

However, there are significant risks for these revenue forecasts. As outlined in Part 2, forecasting government revenue is very difficult, primarily due to the unpredictability of world prices for the key export commodities of copper, gold and oil. This is because profits, and hence tax payments, for the mining and petroleum industries are highly sensitive to prices.

In view of this, two additional scenarios are modelled using PNGGEM: (1) an optimistic scenario; and (2) a pessimistic scenario. These scenarios make respectively optimistic and pessimistic assumptions with regards to commodity prices, mining and petroleum production, and MTDP implementation. Table 7.3 summarises the main assumptions that differentiate the scenarios. For the key commodity price assumptions, the optimistic scenario assumes gold and copper prices are 25 per cent above best estimates and oil prices are in line with the optimistic price scenario projected by the US Government. Conversely, the pessimistic scenario assumes gold and copper prices are 25 per cent below best estimates and oil prices are in accordance with the US Government’s pessimistic price projections.

### 7.2 The range for the forecast resource envelope, 2011-2015

Government revenue forecasts under 3 scenarios



	2011	2012	2013	2014	2015	2011-2015
<b>Best estimate</b>	7,858	8,901	9,943	11,418	13,741	<b>51,861</b>
<b>Optimistic scenario</b>	8,197	9,490	10,558	12,176	15,052	<b>55,474</b>
<b>Pessimistic scenario</b>	7,359	7,924	8,795	9,891	10,967	<b>44,935</b>

Source: PNGGEM modelling forecasts

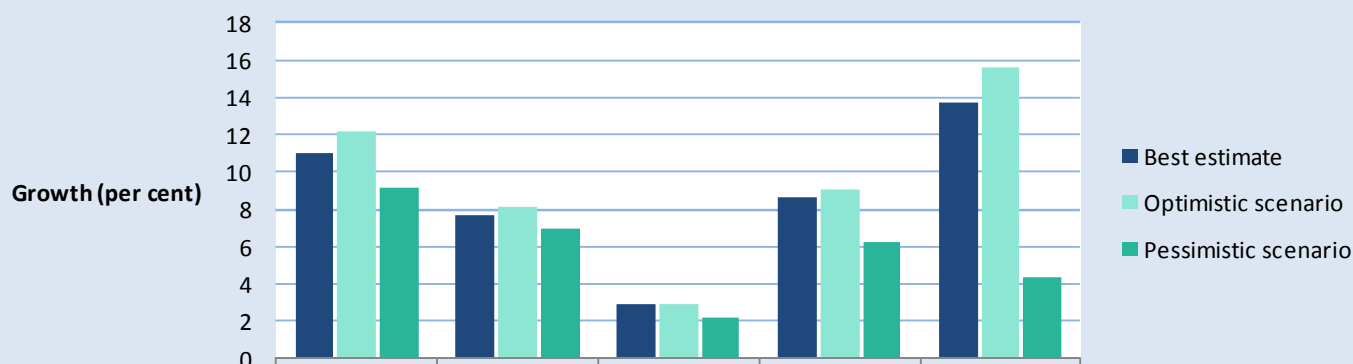
Government revenue forecasts for the optimistic and pessimistic scenarios are provided in figure 7.2 and are compared with the best estimate scenario. These scenarios reveal that over the MTDP period of 2011-2015, government revenue is expected to be between K44.9 billion and K55.5 billion with K51.9 billion representing the best estimate (figure 7.2). The range for forecast growth in GDP is outlined in figure 7.3.

**Table 7.2 – Main assumptions under the “best estimate”, “optimistic”, and “pessimistic” scenarios**

	2011	2012	2013	2014	2015
<b><i>Best estimate scenario</i></b>					
Oil US\$ a barrel	\$76	\$84	\$92	\$100	\$105
Gold US\$ an ounce	\$1010	\$873	\$885	\$933	\$975
Copper US\$ a tonne	\$7025	\$7779	\$7434	\$7021	\$6588
Mining production	In accordance with best estimates calculated by the Department of Mining				
LNG production	Assumed to begin in 2015				
Borrowing	K4.2 billion between 2011-2015				
<b><i>Optimistic scenario</i></b>					
Oil US\$ a barrel	\$88	\$106	\$124	\$146	\$162
Gold US\$ an ounce	\$1162	\$1091	\$1106	\$1166	\$1219
Copper US\$ a tonne	\$8079	\$9724	\$9293	\$8776	\$8235
Mining production	Same as best estimate scenario				
LNG production	Same as best estimate scenario				
Infrastructure	Public funded MTDP infrastructure and infrastructure maintenance increased by 25 per cent				
Borrowing	K2 billion between 2011-2015				
<b><i>Pessimistic scenario</i></b>					
Oil US\$ a barrel	\$60	\$58	\$58	\$58	\$57
Gold US\$ an ounce	\$859	\$655	\$664	\$700	\$731
Copper US\$ a tonne	\$5971	\$5834	\$5576	\$5266	\$4941
Mining production	Assumed that Bougainville does not reopen and Frieda does not commence				
LNG production	Assumed to begin in 2016 – after the MTDP				
Infrastructure	Only half the public funded MTDP infrastructure and infrastructure maintenance is completed				
Borrowing	K6 billion between 2011-2015				

### 7.3 GDP growth forecast under 3 scenarios, 2011-2015

per cent growth



Source: PNGGEM modelling forecasts

## 7.5 Strategies for dealing with uncertainty in government revenues

As outlined in the public finance and investment strategy in the PNGDSP, a stabilisation fund is needed to smooth the fiscal and macroeconomic implications of volatile and unpredictable revenues. This will be achieved by converting volatile revenues into a stable stream of finance for expenditure. The public finance and investment strategy will be developed during the MTDP period with implementation targeted for the commencement of the LNG Project.

During the MTDP period there will therefore be no mechanisms in place for coping with volatile revenue streams. As outlined in the previous section and in figure 7.2, Government revenue over the years 2011-2015 could fall anywhere between K44.9 billion and K55.5 billion. Compared with the best estimate of K51.9 billion, revenue could therefore fall short by K7.0 billion or there could be an unexpected windfall of up to K3.6 billion.

As explained in Part 2, this uncertainty in revenues will be dealt with by combining two strategies: (1) expenditure adjustment through front loading or back loading; and (2) debt adjustment.

Within the Development Budget there will be a number of projects identified for providing a buffer in expenditure. In the event that revenues fall below best estimate forecasts, expenditure on these 'buffer' projects will be back loaded in the sense that funding will be reduced and implementation of the projects will be slowed down. Conversely, if revenues exceed best estimates, then the 'buffer' projects may be front loaded to accelerate their implementation. Major new construction projects will be the most significant items identified for this purpose. A crucial benefit of this approach is that the core services provided by Government will remain stable with predictable funding, regardless of revenue outcomes.

It is important for macroeconomic stability that expenditure adjustment should not be the only mechanism for dealing with revenue volatility. Hence, there will also be an allowance for debt adjustment. The MTDP allows for borrowing of K4.2 billion as outlined in section 7.2. However, if revenues fall to the level of the pessimistic scenario, then the shortfall will be partially absorbed by increasing borrowing to K6 billion. If revenues are at the high end, then borrowing levels can be reduced to just K2 billion.

The key benefits of this dual strategy approach compared with the alternative of allowing expenditure to fully adjust in line with revenue changes are:

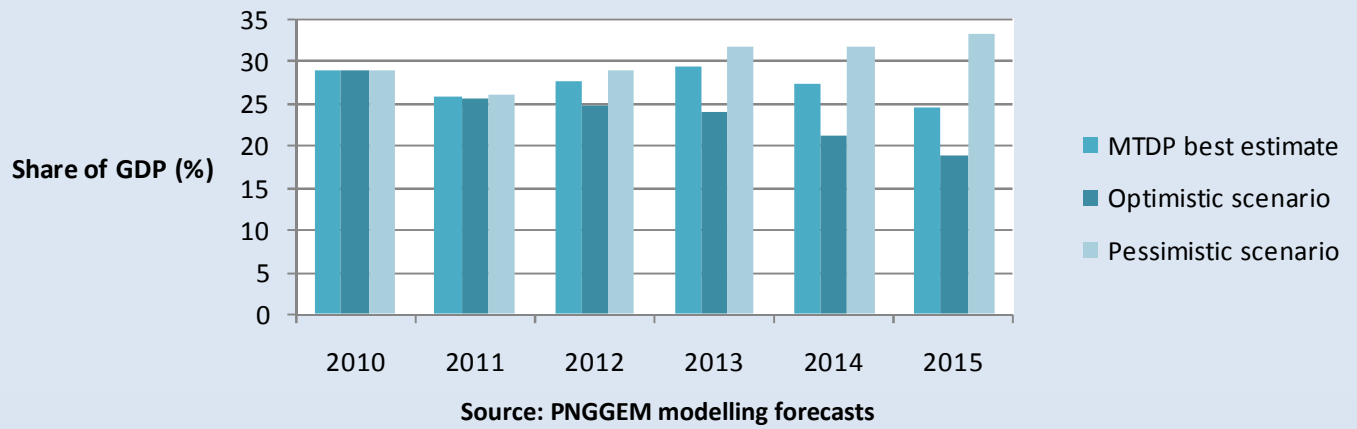
- increased stability in government expenditure;
- increased stability in the balance of payments and the foreign exchange market;
- eliminates the need to rush through supplementary budgets to deal with revenue windfalls;
- eliminates the need for appropriations through trust accounts; and
- greater certainty in the medium term expenditure envelope, thus allowing expenditure planning to shift to a more reliable medium term focus.

There are numerous lessons around the globe of the critical importance of taking a conservative approach to public debt and ensuring public debt levels remain low. Even advanced nations of Europe have experienced the economic trauma and loss of sovereignty associated with building up excessive public debt. Although concessional loans represent a cheap source of finance, it is important to keep them contained at a relatively low level to ensure prudence and the maintenance of sovereignty. PNG has learnt from the past and has learnt from international experiences that over-reliance on concessional loans can lead to policy being driven from abroad.

With these considerations in mind, the increased borrowing planned under the pessimistic scenario will see public debt contained at just 33 per cent of GDP (figure 7.4). This is marginally above current levels and is low by international standards and sustainable. In the event that the optimistic scenario eventuates, public debt will fall to just 19 per cent of GDP.

## 7.4 Public debt under 3 scenarios, 2011-2015

per cent of GDP



# Part 8

## Monitoring and evaluation of MTDP

### 8.1 Parameters of monitoring and evaluation

*Monitoring* is the regular collection of information to assess progress in the implementation of workplans, projects or programs implemented over the next five years. *Evaluation* is defined as the periodic analysis of information to assess progress in changing the practices and the well being of target populations. Over the next five years these two functions will capture the various stages in the life of the project or program as resources get transformed into outputs, outcomes and impacts.

DSP Sector goal	Indicator	Source	Baseline	2015 target	2020 target	2025 target	2030 DSP target
Have an efficient health system which can deliver an internationally acceptable standard	Infant mortality rate	Census/DHS	57 per 1000 live births	45 per 1000 live births	30 per 1000 live births	25 per 1000 live births	Below 17 per 1000 live births
	Under 5 mortality rate	Census/DHS	100 per 1000 live births	50 per 1000 live births	40 per 1000 live births	30 per 1000 live births	Below 20 per 1000 live births
	Maternal mortality rate	DHS	33 per 100,000 live births	50 per 100,000 live births	40 per 100,000 live births	30 per 100,000 live births	Below 100 per 100,000 live births
	Life expectancy	Census/DHS	57 years	60 years	65 years	68 years	70 years

No.	Sector Strategy
1	Improve service delivery
2	Strengthen partnership and coordination with stakeholders
3	Strengthen health systems
4	Reduce the burden of communicable diseases
5	Promote healthier lifestyles
6	Improve our preparedness for disease outbreaks and emergencies

DSP 2030 deliverables	No.	2011-2015 target	2016-2020 target	2021-2025 target	2026-2030 DSP target	Risks and Assumptions
4 specialised regional hospitals	1.1	1 built in Morobe	2 in Morobe and Southern	target 1	target 0	Land is secured Access roads are built and maintained
7500 new community health posts built and fully operational	1.2	500 in the 4 regions	3000 in 4 regions	3000	1500	Land is secured Access roads are built and maintained Trained personnel present
95% of births attended by trained health personnel	1.3	92% across the 4 regions	94% across the 4 regions	80%	95%	Access roads are built and maintained Appropriate number of health personnel available
100% of pregnant women attending antenatal clinics	3.1	45% across the 4 regions	60% across the 4 regions	75%	100%	Access roads are built and maintained Appropriate number of trained health personnel available
100% of facilities with adequate medicines supplies	4.1	60% across the 4 regions	70% across the 4 regions	80%	100%	Access roads are built and maintained

Department of Health and Department of National Planning	No.	2011	2012	2013	2014	2015	2030	Funding options
Estimated inputs (K millions)	1.1	5	5	5	0	0	50	GoPNG/donors
	1.2	4	5	5	3	2	100	GoPNG/donors
	1.3	4	2	2	3	3	80	GoPNG

Monitoring and evaluation will primarily take place at the following levels:

**From inputs to outputs** — have funds been spent on the desired deliverables? (box 4 to box 3)

**From outputs to outcomes** — are we achieving our desired developmental results? (box 3 to box 1)

The framework developed for each sector will be used as a reference for monitoring and evaluation activities, detailing clear targets, indicators and deliverables that are specific, measurable and time-bound.

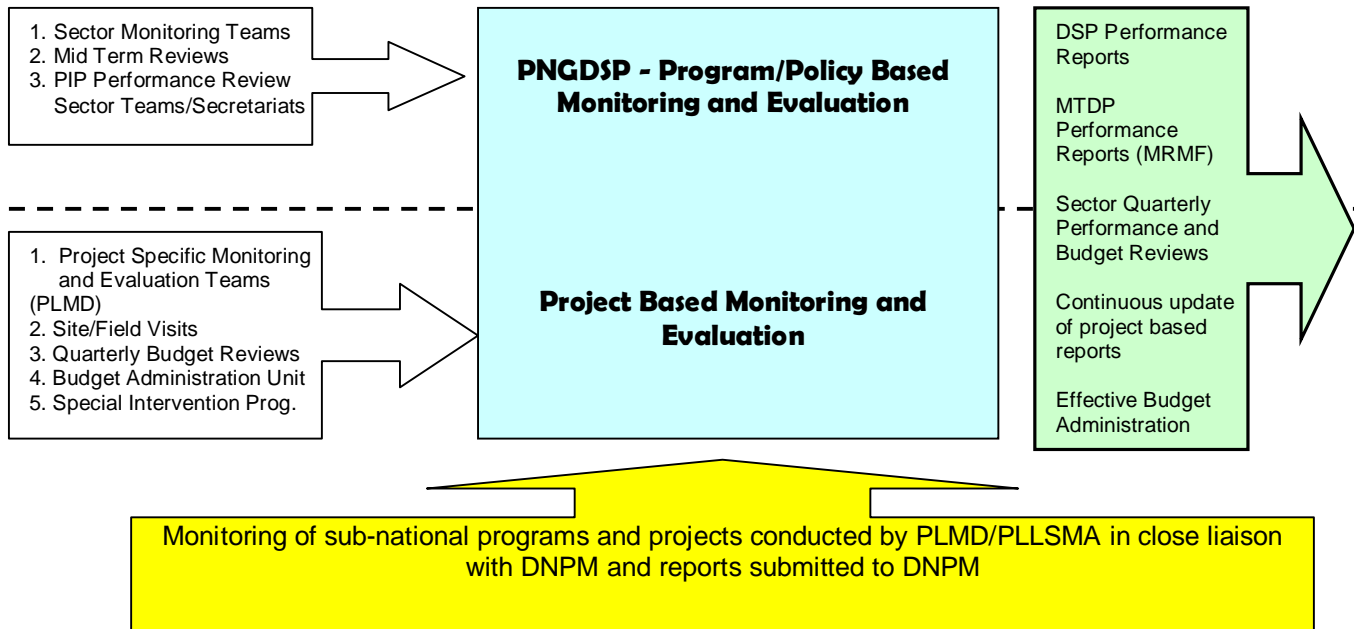
### 8.2 The Department of National Planning and Monitoring 's responsibility

The overall responsibility for monitoring and evaluation rests with the Department of National Planning and Monitoring (DNPM) which reports directly to CACC and the NEC. All departments, agencies, provincial and local level governments, NGOs, CBOs and other stakeholders will work within this current framework.

Within the department, monitoring and evaluation (M&E) is a collaborative activity amongst its functional branches. Each of DNPM's divisions will be responsible for different aspects of M&E that fall within the ambit of their core responsibility. In fulfilling the department's role and responsibilities towards the MTDP, DNPM through various technical divisions will be responsible for the following.

- Ensuring that all funding submissions are in the established format and contain all the necessary information to enable judgement as to the feasibility of funding proposals submitted to the Government's Public Investment Program in line with the MTDP.
- Physical and financial monitoring of MTDP 2011-2015 implementation.
- Collecting and collating quarterly reports from implementing agencies.
- Physically monitoring and verifying national projects and programs implemented on sites/location in PNG.
- Disseminating lessons learnt from its monitoring function on completed programs and projects to guide further improvements in future project designs and implementation.

**Figure 8.1 Proposed M&E implementation strategy.**



### 8.3 Monitoring and evaluation within DNPM

As part of implementing the PNGDSP 2010-2030 through MTDPs, DNPM will develop and institutionalise an elaborate Monitoring and Evaluation (M&E) system that utilises best practice information and communication technology to monitor performance.

To start this process, the Department has already established regional offices in Kokopo for the New Guinea Islands Region, Kundiawa for the Highlands Region, Madang for the Momase Region and Port Moresby for the Southern Region, with the view to effectively monitor project inputs and outputs. The Provincial Liaison and Monitoring Division (PLMD) will be the ‘eyes and ears on the ground’ to ensure that monies for sectoral programs and projects under the Public Investment Program, including grants and loan funded programs, are used for their intended purpose.

Officers from the PLMD will carry out regular monitoring visits and will solicit support from other line agencies and provincial and district administration planning offices to augment monitoring efforts. Monitoring visits will range from 7 to 10 days per month. Officers will not only focus on the quantity of project deliverables, but the quality as well, ensuring that interventions are meeting targeted standards. Through such processes timely information will flow back to the central database for processing.

Monitoring of the relationship between outputs and outcomes will be a collaborative approach across the department involving sectoral teams and officers from, PLMD and Policy wing. Inputs from the sectoral agencies, key stakeholders and local level government will constitute an integral part of this activity.

Evaluation of expenditure will be a joint exercise between PLMD, sectoral teams and the policy wing, as a sequential chain of expected impacts, outcomes and outputs is required to develop an evaluation report. Periodic impact assessments, with various stakeholders, and post completion reviews of specific projects and programs will be carried out to identify a traceable “result chain” from inputs through to impacts of each project and program.

The table below gives the focus areas of M&E during and after implementation of MTDP 2011-2015.

The results of the monitoring and evaluation activities will be published annually, over the next five years, in the form of a MTDP Results Monitoring Framework (MRMF). This publication will report on the trends resulting from the Government’s annual development budget expenditure and will plot the progress towards reaching the higher order PNGDSP objectives.



<b>Table 1: Areas for monitoring and evaluation</b>	
<b>Financial monitoring</b>	<b>Physical monitoring</b>
Annual cash flow	Annual work plans
Warrants management	Site visits and inspections
Expenditure reports	Project/program steering committees
Ad hoc reports from IAs	Quarterly reports from IAs
<b>Financial monitoring</b>	<b>Physical evaluation</b>
PBS/TMS expenditure reports	Project/program mid-term reviews and evaluation missions and visits
Donors' historical financing and expenditure reports	Historical performance reports, impact assessments and <i>Ex Post</i> evaluations
<b>Results-Based M&amp;E</b>	
MTDP PMF	
Sector investment plans and sector annual reports	
PIP performance reports	

# Annex 1 - Regional and provincial targets

## **Regional and provincial targets for health**

National targets in the provision of aid posts, physicians and nurses are carefully distributed across regions of PNG and across provinces within regions using a mathematical approach. This method targets equalisation in service provision across regions and provinces using formulas that take account of population and land area. For example, the 2030 target for the Southern region is for 57 aid posts per 100,000 people which is more than the national target of 76 and more than the target of 47 for the Highlands region. But the posts are distributed more sparsely in the Southern region with 1156 posts per 100,000 km<sup>2</sup> compared with 1623 for PNG and 2745 for the densely populated Highlands region. The high targets with respect to population and low targets with respect to land area reflect the low density of population in the Southern region.

**Table A1 - Aid post targets**

	Estimate	MTDP targets				Posts per 100,000	Posts per 100,000 km <sup>2</sup>
	2010	2015	2020	2025	2030	2030	2030
Central	71	94	182	335	475	136	1585
Gulf	57	75	146	270	383	188	1110
Milne Bay	115	127	174	255	330	82	2297
NCD	54	54	54	53	52	11	21863
Oro	58	75	139	250	352	139	1549
Western	105	140	274	506	719	247	732
<b>Southern</b>	<b>460</b>	<b>565</b>	<b>968</b>	<b>1668</b>	<b>2311</b>	<b>117</b>	<b>1156</b>
Eastern Highlands	138	150	196	275	349	42	3125
Enga	72	85	133	217	295	53	2520
Simbu	51	59	92	148	199	40	3260
Southern Highlands	173	197	287	445	590	57	2305
Western Highlands	90	103	152	237	314	38	3457
<b>Highlands</b>	<b>524</b>	<b>593</b>	<b>860</b>	<b>1322</b>	<b>1747</b>	<b>47</b>	<b>2745</b>
East Sepik	97	129	251	464	660	101	1519
Madang	180	201	283	425	555	80	1922
Morobe	165	197	318	528	722	70	2141
Sandaun	113	131	200	320	430	122	1201
<b>Momase</b>	<b>555</b>	<b>658</b>	<b>1052</b>	<b>1738</b>	<b>2367</b>	<b>87</b>	<b>1669</b>
Bougainville	122	127	147	182	214	64	2283
East New Britain	82	95	144	230	309	74	2021
Manus	57	57	55	52	49	59	2441
New Ireland	39	47	77	130	179	80	1874
West New Britain	95	108	158	244	324	92	1589
<b>Islands</b>	<b>395</b>	<b>434</b>	<b>582</b>	<b>839</b>	<b>1075</b>	<b>76</b>	<b>1899</b>
<b>PNG</b>	<b>1934</b>	<b>2249</b>	<b>3462</b>	<b>5567</b>	<b>7500</b>	<b>76</b>	<b>1623</b>

The MTDP targets of 2015, 2020 and 2025 for health services are calculated in a way to ensure that progress towards the 2030 targets is equal across regions and provinces. Under this approach, provinces that are under-represented in health service provision in 2010 will have a greater increase in resources made available to reach the equalisation targets of 2030 compared with the well represented provinces. For example, the 176 nurses in East Sepik Province is an under-representation and by 2030 this will rise to 1715 (table A3). Milne Bay Province has a much lower 2030 target of 857 nurses, but is currently better represented with 181 nurses (table A3). As a result, by 2015, East Sepik will receive 73 additional nurses compared with 32 additional nurses for Milne Bay (table A3).

	<i>Estimate</i>	<i>MTDP targets</i>				<i>Per 100,000 people</i>	<i>Per 100,000 km<sup>2</sup></i>
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2030</b>	<b>2030</b>
Central	0	3	36	114	311	89	1035
Gulf	4	7	33	94	250	123	725
Milne Bay	13	15	37	87	215	54	1501
NCD	5	5	8	16	34	7	14284
Oro	6	8	32	88	230	91	1012
Western	7	12	61	177	470	161	478
<b>Southern</b>	<b>35</b>	<b>51</b>	<b>208</b>	<b>577</b>	<b>1510</b>	<b>76</b>	<b>755</b>
Eastern Highlands	16	18	41	94	228	28	2042
Enga	10	12	31	77	193	34	1646
Simbu	7	8	21	52	130	26	2130
Southern Highlands	12	16	56	149	385	37	1506
Western Highlands	35	37	55	98	205	25	2259
<b>Highlands</b>	<b>80</b>	<b>92</b>	<b>204</b>	<b>470</b>	<b>1141</b>	<b>30</b>	<b>1793</b>
East Sepik	17	21	66	169	431	66	992
Madang	23	27	63	148	363	52	1256
Morobe	56	61	105	209	472	46	1399
Sandaun	4	7	37	106	281	80	785
<b>Momase</b>	<b>100</b>	<b>116</b>	<b>270</b>	<b>632</b>	<b>1546</b>	<b>57</b>	<b>1090</b>
Bougainville	8	9	23	57	140	42	1492
East New Britain	31	33	51	94	202	48	1320
Manus	2	2	6	13	32	39	1595
New Ireland	7	8	20	47	117	52	1224
West New Britain	12	14	35	85	212	60	1038
<b>Islands</b>	<b>60</b>	<b>67</b>	<b>135</b>	<b>296</b>	<b>702</b>	<b>50</b>	<b>1240</b>
<b>PNG</b>	<b>275</b>	<b>325</b>	<b>817</b>	<b>1975</b>	<b>4900</b>	<b>50</b>	<b>1060</b>

**Table A3 – Nurses**

	<i>Estimate</i>	<i>MTDP targets</i>				<i>Per 100,000 people</i>	<i>Per 100,000 km<sup>2</sup></i>
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2030</b>	<b>2030</b>
Central	48	104	320	694	1236	354	4120
Gulf	87	130	295	581	995	490	2886
Milne Bay	181	213	336	549	857	214	5973
NCD	54	58	73	99	136	28	56844
Oro	83	122	274	536	916	362	4028
Western	157	238	549	1088	1870	642	1904
<b>Southern</b>	<b>610</b>	<b>865</b>	<b>1845</b>	<b>3547</b>	<b>6010</b>	<b>304</b>	<b>3005</b>
Eastern Highlands	70	110	261	525	907	110	8125
Enga	104	135	256	464	767	137	6551
Simbu	111	130	204	332	518	105	8476
Southern Highlands	259	319	551	952	1533	148	5993
Western Highlands	233	261	367	551	818	98	8988
<b>Highlands</b>	<b>777</b>	<b>955</b>	<b>1638</b>	<b>2825</b>	<b>4542</b>	<b>121</b>	<b>7136</b>
East Sepik	176	249	528	1013	1715	263	3949
Madang	196	255	481	875	1444	208	4998
Morobe	310	384	668	1162	1877	183	5568
Sandaun	83	132	320	646	1119	317	3123
<b>Momase</b>	<b>765</b>	<b>1019</b>	<b>1998</b>	<b>3696</b>	<b>6154</b>	<b>226</b>	<b>4339</b>
Bougainville	130	150	228	362	557	167	5936
East New Britain	244	270	372	548	802	192	5254
Manus	53	56	70	93	127	154	6348
New Ireland	109	126	191	303	466	207	4872
West New Britain	153	186	311	528	842	240	4130
<b>Islands</b>	<b>689</b>	<b>788</b>	<b>1171</b>	<b>1834</b>	<b>2794</b>	<b>198</b>	<b>4936</b>
<b>PNG</b>	<b>2841</b>	<b>3628</b>	<b>6652</b>	<b>11901</b>	<b>19500</b>	<b>198</b>	<b>4220</b>

Equalisation in health services across provinces and regions should provide equalisation in the standard of health as measured by health indicators. However, given the current degree of disparity it is realistic to expect that health indicators might head towards parity, but not quite reach parity by 2030. With this principle in mind, targets for progress in the under 5 mortality rate are calculated where the disparity for each region is reduced by 50 per cent, and similarly the disparity for each province is reduced by 50 per cent. For example, the Gulf province had an under-5 mortality rate of 133 in 2006 which is approximately 100 per cent above the rate of 67 for the Southern region (table A4). This disparity is reduced to 50 per cent in 2030 where the target of 28 is 25 per cent higher than the target of 19 for the Southern region.

The under-5 mortality rate is chosen as the key indicator because:

- it focuses on the most valuable yet vulnerable of the PNG population;
- it is a commonly referred to indicator; and
- it is a sufficiently broad indicator to be a proxy for the general state of health of the population.

**Table A4 – Under 5 mortality rate**

	<i>MTDP targets</i>				
	2006	2015	2020	2025	2030
Central	52	39	32	24	17
Gulf	133	97	74	51	28
Milne Bay	81	60	47	34	21
NCD	22	18	16	14	13
Oro	67	50	40	29	19
Western	77	57	44	32	20
<b><i>Southern</i></b>	<b>67</b>	<b>50</b>	<b>40</b>	<b>29</b>	<b>19</b>
Eastern Highlands	61	45	36	27	18
Enga	81	60	47	34	21
Simbu	61	45	36	27	18
Southern Highlands	70	52	41	30	19
Western Highlands	52	40	32	24	17
<b><i>Highlands</i></b>	<b>64</b>	<b>47</b>	<b>38</b>	<b>28</b>	<b>18</b>
East Sepik	96	70	54	39	23
Madang	94	69	54	38	23
Morobe	98	72	56	39	23
Sandaun	136	98	75	51	27
<b><i>Momase</i></b>	<b>101</b>	<b>74</b>	<b>57</b>	<b>40</b>	<b>23</b>
Bougainville	62	46	37	27	18
East New Britain	61	46	36	27	18
Manus	49	37	30	23	16
New Ireland	57	43	35	26	18
West New Britain	62	46	37	27	18
<b><i>Islands</i></b>	<b>60</b>	<b>45</b>	<b>36</b>	<b>27</b>	<b>18</b>
<b><i>PNG</i></b>	<b>75</b>	<b>56</b>	<b>44</b>	<b>32</b>	<b>20</b>

***Regional and provincial targets for education***

By 2030, parity in education across regions and provinces will be ensured since the national target of 100 per cent net enrolment rate implies a 100 per cent net enrolment rate in each of the regions and provinces. However, there is currently disparity across regions and across provinces. Therefore more rapid progress will be required in those places where the current net enrolment rates are lowest. The mathematical method adopted is to adjust upwards or downwards the rate of progress so that all provinces and regions achieve a 100 per cent net enrolment at about the same time.

For example, the net enrolment rate for PNG is expected to increase from the current level of 58 per cent to 75 per cent in 2015 – a rise of 17 percentage points (table A5). But for Oro province, a bigger 25 percentage point rise in the net enrolment rate will be required in recognition of the much lower starting point of Oro Province with a net enrolment rate of just 38 per cent.

**Table A5 – Net enrolment rate**

	<i>Estimate</i>	<i>MTDP targets</i>				
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	
Central	58%	75%	91%	96%	100%	
Gulf	42%	65%	88%	94%	100%	
Milne Bay	69%	81%	93%	98%	100%	
NCD	66%	80%	93%	96%	100%	
Oro	38%	63%	87%	93%	100%	
Western	61%	76%	92%	96%	100%	
<b><i>Southern</i></b>	<b>58%</b>	<b>75%</b>	<b>91%</b>	<b>96%</b>	<b>100%</b>	
Eastern Highlands	50%	70%	89%	95%	100%	
Enga	51%	70%	89%	95%	100%	
Simbu	60%	76%	91%	96%	100%	
Southern Highlands	39%	63%	87%	94%	100%	
Western Highlands	55%	73%	90%	95%	100%	
<b><i>Highlands</i></b>	<b>50%</b>	<b>69%</b>	<b>89%</b>	<b>95%</b>	<b>100%</b>	
East Sepik	51%	70%	89%	95%	100%	
Madang	45%	67%	88%	94%	100%	
Morobe	50%	70%	89%	95%	100%	
Sandaun	40%	63%	87%	94%	100%	
<b><i>Momase</i></b>	<b>47%</b>	<b>68%</b>	<b>89%</b>	<b>94%</b>	<b>100%</b>	
Bougainville	68%	81%	93%	97%	100%	
East New Britain	67%	80%	93%	96%	100%	
Manus	66%	79%	93%	96%	100%	
New Ireland	62%	77%	92%	96%	100%	
West New Britain	67%	80%	93%	96%	100%	
<b><i>Islands</i></b>	<b>66%</b>	<b>80%</b>	<b>93%</b>	<b>96%</b>	<b>100%</b>	
<b><i>PNG</i></b>	<b>53%</b>	<b>72%</b>	<b>90%</b>	<b>95%</b>	<b>100%</b>	

Teacher numbers for each province and region are calculated by applying the enrolment rate targets of table A5 to projections for the school age population. An assumption is applied that average teacher-student ratios will be the same across regions and provinces – consistent with the goal of equality in the provision of education services across regions and provinces. As a result provinces with the lowest education outcomes receive a more rapid increase in teachers (table A6).

**Table A6 – Teachers**

	<i>Estimate</i>	<i>MTDP targets</i>			
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Central	695	1014	1346	1538	1803
Gulf	299	527	776	906	1081
Milne Bay	897	1199	1500	1692	1959
NCD	900	1228	1558	1764	2048
Oro	327	607	916	1074	1287
Western	605	864	1133	1291	1509
<b><i>Southern</i></b>	<b>3722</b>	<b>5439</b>	<b>7230</b>	<b>8266</b>	<b>9688</b>
Eastern Highlands	1302	2062	2876	3321	3928
Enga	920	1439	1992	2297	2712
Simbu	852	1224	1609	1835	2147
Southern Highlands	1384	2508	3746	4383	5243
Western Highlands	1352	2030	2744	3149	3702
<b><i>Highlands</i></b>	<b>5810</b>	<b>9262</b>	<b>12968</b>	<b>14985</b>	<b>17732</b>
East Sepik	1111	1751	2437	2813	3325
Madang	1064	1793	2586	3005	3575
Morobe	1621	2570	3588	4143	4900
Sandaun	480	872	1303	1524	1824
<b><i>Momase</i></b>	<b>4276</b>	<b>6986</b>	<b>9913</b>	<b>11486</b>	<b>13624</b>
Bougainville	800	1076	1352	1526	1769
East New Britain	925	1260	1598	1808	2099
Manus	184	251	320	362	420
New Ireland	465	655	849	966	1127
West New Britain	763	1040	1318	1492	1732
<b><i>Islands</i></b>	<b>3137</b>	<b>4283</b>	<b>5437</b>	<b>6154</b>	<b>7147</b>
<b><i>PNG</i></b>	<b>16945</b>	<b>25970</b>	<b>35548</b>	<b>40890</b>	<b>48191</b>

The target number of schools in each region and province is calculated using a mathematical approach for equity that takes account of land area as well as student numbers. A greater weighting is given to student numbers, but this approach allows for an upward adjustment of school numbers in less densely populated areas. By adopting this approach, children in less densely populated areas will be closer to their school, and schools will tend to be smaller. For example, in Western Province the target for 2030 is for small average school sizes of 144 compared with 495 for NCD and an average for Southern Region of 187 (table A7). By taking account of land area and reducing average school sizes, there will be 4.3 schools per 1000 km<sup>2</sup> for Western Province instead of 3.4 if land area were not taken account of.

The MTDP target number of schools for 2015, 2020 and 2025 are calculated so that the rate of progress towards the 2030 targets is equal across regions and provinces. This approach means that provinces that are currently under-represented will have a greater increase in school numbers compared with provinces that are already adequately represented. Enga Province, for example, is under-represented with just 60 schools, but this will increase by 115 to reach 175 schools by 2015 (table A7). New Ireland Province enters the MTDP period with healthier school numbers, so a much smaller rise of 24 will be targeted to reach 153 schools in 2015 (table A7).

**Table A7 – Schools**

	<i>Estimate</i>	<i>MTDP targets</i>				<i>Average school size</i>	<i>Schools per 1000 km<sup>2</sup></i>
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2030</b>	<b>2030</b>
Central	150	246	343	391	444	162	14.8
Gulf	110	167	224	252	284	152	8.2
Milne Bay	186	268	351	392	437	179	30.5
NCD	54	90	127	145	166	495	690
Oro	114	181	249	282	319	161	14.0
Western	202	273	345	380	419	144	4.3
<b>Southern</b>	<b>816</b>	<b>1225</b>	<b>1640</b>	<b>1843</b>	<b>2069</b>	<b>187</b>	<b>10.3</b>
Eastern Highlands	246	353	461	514	573	274	51.3
Enga	60	175	292	349	412	263	35.2
Simbu	146	200	256	283	313	274	51.2
Southern Highlands	230	418	609	702	806	260	31.5
Western Highlands	191	302	415	470	531	279	58.4
<b>Highlands</b>	<b>873</b>	<b>1448</b>	<b>2032</b>	<b>2318</b>	<b>2636</b>	<b>269</b>	<b>41.4</b>
East Sepik	230	366	505	573	648	205	14.9
Madang	180	338	498	577	664	215	22.9
Morobe	311	501	694	789	894	219	26.5
Sandaun	202	256	311	338	368	198	10.3
<b>Momase</b>	<b>923</b>	<b>1462</b>	<b>2009</b>	<b>2277</b>	<b>2575</b>	<b>212</b>	<b>18.2</b>
Bougainville	216	245	274	289	305	232	32.5
East New Britain	161	231	301	336	374	224	24.5
Manus	85	81	76	74	72	235	35.8
New Ireland	129	153	178	190	204	221	21.3
West New Britain	182	228	275	298	323	214	15.9
<b>Islands</b>	<b>773</b>	<b>938</b>	<b>1105</b>	<b>1187</b>	<b>1278</b>	<b>224</b>	<b>22.6</b>
<b>PNG</b>	<b>3385</b>	<b>5073</b>	<b>6786</b>	<b>7624</b>	<b>8557</b>	<b>225</b>	<b>18.5</b>

**Regional and provincial targets for law and order**

The key regional and provincial targets in the MTDP for government services to provide law and order include police, police stations and village courts. The target for each of these is determined using a mathematical approach to equalise service delivery across regions and provinces by 2030. The main factor in determining the targets is population but land area also has some influence. This ensures a balanced approach which allows people in sparsely populated areas to access law and order services. The greater emphasis on population explains why there is much greater variation in the 2030 target for police per 100,000 km<sup>2</sup> than in police per 100,000 people (table A8).



**Table A8 – Police**

	<i>Estimate</i>	<i>MTDP targets</i>				<i>Per 1000 people</i>	<i>Per 1000 km<sup>2</sup></i>
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2030</b>	<b>2030</b>
Central	308	445	645	803	1094	3.1	36.5
Gulf	140	234	371	479	678	3.3	19.7
Milne Bay	224	382	613	796	1132	2.8	78.9
NCD	280	332	407	467	577	1.2	2402.3
Oro	224	324	469	583	795	3.1	35.0
Western	252	388	585	742	1030	3.5	10.5
<b>Southern</b>	<b>1430</b>	<b>2105</b>	<b>3091</b>	<b>3869</b>	<b>5305</b>	<b>2.7</b>	<b>26.5</b>
Eastern Highlands	252	522	917	1228	1803	2.2	161.6
Enga	280	455	710	911	1283	2.3	109.6
Simbu	224	372	587	757	1071	2.2	175.2
Southern Highlands	308	675	1210	1633	2412	2.3	94.3
Western Highlands	365	613	975	1261	1789	2.1	196.7
<b>Highlands</b>	<b>1430</b>	<b>2636</b>	<b>4400</b>	<b>5791</b>	<b>8358</b>	<b>2.2</b>	<b>131.3</b>
East Sepik	280	528	890	1175	1702	2.6	39.2
Madang	308	556	917	1202	1727	2.5	59.8
Morobe	701	1012	1467	1826	2488	2.4	73.8
Sandaun	252	375	554	696	957	2.7	26.7
<b>Momase</b>	<b>1542</b>	<b>2471</b>	<b>3827</b>	<b>4898</b>	<b>6873</b>	<b>2.5</b>	<b>48.5</b>
Bougainville	28	161	356	509	792	2.4	84.4
East New Britain	224	363	567	727	1023	2.4	67.0
Manus	28	57	99	132	193	2.3	96.5
New Ireland	168	236	336	414	559	2.5	58.4
West New Britain	308	411	561	679	897	2.6	44.0
<b>Islands</b>	<b>757</b>	<b>1228</b>	<b>1917</b>	<b>2461</b>	<b>3464</b>	<b>2.5</b>	<b>61.2</b>
<b>PNG</b>	<b>5160</b>	<b>8440</b>	<b>13235</b>	<b>17019</b>	<b>24000</b>	<b>2.4</b>	<b>51.9</b>

The interim 2015, 2020 and 2025 MTDP targets for each of the three law and order service indicators are calculated so that progress is proportional to the national level. This means that those regions and provinces for which the greatest rate of increase in law and order services is required by 2030 will also have the greatest rate of increase in each of the four MTDP periods. The number of police stations in Madang, for example, will rise more rapidly than most other provinces from 11 in 2010 to 62 by 2030 – in recognition of the current under-representation of police resources (table A9). By 2015 there will be 9 additional stations in Madang. This compares with the better represented West New Britain which will have only 4 additional stations in 2015.

**Table A9 – Police stations**

	<i>Estimate</i>	<i>MTDP targets</i>				<i>Per 100,000</i>	<i>Per 100,000</i>
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2030</b>	<b>2030</b>
Central	11	16	23	29	39	11.2	130.0
Gulf	5	8	13	17	24	11.9	70.2
Milne Bay	8	14	22	28	40	10.1	281.4
NCD	10	12	15	17	21	4.3	8566.3
Oro	8	12	17	21	28	11.2	124.7
Western	9	14	21	26	37	12.6	37.4
<b>Southern</b>	<b>51</b>	<b>75</b>	<b>110</b>	<b>138</b>	<b>189</b>	<b>9.6</b>	<b>94.6</b>
Eastern Highlands	9	19	33	44	64	7.8	576.2
Enga	10	16	25	32	46	8.2	390.8
Simbu	8	13	21	27	38	7.7	624.8
Southern Highlands	11	24	43	58	86	8.3	336.2
Western Highlands	13	22	35	45	64	7.6	701.3
<b>Highlands</b>	<b>51</b>	<b>94</b>	<b>157</b>	<b>207</b>	<b>298</b>	<b>7.9</b>	<b>468.2</b>
East Sepik	10	19	32	42	61	9.3	139.7
Madang	11	20	33	43	62	8.9	213.2
Morobe	25	36	52	65	89	8.7	263.2
Sandaun	9	13	20	25	34	9.7	95.2
<b>Momase</b>	<b>55</b>	<b>88</b>	<b>136</b>	<b>175</b>	<b>245</b>	<b>9.0</b>	<b>172.8</b>
Bougainville	1	6	13	18	28	8.5	301.1
East New Britain	8	13	20	26	36	8.7	238.9
Manus	1	2	4	5	7	8.4	344.1
New Ireland	6	8	12	15	20	8.9	208.4
West New Britain	11	15	20	24	32	9.1	156.9
<b>Islands</b>	<b>27</b>	<b>44</b>	<b>68</b>	<b>88</b>	<b>124</b>	<b>8.8</b>	<b>218.2</b>
<b>PNG</b>	<b>184</b>	<b>301</b>	<b>472</b>	<b>607</b>	<b>856</b>	<b>8.7</b>	<b>185.2</b>

The provision of village court services will rise more rapidly in provinces that are currently under-served by village courts. The level of service required depends both on population size and on the proximity of the population to village court services. By this measure, Manus is well served by 11 village courts compared with larger and more disparate populations such as in Western Province (table A10). In Western Province, the number of village courts will need to increase by 228 between 2010 and 2030 in order to provide a similar level of service to that currently provided in Manus. Over that same period, only one additional village court will be needed in Manus.

**Table A10 – Village Courts**

	<i>Estimate</i>	<i>MTDP targets</i>			
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Central	41	78	132	174	252
Gulf	14	39	75	104	157
Milne Bay	14	57	120	170	261
NCD	18	38	67	90	133
Oro	14	43	87	121	183
Western	10	50	108	153	238
<b><i>Southern</i></b>	<b>111</b>	<b>305</b>	<b>588</b>	<b>811</b>	<b>1224</b>
Eastern Highlands	64	125	215	286	416
Enga	157	181	217	244	296
Simbu	107	131	167	195	247
Southern Highlands	180	246	341	417	557
Western Highlands	98	153	233	296	413
<b><i>Highlands</i></b>	<b>606</b>	<b>836</b>	<b>1173</b>	<b>1438</b>	<b>1928</b>
East Sepik	103	153	227	285	393
Madang	56	116	203	272	399
Morobe	39	132	268	376	574
Sandaun	41	72	118	154	221
<b><i>Momase</i></b>	<b>239</b>	<b>473</b>	<b>816</b>	<b>1087</b>	<b>1586</b>
Bougainville	116	128	145	158	183
East New Britain	41	75	125	164	236
Manus	44	44	44	44	45
New Ireland	11	31	61	85	129
West New Britain	23	55	102	139	207
<b><i>Islands</i></b>	<b>235</b>	<b>333</b>	<b>477</b>	<b>590</b>	<b>799</b>
<b><i>PNG</i></b>	<b>1190</b>	<b>1947</b>	<b>3054</b>	<b>3927</b>	<b>5537</b>

# Annex 2 - Acronyms

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AAA	Accra Agenda for Action
ADB	Asian Development Bank
ADS	Automatic Dependent Surveillance
AMS	Area Medical Stores
ART	antiretroviral treatment
ARV	antiretroviral
ATM	Air Transport Management
AUSAID	Australian Agency for International Development
BDA	Border Development Authority
CACC	Central Agency Coordinating Committee
CASA	Civil Aviation Safety Authority
CBO	Community Based Organisations
CFDA	Coastal Fisheries Development Authority
CHP	Community health post
CHW	Community health worker
CIC	Coffee Industry Corporation
CIS	Corrective Institutions Service
CLRC	Constitutional and Law Reform Commission
CRI	Coffee Research Institute
CRP	Conservation Reserve Program
CSO	Civil Society Organisations
DACS	District AIDS Committee Secretariat
DAD PNG	Development Assistance Database PNG
DAL	Department of Agriculture and Livestock
DCI	Department of Commerce and Industry
DEC	Department of Environment and Conservation
DFAT	Department of Foreign Affairs and Trade
DFCD	Department for Community Development
DHS	Demography and Health Survey
DLPP	Department of Lands and Physical Planning
DMPGH	Department of Mineral and Geo Hazards
DNPM	Department of National Planning and Monitoring
DOD	Department of Defence
DOE	Department of Education
DOF	Department of Finance
DOH	Department of Health
DOT	Department of Trade
DPLGA	Department of Provincial and Local Government Affairs
DPM	Department of Personnel Management
DPU	Distorted Pattern Uniform
DRM	Disaster Risk Management
DSG	District Support Grant

ECIA	Economic Corridor Implementation Authority
EIP	Electricity Industry Policy
EOD	Explosive Ordnance Division
ESEG	Environmentally Sustainable Economic Growth
FAO	Food and Agriculture Organisation
FDI	Foreign direct investment
FMIP	Financial Management Improvement Program
GDP	Gross Domestic Product
GEF	Global Environment Facility
GNSS	Global Navigation Satellite System
GoPNG	Government of PNG
GOPPF	Gulf of Papua Prawn Fishery
HCT	HIV Counselling and Testing
HECS	Higher Education Contribution Scheme
HF	High frequency
HIES	Household Income and Expenditure Survey
HRD	Human resource development
HREB	Highlands Region Engineering Base
ICAO	International Civil Aviation Organisation
ICCC	Independent Consumer & Competition Commission
ICT	Information communication technology
IEA	International Education Agency
IEC	Information, Education & Communication
IFMS	Integrated Financial Management System
ILG	Incorporated Land Group
IMR	Infant mortality rate
IPA	Investment Promotion Authority
IPBC	Independent Public Business Corporation
IPP	Independent power producer
IPV	Inshore patrol vessel
IRC	Internal Revenue Commission
IREB	Islands Region Engineering Base
IUU	Illegal unreported unregulated
JAS	Joint Assistance Strategy
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
KIK	Kokonat Industri Koporesen
LCH	Landing Craft Heavy
LDC	Livestock Development Corporation
LLG	Local Level Government
LNG	Liquid natural gas
LPA	Large Patrol Vessel
LSH	Landing Ship Heavy
MDG	Millennium Development Goals
MEA	Multilateral Environmental Agreement

MFDR	Management for Development Results
MOU	Memorandum of Understanding
MRA	Mineral Resource Authority
MRMF	MTDP Results Monitoring Framework
MSG	Melanesian Spearhead Group
MTA	Metropolitan Transportation Authority
MTDP	Medium Term Development Plan
MTDS	Medium Term Development Strategy
MTFS	Medium Term Fiscal Strategy
NACS	National AIDS Council Secretariat
NAQIA	National Agricultural Quarantine Inspection Authority
NARI	National Agriculture Research Institute
NATO	North Atlantic Treaty Organisation
NATTB	National Apprenticeship & Trade Testing Board
NCDC	National Capital Development Commission
NDOE	National Department of Education
NEC	National Executive Council
NFA	National Fisheries Authority
NGO	Non-government organisation
NHIS	National Health Information System
NICTA	National Information and Communication Technology Authority
NISIT	National Institute of Standards and Industrial Technology
NJSS	National Judicial Staff Services
NLDP	National Land Development Program
NMSA	National Maritime Safety Authority
NREB	Northern Region Engineering Base
NRI	National Research Institute
NSDS	National Statistics Development Strategy
NSO	National Statistics Office
NTC	National Training Council
NWS	National Weather Services
NZAID	New Zealand International Aid and Development Agency
OC	Ombudsman Commission
OCCD	Office of Climate Change and Development
OCR	Office of Civil Registry
OECD	Organisation for Economic Cooperation and Development
OHE	Office of Higher Education
OLIPPAC	Organic Law on the Integrity of Political Parties and Candidates
OoU	Office of Urbanisation
OPIC	Oil Palm Industry Corporation
OPRA	Oil Palm Research Association
OPV	Offshore Patrol Vessels
PACS	Provincial AIDS Committee Secretariat
PATA	Pacific Asia Travel Association
PBS	Planning and Budgeting System

PD	Paris Declaration
PEP	post-exposure prophylaxis
PHA	Provincial Health Authorities
PIP	Public Investment Program
PIRLS	Progress in International Reading Literacy Study
PISA	Program For International Student Assessment
PLMD	Provincial Liaison and Monitoring Division
PMF	Performance Management Framework
PMGH	Port Moresby General Hospital
PMIZ	Pacific marine industrial zone
PNGCB	PNG Cocoa Board
PNGCCI	Papua New Guinea Chamber of Commerce & Industry
PNGDF	PNG Defence Force
PNGDF TTU	PNG Defence Force Transitional Training Unit
PNGDSP	PNG Development Strategic Plan
PNGFA	PNG Forest Authority
PNGICS	PNG Immigration and Citizenship Services
POM	Port Moresby
PPL	PNG Power Limited
PPP	Public Private Partnership
PRAEC	Petroleum Resource Area Economic Corridor
PSO	Provincial Statistical Offices
PSWDP	Public Sector Workforce Development Program
RAMSI	Regional Assistance Mission to Solomon Islands
REB	Regional engineering base
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RPNGC	Royal PNG Constabulary
SBDC	Small Business Development Corporation
SBT	Small Boat Team
SC-DOE	School Census - Department of Education
SIA	Supplementary Immunisation Activity
SIC	Small Industries Center
SME	Small and medium enterprises
SOE	State Owned Enterprise
SREB	Southern Region Engineering Base
SSG	Special Support Grant
STI	Sexually transmitted infection
STOL	short take-off and landing
TA	Technical assistance
TB	Tuberculosis
TIMSS	Trends in International Mathematics and Science Study
TMS	Treasury Management System
TNA	Training Needs Analysis
TPA	Tourism Promotion Authority
TVET	Technical and Vocational Education

TWG-AE	Technical Working Group on Aid Effectiveness
UH-1H	Utility Helicopter - First "H" Model
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNHABITAT	United Nations Human Settlement Program
UNHCR	United Nations Refugee Agency
UNICEF	United Nations Children Fund
UNIFEM	United Nations Development Fund for Women
UNMO	United Nations Military Observers
UNPKM	United Nations Peacekeeping Mission
VHF	Very high frequency
VSAT	Very Small Aperture Terminal (Satellite technology)
WGI	World Governance Indicators
WHO	World Health Organisation
WRA	Women of reproductive age
WTO	World Trade Organisation