CHAPTER 9. SECTORAL POLICIES

9.1 MEDIUM TERM DEVELOPMENT PLAN ENABLERS

9.1.1 Land

The National Land Development Program (NLDP) strategic framework (2011-2020) provides the overall policy directives for the land sector. The overall goal for the NLDP is to unlock land for development. Currently, 3.0 per cent of land in PNG is owned by the State and the remaining 97.0 per cent is customarily owned. The NLDP Implementation Plan 2011-2015 further details the priorities of the program over the first five years of implementation. Key strategic priorities of the program include: Land Administration Support, Incorporated Land Group (ILG) and Dispute Resolution Support and Customary and Alienated Land Development. The NLDP is in line with the Government's commitment to increase land use within the formal administration system to over 20.0 per cent of PNG's land mass and to have at least 60.0 per cent of landowner groups registered as ILGs by 2030. These targets have been set out in the DSP and in the first five years, under MTDP, Government aims to unlock 7.0 per cent of customary land for development purposes.

The pressing need for land is to address outdated land related legislations and an inefficient and lengthy land administration system. Progress has been made in addressing these issues. Under the Office of Urbanisation two pilot projects are under way to form ILGs in order to register and unlock land for development. Furthermore, court services in the provinces have been established in partnership with the Magisterial Services to improve dispute administration and management system at the lower levels of government. However, challenges remain, particularly in efforts to access and use customary land for development.

In 2011, Government funding will focus on the key components of the NLDP which includes Land Administration Support, ILG and Dispute Resolution Support, Customary and Alienated Land Development, and Institutional and Capacity Building. In addition to Land Administration Support, Government funding to unlock land will include the construction of two 'missing links' (Baiyer-Madang and Bogia-Angoram) and piloting of four economic corridors through the Economic Corridor Development Programme.

In comparison to previous budgets, Government funding in 2011 is expected to increase. This is in support of focusing expenditure on the enablers, the Government's key focus areas outlined in the MTDP. Table 38 shows the level of development funding from the Government and development partners since 2005.

Table 38: Development Appropriations for Land 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	0.4	0.0	0.0	0.0	0.4
2006	0.5	0.0	0.0	0.0	0.5
2007	2.3	0.0	0.0	0.0	2.3
2008	2.5	0.0	0.0	0.9	3.4
2009	6.0	0.0	0.0	0.9	6.9
2010	6.0	0.0	0.0	9.6	15.6
2011	**102.5**	**0.0**	**0.0**	**11.9**	**114.4**

Source: Department of National Planning and Monitoring

Table 39 shows the major programs and projects targeting land development being funded in the 2011 Development Budget.

Table 39: 2011 Development Expenditure on Land (Kina Million)

	Government	Grants	Total
Economic Corridors Development Programme	50.0	0.0	50.0
National Land Development Program	10.0	5.7	15.7
Border Development Mapping Project	2.0	0.0	2.0
Baiyer-Madang Missing Link	20.0	0.0	20.0
Bogia-Angoram Missing Link	20.0	0.0	20.0
Other	0.5	6.2	6.7
Total	**102.5**	**11.9**	**114.4**

Source: Department of National Planning and Monitoring

9.1.2 Law and Justice

The current high levels of crime and violence not only reduce the quality of life of people in both the rural and urban areas, but it is costly to the nation as a whole, undermining access to basic goods and services and impeding economic growth. The poor law and order situation often leads to the destruction of assets within a community, such as aid posts and schools, and criminal activity discourages business and investment, thus hindering economic growth. Currently, the annual incidence rate of major crimes committed is estimated to be around 600,000, with 150,000 cases reported in 2005. Reporting systems are weak and as such only an estimated 20-30 per cent of crimes are reported. The average victimization rate is 9.7 per cent across urban centres, including burglary, assault, sexual assault, violence, vandalism and vehicle theft.

The 2007 White Paper on Law and Justice in PNG and the National Law and Justice Policy and Plan of Action 2000 set out the overarching policy directions for the Law and Justice Sector. These policies focus on improved functioning of the formal law and justice system, improved sectoral coordination and resource use and increased focus on crime prevention and restorative justice.

Both policies are implemented through the Law and Justice Sector Strategy Framework (LJSSF) with the goal of achieving *“A Just, Safe and Secure Society in PNG*”. The LJSSF focuses on five key areas:

1. Improved policing, safety and crime prevention;
2. Improved access to justice and just results;

3. Improved reconciliation reintegration and deterrence;
4. Improved accountability and reduced corruption; and
5. Improved ability to provide law and justice.

The Government is committed to achieving the DSP target to reduce crime rates by 55.0 per cent and the victimization rate to below 5.0 per cent by 2030. Over the next five years, the MTDP period, Government will work towards reducing the current crime rate of 91 per 1000 to 70 per 1000 and the estimated annual crime incidence rate from 600,000 to 520,000.

The National Coordinating Mechanism (NCM) leads the promotion of the Law and Justice Policy and the LJSSF, including in policy and budget matters and provides oversight and direction through the Law and Justice Secretariat (LJSS). The LJSS supports the Government's sector-wide approach through increased coordination of procedures and activities, monitoring of sector performance and management of the central imprest account mechanism. Diversion from the LJSS's mandated functions and poor reporting has been an issue in recent years and a review of the Secretariat in 2010, funded by AusAID, will inform the Government on how best to address the role of LJSS in future years.

The sector is responsible for a range of functions and only through effective coordination and support will the system operate effectively as a whole. For instance, the removal of the backlog of cases in the National and Supreme Courts will reduce the number of remandees awaiting trial and relieve pressure on Correctional Service. Solving disputes early at the community level by increasing the skills of police and village court officials and improving the payments system of village court officials will slow the growth in cases reaching the higher courts.

At the national and provincial levels, the formal principal law and justice agencies work with civil society through the Community Justice Liaison Unit (CJLU) to ensure local levels of restorative justice and crime prevention are strengthened. Further support to the sector in 2011 will come in the form of an infrastructure development policy which is currently being developed by the sector. This policy will guide and coordinate the infrastructure plans of the law and justice agencies and will ensure that facilities are of an adequate standard and maintained.

It is clear that implementation across the sector must be strengthened in order to address the current high levels of crime and violence. However, one of the key challenges faced by the sector is the issue of deteriorating facilities, in particular the state of correctional services, police housing, the National and District Court Houses and the rural lock-ups. Other critical areas for the sector include the provision of legal aid at the provincial level, addressing juvenile justice and training of key personnel. The Government takes note of these issues and expenditure in 2011 will focus on the infrastructure rehabilitation. This investment builds upon work carried out in 2010 and is in line with the priorities of the Government to increase the capacity and effectiveness of the sector agencies.

Table 40 details the level of Government and Donor support to the sector throughout the MTDS period (2005-2010). Overall, since 2005, the level of Government funding from the Development Budget has increased and the level of donor support has decreased. However, in 2011, the level of donor funding is greater than that of Government direct financing. Whilst the total amount allocated to the sector is less than the 2010 appropriation, the total allocation to implementing agencies through the Development Budget is K3.5 million higher

than in 2010. In contrast to the 2010 Development Budget, support to the sector will not be provided through the District Service Improvement Programme (K35.6 million in 2010).

Table 40: Development Appropriations for Law and Justice 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	13.5	10.0	0.0	510.3	533.8
2006	26.8	0.0	0.0	76.6	103.4
2007	30.5	0.0	0.0	96.0	126.5
2008	31.0	0.0	0.0	108.3	139.3
2009	10.0	0.0	0.0	96.0	106.0
2010	94.1[1]	0.0	0.0	72.2	166.3
2011	**62.0[2]**	**0.0**	**0.0**	**83.2**	**145.2**

[1] Includes DSIP law and justice funding (K35.6 million).
[2] Does not include DSIP law and justice funding.
Source: Department of National Planning and Monitoring

Table 41 details the major programs which will be funded in 2011. The Government has allocated substantial amount of development funds towards tackling the deteriorating infrastructure in the sector, including the rehabilitation of four police stations, three jails and three police housing complexes. Over the medium term, it is the policy of Government to enhance the capacity of law and justice implementing agencies and rehabilitate infrastructure in the sector.

The Australian Government will continue to fund the PNG-Australia Law and Justice Partnership Program, aimed at supporting the sector through advisors and funding of the Law and Justice Secretariat. A component of the partnership also targets capital works and in comparison to 2010, the Government will invest a larger proportion of total funds to improve critical infrastructure in the sector.

Table 41: 2011 Development Expenditure on Law and Justice (Kina Million)

	Government	Grants	Total
Police Logistics	20.0	0.0	20.0
Morobe police housing	3.0	0.0	3.0
Eastern Highlands police housing	2.0	0.0	2.0
Tambul/Nebilya police barracks	3.0	0.0	3.0
Boram jail relocation/extension	10.0	0.0	10.0
Rural lock-up program	8.0	0.0	8.0
Mukrumanda jail construction	3.0	0.0	3.0
Kwikila police station	2.0	0.0	2.0
Boroko police station	2.0	0.0	2.0
Wewak police station	2.0	0.0	2.0
Angoram police station	2.0	0.0	2.0
PNG-Australia Law & Justice Partnership	2.0	74.4	76.4
Other	3.0	8.8	11.8
Total	**62.0**	**83.2**	**145.2**

Source: Department of National Planning and Monitoring

9.1.3 Transport

Papua New Guinea's diverse and challenging geography means that reliable land, air and water transport infrastructure is crucial to the social and economic advancement of the country and the overall wellbeing of its people. Improved transport infrastructure facilitates access to markets and the flow of basic goods and services to both rural and urban communities. However, the state of transport infrastructure across the country is poor and it is deteriorating rapidly. For a number of years there has been inadequate maintenance of existing assets. As such a large amount of funding is required for rehabilitation work. This is the case for all three modes of transport (land, air and water).

The total road network in PNG is approximately 30,000km, of which 8,460km are national roads. Annual data is recorded on the national road network under the Road Asset Management System (RAMS), with each 10km stretch of road classified as either: good, fair or poor. Location and traffic volume data is used to identify the appropriate level of aggregation. In 2010, 30.4 per cent of national priority roads are in "good" condition. This is an improvement from the per centage recorded in 2008 (29 per cent). Under the DSP, the Government is committed to obtaining the target of 100 per cent of 25,000km of national roads in good condition by 2030. To reach this target, Government will work towards ensuring less than 1,200km of national roads are in poor condition, whilst increasing the size of the road network to 10,000km over the medium term.

Thirteen out of twenty-two airports have been fully ICAO certified and the Government is working towards the MTDP target of 100 per cent of regional airports meeting international certification by 2015. This will be through the leadership of the National Airports Corporation (NAC), following the restructuring of the sector in 2010. The previous Civil Aviation Authority (CAA) functions were allocated to three agencies: NAC, Civil Aviation Safety Authority (CASA) and PNG Air Services Limited (PNGASL). CASA is now responsible for air safety, PNGASL is responsible for managing PNG's airspace and NAC is responsible for managing all national airports. Ensuring that all airports provide a safe and secure operating environment is a legal requirement under the Civil Aviation Act 2000 and continues to be a top priority of the Government. The Civil Aviation Development and Improvement Program (CADIP), a multi tranche financing facility through ADB, will address this priority.

PNG Ports Corporation has increased its maintenance and development activities targeting Lae Port, through concessional ADB loan financing. At the same time, the corporatization of PNG Ports under the Independent Public Business Corporation (IPBC) has enhanced its capability to effectively address issues affecting sea port facilities. Under the DSP, the maritime sector will work towards achieving the targets of reducing the turnaround time from 3 days to 1 day, upgrading ports and tripling the number of routes serviced and number of vessels by 2030. By 2015, it is anticipated that the turnaround time will have been reduced from 3 days to 2.5 days and the number of routes serviced and number of vessels increased by 25.0 per cent, as detailed in the MTDP. The Government will also continue to focus on rehabilitating jetties and wharves to serve the coastal communities of PNG.

In 2011, the transport sector will be guided by the National Transport Strategy 2011 -2030 (NTS) which will be implemented through a five-year Medium Term Transport Plan (MTTP 2011-2015). The NTS is due to be completed by the end of 2010. Both new plans are aligned to the MTDP and DSP.

The goal of the NTS is to work towards establishing a transportation network that links all of PNG. The NTS features a longer time-frame than previous plans and identifies strategic infrastructure (importance vs. investment priorities) and new approaches to cost recovery. It also examines Community Service Obligations, coordination between state agencies and stakeholders (through Government's Transport Sector Coordination Monitoring and Implementation Committee – TSCMIC), safety, security and clearer accountability for effective service delivery. Under the NTS, Government will focus on:

- Basic maintenance: 'good' and 'fair' condition national roads will be maintained over the full 20-year horizon to prevent deterioration;
- Rehabilitation: applied to 'poor' quality national roads to upgrade them to 'fair', plus maintenance for the rest of the 20-year period;
- Upgrading: any national road from existing condition to 'good' quality;
- Bridge improvements: bringing any bridges on a link that is below the capacity of 'fair' up to 'good';
- Construction of 16 missing links and economic corridors;
- Increasing shipping services;
- Reducing port turnaround time; and
- Upgrading airports and reopening rural airstrips.

The NTS was informed by the Transport Infrastructure Priority Study (TIPS) funded by AusAID. TIPS is producing a model to assist prioritisation of investment in the transport sector from both an economic and social development perspective. Unlike the 2006 TIPS, TIPS 2010 considered all three modes of transport and covered infrastructure at both the national and provincial levels. Crucially TIPS provides Government with the projected economic benefit from investment in critical areas and informs stakeholders on an appropriate sequencing policy for the transport sector. However, the prioritization methodology used under TIPS is predominately based on economic factors and does not adequately factor in community service obligations. As such, care was taken in interpreting and using the findings from TIPS. TIPS will be finalized by the end of 2010.

As in the 2009 and 2010 Development Budget, the transport sector remains the highest funded area under the Development Budget and receives over 37.0 per cent of all concessional loans. This relative funding allocation is justified by the sequencing principle encapsulated in the Development Budget strategy. Expenditure on transport will produce spillover effects on to other expenditure areas, for example the delivery of basic health and education services and the promotion of income-earning opportunities. The Government's commitment to fund the transport sector through direct financing, tax credits and loans is detailed in Table 42.

However, whilst the relative funding allocation for the transport sector was high between 2005-2010, funding fell short of the major capital investments required in all three sub-sectors – land, air and water. Aside from the level and allocation of funding, other constraints exist in the sector. Poor prioritisation of funding, delays in the procurement and approval process of Government, a lack of qualified engineers and technical staff, security issues and landowner issues continue to plague the sector.

Table 42: Development Appropriations for Transport 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	105.6	69.2	137.5	211.5	523.8
2006	193.1	71.1	100.5	173.7	538.4
2007	159.8	85.4	132.3	185.9	563.4
2008	148.0	73.7	116.4	220.8	558.9
2009	283.3	40.0	131.2	197.9	652.4
2010	475.9[1]	60.0	150.4	214.5	900.8
2011	**359.0[2]**	**0.0**	**141.8**	**207.4**	**708.2**

[1] Includes Infrastructure Development Grant funding (K120 million) and two 'missing links' (K40 million)
[2] *Excludes* Infrastructure Development Grant funding (K120 million) and two 'missing links' (K40 million), which are accounted for elsewhere.
Source: Department of National Planning and Monitoring

The major items in the 2011 Development Budget for transport rehabilitation and construction are shown in Table 43. Recognizing the lack of funding for the maritime and air sub-sectors in recent years, Government will fund all forms of transport in the 2011 Development Budget.

For the road sub-sector, K60.0 million has been allocated for the rehabilitation of five highways: trans Sepik Highway, trans East-West New Britain Highway, Buluminski Highway, Central-Malalaua Highway and Kokopau to Arawa road upgrading and bitumen sealing. In contrast to the 2010 Budget, the national bridge maintenance program will be budgeted for in the Recurrent Budget and not the Development Budget (K40.0 million). A further K60.0 million for the national road maintenance programme has also been appropriated in the Recurrent Budget.

In the 2011 Development Budget concessional loan funding is being sourced from the Asian Development Bank (ADB) for programs covering all three modes of transport. This includes the Lae Port Development Program, the Civil Aviation Development and Improvement Programme and the Highlands Region Roads maintenance and improvement program under an ADB multi tranche financing facility.

In 2011, other donors, including JICA and AusAID will continue their grant financing in the road sub-sector. The PNG Australia Partnership for Development recognises the need to improve transport infrastructure and in 2011 AusAID will continue its Transport Sector Support Programme, which targets maintenance and rehabilitation of the 16 national roads as well providing some funds towards maintenance of national airports, ports and airport certification in line with the NTS and MTDP. JICA will continue its support to rehabilitate Markham Bridge in Morobe Province and the bridge programme in Bougainville.

Table 43: 2011 Development Expenditure on Transport (Kina Million)

	Government	Loans	Grants	Total
DSIP – rural and feeder roads	178.0	0.0	0.0	178.0
Trans Sepik Highway	10.0	0.0	0.0	10.0
Trans East-West New Britain Highway	10.0	0.0	0.0	10.0
Buluminski Highway	10.0	0.0	0.0	10.0
Central Malalaua Highway	10.0	0.0	0.0	10.0
Kokopau to Arawa Road upgrading	20.0	0.0	0.0	20.0
Highlands Region Road Improvement	10.0	48.0	0.0	58.0
Lae Port Development	0.0	21.9	0.0	21.9
Mobile Harbour Cranes	30.0	0.0	0.0	30.0
Coastal Vessels	20.0	0.0	0.0	20.0
Community water transport	8.0	6.0	0.0	14.0
Civil Aviation Development and Improvement Programme	8.0	21.9	0.0	29.9
Transport Sector Support Programme	0.0	0.0	136.4	136.4
Other	45.0	44.0	71.0	160.0
Total	**359.0**	**141.8**	**207.4**	**708.2**

Source: Department of National Planning and Monitoring

9.1.4 Higher and Technical Education

Higher and technical education is crucial for supplying the country's manpower requirements in all sectors of the economy and a highly skilled workforce will drive growth and development. Currently the number of skilled workers is low in PNG and the Government recognises the need to address this issue as a priority.

For example, PNG currently has less than one doctor and less than one health worker per thousand people. This is low in comparison to the average amongst the developing countries considered to be particularly poorly supplied with health workers. PNG's (indirectly measured) youth literacy rate is 61.7 per cent and adult literacy is 49.2 per cent. Furthermore, one-third of skilled jobs are currently held by foreigners, resulting in an estimated K780.0 million leaving the country every year in the form of foreign remittances. The DSP and MTDP recognize the importance of addressing these issues and have set the targets of 112,000 graduates in 2015 and 265,000 in 2030 to address the shortage of skills in the adult population.

The National Education Plan 2005-2014 is the guiding policy framework for technical and vocational education. The Higher Education sector is guided by the National Higher Education Plan II, however work is underway to finalize the National Higher Education Plan III, 2011-2020. Under the plan, the Government has identified a number of necessary interventions in the higher education sector, guided by the findings of the PNG University Review. Key strategic areas for the Government over the medium term include:

- Higher education reform, lead by the Commission for Higher Education;
- The rehabilitation, or replacing, of run-down existing assets, and restoration of quality before investment in expansión;
- Repair and expansion of the national high schools to improve on the quality of intake to universities;
- Provision of information and communication technology in universities; and

- Forging of strong partnerships with relevant stakeholders, including dialogue with PNG industry.

Table 44 shows appropriations for Higher and Technical Education over the MTDS period (2005-2010). Under MTDS higher and technical education was not an expenditure priority area. However, the EPA "development orientated adult education" focused investment on informal adult education in partnership with formal education systems. The significant increase in funds allocated to the higher and education sector in 2011 reflects the change in Government priorities under MTDP.

Table 44: Development Appropriations for Higher andTechnical Education 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	2.9	0.0	6.1	31.2	40.2
2006	5.3	0.0	5.8	39.7	50.8
2007	11.2	0.0	5.1	51.5	67.8
2008	17.8	0.0	0.4	46.0	64.2
2009	43.6	0.0	0.0	50.0	93.6
2010	55.3	0.0	11.8	62.5	129.6
2011	**93.0**	**0.0**	**61.7**	**36.4**	**191.1**

Source: Department of National Planning and Monitoring

The major programs in the 2011 Development Budget targeting this DSP and MTDP enablers are shown in Table 45. The Government has recognized the importance of funding technical colleges and universities as well as scholarships to address the shortage of skills in the adult population.

Table 45: 2011 Development Expenditure on Higher and Technical Education (Kina Million)

	Government	Loans	Grants	Total
Unitech infrastructure development (HR)	16.0	0.0	0.0	16.0
Unitech petroleum & petrochemical engineering school	10.0	0.0	0.0	10.0
UPNG law school building	10.0	0.0	0.0	10.0
UPNG science building	8.0	0.0	0.0	8.0
UoV library	5.0	0.0	0.0	5.0
UNRE administration block upgrade	3.0	0.0	0.0	3.0
UoG dormitory extension	4.0	59.0	0.0	63.0
Trade Skills Scholarship	20.0	0.0	0.0	20.0
TVET sector projects	10.0	0.0	0.0	10.0
Other	7.0	2.7	36.4	46.1
Total	**93.0**	**61.7**	**36.4**	**191.1**

Source: Department of National Planning and Monitoring

9.1.5 Primary and Secondary Education

The overarching objectives for the education sector are encapsulated in the National Education Plan 2005-2014 and the Universal Basic Education Plan (UBE) 2010-2019. Key strategic priorities of these plans include: implementation of the education reforms to improve service delivery, strengthening and coordinating partnerships with stakeholders at all levels, enhancing universal access to basic education and ensuring effective distribution of education materials and supplies. Under the UBE plan, the Government aims to provide the opportunity for all children to complete eight years of basic education. Through implementation of these plans, the Government will meet its commitment to MDG Goal 2: Achieve Universal Primary Education.

The national MDG targets for PNG, stated in the MTDP, is to achieve a gross enrolment ratio of 74.3 per cent, a cohort retention ratio between grade one and six of 40.0 per cent and a youth literacy rate of 70.0 per cent. Currently, the completion rate to grade eight is 45.4 per cent. Overall, little progress towards achieving the national targets for enrolment (access to education), retention and achievement was made between 1990 and 2009 and given continuation of recent trends, PNG will not be able to achieve the global targets for MDG 2 by 2015. Much work needs to be done to meet the revised national targets detailed in MTDP 2011-2015.

The quality of education is also an area of concern for the Government. Since 2001 class sizes have steadily increased, and the number of school inspections has decreased. To substantially improve the quality of primary and secondary education, performance monitoring must be strengthened, teachers must be trained to higher standards and primary, secondary and national high schools must be adequately equipped with resources and an appropriate number of classrooms. Furthermore, secondary schools in turn must be well integrated with vocational and technical colleges to ensure continuity of education attainment throughout the system.

The expansion of the education sector since 1995 has put considerable pressure on existing resources, a pressure which is further compounded by high population growth rates. In particular there is considerable pressure in the capital cost of expanding infrastructure and the recurrent costs of additional teachers and their associated training requirements. Yet, insufficient numbers of teachers and resources in the rural districts and communities remains an issue. The capacity at all levels to monitor and administer the education system, as well as greater community and parental demands for access to education, has further put pressure on the sector to perform.

In responding to these challenges, the Government in 2011 will focus development expenditure on building capacity within the system. This includes rehabilitating existing primary, secondary and high school infrastructure, investing in new classrooms and providing sufficient educational materials.

The Government has increased funding to primary and secondary education over the life of the MTDS. Guided by the expenditure sequencing strategy basic education was an expenditure priority area under the MTDS. Under MTDP, one of the key enablers for growth and development has been identified to be primary and secondary education. As such the significant increase in funds to the sector in 2011 reflects an adjustment in Government priorities over the next five years. In 2011, donor grants account for 49.0 per cent of expenditure. In 2010 donor grants were estimated to be 71.0 per cent of expenditure.

Table 46: Development Appropriations for Primary and Secondary Education 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	5.7	0.0	0.0	170.4	176.1
2006	14.4	0.0	0.0	151.5	165.9
2007	26.9	0.0	0.0	74.4	101.3
2008	10.5	0.0	0.0	163.1	173.6
2009	30.8	0.0	0.0	144.8	175.6
2010	82.1	0.0	0.0	197.3	279.4
2011	**174.0**	**0.0**	**46.9**	**208.3**	**429.2**

Source: Department of National Planning and Monitoring

Major projects funded in 2011 are listed in Table 47.

Table 47: 2011 Development Expenditure on Primary and Secondary Education (Kina Million)

	Government	Loans	Grants	Total
Rehabilitation of Education Sector Infrastructure (RESI)	70.0	0.0	0.0	70.0
Rehabilitation of four National High Schools	40.0	0.0	0.0	40.0
Establishing library in every school project	11.0	0.0	0.0	11.0
Oro Recovery and Restoration Programme	20.0	0.0	0.0	20.0
Community Colleges	5.0	46.9	0.0	51.9
Procurement and distribution of secondary school books	0.0	0.0	27.3	27.3
New Education Delivery Strategy	0.0	0.0	74.7	74.7
Other	28.0	0.0	106.3	134.3
Total	**174.0**	**46.9**	**208.3**	**429.2**

Source: Department of National Planning and Monitoring

9.1.6 Utilities

Public utilities are fundamental to the growth and development of all sectors of the economy. Priority utilities in the MTDP are:

1. Water and sanitation;
2. Energy development; and
3. Information and Communication Technology.

9.1.6.1 Water and Sanitation

By regional Pacific standards, Papua New Guinea ranks low in terms of access to potable water and safe sanitation services. Only 40.0 per cent of the national population has access to potable water. And 45.0 per cent of the national population has access to adequate sanitation services. Within the rural community, clean and safe water is accessible to 32.0 per cent of the rural population while 41.0 per cent of the rural population has access to safe sanitation.

Papua New Guinea appears unlikely to achieve MDG 7, which aims to halve the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015, relative to 1990 levels. To address this, the Government has set the following targets in the MTDP: increasing the total population's access to improved water source from 40.0 per cent to 46.0 per cent and access to improved sanitation from 45.0 per cent to 50.0 per cent.

A number of government agencies are responsible for providing safe drinking water and sanitation to the citizens of PNG. These include the Department of Environment and Conservation, Eda Ranu, PNG Waterboard and the Department of Health. In particular, the Department of Health is responsible for the promotion of a clean water supply and improved sanitation in the rural areas. Under the National Health Plan 2011–2020 the safe water supply and sanitation priorities are:

1. Increase the number of households that have access to safe drinking water, and effective waste disposal and sanitation;
2. Ensure all health facilities have access to running water, and effective waste disposal and sanitation;
3. Ensure public and private buildings comply with legislation in relation to water supply, sanitation and food handling; and
4. Review and improve relevant legislation to enhance the management and control of rural water supplies.

To further support the utilities sector, the Government wishes to formulate a comprehensive National Water Policy in line with MTDP.

The Government has recognized that the private sector can play an important role in the provision of safe water and sanitation. Implementation of the Public-Private Partnership (PPP) policy, coupled with development of the Community Service Obligations (CSO) policy and associated legislation in 2011, are two mechanisms which the Government can draw upon to improve the delivery of safe drinking water and effective waste disposal and sanitation. Service delivery can also be improved through strengthening partnership with non-state actors. The Civil Society-State Partnership, signed in March 2010, helps foster strategic alliances with key stakeholders. This partnership is consistent with one of the underlying principles of the MTDP, which is to strengthen partnership and collaboration among all major stakeholders. Obstacles remain however, including the loss and poor distribution of water due to vandalism and illegal connections, lack of capacity in the management of water resources, and depletion and pollution of water resources.

Tables 48 and 49 indicate levels of funding towards water and sanitation and document the major programs in the focus area. Under MTDS, expenditure on water and sanitation was captured in the EPA – primary and preventative health. There are also a number of projects with donor support in the form of both grants and concessional loans. The EU is the only grant funding donor in the sector.

Table 48: Development Appropriations for Water and Sanitation 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	8.5	0.0	31.0	3.6	43.1
2006	16.5	0.0	27.8	14.1	58.4
2007	11.3	0.0	5.0	2.2	18.5
2008	11.6	0.0	13.8	33.2	58.6
2009	8.5	0.0	30.1	18.9	57.5
2010	42.7	0.0	35.0	31.6	109.3
2011	**45.0**	**0.0**	**9.6**	**28.7**	**83.3**

Source: Department of National Planning and Monitoring

In the 2011 Development Budget, the Government is funding a number of measures to improve people's access to safe drinking water and sanitation facilities. These are documented in Table 49.

Table 49: 2011 Development Expenditure on Water and Sanitation (Kina Million)

	Government	Loans	Grants	Total
POM sewerage	10.0	9.6	0.0	19.6
Goroka town sewerage	8.0	0.0	0.0	8.0
District town water supply	5.0	0.0	9.9	14.9
Water supply and sanitation programme	15.0	0.0	0.0	15.0
Other	7.0	0.0	18.8	25.8
Total	**45.0**	**9.6**	**28.7**	**83.3**

Source: Department of National Planning and Monitoring

9.1.6.2 Electricity

Electricity is an important input to production and hence growth and development. As such it is identified in the DSP and MTDP as an enabler for other sectors of the economy to thrive. However, the energy sector is currently underdeveloped in PNG, despite the country being rich in renewable and non-renewable energy sources.

PNG has substantial deposits of hydrocarbons, mainly natural gas. The recoverable, proved and probable natural gas resources are estimated at 428 billion cubic metres, equivalent to about 3 billion barrels of oil. The country is also rich in renewable energy resources suitable for power production, particularly hydropower. PNG has more than 15,000 megawatts (MW) of hydropower potential. Coconut plantations are widely spread throughout PNG and may be a potential source of power as coconut-based bio-diesel becomes a viable option. Other potential energy sources are geothermal, wind, solar and marine.

The most recently published data shows that only 12.4 per cent of households have access to electricity. Under the MTDP, it is anticipated that this will increase to 26.8 per cent of households, rising to 70.0 per cent by 2030. To address this, the Government has formulated the National Electricity Policy. The focus of the policy is increasing private sector participation and competition, particularly in generation activities and rural electrification. Currently 0.6 per cent of FDI is invested in power and major investment in electricity infrastructure is needed due to an expected five-fold surge in demand for electricity by 2030.

Under the Electricity Industry Policy, free entry of private sector producers will be allowed to serve large customers with loads of 10 MW or more alongside third party investment in

generation, retailing and network activities in areas outside current PNG Power Limited exclusive areas, which include rural areas. The framework uses a standard pricing in the shape of national single tariff and envisages an Electricity Trust Fund to finance subsidies for rural areas. Private sector generators can also be encouraged through the inclusion of 'feed-in-tariffs' in the electricity generation market. These tariffs will mean a guaranteed revenue stream for any new participants in the electricity generation market and thereby provide further certainty for long term investments in electricity generation. Competitions will be introduced in identified segments of the electricity markets. Where there is no competition, Community Service Obligation (CSO) will be applied. Work is currently underway to develop the Community Service Obligation Policy and associated legislation to guide the application of CSOs in the sector.

For effective implementation of the policy, regulation of the energy market must be strengthened. Presently, ICCC is the economic regulator of the industry and technical regulation is carried out by PNG Power Limited.

Table 50 shows the appropriations towards energy development throughout the MTDS period. As can be seen in the table below, the Government has increased funding towards this focus area over the last year. Development partner assistance has increased in recent years in the form of concessional loans.

Table 50: Development Appropriations for Energy Development 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	0.0	0.0	0.0	0.5	0.5
2006	2.3	0.0	0.0	7.6	9.9
2007	1.0	0.0	0.0	1.3	2.3
2008	2.0	0.0	0.0	0.2	2.2
2009	3.0	0.0	0.0	0.0	3.0
2010	13.0	0.0	0.0	0.0	13.0
2011	**43.0**	**0.0**	**5.0**	**0.0**	**48.0**

Source: Department of National Planning and Monitoring

The major programs targeting energy development are shown in Table 51. The Government has recognized the importance of funding electrification in the rural areas as well as the urban environment. The Town Electrification Programme, through concessional ADB loan financing will continue in 2011.

Table 51: 2011 Development Expenditure on Energy Development (Kina Million)

	Government	Loans	Total
Rural solar capacitors	10.0	0.0	10.0
Rural electrification programme	30.0	0.0	30.0
Town electrification programme	3.0	5.0	8.0
Total	**43.0**	**5.0**	**48.0**

Source: Department of National Planning and Monitoring

9.1.6.3 Information and Communication Technology – ICT

Information and communication technology transforms PNG, linking rural communities to the wider world, increasing access to goods and services and increasing knowledge and information across the country.

Telecommunication services have benefitted from the introduction of private sector competition in the mobile phone industry. This has lead to a substantial upgrade in the quality and reach of services and a significant decline in cost. As such there are currently 277 mobile subscribers per 1000 people, with an increasing number of subscribers every year. The fixed telephony network has approximately 65,000, 65.0 per cent of which are business lines. The level of access in the rural and remote areas is however lower than the urban centres. Currently, 2.3 per cent of the population has access to the internet; however internet broadband access remains expensive by international standards.

Acknowledging the benefits of ICT for the PNG economy it is current Government policy to roll out the benefits of competition throughout the telecommunications sector. This will enable Government to achieve the MTDP targets for the ICT sector: to increase the number of mobile subscribers to over 700 per 1000 people by 2015 and internet access by 20.0 per cent. The National ICT policy sets out the strategic directions for the sector including the introduction of staged open competition in the communications sector and transforming Telikom into a viable and efficient competitior in the market. Moreover, Government has undertaken a review of the current regulatory structures and processes mandating ICCC to be competition regulator, whilst PANGTEL will be a technical regulator, effective under the National Information Communication Technical Authority (NICTA) as a new licensing regime. This will ensure properly designed CSO mechanisms and interconnections regimes are established at the same time as open competition.

Reform and investment in the communications sector is required in order to extend availability to rural and remote areas of PNG. The costs in undertaking such initiatives are high due to PNG’s rugged and remote terrain. As such, until the establishment of a well regulated open market, an equitable and properly managed CSO scheme must be considered. With open competition, traditional cross subsidies between services and geographic areas will become difficult to sustain. Work on the CSO policy and associated legislation in 2011 will help in this regard. Furthermore, with the recent engagement of the World Bank to assist in the establishment of the rural connectivity fund (RCF) and Universal Access Scheme, development of ICT services in rural areas of PNG will be enhanced.

Table 52 indicates the level of funding towards ICT over the last five years. This area has seen increased funding since 2005, in line with Government’s policy to promote rural transformation and empowerment.

Table 52: Development Appropriations for ICT 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	0.3	0.0	0.0	0.0	0.3
2006	0.0	0.0	0.0	0.0	0.0
2007	0.0	0.0	0.0	0.0	0.0
2008	0.8	0.0	0.0	0.0	0.8
2009	7.0	0.0	0.0	0.0	7.0
2010	0.5	0.0	0.0	0.0	0.5
2011	**43.5**	**0.0**	**45.4**	**3.9**	**92.8**

Source: Department of National Planning and Monitoring

The major programs in the 2011 Development Budget targeting ICT development are shown in Table 53.

Table 53: 2011 Development Expenditure on ICT (Kina Million)

	Government	Loans	Grants	Total
Integrated Government Information System	2.5	41.4	0.0	43.9
Rural communications (WB)	1.0	4.0	0.0	5.0
Rural communication	10.0	0.0	0.0	10.0
National ID cards	30.0	0.0	0.0	30.0
Other	0.0	0.0	3.9	3.9
Total	**43.5**	**45.4**	**3.9**	**92.8**

Source: Department of National Planning and Monitoring

9.1.7 Primary and Preventative Health

The National Health Plan 2011-2020 provides the overall policy and planning directives for the health sector. Its goal is to strengthen primary health care for all, and improve service delivery for the rural majority and urban disadvantaged. Strategic priority areas for the first ten years of this plan include: improving service delivery, strengthening partnership and coordination with stakeholders, strengthening of the health systems, improving child survival, improving maternal health, reducing the burden of communicable diseases, improving health lifestyles, and improving preparedness for disease outbreaks and emerging population health threats. The health sector Medium Term Expenditure Framework (MTEF) guides this approach by signifying the overall resource envelope accessible to the sector to assist the allocation of resources to the priority areas. The MTEF has expanded and improved over the last ten years to assist financing of the health sector in PNG.

To support the National Health Plan 2011-2020, the Department of Health is currently in the process of formulating the Human Resource Workforce, the ICT and the Asset Management Policies.

Over the past decade there has been little or no improvement in the country's health status. The health sector is represented by low life expectancy at birth as a result of high infant and child mortality, a high maternal mortality rate as well as deteriorating health facilities. The 2006 Demographic and Health Survey indicates that infant mortality is 57 per 1,000 live births, under-five mortality is 75 per 1,000 live births whilst maternal mortality is reported to be 733 for every 100,000 live births (indirect estimate, circa 1994). Considering the present level of infant, under-five and maternal mortality and the trend over the last ten years, the global MDG targets for goal 4: reduce child mortality and goal 5: improve maternal health will

not be achieved in the remaining six years of the first MDG cycle 1990-2015. Progress towards the national target for MDG 4 has however been made and in 2009, the national target for under-five mortality has been achieved. However the trend in maternal mortality since 1990 suggests that the national MDG target set for 2015 is unachievable.

Over the next five years, the Government will work towards reducing infant mortality from 57 per 1,000 live births to 43, under five mortality from 75 per 1,000 live births to 56 and maternal mortality from 733 per 100,000 live births to 500. These targets are detailed in the first MTDP 2011-2015.

With only five years left of the initial MDG cycle 1990-2015, the global as well as the national targets for MDG 6: combat HIV/AIDS, malaria and other diseases also appear to be out of reach. According to the 2009 Annual Health Sector Review, immunization rates still remain relatively low with only 62.0 per cent of children under one year old immunized against measles per year and only 61.0 per cent with triple antigen (third dose) per year. Over the last two years, coverage of the 3 doses triple antigen has declined, whilst measles vaccine coverage has increased, in part due to supplementary immunization activities. In 2008, the malaria prevalence rate was 391 in high malaria endemic districts and the pneumonia case fatality rate of children under five years was 2.7 per cent (an increase of 0.3 per cent from 2007).

The causes of ineffective health service delivery are systemic and complex. Health infrastructure continues to deteriorate, medical supplies are insufficient and fragmentation of the health systems' structure has reduced service delivery at the provincial and district levels. For instance, over a period of nine years, the proportion of open registered aid posts in the rural areas decreased from 78.0 per cent to 71.0 per cent. The required recurrent funding must be made available to prevent further deterioration of health facilities and services and the roll out of Provincial Health Authorities (PHAs) in 2011 must be supported to overcome fragmentation in the delivery system. Efforts to ensure funds reach the service delivery frontline, supported by the District Treasury Roll-Out Program must also be strengthened.

Inadequate service delivery is also the result of poor progress in other sectors, for example poor transport infrastructure, law and order problems, low level of education, and a lack of continuous water and electricity supply. Only through focused investment on the supporting enablers will improvements in the health sector be fully realized.

In 2011, expenditure in the health sector will be focused on rehabilitation of existing infrastructure, trialing of community health posts in strategic locations and the procurement of vital medical equipment.

Table 54 shows the level of funding from Government and Development Partners since 2005. Since 2005 funding from both Government and Development Partners has consistently increased. From 2010 to 2011 funds allocated to the health sector by Government have increased by 152.0 per cent. Funds from Trust Accounts and recurrent expenditure are not reflected in Table 54.

Table 54: Development Appropriations for Primary and Preventative Health 2005-2011 (Kina Million)

	Direct Financing	Tax Credit	Loans	Grants	Total
2005	1.0	0.0	0.0	9.5	10.5
2006	3.0	0.0	0.0	40.6	43.6
2007	12.5	0.0	0.0	78.3	90.8
2008	17.0	0.0	0.0	84.3	101.3
2009	39.6	0.0	0.0	109.8	149.4
2010	73.8	0.0	0.0	200.4	274.2
2011	**186.3**	**0.0**	**0.0**	**124.8**	**311.1**

Source: Department of National Planning and Monitoring

Development Partners continue to contribute significantly to the heath sector, including AusAID, NZAID and the UN. Table 55 shows the major programs and projects being funded in the 2011 Development Budget. In addition to the major projects listed below, Government funds a number of smaller projects in rural areas including the rehabilitation of health centres and aid posts.

Table 55: 2011 Development Expenditure on Primary and Preventative Health (Kina Million)

	Government	Grants	Total
Specialist hospitals' feasibility studies	20.0	0.0	20.0
Rehabilitation and construction of 13 hospitals	84.8	0.0	84.8
Community health posts	13.0	0.0	13.0
Provincial transit medical stores	14.4	0.0	14.4
Replacement of priority medical equipment	10.0	0.0	10.0
Static plant equipment replacement	7.0	0.0	7.0
Cuban doctors (MDG 4 & 5 special intervention)	25.0	0.0	25.0
Medical research	2.0	4.9	6.9
Health sector resourcing framework	0.0	50.3	50.3
Other	10.1	74.5	84.6
Total	**186.3**	**124.8**	**311.1**

Source: Department of National Planning and Monitoring

For Development Partners' contribution to the health sector, the Health Sector Improvement Program (HSIP) is a mechanism to pool Government and donor funds. However, to date, a range of issues including insufficient capacity to move funds to provinces and facilities, confusion in roles and responsibilities and development partners' policies and legal frameworks have prevented the sector wide approach from operating effectively. For effective implementation of the National Health Plan 2011-2020, improvements to the Health Sector Improvement Program (HSIP) must be made.

9.2 ECONOMIC SECTORS

9.2.1 Agriculture

The agriculture sector contributes around 25.0 per cent to GDP and 19.0 per cent to total exports from its major commodities which include coffee, copra, oil palm, rubber and timber. The agriculture sector remains the principal economic activity in PNG, sustaining the livelihood of more than 85.0 per cent of the population residing in the rural areas.

The Department of Agriculture and Livestock (DAL) is a mandated agency responsible for the overall development of the agriculture sector. Other agencies such as the National Agriculture Research Institute (NARI), Cocoa Copra Research Institute (CCRI), and associated commodities boards are the implementing agencies responsible for executing the policies, legislation and development plans put forward by DAL to improve and increase the production of each agriculture commodity.

The National Agriculture Development Plan (NADP) 2007 – 2016 provides the overall policy and planning directives for the agriculture sector. The NADP aims to sustainably transform the country's agriculture sector into a vibrant and productive economic sector that contributes to economic growth, social wellbeing, national food security and poverty alleviation. To achieve this vision, the NADP is committed to developing a well coordinated planning and implementation strategy that is both interactive and effective and involves the full participation of stakeholders. The eight priority areas under NADP are: research and extension, information and training, food and horticulture crop development, tree and industrial crop development, livestock, apiculture and aquaculture development, spice and minor crop development, gender, social and HIV/AIDS related issues, regulatory and technical services and strengthening of NADP management and coordination.

In 2008, the Government agreed to fund NADP at a cost of K100.0 million annually for ten years. Implementation of NADP commenced in 2009 and in 2011, the Government has committed K109.0 million to fund NADP. K89.0 million will be allocated to the districts and K20.0 million will be allocated to the National Development Bank for the provision of a credit facility for private ventures involved in agriculture.

Funding of the agriculture sector in the 2011 Development Budget will also include support to the commodity boards, the national spice promotion and development programme and the National Agriculture Research Institute (in addition to NADP research funds) to ensure the agriculture sector is equipped to manage risks associated with climate change and natural disasters. NARI's research on disease and drought tolerant crops, biological control of weeds and high yielding crops will be disseminated to smallholder farmers through agricultural extension.

Indirect support to the sector in 2011 will also come through significant investment in the rehabilitation of the deteriorating transport network, assisting producers to take their crops to the market, and support to the national land development programme. Improvements in land administration will increase opportunities for market based large scale and smallholder agriculture, employment and income generation in the rural area.

Though an estimated 30.0 per cent of land in PNG is suitable for agriculture, only 4.0 per cent is currently being utilized for commercial agricultural production.

9.2.2 Fisheries

The fisheries sector supports the livelihoods of many coastal communities in PNG. The sector is characterized by inland river fisheries, aquaculture, coastal bêche-de-mer, reef fisheries, prawn trawl and large-scale deepwater tuna fisheries. Stakeholders include artisanal communities to medium sized domestic prawn and tuna long-line operators to large international purse seine fleets in the deepwater tuna fishery. It is estimated that the value of the fisheries sector is K350-K400 million per annum. However, calculating the contribution of the fisheries sector to the economy is a difficult task due to high subsistence consumption and transactions in the local market and payment of crews in kind.

PNG has the potential to benefit greatly from the fisheries sector as it has the largest fisheries zone in the Pacific, covering an area of 2.4 million square kilometres. Recognizing this potential, the Government endorsed the National Fisheries Development Plan Framework (NFDPF) 2006-2016. Key priorities under the NFDPF include: increasing the volume and value of downstream processed products, promoting fish products of internationally recognized quality, encouraging sustainable fishing, improving fishing communities' access to markets, and encouraging the vertical and horizontal linkages between supportive markets. The NFDPF will drive the Government's commitment to increase processed fisheries' exports from K189.0 million to K450.0 milllion, the quantity share of catch caught by PNG vessels from 1 per cent to 5.0 per cent and the license fees generated from tuna fisheries from K60.0 million to K100.0 million over the MTDP period (2011-2015).

It is estimated that 34.0 per cent of the total fisheries output is processed locally at a value of K189.0 million. Greater value to the sector, employment and income earning opportunities for rural people, could be further enhanced by increasing the number of onshore downstream, and product diversification processing facilities for fish and fisheries products. There are currently four commercial canneries and processing plants in PNG. This includes the new tuna processing plant currently being constructed by Majestic Seafood Corporation in Lae. The Lae processing plant will eventually process 350 metric tonnes daily to the value of K375.0 million per annum and will provide 6,000 jobs.

To further support the development of downstream industries, the Government aims to make fisheries an efficient commercial industry by promoting and creating fisheries zones complete with the necessary infrastructure and government services. With the establishment of Marine Industrial Zones, the Government hopes to increase Foreign Direct Investment (FDI) from 0.8 per cent to 5.0 per cent. The Pacific Marine Industrial Zone (PMIZ) in Madang is the first of such kind. The PMIZ is a joint initiative of the National Government, Provincial authorities and major industry players including RD Tuna. Its aim is to become the regional tuna trans-shipment and processing hub for the Western and Central Pacific, through the establishment of six canneries processing 600 metric tonnes of tuna a day. The project is fully funded through a concessional loan from the Chinese Government. It is expected that the project will provide 40,000 direct jobs with a multiplier effect of approximately five with the support industry and spin-offs opportunities for the local surrounding communities.

PNG has substantial stocks of tuna within its Exclusive Economic Zone, some of which have been exploited by foreign fishing vessels paying access fees in exchange for fishing rights. License fees are low and there is an incentive to overfish. K60.0 million is currently generated annually through license fees, however there is the potential to collect over K100.0 million annually. The Government has adopted a policy of domestication of its tuna fishery, which involves encouraging domestic long-line vessels and expanding the proportion of the purse seine catch taken by locally based vessels supplying domestic canneries. Further development of the tuna fishery will take the form of a change in the balance between the long-line and purse seine fisheries, or a change in the allocation of the purse seine catch. Moreover, compliance of quality, standards, Sanitary and Phytosanitary (SPS) measures, and rules of origin will increase the potential for the fisheries sector to access international markets. In particular PNG will able to fully utilize the Interim Economic Partnership Agreement signed with the European Union in 2009, giving access to the lucrative European market duty and quota free.

Through funding of the following programs in the 2011 Development Budget: coastal fisheries development programme (K15.0 million) and PMIZ (K55.0 million) the Government will continue to support the sector. The Coastal Fisheries Development Program is an import development and policy initiative to enhance and harness the fisheries potential of local fishermen. This program will be executed by the newly established Coastal Fisheries Development Agency (CFDA).

9.2.3 Forestry

PNG has a total land area of 46 million hectares, of which two thirds is forested. Of this, is it estimated that 15 million hectares is rich in timber species that are acceptable and accessible for development. The Government is committed to ensuring PNG's forest resources are managed so as to derive maximum sustainable benefits while minimizing any detrimental impact to the environment and society at large. As such, the Government has set the following targets for the forestry sector: increase the share of processed timber from 20.0 per cent to 30.0 per cent by 2015, decrease the share of logs harvested from natural forest and increase the share of plantation forests by 18,000 over the five year MTDP period.

The development of the sector is guided by the Forestry Act and the National Forest Plan. The National Forest Plan and National Forest Development Guidelines detail how the national and provincial governments intend to manage, utilize and develop the country's forest resources. Key strategic priorities of the plan include: improved administration capacity, promotion of local and provincial interest in the industry, development of diversified markets, promotion of forest management through reforestation and afforestation, establishment of a State Market Agency (SMA), promotion of forest research and downstream processing to phase out log export. Work is underway to formulate supporting policies in the areas of downstream processing, reforestation and eco-forestry. Future policy areas include forest research and non-timber forest products. To further improve service delivery and enhance implementation of the National Forestry Plan, appropriate sections of the Forestry Act were amended and endorsed by Parliament in May 2010. These amendments relate specifically to the selection of foresters and will ensure that the selection process is aligned to public procurement processes.

The forestry sector is dominated by large scale logging activities in West New Britain, East New Britain, Western and Gulf provinces. The major logging crops are Taun, Malas, Kwila, and Calophyllum for export to China, Korea and India, the largest buyers of PNG timber. From January-May 2010, the total volume of log exported was 1,099,687m^3, providing K69,070 million and K8,473 million in the form of export duty and export levy to Government and other stakeholders.

The Government is committed to achieving sustainable forest management and addressing climate change. Noting the role that forests play in reducing greenhouse gases, the Government has identified four strategic ways to mitigate climate change: increase the per centage of forested land, increase the carbon density of existing forests, substitute fossil fuels and other carbon intensive products with sustainably produced forest products and implementation of the Reduced Emissions from Deforestation and Forest Degradation (REDD) and REDD+ concept under the leadership of the Office of Climate Change and Development (OCCD). REDD + comprises REDD and Sustainable Forest Management (SFM) and conservation.

To this effect, the PNGFA drafted the Forestry and Climate Change Policy Framework for Action 2009-2015. The Framework for Action reaffirms the state's commitment towards a

number of international agreements including the MDGs, Copenhagen Accord, Johannesburg Plan of Implementation, UN Commission on Sustainable Development, UN Framework for Climate Change Convention, UN Convention on Biodiversity, UN Convention to Combat Desertification, Intergovernmental Panel on Climate Change and Reduced Emissions from Deforestation and Forest Degradation (REDD and REDD+). PNG has also become part of a “Coalition of Rainforest Nations”, to further give support to the REDD and REDD+ initiatives. The PNGFA as the responsible agency is committed to implement the framework in conjunction with the Department of Environment and Conservation and the newly established Office of Climate Change and Development (OCCD). In 2011 the PNGFA will continue work on developing pilot projects for possible REDD projects. Work must also take place on formulating clear national guidelines on the legal status of carbon sinks and carbon ownership in native forests, as market and information failure, coupled with lack of awareness on REDD by landowner groups, has lead to the emergence of unsolicited private sector initiatives. A voluntary and ‘parallel’ market currently exists, lead by the private sector, which secure carbon credits from Clean Development Mechanism (CDM) projects.

To oversee implementation of the sustainable forest management principle the Government has developed a logging code of practice and PNG is a member country to the International Tropical Timber Organisation (ITTO). Under the ITTO PNG reports on its progress towards achieving SFM against a set of internationally agreed criteria and indicators for natural tropical forests. The PNGFA is the agency responsible for implementation of the SFM principle, in which forest concessions are acquired under the Forest Management Area (FMA) system. Under this arrangement, the concession holder can operate within the timber concession for 35 years. Within 35 years residual or undersized trees left behind by the initial logging operation will have grown to an acceptable size (more than 50cm diameter breast height), and the renewable resource can be managed and developed in a sustainable manner until the next cutting cycle. Logging enterprises are also required to develop and follow various forest working plans (annual five year logging plans). The plan specifies methods for practicing selective logging. It is important to note however the enormity of task in monitoring the SFM principle. The vast land areas that are required to be covered with diverse terrain, weather pattern, ecological systems, type and quality and timber sources necessitates close consultation all levels of Government, non-government organizations, customary landowners and logging companies’ forest inventory/survey teams.

In 2011, the Government will support the forestry sector through expenditure on the following programs: forest research institute rehabilitation and support for sustainable forest management. Support to the sector will also come from the Japanese Government in the form of a grant. The JICA supported Forest Preservation Program will minimize capacity and data access problems currently faced by the Papua New Guinea Forest Authority (PNGFA) in achieving sustainable forest management.

9.2.4 Tourism

There is significant potential to expand the value of the tourism sector (currently approximately 3.0 per cent of GDP) through marketing of PNG’s natural beauty, cultural richness, world class diving, deep sea fishing, unique bird watching, trekking and surfing. The tourism industry also has the potential to boost employment opportunities, spin-off businesses and help preserve PNG’s unique environment and culture. The MTDP has set the target for the sector of increasing visitor numbers to 213,666 over the five year period, contributing K2.6 billion in total tourism receipt and generating an additional 5,100 jobs. This will set PNG on a road towards reaching the DSP target of 350,000 visitors and K5.0 billion in total tourism receipt in 2030.

The Tourism Master Plan 2007-2017 (TMP), under the leadership of the Tourism Promotion Authority, is the overall guide for the tourism sector with the goal of "increasing overall economic value of tourism to the nation by doubling the number of tourists on holiday in PNG every five years as well as to maximize sustainable tourism growth for the social and environmental benefits for all Papua New Guineans". Key strategic priorities of the plan include: transport and infrastructure, human resource development, institutions and industry partnership, marketing the destination, and product development and investment. In 2010, the PNGTA became a member of Eco-tourism Australia and it is hoped that this will boost visitor numbers to PNG.

Based on the annual visitor reports, the number of visitor arrivals increased from 120,134 in 2008 to 125,891 in 2009, of which the majority of the inbound market was for business travel. Whilst the trend is expected to increase, with 8.5 per cent growth predicted over the next ten years, the number of holiday visitors fell over the two year period from 34,719 in 2008 to 30,497 in 2009. However, the estimated total foreign earnings from tourism in 2009 amounted to K391.0 million, compared to K300.0 million in 2007. The average daily expenditure per visitor is estimated to be K967.97. However, PNG's share of the South Pacific regional market remains small, with only 5.0 per cent of total arrivals, and less than 2.0 per cent of the holiday market.

The goal to double the number of tourists on holiday in PNG every five years will be a challenge. The Government will need to continue to support the TMP, and the projects recommended under it. The promotion of taxation incentives for tour operators and hotelier sub-sectors marketing PNG overseas must be encouraged, the capacity of the hospitality sector must be strengthened and efforts to stimulate competition in the tourism market, particularly in the accommodation sub-sector must be supported. Indirect support to the sector will also be needed in the form of consistent funding to the enabling environment. An increase in the competitiveness and standard of transport infrastructure is required, alongside improvements in the law and order situation, provision of safe drinking water and sanitation and reliable electricity and ICT services. Through creating a conducive environment the industry will be able to flourish and the PNG will be able to compete with other Pacific countries for tourists.

The Government remains committed to the sector, indicated by an appropriation of K1.0 million in the 2011 Development Budget for global PNG brand awareness. The Small and Medium Enterprise Tourism Loan Facility (SME TLF), facilitated through the NDB, is one program that supports SMEs in the industry, in particular those in the rural areas which have greater tourism potential. In the 2011, an additional K5.0 million is allocated to the SME TLF, which saw 7 projects successfully utilizing the fund in 2010.

9.2.5 Oil and Gas

Since the 1990s, the oil and gas sectors have been the second largest contributors to GDP, driving PNG's growth and development.

The oil and gas sector is guided by the *Oil and Gas Act 1998.* This act has guided the sector with the focus of improving the management and development of oil and natural gas resource extraction in the country. The current oil fields are estimated to be depleted by 2026 whilst gas production is expected to increase substantially over the next decade, driven by the Government's commitment to the development of two Liquefied Natural Gas (LNG) projects.

The first LNG project is located in the Southern Highlands and an Agreement was signed between the Government of PNG and ExxonMobil on 22nd May 2008. The LNG project has an expected project life of 30 years with production scheduled to start in 2014. Construction has started at the project site at an estimated cost of approximately US$15.0 billion (real terms). The effects on the PNG economy will be large and the Government must manage economic risks, such as inflationary pressures whilst ensuring that the benefits of the projects are translated into socio-economic benefits for the country as a whole. To manage the expected windfall revenue, the Government is currently exploring options to set up three interrelated funds. These are: a stabilization fund (using revenue streams from 30.0 per cent corporate tax and additional profit tax), an infrastructure fund (using dividends from the state's equity stake held by Kroton No. 2) and a future fund (using portions of revenues from the 30.0 per cent corporate tax, additional profits tax and dividends from the LNG project). The Umbrella Benefit Sharing Agreement (UBSA) and License Based Benefit Sharing Agreement (LBBSA) state the benefits that will accrue to the landowners in the affected areas.

A second LNG project has also been considered by the Government in Gulf Province, a US$6.0 billion venture with shareholdings from InterOil Corporation, Merrill Lynch Commodities, Pacific LNG Operations and Petromin (State Nominee). The Project is expected to last for 25 years, following construction in 2011 for 3-4 years. The proposed project will have an underground gas pipeline from the two fields down to the coast between Kerema and Ihu, before reaching land at the proposed processing plant near Napa Napa InterOil refinery. For the Gulf LNG project, the local work force is expected to peak at 1,700 with local companies securing almost K2.0 billion in contracts. The annual direct contribution to PNG's GDP is estimated to peak at K3.5 billion (in constant, 2006 prices) and payments to Government are estimated as K6.4 billion in Net Present Value (NPV) terms.

Recent agreements for the sale of gas with China and Japan, coupled with the high demand in the Asian markets, indicate the potential for PNG to benefit from the gas sector. Moreover, the Government's focus on on-shore downstream processing of natural gas into processed petrochemical products, including LPG, will add added value to the sector. It is Government's ambition to have at least three LNG projects by 2015, producing and exporting 6.3 million tonnes and an increased number of petroleum licenses over the period, from 75 to 80, as detailed in the MTDP. The Government is also encouraging the exploration of oil and gas across the country.

In 2011, the Government will meet state commitments associated with the LNG project. This includes payment of the K120.0 million Infrastructure Development Grant under the UBSA commitment and contributions towards the High Impact Infrastructure Projects in Southern Highlands Province (K100.0 million).

9.2.6 Mining Sector

PNG experienced a proliferation in the number of mining projects during the 1970s and 1980s due to extensive copper and silver deposits, and the third-largest gold reserves in the world. The rate of new mines opening has fallen in recent years, however, the mining sector continues to be major export earner for the country, boosted by high commodity prices. Under the DSP, the goal for the sector is to double mineral exports, whilst minimizing the adverse impact on the environment. To reach this objective, the Government hopes to increase the number of exploration licenses to 250 and the number of operational mine sites to 12 over the MTDP period (2011-2015).

The sector is guided by the Mineral Resources Authority (MRA), established in 2005, and the Department of Mineral Policy and Geohazards Management. Fiscal incentives, the evolution of an enabling policy and regulatory environment and high commodity prices have provided sufficient incentives for developers to invest in the mining industry. As of June 2010, the Chamber of Mines records indicate 181 current exploration (EL) licenses, 127 license renewals and 158 applications for 2010. The number of applications has increased from the number recorded in 2009 (104).

There are currently seven mines in operation, which includes: Tolukuma, Ok Tedi Mining Ltd, Porgera Joint Venture Ltd, Simberi Gold Company Ltd, Ramu Nickel, Lihir Gold, Mt. Sinivit Ltd and Hidden Valley. The first gold pour from Hidden Valley was in June 2009 and it was officially opened in September 2010. Production at Ramu Nickel, Madang province was scheduled to start in the December quarter of 2010. However due to a court injunction on the disposal of waste tailing, production has been delayed. About 90.0 per cent of the mine has been constructed by Metallurgical Chinese Corporation and once the DSPT pipeline has been completed, production is expected to begin in the June quarter of 2011. Once production has started, Ramu Nickel is projected to produce 31,500 tonnes of nickel and 3,300 tonnes of cobalt per annum, over a twenty year lifespan.

Ok Tedi Mine was scheduled to cease operation in 2013, followed by Porgera in the near future. However a feasibility study is currently looking into extending Ok Tedi mine for another seven years. Production will however be at half the level of current outputs.

A number of new mines are at exploration stage. These mines will further develop the minerals sector and increase export earnings for PNG. Yandera is currently completing its definitive feasibility study whilst Frieda river project completed its pre-feasibility study in September 2010. Yandera is projected to commence production in 2013, whilst Frieda is expected to commence mining activities in 2016. Advanced exploration of the Wafi-Golpu and Woodlark Projects is currently underway with the potential to be developed into mines in the near future, whilst the Tabar project is in still being investigated.

In addition, Government has issued the world’s first off-shore exploration license to Nautilus Minerals Ltd to mine Seafloor Massive Sulphides (SMS) deposits, copper, gold, zinc and silver in the Bismarck Sea. Under the Solwara 1 project, Nautilus Minerals Ltd, in conjunction with Jan De Nul, will commercially explore the seafloor at a depth of 1000m. The capital cost is estimated to be K1.6 billion and the average operating cost is expected to be K291.0 per tonne based on a production rate of 1.35 million tonnes annually. Over the project life, the value added to the PNG economy is estimated to be K164.0 million. An Environment Impact Assessment and feasibility study were carried out in 2008 and Nautilus Minerals are currently awaiting issuance of a mining lease to commence construction. Production is expected to commence in 2012.

In recent years the disposal of mine waste has been an issue for PNG, exemplified by the recently reported mining waste sea tailing by Ramu Nickel, the Ok Tedi Mining Ltd court case and accusations leveled against Tolukuma gold mine for disposing mine waste into the Angabanga River. It is the Government’s responsibility to protect the environment, ensure landowners and all stakeholders benefit and provide a regulatory and policy framework for the mining sector that is both simple but effective to keep industry compliance costs to minimum. The *Mining Regulation 1992* and Mineral Resources Party Ltd 1996, succinctly delineates the regulatory framework that should be complied with by the mining companies in their investments. The Department of Environment and Conservation (DEC) further supports the mining sector through conducting Environmental Impact Assessments and the

invoking of the *Environmental Planning Act, 1978*, the *Environmental Containments Act, 1978* and the *Water Resources Act, 1982*. In 2011, the Government will continue to support DEC to perform its mandated responsibility.

Effective mine closure is also an issue that the sector faces. Lack of a coherent mine closure plan can result in project impacted communities losing out on long term benefits once the developer completes and leaves the project. The Government's generic Mine Closure Planning Structure, prepared by DMPGM should help communities prepare for timely and orderly closure of mines in the near future.

The benefits accruing to the Landowners, Provincial Governments and Local Level Governments of the mine impacted areas has been an issue of contention for a number of years. Concern around the use of MoAs, royalties and Special Support Grants (SSGs) by Landowner Associations and Provincial Governments remains and the benefits of substantial revenue is not being realized on the ground in the form of improved health, education and transport infrastructure. In 2011, payments will be made to honour the commitments made through budgeting of a projected K66.7 million in SSG payments and K32.1 million in MOA commitments. The sector will also be supported by institutional strengthening projects from EU grant funding and World Bank loan financing.

9.2.7 Manufacturing

The manufacturing sector has the potential to transform PNG's economic base. The sector currently contributes 0.5 per cent of real GDP. Processing industries for natural resources to finished products dominate the manufacturing sector such as canned tuna, furniture, biofuel, refined petroleum, refined palm oil, canned meat, fabricated metal projects, plywood and veneer. As such, the manufacturing sector relies heavily on agricultural and resource based industries. About 70.0 per cent of the manufacturing sector is located in Port Moresby, Lae and Madang.

Foreign equity holdings in the sector increased by 79.0 per cent between 2004 and 2005 and held consistently until 2009. Between 2003 and 2006, 95.0 per cent of investment approvals were granted to foreign companies to conduct manufacturing businesses. Overseas investors in PNG are predominately Australian, Taiwanese, Singaporean and Malaysian. The total investment proposed by these firms was K334.0 milllion, with 3,648 new job opportunities generated in East New Britain, East Sepik and NCD. In 2009 the manufacturing sector contributed 8.4 per cent of total foreign equity holdings but this figure was projected to decline throughout 2009 and 2010.

The development of the manufacturing sector is guided by different policies of Government, through the Department of Commerce and Industry, Chamber of Commerce and Industry, key state-owned enterprises and the Industrial Centres Development Corporation. Under the leadership of these agencies, the government aims to reduce impediments to business and investment and advance the sector from the downstream processing of primary commodities to the development of higher value production chains and appropriate technologies. Direct interventions to this effect include the lowering of input tariffs, overburdening regulatory constraints and export duties, whilst the creation of an enabling environment through investment in addressing the law and order situation, deteriorating transport infrastructure, land reform and provision of key utilities also reduces the cost of business in PNG. Over the DSP period, the Government is committed to tripling the value of manufacturing production, the level of exports and current investment in the sector.

The Government is also committed to assisting the manufacturing sector through facilitating the development of Small Medium Enterprises (SMEs). For instance, through the Small Business Development Corporation (SBDC), in conjunction with relevant schools and NGOs, the Government is providing training courses to improve SMEs' development into the manufacturing sector. Other initiatives that will increase the revenue and the growth of the sector are the petrochemical processing and exporting plants associated with the LNG project. This includes the Juha Production Facility due to be established in 2020, the Hides Gas Conditioning Plant, Kutubu Central Processing Facility and Gobe Production Facility.

In 2011, to support the manufacturing sector the Government through the Development Budget will be financing SMEs appropriate technology development programme, leather manufacturing capacity development programme and the know about business project to the value of K10.0 million.

9.3 CROSS-CUTTING

9.3.1 Environment

PNG is one of the most bio-diverse countries in the world. However, balancing economic development with biodiversity conservation and environmental sustainability remains a challenge for the country. About 85.0 per cent of the population live in the rural areas and depend on natural resources for their livelihoods, such as those in the fisheries, forestry, and agricultural sectors. However, in the pursuit of economic prosperity these sectors have been compromised by unsustainable development practices.

The Department of Environment and Conservation (DEC) is the mandated Government agency responsible for protection of the environment, including air, water, soil, biodiversity and the sustainable use of natural resources as detailed in the fourth goal of the National Constitution. This includes maritime exploration, water resource management and environmental monitoring of mines, fisheries, forestry and oil and gas fields. DEC's mission statement is to ensure the country's natural resources are managed to sustain environmental quality, support human well being and improve standards of living. Furthermore, as part of the Department of Environment and Conservation's (DEC) reform, DEC is developing a framework to establish an Environment Protection Authority (EPA). The proposed EPA will help ensure the needs of future generations are not compromised amid challenges of unsustainable logging operations, direct disposal of industrial waste, mangrove depletion, unsustainable fishing practices and climate change.

To further support the environment sector, the Office of Climate Change and Development (OCCD) was created in March 2010. The OCCD is the successor to the former Office of Climate Change and Environmental Sustainability (OCCES) which was abolished under NEC decision 53/2010. PNG is particularly vulnerable to the effects of climate change and investment in mitigation and adaptation measures are required. As such, the core responsibilities of the OCCD include: policy development, coordination between agencies and stakeholders to implement climate change programs/projects, securing of international funding, compliance with international climate change regulations, national awareness on climate change issues and capacity building.

OCCD, in collaboration with stakeholders, is finalizing the Climate Compatible Development Strategy (CCDS). The CCDS details the Government's climate change mitigation strategies, including REDD+, adaptation efforts and interventions to ensure PNG continues on a path of low carbon growth.

The United Nations Climate Change conference of the Parties 15 (COP 15) in Copenhagen in December 2009 lead to the Copenhagen Accord in which developed countries committed over US$30.0 billion to assist developing countries adapt to and mitigate the effects of climate change. The Office of Climate Change and Development (OCCD) will be responsible for securing funds for PNG and utilizing them in adaptation and mitigation interventions.

The environment sector is guided by the three Rio Environment Conventions, the *Environment Act 2000* and 45 regulations, acts and policies guiding compliance, enforcement and adherence to standards. Furthermore, the Government is a signatory of the MDGs, of which MDG 7 aims to ensure environmental sustainability by integrating the principles of sustainable development into country policies and programs and to reverse the loss of environmental resources by 2015. Since 2000, little, if any, progress has been made towards achieving MDG 7. However, the global and national targets for MDG 7 remain vague and imprecise, rendering measurement of progress difficult to ascertain. Moreover, the lack of complete and reliable data makes it difficult to establish a reliable trend for any of the indicators with much confidence. A coordinated approach in the collection, analysis, storage and dissemination of environmental data to monitor progress and inform policy decisions is urgently required.

Nonetheless, to increase progress towards the MDG 7 national targets by 2015, the Government will work towards ensuring 59.0 per cent of land continues to be covered by primary forests, the depletion rate of primary forest is reduced from 2.6 per cent to 2.4 per cent and the land area protected to maintain and improve biological diversity is increased from 3.8 per cent to 4.0 per cent.

In 2011, the Government will provide support to the environment sector in the Development Budget through financing of the Owen Stanley Brown River Catchment and marine program on coral reefs, fisheries and food security. Development Partners are also investing in various elements of environmental sustainability, such as waste management (JICA) and environmental management and sustainable livelihoods (UN).

9.3.2 HIV/AIDS

HIV/AIDS is a development issue which cuts across all sectors of the economy. Unless it is adequately addressed, HIV/AIDS has the potential to significantly undermine the social and economic progress in PNG.

The most recently published statistics conducted by the National Department of Health (NDOH) and the National AIDS Council Secretariat (NACS) estimates the prevalence of HIV among adults aged 15-49 years to be 0.9 per cent This is 0.2 per cent lower than the estimate detailed in the 2008 UNGASS Country Progress Report. HIV prevalence is highest in the Highlands and Southern Region (1.02 per cent and 1.17 per cent respectively) with lower estimates in the Momase and New Guinea Islands (0.63 per cent and 0.61 per cent respectively). The number of clinics providing voluntary counselling and testing services throughout the country has increased ten-fold, from 17 in 2005 to 178 in 2009. This has provided a much more comprehensive set of information to draw from.

The *PNG HIV prevalence: 2009* estimates further reports the total estimated number of people living with HIV to be 34,100 (31,000 adults and 3,100 children), and the number of newly infected people to be 3,200. In 2009, the total number of deaths from HIV related illnesses and AIDS was estimated to be 1,300, however access to prevention and treatment services was noted to have improved in recent years. There is still a need to scale up efforts

in a sustained manner. However, the lack of reliable data makes it difficult to assess the situation accurately. It is possible that the number of infections is higher or increasing more rapidly than current estimates suggest as testing has become *voluntary* instead of *compulsory*, as in the recent past.

In 2011, the Government's effort to combat the HIV/AIDS epidemic will be guided by the new National HIV and AIDS strategy (NHS) 2011-2015. This strategy focuses on: a comprehensive prevention strategy, a sustainable care, treatment, testing and counselling strategy and improved organisational capacity and system strengthening. These strategies will ensure the Government meets the HIV/AIDS targets set out in the MTDP. These include reducing the prevalence rate of HIV/AIDS to below 0.9 by 2015, reducing the number of orphan children due to HIV/AIDS from an estimated 5995 to 4000 and increasing the per cent of HIV-positive pregnant women receiving ART from 3.5 per cent to 20.0 per cent. These targets will help ensure the Government meets its commitment to achieve MDG 6: combat HIV/AIDS, malaria and other diseases.

To further support implementation of the strategy, additional guiding policies include: the *National Research Agenda 2008-2013* directing HIV/AIDS behavioural research, the *National Prevention Strategy (NPS 2011-2015*), the *Out of School Youth Sexual Reproductive Health and HIV & AIDS Manual* and the *National Leadership Strategy 2011 to 2015* (NSL) will guide the NHS priority area of institutional strengthening.

Efforts to combat the HIV and AIDS epidemic will be led by the National AIDS Council Secretariat in collaboration with the National Expenditure & Fiscal Commission (NEFC), DPLLGA and PLLSMA integrating HIV & AIDS priorities into sub-national level service delivery functions and responsibilities. NACS will continue with monitoring and surveillance work in collaboration with National Department of Health, through the National Health Information System which captures data from regionalized Voluntary Counseling and Testing Centres (VCTCs) and Sero-surveillance sites in selected anti natal clinics. In 2011, NACS will also continue the National Anti Retroviral Therapy Program through accredited sites throughout the country.

Over the past five years, the Government and Development Partners have increased funding to the national HIV/AIDS response. Annual funding has supported over sixty different stakeholders including: 20 Provincial AIDS Committee Secretariat (PACS), national and international NGOs, faith based organizations (FBOs), People Living with HIV (PLHIV) Organizations, the business sector communities and government departments and agencies. In 2011, the Government has appropriated K20.0 million in the Development Budget to ensure effective implementation of the NHS. This is an increase of 72.0 per cent from the 2010 appropriation (K11.6 million). The provision of Anti-Retro Therapy has been appropriated for in the Recurrent Budget (K15.0 million). Development Partners continue to support efforts to stem the epidemic, to the value of K148.7 million in 2011.