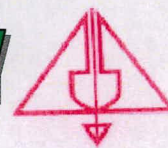




NATIONAL SUSTAINABLE LAND USE POLICY



FOR

PAPUA NEW GUINEA



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MINISTER'S STATEMENT



It gives me great pleasure to release this Discussion Paper on the National Sustainable Land Use Policy (NSLUP). As the Minister for Lands and Physical Planning, my responsibility is two folios; as Minister for Physical Planning, the powers available to me are far broader and extensive in their impacts than those available to Lands. Physical Planning, through its legislation, covers the whole nation; the Land Act generally provides for 3-4% of the alienated stock of land to be administered under its provisions.

Papua New Guinea has a total land area of 462 840 000 square kilometers and a total sea area of 3 120 000 kilometers with abundant land and land resources which is capable of supporting a high standard of living for the small population. The resources available to the people of the country are finite and therefore should be used sustainably to benefit the present and future generations. One of the most important factors of production in Papua New Guinea is land. All the resources both renewable and non-renewable evolve from the land. The State owns and controls over 3% of the land while the rest 97% is owned and controlled by the customary landowners of Papua New Guinea. Planning for land outside the state land (customary land) has been a major challenge despite the existence of the Physical Planning Act. Therefore, one of the major emphases of the National Sustainable Land use Policy is to release customary land for development purpose through planning the use of land in rural and urban areas.

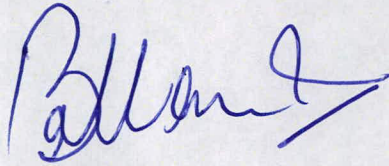
Given the limited supply of state land to facilitate development and the need to unlock potential customary land, the government recognizes the need for an over-arching policy framework that will guide the planned allocation, development, management and best use of land and land resources in Papua New Guinea. Following from the successful launching of the home grown land reform program introduced by the Government to free up customary land for development purposes, and thus this policy document will assist in the planned allocation, development, management and best use of land in Papua New Guinea.

The shift in paradigm from short to medium and long term planning as a result of higher order policies such as the National Constitution, Vision 2050, Development Strategic Plan 2010-2030 and National Urbanization Policy has created the necessary environment to introduce the National Sustainable Land Use Policy. The framework established by the policy should guide the way how we would manage and use the land and its resources. The journey to achieve the goal of NSLUP will have many obstacles and challenges for us all but it is critical that we start to move forward at this critical time in PNG's development.

The release of this Discussion Paper is the first step in the consultation process for development of the policy. It has given the opportunity for a wide range of stakeholders and the general public to provide their input on the requirements to be captured in the policy for sustainable land use in the country. This Discussion Paper provides the opportunity for all stakeholders to critically review the existing systems of planning and provide ways and means through which the system can be improved to meet the requirements in planning for the better use of land in the country.

The outcome of the input from the stakeholders will enable the Department of Lands and Physical Planning to identify appropriate management agencies, procedures and the best means of achieving the best use of land and land resources in the country for the benefit of the present and future generations of Papua New Guinea.

I look forward to a robust discussion about the issues and ideas it raises and the lessons to be learned from previous experience in planning the land sustainably in Papua New Guinea.



Hon. Benny Allen
Minister for Lands and Physical Planning

SECRETARY'S STATEMENT



I am pleased to introduce this Discussion Paper of the National Sustainable Land Use Policy for Papua New Guinea. The release of this document is the first step in the development of the policy.

Given the complex nature of land tenure system and land use in the country, the policy initiative NSLUP was delayed at that time to allow a proper study to be conducted to understand the underlying complex socio-economic and cultural issues behind the issue of customary land before the formulation of the National Sustainable Land Use Policy. The underlying problems and issues that NSLUP will tackle are by nature are complex socio-economic problems which requires achieving invested addressing land use issues in the country and the participation of many individuals and groups in the society.

Over the years and in line with the Physical Planning program for the development of the policy, the Department of Lands and Physical Planning has undertaken extensive research in understanding this phenomenon. Over the years, large volume of information has been compiled in the form of documents, reports and discussion papers.

The Government's recent focus on long term planning to guide and shape the future development of Papua New Guinea through the introduction of policies such as the Vision 2050, Development Strategic Plan 2010-2030, National Urbanization Policy 2010-2030 and a home grown Land Reform Program targeting the empowerment and participation of customary landowners has created the urgent need to guide the development, use, management and allocation of land to realize these development goals in the short, medium and long terms. The introduction of these higher order policies has created an environment conducive to the introduction and implementation of National Sustainable Land Use Policy.

This paper is released to promote discussion and comment. I encourage all interested stakeholders to read it and provide comments to the Department so we can improve the paper and strengthen the new directions being proposed here.

A handwritten signature in blue ink, which appears to read 'Romilly Kila Pat'. The signature is stylized and cursive.

Romilly Kila Pat

Secretary

Department of Lands and Physical Planning

CHIEF PHYSICAL PLANNER'S COMMENTS



The current physical planning system provides the framework for spatial planning in Papua New Guinea. However, the sphere of influence of physical planning has been restricted to less than three percent of the land declared as physical planning area throughout the country. The physical planning system in Papua New Guinea is in its infancy of development; as such the application of the legislation has been restricted to urban areas throughout the country.

The functional responsibilities of physical planning include;

- i. Promoting best use of land in Papua New Guinea in the interest of each citizens and the economic advancement of the country,
- ii. Formulating and over sighting the implementation of policies in the following areas of land use planning and subdivision discovery as well as infrastructure needs for urban and rural areas populations,
- iii. Supervising and preparing physical plans and exercise planning control, administer the provision of physical planning regulations and physical planning boards.

In light of the Government of Papua New Guinea's recent drive to bring social and economic changes given by the economic prosperity that the country will experience from the exploitations of its abundance natural resources, the Government has focused its attention in putting together the necessary policies, plans and strategies to ensure there is sustainable development.

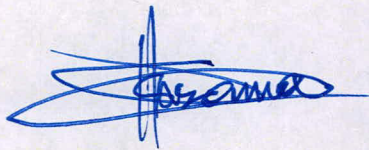
Physical Planning has played an important role in allocation, use and management of land throughout PNG. The major challenge that concerns physical planning is the land tenure system where much of the land is customary owned in which the state/Government through the Department of Lands and Physical Planning cannot plan that land because it belongs to the local people. However, after registering the customary land, physical planning can be utilized in planning the use, allocation, management and wise use of the portion of the land that was registered.

The purpose of this paper is to stimulate a discussion on the issues of land usage in Papua New Guinea and the development of a strategic National Sustainable Land Use Plan for Papua New Guinea. The need for comprehensive sustainable land use policy is to clear from a simple consideration of Papua New Guinea's domestic and international obligations to protect and sustain land and its resources for future generations and also to give effect to the interest of all people regarding their health and welfare, in particular the 4th Goal and its Directive Principles of the Constitution.

The paper provides an overview of the current status and issues focus of land use patterns, discuss in critical terms the current approaches of policy and planning that includes sustainable economic development, food security, biodiversity and wildlife, depletion of finite resources, management of best use of land through identification of existing zoning

mechanisms, local control of land use management and land tenure conversion that lays the groundwork of the development of NSLUP.

The paper does not pretend to have all the answers or to have considered all the issues but has been developed to stimulate discussion and to provide the opportunity for key stakeholders to provide their views as an input to the development of this Government's Policy. I would welcome criticisms to this policy until then, we will realize the impact we endure to the development of the National Sustainable Land Use Policy for Papua New Guinea.



Gerisoma James
Chief Physical Planner
Department of Lands and Physical Planning

ACKNOWLEDGEMENT

The development of the National Sustainable Land use Policy could not be accomplished without the contributions of many individuals. With the perseverance of the Minister for Lands and Physical Planning, Mr. Benny Allen, at every outset for a PNG Strategic Land Use Plan to deliver the National Sustainable Land Use Policy that this document was produced. Many individuals and organizations worked on successive National Sustainable Land Use Policy documents since the 1990's and they have embedded a lot of information for us to study, review and come up with our home grown National Sustainable Land Use Policy.

We would like to acknowledge and thank the people involved in developing NSLUP, Officers of the Physical Planning Division especially the Physical Planning Policy Unit for their tireless efforts in initiating this major policy since 2000, in which a lot of research has been conducted. Special and sincere thanks to Development Planning and Development Assessment Unit, the Chief Physical Planners, the ILG and Customary Lands Divisions, Corporate Services and the Policy and Legal Divisions, Office of the Secretary and the Department of Lands and Physical Planning for their support over the years up until now as this policy becomes a reality.

Special thank you goes to all Government Departments and State Owned Entities who contribute immensely to the development of the National Sustainable Land Use Policy. The stakeholders were represented by the Departmental/Organizational Heads or their nominees;

Border Development Authority
Central Provincial Administration
Department of Agriculture and Livestock
Department of community Development
Department of Education
Department of Environment and Conservation
Department of Finance
Department of Health
Department of Mineral Policy and Geohazards
Department of National Planning and Monitoring
Department of Personal Management
Department of Prime Minister and NEC
Department of Provincial and Local Level Government Affairs
Department of Trade and Industry
Department of Transport
Department of Treasury
Department of Works
Laloki High School
National Disaster Center
National Fisheries Authority
National Information and Communication Technology
National Research Institute
Office of Climate Change and Development
Office of Urbanization
Papua New Guinea Forest Authority
Rabaul Volcanoes Observatory
Water PNG

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ACRONYMS

BRC	Binatang Research Center
CCDS	Climate Compatible Development Strategy
CI	Conservation International
CLRC	Commission for Law Reform Committee
COP	Conference of Parties
DAL	Department of Agriculture and Livestock
DEC	Department of Environment and Conservation
DLPP	Department of Lands and Physical Planning
DSP	Development Strategic Plan
ED	Economic Development
EMP	Environment Management Plan
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GIS	Geographical Information System
ICAD	Integrated Conservation and Development
ILG	Incorporated Land Groups
IUCN	International Union for Conservation of Nature and Natural Resources
LUP	Land Use Planning
MDG	Millennium Development Goals
MTDS	Medium Term Development Strategy
NARI	National Agricultural Research Institute
NC	National Constitution
NDGDP	National Development Goals and Directive Principles
NGO	Non-Governmental Organization
NLDT	National Land Development Taskforce
NPPB	National Physical Planning Boards
NRI	National Research Institute
NSDS	National Sustainable Development Strategy

NSLUP	National Sustainable Land Use Policy
NUMP	National Urbanization Management Plan
NUP	National Urbanization Policy
OCPD	Office of the Chief Physical Planner
OCCD	Office of Climate Change and Development
PNG	Papua New Guinea
PNGAT	Papua New Guinea Appeals Tribunal
PNG LNG	Papua New Guinea Liquefied Natural Gas
PRAEC	Petroleum Resources Areas Economic Corridor
REDD	Reduction in Emission of Deforestation and Degradation
REDD+	Reduction in Emission in Deforestation and Forest Degradation including the role of Conservation, Sustainable Forest Management and Enhancement of Carbon Stock
SABL	Special Agriculture and Business Leases
UN	United Nations
UNCBD	United Nations Convention on biological Diversity
UNCED	United Nations Convention on Environment and Development
UNFCCC	United Nations Framework Convention on Climate Change
UNITECH	University of Technology
UPNG	University of Papua New Guinea
WCS	Wildlife Conservation Society
WMA	Wildlife Management Area
WWF	World wide Fund for Nature

DEFINITION

Sustainable Land Use Policy (SLUP) is a systematic and iterative procedure carried out in order to create an enabling environment for sustainable development (*Wehrmann.B, 2011*). It assesses the physical, socio-economic, institutional and legal potentials and constraints with respect to an optimal and sustainable use of land resources and empowers people to make decisions about how to allocate those resources. It also implies the initiation and monitoring of measures to realize the agreed land uses and thus mapping out suitable locations for housing, industries, businesses, open spaces, parks, roads, water and sewer lines, reservoirs, hospitals, schools, water treatment plants, etc...then zoning regulations or other devices are used to control how the land is used.

Because land is such a valuable economic resource, land use planning is a complex and controversial process involving competing values and intense power struggles. Most land use planning is based on the assumption that substantial future growth in population and economic development should be encouraged, regardless of the environmental and other consequences. Land use planning creates the preconditions required to achieve a type of land use that is environmentally sustainable, socially just and desirable and economically sound. It thereby activates social process of decision making and consensus building concerning the utilization and protection of private, customary and public land areas.

Over the years since independence, there has been a general decline in the standard of living to the majority of the population in Papua New Guinea. The cost of the development process in terms of living for the majority of our population is high. Furthermore, the cost of development process in terms of improving standards of living has been lacking. The emerging unsustainable pattern of development is seen in the uneven income distribution patterns, due to lack of sustainable economic development. Malnutrition in Papua New Guinea rates the highest in the world due to lack of food security. The undesirable environment impact from economic projects is evident due to lack of planning for the management and protection of the environment. There is a threat to biodiversity due to the country lacking in formulating a biodiversity plan.

The initial conception of this policy was the result of the United Nations Convention on Environment and Development (UNCED) 1992 in Brazil which Papua New Guinea was a participant member country. The convention emphasizes the need for sustainable development to be implemented by all member country. The Waigani Seminar after UNCED emphasizes the need for a National Sustainable Development Strategy (NSDS) for Papua New Guinea which drove Papua New Guinea to develop its own policy to apply the concept of sustainable development in our country.

The Office of the Chief Physical Planner in its Physical Planning Conference held in Madang in 2000 mentioned a major need for a sustainable land use policy for the country. However, in 2003 the development of the national Sustainable Land Use Policy gained.

In 2011, a first major consultative workshop was held in Laloki in Central Province which involved key stakeholders of the development of the policy on sustainable land use policy. All contributions and comments have now developed into a Discussion Paper in which is here for endorsement by the National Physical Planning Board for Executive Management Committee Presentation.

The purpose of the National Sustainable Land Use Policy (NSLUP) includes;

- The review of the guiding principles of higher order policy hierarchy than the present document and an analysis of the impact of those higher order policies upon sustainable land use which are to be the focus of discussions.
- To identify the current spatial issues, trends and social and economic problems resulting from the impacts of human activities on land use which has been affecting Papua New Guinea (PNG) over the last forty years.
- To identify the strategic objectives under each of issues focus
- To set directions by establishing approved programs for existing and newly identified agencies (inclusive of any associated legislative changes) necessary to give effect to the proposed course of actions.
- The document is the result of collaborative effort of many experts, individuals and agencies representing government, churches, non-governmental organizations, private sectors and international organizations.

EXECUTIVE SUMMARY

The opening chapter sets out a statement of the guiding principles that are of higher order in policy hierarchy. An analysis of the impacts of those higher order policies upon sustainable land use issues are covered. The research required for this chapter involves a literature review of all of the higher order of the policy documents. The evaluation of work required involves an appraisal of the impacts of the policies upon land use in Papua New Guinea over the last three decades. These higher order policies have the effect of setting the contextual framework for Sustainable Land Use Policy. The policy for the use of land and land resources occurs in a process becomes complex with the inclusion of stakeholders.

The mandate function of National Sustainable Land Use Policy derives directly from the 4th Goal of the National Constitution and is supported by the Physical Planning Act 1989.

The 4th Goal states that;

“Papua New Guinea’s natural resource and environment should be conserved and used for the collective benefit of all and should be replenish for the future generations”.

We accordingly call for-

- i. Wise use to be made for our natural resources and the environment in and on the land or seabed, in the sea, under the land, and in the air, in the interest of our development and in trust for future generations.
- ii. The conservation and replenishment, for the benefits of ourselves and posterity of the environment and its sacred, scenic and historical qualities; and
- iii. All necessary steps to be taken to give adequate protection from development so that the quality and the quantity of the land and its resources are maintained at all times.

At Independence, the country adopted the National Constitution (NC), which lay down the National Development Goals and Directive Principles (NDGDP). Over the years after the independence, the focus of government strategy been a gradual shift of emphasis from an economic driven approach to the realization of the need to conserve and manage land and land resources, however this approach to development has failed to achieve the desirable results. Apart from the National development Goals and Directive Principles, which sets the over-arching development goals of the country, the Development Strategic Plan (DSP), National Sustainable Development Strategy (NSDS), National Urban Management Policy (NUMP) and Medium-Term Development Strategy (MTDS) have had very little impacts in achieving the desired development patterns.

Before and after independence in 1975, Papua New Guinea relied on a separate legislation adopted during the colonial and pre-independence era to determine its use in land and land resources. Over the years, the introduction of the legislation has resulted in a piecemeal development of legislation which are scattered among several government agencies. Papua New Guinea’s planning system therefore developed out of a piecemeal development of legislation and functions scattered amongst several Government Departments. Three separate planning systems emerged and evolved into one of the three aspects of the

planning systems. This has resulted in the development of a holistic approach to planning rather than focusing on a single aspect of planning for sustainable land use. An integrated physical planning through the framework provided by the National Sustainable Land Use Policy recognizes the importance of balancing the promotion of development with conservation as well as sustainable rural development. Land Use Planning (LUP), Environment Management and Protection (EMP) as well as Economic Development (ED) can therefore be given equal consideration in the future development of Papua New Guinea.

The implementation of the piecemeal legislation was driven by land and economic development policies that restricted the release of customary land for development. The policies and legislations of the day are determined by the control and utilization of land and land resources, of which much of it is in the hands of customary landowners. Government policy was very much protective over customary ownership of land. Attempts made previously to reform land and the comprehensive system registration was unsuccessful. With the policy on changing the land tenure system to allow greater economic participation, it has been realized that the social cost in terms of destroying traditional structure as a result of changing the land tenure systems of Papua New Guinea.

In Papua New Guinea, customary ownership of land is fundamental and indispensable to the livelihoods of its people. Customary land provides the foundation through which over eighty percent (80%) of the people meet their basic needs. Land is crucial in terms of food security, shelter, cultural identity, community development, social cohesion and economic wealth (CLRC, 2012). Customary ownership of land through social units defines, characterizes and give prominence to the livelihood of the people. Land is an important subsistence safety net for the people. The laws protect the customary landowners from losing their land and become landless in their own land.

Land is plentiful in Papua New Guinea and wealth is locked up in land, however, that plentiful land in economic terms is actually a mountain of dead capital because of the inherent nature of customary tenure system. Therefore appropriate measures or reforms are required for conversion of land as dead capital to land as live capital. The legal apparatus is necessary so that land is freed up for recognition by financial institutions. This should lead to achieving broader development objectives and reducing economic poverty for the majority of Papua New Guineans. Most specifically, the direct outcomes are;

- To acquire land title for customary land and use land as loan guarantee for development activity,
- Help reduce land disputes over boundaries
- Access to customary land for resettlement of people affected by natural disasters and government needs to respond to demands on infrastructure and public services by accessing customary land.

The National Land Development Program's (NLDP) main perspective of land reform is for releasing land for development and poverty reduction. Consequently, the aim of land reform is to effectively use land for economic development and to protect the rights of the vulnerable section of the community. This requires the government to have a forward

looking strategy on land policy, land use planning for customary and state land and to adequately inform people of land reform implications. Land is plentiful in Papua New Guinea and the wealth is locked up in land, however that plentiful land in economic terms is actually a mountain of dead capital because of the inherent nature of the customary land tenure system.

The release of customary land is one of the options and that is to free up the customary land for development purpose. The voluntary customary land registration is to act as a mirror of the land, reflecting the interests over the land, the physical area, and the title to it. Registration formalizes titles so that land is no longer becomes just a matter of birth, name of residence, but the question of law (*Sharon Kila, verbal interview*). Furthermore, registration serves as a useful purpose where land is marketable commodity and changes hands frequently. It also provides security of tenure where registration is deemed to be infeasible.

This paper is the first step in moving towards a systematic framework and process for establishing National Sustainable Land Use Policy (NSLUP) and draws lesson from Papua New Guinea and selected international experiences. The current land use pattern poses a threat to the future of Papua New Guinea. Since many forms of development are taking place in the country and the human population is also growing at an unprecedented rate, we know that land is a finite resource and once its quality, quantity and resources are overexploited, we will face a very serious problem so therefore we need to plan it now to save tomorrow.

- ✓ The lack of a Sustainable Land Use Policy and effective legal framework is a major impediment to achieving sustainable land usage and management.
- ✓ Whole of government land use planning processes are required to ensure coordinated decision-making regarding allocation of land to resource development or conservation purposes.
- ✓ The National Sustainable Land Use Policy cover the whole land area of Papua New Guinea and thus it will cover the state land as well as the customary land tenure system. Therefore, it needs support from the local communities in order to implement NSLUP.
- ✓ The customary land tenure system and state land ownership should be balanced and equitably planned for the provision of services and utilization of the land and its resources that can sustain and benefit all people.
- ✓ NSLUP will be managed by the state through the Office of the Chief Physical Planner and considerable efforts and funding support will be needed to ensure landowner communities to meet their obligations that flow from having NSLUP gazette over their land.

There are enormous set of issues that PNG faces in view of land and resources use but to date with the creation of NSLUP, the above are the key lessons emerging from this paper.

The conclusion of the Discussion Paper is that PNG has an enormous opportunity to deliver on its constitutional obligations and international obligations to protect the environment

and biodiversity whilst at the same time alleviate poverty for communities that do not employ sustainable land use practices whilst working the land.

1.0. RATIONALE

The need for comprehensive Sustainable Land Use Policy is to clear from a simple consideration of Papua New Guinea's domestic and international obligations to protect and sustain land and its resources for future generations and also to give effect to the interest of all people regarding their health and welfare, in particular the 4th Goal and its Directive Principles.

The 4th Goal of the Papua New Guinea's Constitution articulates;

"We declare our fourth goal to be for Papua New Guinea's natural resources and environment to be conserved and used for the collective benefit for us all, and to be replenished for the benefit of future generations."

From the above mentioned goal, there are various national legislations and action plans to promote the objective of the 4th Goal of the National Constitution. In doing so, PNG has partnered with the global community through various multi-lateral environmental agreements;

- i. United Nation's Convention on Environment and Development
- ii. United Nation's Millennium Development Goals
- iii. United Nation's Convention on Biological Diversity
- iv. United Nation's Framework Convention on Climate Change
- v. United Nation's Convention on Sustainable Development (Rio +20)

The paper provides an overview of the current status and issues focus of land use patterns, discuss in critical terms the current approaches to land use conversion that includes sustainable economic development, food security, biodiversity and wildlife, depletion of finite resources, management of best use of land through identification of existing zoning mechanisms, local control of land use management and land tenure conversion that lays the groundwork of the development of the National Sustainable Land Use Policy.

1.1. VISION

Land in Papua New Guinea including its resources and environment to be conserved and used for the collective benefit of all citizens and replenished for the benefit of future generations.

1.2. MISSION STATEMENT

To promote best use of land in the interest of all people in Papua New Guinea and to achieve sustainable social, economic and physical advancement. The vision derives from the National Constitution, the policy represent a human ascribed goals of Papua New Guinea societies. In pursuing the goals and guiding principles, the Government intends to shape the social and physical environment of the country to achieve the desired development Goals and Directive Principles of the country as enshrined in the Constitution.

To achieve the vision, land use, physical and related planning activities shall proceed within the context of the principles that support the allocation and use of land and its resources with due regard to their sustainability. These principles include addressing the higher order issues of sustainable development such as sustainable economic growth, food security, biodiversity and wildlife conservation and depletion of finite resources.

1.3. GOAL

To identify strategies, activities and appropriate institutional and procedural mechanisms to monitor and manage land use conversions thus implementing Government policies on sustainable development.

1.4. POLICY PRINCIPLES

Sustainability

This requires a sustainable management and the best use of our land and its resources making up natural and built environment to benefit the present and future generation.

Equality

This requires that everyone affected by spatial planning, land use management and land development actions and or decisions must enjoy equal protection and benefits and that no unfair discrimination will be allowed.

Efficiency

This requires the desired results of land use must be produced upon the land with minimum expenditure of resources.

Integration

This requires that separate and diverse elements involved in development planning should be combined and coordinated to achieve complete and harmonious whole.

Fair and Good Governance

This requires that planning, spatial planning; land use management and land development must be democratic, legitimate and participatory.

Integrity

Uphold highest ethical standards of people and processes involved in addressing land and land issues.

Capacity Building

Build and enhance existing capacities to deal with all issues of land, land use, management and development.

Leadership

Provide and demonstrate responsible leadership.

Cultural Sensitivity

Recognize, respect and uphold existing customary values, authorities, institutions and processes.

Information Management

Establish and development a national credible and reliable physical planning information systems regarding all land in Papua New Guinea.

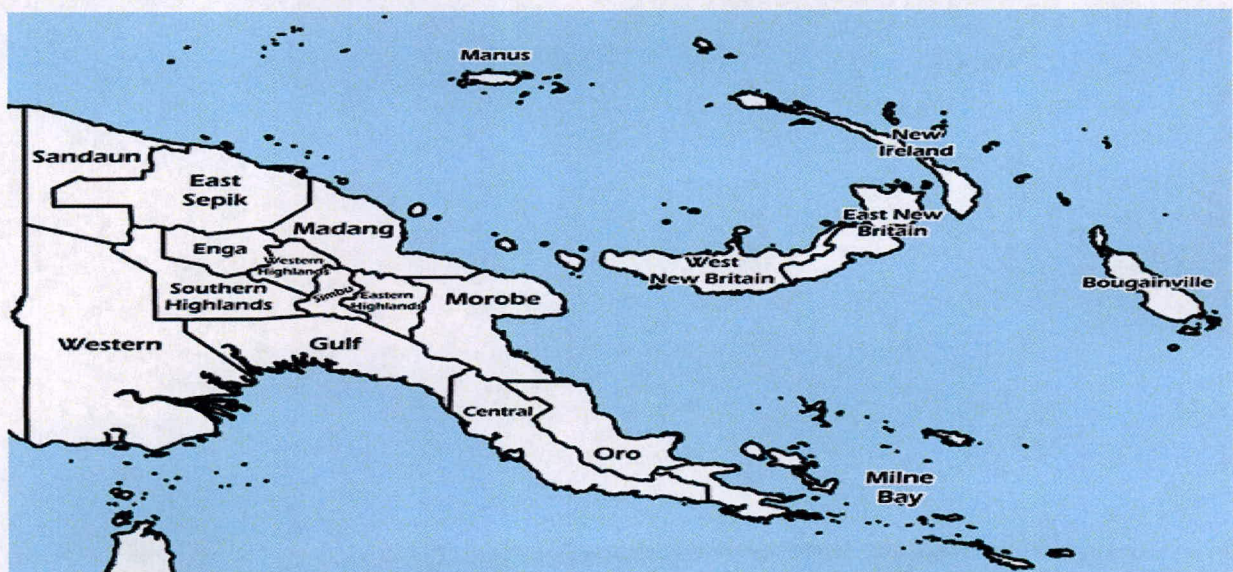
2.0. BACKGROUND

Papua New Guinea is a small island country located in the Pacific Island, is mountainous and tropical lying on the Eastern Half of New Guinea Island. Papua New Guinea has a landmass covering approximately 463 000 000 square kilometers of land and is a country of exceptional ethnic and biological diversity and harbor's hundreds of endemic species. The population is about approximately seven (7) million people who speak more than 840 distinct languages. The indigenous population of Papua New Guinea is one of the most heterogeneous in the world; several thousand separate communities and tribal groups live spread out over the country. Approximately, 85 percent of these population lives a traditional rural subsistence lifestyle which utilizes 97 percent of the land.

The state owns only 3% of Papua New Guinea's land and develops, control and manage. The large rural population is supported by the biological richness and the diversity of the forests, inland waters and the coastal seas. 85% of the country's labour force is absorbed by the agricultural sector. Major agricultural products include coffee, cocoa, tea, rubber, copra, oil palm etc....

Land is our life. Land is our physical life-food and sustenance. Land is our social life; it is marriage; it is status; it is security; it is politics, in fact, it is our only world. We have little or no experience of social survival detached from the land.

Map of Papua New Guinea



Map showing the Provinces that make up Papua New Guinea

2.1. CURRENT SITUATION AND ISSUES FOCUS

2.1.1. Agriculture & Livestock

PNG has about 463 million hectares of land of which 97 % is traditionally owned and used by local people. Due to steep slopes and inundation, only 30% arable land suitable for commercial agriculture- Large areas of these lands include:

- i. Markham/Ramu Valley- Morobe/Madang Province
- ii. Tari Basin- Southern Highlands Province
- iii. Sepik Plains – East Sepik Province
- iv. Sogeri Plateau- Central Province
- v. Waghi Valley-Western Highlands Province

The utilization of land for crop production to satisfy human needs and wants has developed vast areas of land for food production. These areas are regarded as land suitable for supporting large number of population and economic advancement. However, less than 10% of arable land is currently being utilized, mainly due to local land tenure system. Population increase as well as social and economic pressure has meant that more and more marginal lands are being used.

The primary objective of planning for production land use is to determine the most efficient and equitable manner of utilization and managing land resources such that there is adequate and accessible space for sustainable food production, forest and mineral resource extraction, industrial and tourism with the end in view of meeting the material and other requirement of the population.

Issues of Concern

- i. Over and/or extensive use of marginal land without proper attention to land and land based resources conservation and/or prevention of land degradation.
- ii. Mono cropping threatens soil quality as well as biodiversity
- iii. Food insecurity for growing population.
- iv. The high rate of import of food from other countries that can be cultivated in Papua New Guinea.
- v. The desired outcome is to produce all of what we need to eat and enough of what we want to eat (*National Framework for Sustainable Land Use 2006-2036*).

The main policy is to identify land appropriate for food production and maintain its levels of production and productivity

There is a need to increase the level of production and productivity in agriculture, forest, mining, and industry and tourism sectors in order to address existing supply gaps, increasing demands brought about by increasing population per-capita consumption levels and increasing competition from foreign investors.

The following policy guidelines can help in achieving a required level of production and productivity;

- i. Identify and delineate existing and potential agricultural, forest, mining production areas, assess supply and demand requirements, implement measures to improve efficiency, and provide support infrastructure and other facilities to production activities.
- ii. Promote water security through focused irrigation programs, research and development, and the development and improvement of water database.
- iii. Identify and delineate existing and potential tourism areas, assess current economic performance, social and environmental impacts, determine areas where tourism development should be pursued further or discouraged and provide infrastructure support.

Priority Areas for Concern

- i. Maintenance of soil quality for crop quality and quantity production
- ii. Training of local farmers in innovative crop farming e.g agro forestry, drought resilient crops and new crops and use of better agricultural techniques to maintain soil fertility.
- iii. Support and encourage agriculture extension officers in rural areas
- iv. Work with landowners to encourage continuation of traditional sense of environment stewardship whilst pursuing sustainable economic and social development through sufficient and adequate food production.
- v. Establishing and strengthening strong partnership among stakeholders (landowners, government, NGO, CBO, and the private sector)
- vi. Maintaining realistic and accessible data or information system.
- vii. The main concern relies in the range from extent to which food will produce. To identify land appropriate for food production and to maintain its productive capacity and use for this purpose.
- viii. To prepare a National Action Plan for Food Security for Papua New Guinea.
- ix. Identify existing agricultural lands, assess their productivity and production levels and the extent practicable and possible and protect this from conversion.
- x. Identify potential agricultural expansion areas and with due consideration for competing land uses, protect this from conversion.
- xi. Identify marginal land for agricultural expansion and with due consideration for competing land uses, protect these from conversion.
- xii. Consider marginal land as expansion areas for non-agricultural activities to reduce the pressure of land use conflicts.
- xiii. Provide infrastructure support that would link production areas to other land uses, and implement other measures to increase productivity.
- xiv. To encourage the type of development throughout the country which renewable resources and to minimize the exhaustion of finite resources
- xv. Facilitate economic projects close to the population that may lead to poverty alleviation and are capable of continuous operations.

2.1.2. Climate Change

The impacts of climate change-related hazards in the country has been increasing in intensity and frequency, which is particularly evident in increasingly frequent and impactful occurrences of tropical storms and cyclones which are able to produce significant natural disasters. Further impacts of climate change have drastic effects on the natural environment as well as people. Climate Change is both an environmental and developmental issue.

Issues of Concern

- i. The loss of food gardens due to extensive flooding combined with extended periods of drought.
- ii. The rising sea level is causing some of PNG's islands to be gradually submerged. In addition, salt water intrusion which degrades the ground water. Many low-lying coastal islands are sinking, coastal erosion, king tides, cyclones and storm surges are more frequent.
- iii. Coastal and inland flooding have pronounced and thus aided in transporting its sediments down to the sea which aids in the bleaching of coral reefs, degrading marine ecosystems and thus assists in the diminishing of marine species that were unable to adapt to the changing environmental conditions.
- iv. In the highlands, increase episodes of hailstorm and frosts which resulted in the destruction of food gardens.
- v. Irregular rainfall patterns with period of prolonged dry seasons affects soil fertility and yields while increasing the spread of infectious diseases and pests which are further decreasing agricultural productivity and thus resulting in food shortage in some areas.
- vi. Mitigating the impacts of and adapting to climate change through the reduction of greenhouse gas emissions and the use of renewable energy, air quality and pollution, land contamination, aquifer protection and noise pollution.

Priority Areas for Action

The land use plan should identify certain areas for specific development options, so that each development such as REDD+ (carbon trade), conservation areas and agriculture development activities can continue and be sustained.

- i. All Maritime Provinces including their outer islands must have a land use plan in place in order to identify specific types of land uses and identify areas for conservation.
- ii. Integrate climate change issues in all planning systems at national, provincial and local levels and to make sure all parties that include local people, government, private sectors and NGOs to participate in decision making processes.
- iii. Formulate and develop resettlement or migration plans for climate change induced migration and resettlement.
- iv. Further dialogue to integrate and facilitate integration of relevant land use plans.

- v. Since climate change issues are very devastating in PNG, it is very important to formulate a climate change policy.
- vi. Capacity building, training and awareness at local, national and provincial levels should be conducted to instill the knowledge and skills of how to adapt and mitigate climate changes issues to all the people.
- vii. Encourage reforestation and reforestation of cleared areas and grassland. - planting different local tree species of cultural and economic values.
- viii. Information sharing among relevant agencies/sectors that should contribute towards Sustainable Land Use Policy to better address land use issues.
- ix. Relevant national government agencies/sectors involved in land use planning, provincial administrations, relevant NGOs and of course the land owners if need be.

2.1.3. Mining and Petroleum/Energy

The extraction of non-renewable resources mainly gold, copper and oil are concentrated in the remote areas with large open cut mines that tend to pollute river and sea eco-systems. Destruction of agricultural land and forests for mining purposes have largely impact the natural vegetation.

Issues of Concern

- i. River and sea pollution from waste dumping of mining sediments and tailings.
- ii. Loss of fish stock, loss of land and food and water poisoning etc. resulting from disposal of toxic and excessive waste.

Priority Areas of Action

- i. More responsible mining (i.e. understanding impacts, better management of mitigating benefits).
- ii. The mining plan should be submitted to the National Physical Planning Board seeking permission for carrying out mining if an area is potential for mineral resources.
- iii. The mine closure plan should also be prepared and submitted as this will indicate how the mine communities will adapt to the changes that were made to their natural environment and also with the introduction of cash economy.

2.1.4. Forestry

PNG has approximately 463 million hectares of land of which 77% (36 million hectares) is natural forest that contains 5%-7% world's species of plants and animals. Only 17% of the natural forest (8million hectares) is suitable for economic logging where close to half (3.5% million hectares) has already been logged. Social and economic pressures have caused high deforestation rates e.g logging for much needed cash and clearing for subsistence agriculture with shorter fallow.

Issues of Concern

- i. Land availability and its use in terms of forestry development are crucial at this point in time particularly when other stakeholders or land based developers are also competing for the same parcel of land. This is quite evident especially when there is ab-

sence of national land use planning system in place for the whole nation. A major thrust of the Governments Strategic plan is to improve the economy through increased export income. This is also highlighted in PNG Vision 2050.

- ii. Immediate planning issues are the Chief Physical Planner to dialogue with relevant agencies/ sectors that have their respective mandated land use plans and facilitate integration of plans.
- iii. Deforestation causes gradual soil erosion and mass land slips, reduction in biodiversity and hence reduction in food security.
- iv. According to current trends (harvesting and cutting cycle) most economical forest will have been logged in 25 years time.
- v. Increasing numbers of rare fauna and flora are endangered. Some species could be lost forever if exploitation is uncontrolled and habitats altered.
- vi. Growing illegal trade in wildlife where data is difficult to quantify.
- vii. To develop a land use plan is a major challenge as 97% of the land is owned by customary land owners.

Priority Areas for Action

- i. The land use plan should identify certain areas for specific development options, so that each development options such as timber production, climate change and carbon trade, conservation areas and agriculture development activities can continue and be sustained.
- ii. Further dialogue to integrate and facilitate integration of relevant land use plans.
- iii. Strengthening forest laws enforcement e.g training and awareness at local level in national and provincial forest laws and sustainable forest management.
- iv. Reforestation and a forestation of cleared areas and grassland. - planting different local tree species of cultural and economic values.
- v. Encourage renewable energy if efficient use in place of fuel wood.
- vi. Information sharing among relevant agencies/sectors that should contribute towards better addressing land use issues and physical planning.
- vii. Relevant national government agencies/sectors involved in land use planning, provincial administrations, relevant NGOs and of course the land owners if need be.

2.1.5. Natural Disasters

Due to PNGs geographic location i.e. Pacific Rim of fire) it is prone to natural disasters such as earthquakes, volcanic eruptions, tsunamis as well as excessive rainfall that cause mass land slips. PNG is just outside the main tropical cyclone belt with high probability of cyclone forming outside and tracking into PNG. Droughts and frosts becoming more frequent.

This policy seeks to achieve environmental stability and ecological integrity thus ensuring balance between resources use and the preservation of some educational, cultural and historical significance and protect people and manmade structures from ill effects of natural hazards There are four main issues concerned and include;

- i. *Non-demarcation of boundaries of protected areas*

- ii. *Conflict resolution within protected areas*
- iii. *Disaster mitigation, use of resources and its impacts on protection area.*
- iv. *Information, education and communication campaign*

Issues of Concern

- i. Natural disasters affect lives, destroying essential infrastructure such as roads and bridges, increasing poverty by affecting local and national economy and threaten food security.
- ii. Environment risks be more properly inserted in the development framework in terms of both preparedness and mitigation.
- iii. Continuous vandalism of seismic equipment, weather recoding, telecommunications facilities and navigational aids such as light houses.
- iv. Avoiding new development in areas at high risk of flooding and sea level rise.

Priority Areas of Actions

- i. Maintenance and improvement of early warning system for natural disasters
- ii. Public education and awareness to preserve essential warning system.
- iii. Improved data management

2.1.6. Water Resources

Papua New Guinea's total freshwater area = 64,000 Km² comprising 5383 freshwater lakes as well as wetlands including 14 major rivers. An average rainfall of 3000 millimeters per year. The southern part of country is drier than the northern part. Only 91 Km² (<1% of total fresh water Area) is protected area. Total renewable water resources per capita is about 170 000m³ (one of the highest in the world) but PNG ranks in the bottom ten countries for access to safe water. Only about 30% of total population has access to safe water (wherein 29% of vast rural population have access to safe water sources compared to 91% of relatively small urban population). Only 60% of urban population has water directly piped to household.

Issues of Concern

- i. Increasing population puts pressure on limited capacity of treated water supply and sanitation systems.
- ii. Unregulated runoff from industrial activities and direct dumping of wastes such as solid domestic waste, hazardous waste and sewerage.
- iii. Underdeveloped or poor sanitation facilities
- iv. Waterborne diseases (e.g diarrhea) are major contributor to childhood morbidity and mortality in rural areas.
- v. Vandalism of Southern Cross tanks.

Priority Action Plan

- i. To ensure allowable land utilization beyond town/city boundaries for water resource management and safe water and sanitation programs.
- ii. Consider a National Physical plan- identifies and protect river basins, catchment areas, aquifers from reckless development, habitations, and use of land.

- iii. Water harvesting of rainwater and conservation or sustainable use of water catchment.
- iv. Improvement in both water supply and sanitation systems to reduce cases of water borne diseases.
- v. Buffer zones for the protection of land and eco-systems on river banks.

2.1.7. Transport Infrastructure-Airports, Seaports and National Highways

The role of infrastructure in national development in providing the built up environment that allows production, consumption and service activities to take place. Infrastructure is the physical entity that enables economic processes, supports and guides urban and rural development, integrates the various communities of the various communities of Highlands, Coastal and maritime provincial population of Papua New Guinea to the global community.

In this manner, the state of infrastructure, including the way it enhances and complements the natural environment, provides a physical measure of a national and local development and ultimately of the quality of life.

Infrastructure is the common, physical link among the production, protection and the settlement component of the National framework for Physical Planning. Infrastructure development in the National Framework for Physical Planning covers five sub-sectors and that include;

- i. Transportation
- ii. Communications
- iii. Energy
- iv. Water resources
- v. Social

Issues of Concern

- i. Produce air, surface and groundwater pollution and addition of carbon dioxide into the atmosphere.
- ii. By failing to make transport strategy the basis of land use planning, land becomes scares to further develop transport infrastructure.

Priority Action Plan

The provision of basic services, fostering economic and other forms of integration necessary for producing or obtaining the material requirements of Papua New Guineans and the development of an efficient, responsive, safe and ecologically friendly built environment for transport infrastructure.

- i. Prioritize and implement infrastructure projects that support the policy of national dispersal through regional concentration.
- ii. Promote inter-modal transportation systems, taking into account compatibility, economic feasibility, comparative advantage and linkages of desired transportation modes to facilitate smooth transfer of people and good between designated transfer points.

- iii. Prioritize and implement infrastructure projects that allow increased access to basic social services and other development services while catering to the productive sectors and market-based industry putting the entire population into the mainstream of sustainable development.
- iv. Ensure compatibility of infrastructure with local land use and development plans, giving priority to projects with the most strategic impacts.

2.1.8. Community Development-Settlement and Housing

There are three main concerns with the idea of settlement development and these include; planning within the context of National Network of Settlements, Spatial distribution of future population and managing spatial impact of development processes. Zoned and subdivided allotments leased to individuals by the State. Formal settlements have necessary services being provided by the City Authorities and zoned residential areas.

The settlement of human population has acquired much of the land. The hierarchy of settlements encourages local development initiatives to make strategic plans and decisions that involve regional and national considerations.

There are six main concerns with the idea of settlement development and these include;

- i. Planning within the context of National Network of Settlements
- ii. Spatial Distribution of Future Population
- iii. Infrastructure and Basic Services
- iv. Housing and Informal settlements
- v. Food Security and Land Conversion
- vi. Income Distribution Patterns
- vii. Rural-Urban Linkages
- viii. Managing the Spatial Impacts of Development

Issues of Concern

- i. Illegally settlements are coming up everywhere in the urban areas.
- ii. People settling in prime state land and depriving the state from providing services.
- iii. Make-shift houses with no proper services being installed.

Priority Action Plan

- i. Formulating subject, local urban or provincial development plans within the context of national hierarchical network of settlements where there will always be difference in the level and scale of activities. Despite such difference, however opportunities for economic growth and improving delivery of services and overall quality of life relative to other settlements can be locally initiated.
- ii. Guide the formulation of physical plans by the close relationships between local economic growth and production efficiency, market access, and the provision of basic services.
- iii. Settlement areas shall be focus on growth and their importance be promoted through;

- iv. Efficient use of land and resources, the use of infrastructure and public service facilities which are planned or available thus avoid the need for their unjustified or uneconomical expansion
- v. Identify and promote opportunities taking into account existing building areas and the availability of suitable existing or planned infrastructure or public service facilities required to accommodate projected needs.
- vi. Promote and facilitate compact form while maintaining appropriate levels of public health and safety.
- vii. Establish and implement minimum targets within built up areas.
- viii. Establish and implement policies to ensure specify targets are achieved prior to, or concurrent with new development within designated growth areas.
- ix. Development should occur adjacent to the existing built-up areas and shall have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities.
- x. Identify settlement areas and or allow for expansion of the boundary for settlement areas.

2.1.9. Fisheries

Papua New Guinea has a valuable and extensive fisheries sector ranging from inland river fisheries and aquaculture to coastal reef fisheries and deepwater tuna fisheries.

There are range of subsistence fishing communities to small scale commercial fisheries, medium scale domestic prawns and tuna longline operators, and international interests operating purse seine tuna fishing vessels.

The PNG's zone of 2.4 million square kilometers is the richest in the South Pacific. The fisheries zone includes an extended reef system, numerous islands and extensive coastline. These create huge opportunity but also present an enormous challenge for monitoring and control.

Issues of Concern

- i. Subsistence and artisanal fisheries is difficult to obtain information regarding demand, supply and small-scale economic activity.
- ii. The development of aquaculture fisheries needs suitable land and as such the entire community needs to participate in constructing fish ponds and participate in inland fisheries activities as land is a communal property.

Priority Action Plans

- i. Better management and development of fisheries in Papua New Guinea.
- ii. More awareness should be carried out on fisheries as it is a very viable industry that can sustain people living in the rural areas.
- iii. More land should be made available for aquaculture.

2.1.10. Urbanization

Towns evolved in Papua New Guinea as the centers for colonial control and administration. As towns expand, additional land was alienated in a piecemeal way, resulting in a patchwork of alienated land. Later town boundaries were drawn.

Today, the towns are expanding very fast. Most of the people are moving and settling in towns and cities to access the better services that are provided there.

Issues of Concern

- i. Given high urban population growth rates pressures on urban infrastructure and employment opportunities have increased.
- ii. Growing of informal and squatter settlements within the urban settings.
- iii. Roads and drainage suffer more from lack of maintenance.
- iv. Low and average income earners unable to afford reliable accommodations and thus the real estate prices are very high.
- v. Rate of unemployment is very high.
- vi. Law and order problems are very common in urban areas.

Priority Action Plan

- i. Encourage rural development.
- ii. Promote equal access to employment opportunities and discourage migration.
- iii. Introduce low-cost self-help housing schemes.
- iv. Build appropriate affordable infrastructures such as roads, bridges, etc...
- v. Encourage and promote small medium enterprises (SME).
- vi. Improve the built and natural environment in and around urban areas and rural settlements including the provision of good quality open space, maintain soil qualities and preservation of archaeological sites.
- vii. Protecting the quality, character and amenity values.
- viii. Introduce policies on urban environmental management and landscaping.

2.1.11. Health

The national health system is the basis for organization and administration of health services in the country. The legislative framework defines the powers, roles and responsibilities for all levels of government in delivering health services.

Issues of Concern

- i. The health of the people is not improving. This applies particularly to the rural communities especially mothers and children who are dying from preventable diseases.
- ii. There are limited resources available to improve the health of the people.
- iii. Geographical barriers deny access to basic health services.
- iv. Customary landowners are not willing to release their land for build health facilities.
- v. Local people destroying the health facilities after not paying compensation to the land.

Priority Action Plan

- i. More rural health facilities to be build to meet the needs of the rural population.
- ii. More land must be made available by the state to set up health facilities.
- iii. Protecting the environment and human health through effective waste management practices.

2.1.12. Lands and Physical Planning

The allocation, management and best use of land within the three broad land use zones in the country that is supported by the existing legislative framework of;

- i. Development Promotion,
- ii. Sustainable Rural and
- iii. Conservation

The two principle legislations provided by the Physical Planning Act and the Environment Act need to be strengthened. The recent paradigm shift in Government policy and planning from short to medium term planning to long term planning through the introduction of higher order policies such as Vision 2050, Development Strategic Planning 2010-2030 and National Urbanization Policy 2010-2030 has created a shift in focus in development to make rural areas more urban. This has created the need to identify a range of land uses and zones for development.

Issues of Concern

- i. Institutional and professional capacity to oversee development and undertake forward planning for declared physical planning areas has been limited.
- ii. There is widespread sensitivity to the possibility of political motivated resistance to the extension of physical planning areas. This has been preventing planners from extending physical planning areas to the full extent of town's sphere of influence.
- iii. No rural zoning existed in the 1990 Regulation Zoning Schedule, so there was no point in extending physical planning control in rural areas. The 2007 regulation has provided for some rural zoning but there is a need to include protection land use zoning to cover natural disasters areas.
- iv. There has been inertia within the physical planning system caused by problems of understanding and a pervasive that "one should but of what one can chew".
- v. The principle legislation emphasis management of land use by Physical Planning Board; the new regulation adds to the restrictive controlling mechanism by the introduction of a more facilitating mechanism of certificate and compliance.
- vi. There is now clear separation of responsibilities between Physical Planning Offices and the Physical Planning Boards. Physical Planning Offices must be manned by professional staff that is adequately competent to identify the type of development proposal which is being requested by an applicant. If the proposed activity is compliant with the provisions of the Physical Planning Act, the Physical Planning Regulation, current zoning plans and other guidelines (such as preferred conditions upon deemed permissions) will be used by Office staff.

- vii. There is an urgent need for the preparation of 21 Provincial Development Plans, and Subject Development Plans within the framework of the Physical Planning Act.

Priority Action Plan

- i. The need for the country to have a Strategic Land Use Plan that will guide physical development throughout the country. The National Land Use Management Plan which must follow on from the implementation of the National Sustainable Land Use Policy will translate all the higher order policies in physical terms to achieve the goals of sustainable land use practices, balance rural-urban, inter-provincial and inter-regional disparities within the country whilst at the same time optimize the use of our finite land and land resources so as to achieve the development goals of our higher order policies.

2.1.13. Environment and Conservation

For National Sustainable Land Use Policy to have an effect in the protection of Conservation areas identified under the three broad category of land use in the country, the Government must strengthen the existing legislation on the Protection of Conservation Areas. Department of Environment and Conservation (DEC) administers the Environment Act 2000 of Parliament whose objectives are to facilitate the gazetting of protected areas for biodiversity conservation purposes.

Issues of Concern

- i. It relies upon the alienation of customary land tenure by state. This is unlikely to occur.
- ii. There are number of resource exploration and development leases which are given over Wildlife Management Areas (WMAs) and the extent of damage to WMAs through commercial logging and intensification of subsistence agriculture.
- iii. Environmental degradation and destruction of biological diversity from intensive land usage like resource extraction through logging, mining, commercial agriculture.etc...

Priority Action Plan

- i. The rehabilitation, conservation and management of sensitive or critical ecosystems to preserve their integrity, to allow degraded resources to regenerate and to protect human population from environment hazards.
- ii. The Government does not have a protected area policy and is working towards the development of a National Protected Area Systems Policy for Papua New Guinea. Such a Policy should come under the over-arching policy framework for National Sustainable Land Use.
- iii. The National Sustainable Land Use Policy has identified three broad categories of land use zones for the purposes of policy and planning. The Protected Area systems are part of land use broadly categorized as Conservation Area which the Department of Environment and Conservation is responsible for its management and planning.

- iv. Development Promotion is the responsibility of Physical Planning and Sustainable Rural Zone is the shared responsibility of Environment and Conservation and Physical Planning under the over-arching policy framework for sustainable land use.
- v. Develop a National Biodiversity Action Plan for Papua New Guinea.
- vi. Protecting rural areas from the impacts of developments on landscape quality, conservation and enhancement of wildlife species and biological diversity.
- vii. Up-to-date information on the environment characteristics and potential impacts, either positive or negative on the environment should be noted.
- viii. Recognize the limit of the environment to either accept or decline new developments without irreversible damages.
- ix. Protecting and enhancing the quality of historic and natural environment in both urban and rural areas by protection to valued landscapes, wildlife and natural resources

3.0. POLICY CONTEXT

The aim of developing National Sustainable Land Use Policy is unlikely to be achieved unless the policy and legislative environment is supportive. Until recently this has not been the case and Government policy has primarily focused on economic development and poverty reduction.

Both the policy and legislative environment are much based on the social and economic development and advancement of Papua New Guinea. The Papua New Guinea higher order policies emphasize the need for prudent economic development while improving the quality of life of all people in Papua New Guinea while the legislative environment make the policies conducive for prosperity and development which both complement each other for raising the standard of living for all people.

3.1. International Policy Context

Papua New Guinea also aims to implement international policy or conventions through defining them into PNG context and implement them in order to be recognized as a member or participant in the negotiations in the international arena.

Some of the international conventions that PNG became a major participant and thus either ratify or be a signatory include the following;

3.1.1. Millennium Development Goals

The United Nations Millennium Development Goals (UN MDG) are eight goals that all 191 UN member states have agreed to try to achieve by the year 2015. The United Nations Millennium Declaration, signed in September 2000 commits world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women (Melnick, 2005, 13). The MDGs are derived from this Declaration, and all have specific targets and indicators.

The Eight Millennium Development Goals are:

- i. eradicate extreme poverty and hunger;
- ii. achieve universal primary education;
- iii. promote gender equality and empower women;
- iv. reduce child mortality;
- v. improve maternal health;
- vi. combat HIV/AIDS, malaria, and other diseases;
- vii. ensure environmental sustainability; and
- viii. develop a global partnership for development.

The MDGs are inter-dependent; all the MDG influence health and health influences all others. For example, better health enables children to learn and stay fit and healthy. Gender equality is essential to the achievement of better health. Reducing poverty, hunger and environmental degradation positively influences, but also depends on, better health.

3.1.2. United Nations Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty which has taken place in New York in 1994 about the issue of climate change. The objective of the treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (*Trexler, 1999, 15*). Deforestation and forest degradation are major contributors to greenhouse gas emissions, through large-scale logging and commercial agriculture. These activities continue because the value of forests as carbon sinks and a source of livelihood has not fully recognized.

One of its first tasks was to establish national greenhouse gas inventories of greenhouse gas (GHG) emissions and removals, which were used to create the 1990 benchmark levels for accession of Annex I countries to the Kyoto Protocol and for the commitment of those countries to GHG reductions. Updated inventories must be regularly submitted by Annex I countries. Papua New Guinea as a third largest country with intact rainforest with other rainforest countries in the world have been successful in placing REDD+ (*Reduction in Emissions of Deforestation and Forest Degradation through Sustainable Forest Management, Conservation and Enhancement of carbon Stock*) as a mechanism for discussion in the international negotiations. Since the 15th Conference of Parties (CoP 15) to the UNFCCC, developed countries have pledged funds to prepare for REDD+ implementation in developing or forest countries to support both mitigation and adaptation of climate change.

Parties to UNFCCC are classified as:

- i. Annex I countries: industrialized countries and economies in transition
- ii. Annex II countries: developed countries which pay for costs to developing countries
- iii. Non Annex I countries: Developing countries.

Annex I countries which have ratified the Protocol have committed to reduce their emission levels of greenhouse gasses to targets that are mainly set below their 1990 levels. They may do this by allocating reduced annual allowances to the major operators within their borders. These operators can only exceed their allocations if they buy emission allowances, or offset

their excesses through a mechanism that is agreed by all the parties to UNFCCC. Annex II countries are a sub-group of the Annex I countries. They comprise the OECD members, excluding those that were economies in transition in 1992.

Developing countries are not required to reduce emission levels unless developed countries supply enough funding and technology. Setting no immediate restrictions under UNFCCC serves three purposes:

- i. it avoids restrictions on their development, because emissions are strongly linked to industrial capacity
- ii. they can sell emissions credits to nations whose operators have difficulty meeting their emissions targets
- iii. They get money and technologies for low-carbon investments from Annex II countries.

Developing countries may volunteer to become Annex I countries when they are sufficiently developed.

3.1.3. United Nations Convention on Environment and Development (Rio Declaration)

The United Nations "Conference on Environment and Development" (UNCED), informally known as the Earth Summit was taken place in Rio in 1992. Papua New Guinea's participation at the Rio Earth Summit was an opportunity to reaffirm our constitutional commitment to the concept of integral human development or holistic development, which is based on the intricate balance between man and the environment as well as the preservation and sustenance of the spiritual and moral fabric of the society. Papua New Guinea actively participated in the UN conference on Environment and Development by virtue of its membership with the United Nations and through a specific Government Directive for the country to be involved in the conference (Gabut. J, 1996).

The Rio Declaration consisted of 27 principles intended to guide future sustainable development around the world.

Some of the principles contained in the Rio Declaration which are relevant to Papua New Guinea are as follow;

- i. *Role of Humans*-Human beings is at the centre of concern for sustainable development. They are entitled to a healthy and productive life.
- ii. *State Sovereignty*- States have, in accordance with the charter of the United Nations, and the principles of international law, the sovereign rights to exploit their own resources pursuant to their own environmental and development policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.
- iii. *Environmental Protection in the Development Process*- In order to achieve sustainable development, environmental protection shall constitute an integral part of development process chain and cannot be considered in isolation from it.
- iv. *Eradication of Poverty*- All state and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in

- order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.
- v. *State Cooperation to Protect Ecosystem*- State shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the world's ecosystem. In view of the different contributions to global environmental degradation, states have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.
 - vi. *Public Partnership*- Environmental issues are best handled with the participation of all concerned citizens, at relevant levels. At the national level, each individual have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities and the opportunity to participate to decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative progressing, including redress and remedy, shall be provided.
 - vii. *National Environmental Legislation*- States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied in some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particularly developing countries.
 - viii. *Compensation for Victims of Pollution and other Environmental Damage*- States shall develop national laws regarding liability and compensation for the victims of pollution and other environmental damages. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.
 - ix. *State Cooperation to prevent environmental dumping*- States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.
 - x. *Precautionary principle*- In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
 - xi. *Environmental Impact Assessments*- Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.
 - xii. *Notification of Natural Disaster*- States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.
 - xiii. *Women have Vital Role*- Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

- xiv. *Indigenous Peoples have a Vital Role-* Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.
- xv. *Resolution of Environmental Disputes-* States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.
- xvi. *Cooperation between State and People-* States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

3.1.4. United Nations Convention on Biological Diversity (UNCBD)

The Convention on Biological Diversity was signed at *the Earth Summit*, which took place in 1992, at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. It is the first global agreement on the conservation and sustainable use of biological diversity. The treaty recognizes – for the first time – that the conservation of biological diversity is *a common concern of humankind* and is an integral part of the development process. Importantly, the Convention is legally binding; countries that join it are obliged to implement its provisions. Up to the present moment, 168 countries have signed the Convention.

Biological resources are genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity. Genetic material refers to any material of plant, animal, microbial or other origin containing functions units of hereditary. In-situ condition are conditions where genetic resources exist within ecosystems and natural habitats, and in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties (*John Genolagani, 2009*). Sustainable use refers to the use of components of biological diversity in a way and at a rate that does not lead to the long term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

Ecosystems and habitats containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory, species of social, economic, cultural or scientific importance; or, which are representative, unique or associated with key evolutionary or other biological processes; species and communities which are threatened wild relatives of domesticated or cultivated species; of medicinal, agricultural or other, economic value; or social, scientific or cultural importance; or importance for research into the conservation and sustainable use of biological diversity, such as indicator species; and described genomes and genes of social, scientific or economic importance.

Biodiversity conservation is the management of human use of organisms or ecosystems to ensure the use of plants, animals and ecosystems is sustainable, and the management of genetic, species and ecosystems variability. This primarily involves the maintenance, protection, rehabilitation, and enhancement of natural environments that are significantly unmodified by human activities. Threats to biological diversity through exploitative development

mean that development is incompatible with conservation objectives, which causes erosion in biodiversity values. Therefore the need to conserve biological diversity for tangible development lies in the hands of all individuals. One of the conservation processes that highlights the conservation of biological diversity is the introduction of ICAD. ICAD is the process of integrating conservation and development, to meet resource holders' social and economic development needs and aspirations, while meeting conservation objectives (John Duguman, 2009). The ICAD process is a complex approach aimed at realizing tangible social and economic benefits from conservation management as a means of establishing sustainable conservation incentives.

PNG boasts some 15-21,000 higher plants, 3,000 species of orchids, 800 species of coral, 600 species of fish, 250 species of mammals and 760 species of birds and 8 species of tree-kangaroos out of which 84 genera of animals are endemic (*John Genolagani, 2009*). Ecosystems range from lowland forests to montane forests, alpine flora down to coastal areas which contains some of the most extensive pristine mangrove areas in the world. Much of this biodiversity has remained intact for thousands of years because the ruggedness of the terrain made the interior lands inaccessible; furthermore low population density and restrictions on the effectiveness of traditional tools, ensured that these biodiversity was never overexploited.

Even though this biodiversity is on just 1% of the world land mass, it has both global and local value. Most of the ecosystem service provided by the forests and oceans (e.g. water cycling, carbon cycling) is impartial to political boundaries. Within the country, about 85% of the PNG population's depend on the biological resource to sustain their physical, spiritual and social livelihoods. The biological resources are a source of food, building material, medicine for minor ailments, logs for canoes. The traditional society revered, and respected nature because it was considered a gift from some ancestor". Currently, the harvesting of natural resource for export is a source of income that sustains the modern PNG economy.

The PNG government recognized the relationship between the people and nature and at independence, provision was made in the constitution for "...all necessary steps to be taken to give adequate protection to all our valued birds, animals, fish, insects, plants and trees". Currently, biodiversity is explicitly protected by the following legislation: *Fauna Act/1982*, *Conservation areas Act/1980, 1992*, the *Crocodile Trade Act/1982* and the *International Trade Act/1982*. The Department of Environment and Conservation (DEC) is the government agency responsible for biodiversity conservation.

The PNG government's effort to conserve biodiversity is supported by international environment conservation and Non-governmental organizations (NGOs). The major government research organizations include the Forestry Research Institute (FRI), and the National Agriculture Research Institute (NARI). The government owned universities: the University of Papua New Guinea (UPNG) and the University of Technology (UNITECH) also contribute to novel researches into the PNG biodiversity. The government research organizations tend to place emphasis on species with economical value to PNG. The NGOs, on the other hand are the driving force for biodiversity conservation for the sake of conservation. The major international NGO's assisting in biodiversity conservation includes;

- i. Conservation International (CI),
- ii. The Binatang Research Centre (BRC),

- iii. Wildlife Conservation Society (WCS), Worldwide Fund for Nature (WWF)
- iv. The Nature Conservancy (TNC).
- v. Indigenous PNG NGO's which had active conservation programmes (Conservation Melanesia,
- vi. Melanesian Environment Foundation,
- vii. PNG Research & Conservation Foundation,
- viii. Village Development Trust,
- ix. Pacific Heritage Foundation,
- x. Partners with Melanesia

The effort by the PNG government to protect biodiversity has resulted in 44 existing terrestrial protected areas using the International Union for the Conservation of Nature and Natural Resources (IUCN) categories. These protected areas account for 1.6% of the total land area (*John Genolagani, 2009*). A study of biodiversity identified a further 398 areas as candidates for conservation. This would increase the total protected areas to 16.8% of the total country area. Included in the PNG protected area list, but not formally recognized by IUCN is the terrestrial Wildlife Management Area (WMA). WMA is an Integrated Conservation and Development Project (ICAD), which seeks to conserve biological diversity by involving landowners. The idea behind the project is that income generating activities, from the biological diversity would encourage people living in these areas to conserve, because such projects would link the value of these resources to living standard and also access to markets. The progress of WMA's is yet to be evaluated.

Papua New Guinea's first conservation area, the YUS Conservation Area, was established in 2009 on the Huon Peninsula, Morobe Province. Apart from local conservation efforts, PNG is also a signatory to international conventions and treaties. These international treaties include;

- i. *The International Plant Protection Convention (1951),*
- ii. *The Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matter (1972);*
- iii. *The convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES);*
- iv. *The RAMSAR Convention on Wetlands of International Importance (1992);*
- v. *The Convention on the Conservation of Migratory Species of Wild Animals.*

PNG is also in partnership with other nations in the Oceania region and is a signatory to the regional convention, *The Convention on Conservation of Nature in the South Pacific (APIA Convention)*. PNG has two listed RAMSAR sites: Lake Kutubu and Tonda Wildlife Management Area (*John Duguman, 2009*).

3.1.5. United Nations Convention on Human Settlement

The United Nations Conference on Human Settlement (Habitat II) was held in Istanbul, Turkey in 1996. The convention proposed for community of nations reviews its collective vision and responsibility of the future of living conditions, and agreed on a new Habitat Agenda which is expected to guide national and international action on human settlements. It has become evident to the world community that comprehensive and far reaching actions is urgently needed to secure a health, safe and equitable living environment for which a com-

mitment of all interested parties on a sustained basis is required. Recognizing the global nature of the issues concerning human settlements, the convention decided that a concerted global approach could greatly enhance progress towards achieving the goals of adequate shelter for all and sustainable human settlement development in an urbanizing world.

National and global commitments were made to improve the living conditions of the world's population through the development implementation strategies and policies on;

- i. Land use
- ii. Housing
- iii. Urbanization
- iv. Sustainability and environmental impact of human habitation
- v. Human rights
- vi. Social development
- vii. Access for and role of women in the development of communities.

3.2. National Policy Context

- i. Policies that guide the processes of Development*
- ii. Policies that guide the spatial impact of development*

Papua New Guinea's national policies which include all the higher order policies envisioned the future development pathways of Papua New Guinea and thus anticipated for development that will bring prosperity in the lives of all people. The National Sustainable Land Use Policy is an over-arching and a higher order policy that will deal with the use, allocation, and management of land and land resources in Papua New Guinea. It influences the spatial development across Papua New Guinea.

The planning system in Papua New Guinea offers three separate processes to assess sustainable land use in the country. The processes have attempted to address sustainable development. At a higher level of policy and planning where macro level policy issues are tackled, the focus has been in correcting the process of development in the country. This began with the adoption of the National Constitution and Directive Principles which sets the vision for a desirable society in Papua New Guinea in the future. The other higher order policies which establish the framework for development processes in Papua New Guinea are the Vision 2050, Development Strategic Plan, National Protected Area Policy and National Urbanization Policy.

3.2.1. The National Constitution

The Constitution contains the PNG National Goals. These include;

- i. Integral Human Development;
- ii. Equality and Participation;
- iii. National Sovereignty and Self Reliance
- iv. Natural Resources and Environment;
- v. Papua New Guinea Ways

The 4th Goal emphasized that, "Papua New Guinea's natural resource and environment should be conserved and used for the collective benefit of all and should be replenish for the future generations".

We accordingly call for-

- i. Wise use to be made for our natural resources and the environment in and on the land or seabed, in the sea, under the land, and in the air, in the interest of our development and in trust for future generations.
- ii. The conservation and replenishment, for the benefits of ourselves and posterity of the environment and its sacred, scenic and historical qualities; and
- iii. All necessary steps to be taken to give adequate protection from development so that the quality and the quantity of the land and its resources are maintained at all times.

3.2.2. Vision 2050

This policy document aims to promote development in terms of economic advancement from now till 2050. It aims to alleviate poverty through strategic planning and collaborations as mentioned in its seven planning areas which are regarded as pillars. These include;

- i. Human Capital Development, Gender, Youth and People Empowerment;
- ii. Wealth Creation;
- iii. Institutional Development and Service Delivery;
- iv. Security and International Relations;
- v. Environmental Sustainability and Climate Change,
- vi. Spiritual, Cultural and Community Development;
- vii. Strategic Planning, Integration and Control.

This framework is long-term which maps the future direction of Papua New Guinea as it reflects the aspiration of the people. Pillars that underpins land and its resources use includes;

- i. Wealth creation
- ii. Institutional development and service delivery
- iii. Environmental sustainability and climate change
- iv. Strategic planning, integration and control

Papua New Guinea has the capacity to improve its socio-economic development status through its land and resource usage. Land use planning is the key component in successfully achieving the objective. The Vision 2050 aims to transform the lives of the people to make sure they live a decent and healthy lifestyle. The new developments will direct for economic advancement at a desirable rate thus promoting better service delivery, improve health and education and a sound political leadership and structure.

3.2.3. Development Strategic Plan 2010-2030

The Development Strategic Plan is a development framework that is intended to promote and guide Papua New Guinea onto a path of sustainable economic growth, achieving economic prosperity and a high quality of life for all Papua New Guineans.

The Development Strategic Plan is an integral policy document that considers all objectives and strategies in terms of how they will contribute to the vision of PNG's prosperity. It is therefore able to guide development by enabling how best to utilize scarce resources and by focusing development efforts on policy areas with the greatest potential.

The 20 year development strategy sets long term goals and targets that will guide development planning and importantly, will set the priorities for development expenditure. In doing so, it dismantles the dominance of short-term, annual budgets over the allocation of resources. Its formulation is therefore a historic moment in PNG's development. The Development Strategic Plan outlines where PNG is now, it provides targets of where PNG will be in 2030 and it outlines how PNG will get to its 2030 targets.

3.2.4. Medium Term Development Plan

The Medium Term Development Strategy is a five year plan that provides strategies to guide and direct the long term planning processes to achieve the desired outcomes of the Papua New Guinea Development Plan 2010-2030 and the Vision 2050. It sets the sector strategies, targets and deliverables and their projected estimated costs of implementation. The MTDP is aimed at translating the Papua New Guinea Development Strategic Plan 2010-2030 into tangible results. It also takes into account the lessons learnt and experience from the previous Medium Term Development Strategy 2005-2010. 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 PNG DSP 2010-2030.

The Medium Term Development Plan 2010-2015 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 MTDP 2010-2015 pulls together the whole of the nation in a team effort to realise the Vision 2050.

3.2.5. National Land Development Program

The broader perspective of land reform is for development and poverty reduction. Consequently, the aim of land reform is to effectively use land for economic development and to protect the rights of the vulnerable sections of the community. This requires the Government to have a forward looking strategy on land policy, land use planning for customary and state-owned land and to adequately inform people of land reform implications.

The home grown land reform program has a number of significant outcomes. These include;

- i. Amendment of the Land Group Incorporation and Land Registration Act that now enables customary land to be registered and leased for development purposes by the landowners.
- ii. The establishment of a Land Court Division and appointment of a Deputy Chief Magistrate Lands Division at the Magisterial Services.

- iii. The establishment of Customary Lands Division and appointment of a Deputy Secretary-Customary Lands at the Department of Lands and Physical Planning.
- iv. Preparation of a National Land Development agenda under the PNG Development Strategic Plan 2010-2030 and Medium Term Development Plan.
- v. Development of a National Land framework by the National Research Institute to guide research on land development initiatives and related issues in Papua New Guinea.
- vi. Building of a new office complex for the Department of lands and Physical Planning.

Table.1. summarizes the above discussion.

Higher Order Policy	Primary Focus	Target	Tools Used	Source of Legitimacy
Development Goals & directive principles	Guiding Principles for policy & planning	Government-People	National Policies Development Plans Legislations	National Constitution
Vision 2050	Translation of Guiding Principles to achievable development goals 40 year time frame	Government-People	National Policies Development Plans Legislation Programs	National Constitution of Papua New Guinea
National Sustainable Development Strategy	Environment & Development	Environment Sustainability, Economic Sustainability Social Sustainability	Common framework of action by countries	International Convention, UNCED
Development Strategic Plan 2010-2030	Economic Corridors of Development for Equitable Development	10 Economic Corridors of Development	Impact projects strategically located on economic Corridors	Strategic Planning (Budget Centered Planning)
National Urbanization Policy	To guide the process of development	Hierarchy of Cities of Cities in the Country	Urban Planning	Physical Planning Act
UNFCCC	Translate International Convention to address climate change in the country	194 Countries who are signatories to the treaty	Protocols Conference of all parties	International Convention Treaty Protocols (no legally binding).
UNDP Millennium Development Goals	International Agreement translated into 20 targets and over 60 indicators	MDG sets 20 targets and over 60 indicators	Framework for the development activities	International Convention
National Protected Area Policy	Protection of the Environment	Conservation Area	Legislation Regulations Standards Guidelines	Conservations Act ,Fauna (Protection & Control Act), National Parks Act
Sustainable Land Use Policy	The Use of Land and Land Resources in PNG	Allocate Develop Manage Use	Legislation Strategic land Use Plan	Physical Planning Act Environment Act

4. INSTITUTIONAL CONTEXT

4.1. Department of Lands and Physical Planning

The identification of suitable management agencies to facilitate sustainable land use is the first purpose of the National Sustainable Land Use Policy. The current agencies focus only on one aspect of land use. The need to balance the planning system and plan for the best use of land is through focusing on the current land use pattern and thus plan for the future.

There is a need for physical planning to establish suitable agencies to promote and facilitate physical planning activities throughout the country. There has to be changes in the process by which land use planning is assessed and monitored in the country (*National Framework for Physical Planning 2007-2037*). We need to amend existing legislations which will enable us to align the functions of physical planning to the NSLUP framework. We need to maintain the existing physical planning and Environment legislative framework and further maintain the existing mandate for physical planning and environment and conservation.

4.1.1. Physical Planning Organizational Structure

The existing structure of the Physical Planning function is a three tiered structure consisting of the Office of the Chief Physical Planner and National Capital District Physical Planning Office at the national level, whilst at the regional level and extended physical planning functions of the Office of the Chief Physical planner has established four regional office whereby their role is to coordinate the activities of development planning and assessment within those four regions. At the Provincial level, devolution of the Physical Planning powers and functions are done through the establishment of Provincial Physical Planning Boards and Offices.

The institutional frameworks required for exercise of physical planning responsibilities at the National, Provincial and Corporate levels are as follows;

Minister (National level) responsible for Physical Planning

For processing of policy through to the NEC and for appointments to statutory boards at all levels, and exercise of statutory responsibilities.

Provincial Executive Councils and Committee Chairman

For exercise of decentralized statutory responsibilities

Chief Physical Planner

With responsibilities for administration of the legislation, recommendations and conversion of policies into strategies and programs for implementation

National Physical Planning Board

For processing a statutory matters of the national interest including those matters where a provincial board is not yet established or is under suspension for an interim period.

Provincial Physical Planning Boards

For the exercise of statutory responsibilities in matters of the provincial interest and in an advisory capacity for matters of the national interest

Physical Planning Appeals Tribunal

For adjudication and referral to the Minister for a decision on all matters appealed against in respect of decisions or notices issued under the Act.

National- level Office of Physical Planning

To give effect to a range of responsibilities and obligations of the Chief Physical Planner, this will include a number of separate units and regional offices to carry out specific sets of functions. National-comprises the Office of the Chief Physical Planner which also houses the PNG Appeals Tribunal (PNGAT) and the National Physical Planning Board (NPPB) and the development matters that arise as the national interest is taken care of by this office.

Provincial Physical Planning Offices

This is responsible to Provincial Administration in matters of physical development and administrative support for Provincial Physical Planning Boards. Provincial - comprises of the Provincial Administrations and also the Provincial Physical Planning Board. Whatever development issue that arises in the Province is taken take off by these two bodies. However, if they think that the issue at hand is of national interest then it is recommended and brought forward to the National Physical Planning Board for further deliberations.

4.1.1.1. Physical Planning in Headquarters

The Office of the Chief Physical Planner is responsible for the maintenance of the professional standards throughout the country as its primary responsibilities is for the administration of the Physical Planning legislation, recommendations and conversion of policies into strategies and program for implementation. It is made up of three units;

4.1.1.1.1. Physical Planning Policy Unit

Activities preformed within this unit include;

- i. Facilitate and encourage a holistic approach in planning to guide sustainable land use for economic, social and environment purposes.
- ii. Establish and maintain norms of performances in quality and quantity of work programmed by each physical planning office.
- iii. Monitor the output of physical planning offices nationwide and report to the Chief Physical Planner accordingly.
- iv. Establish and operate a regional base support system to carry out the inspectorate activities.
- v. Establish a framework of professional and Procedural Advice and update the Physical Planning Manuel and its use and prepare circulars from time to time.

- vi. Offer advice and support, on request from Physical Planning offices on the operation of the Physical Planning System and interpretation of the Physical Planning legislation.
- vii. In association with Development Planning, contribute to the consistency and continuity of physical development plans nationwide.
- viii. Identify training needs and prepare programmes by way of identifying shortcomings in professional performances
- ix. Prepare and conduct workshops and seminars to contribute to improvement of workings of the Physical Planning Systems nationwide and undertake specific training nationwide.
- x. Promote systems improvement by way of contributing to the preparation of improved Physical Planning Regulations and recommend on areas and subjects requiring improved policy formulation or better programming for implementation.
- xi. It has 9 professional staff headed by the Manager-Physical Planning Policy.

4.1.1.1.2. Development Planning Unit

- i. Facilitate the preparation, monitoring and review of development plans with full participation by provinces for approval by the Provincial Physical planning Boards.
- ii. Responsible for contributing towards the promotion of best use of land in PNG by undertaking land use analysis and future requirements, social economic research, population and land usage projections as well as evaluations of the effects of political priorities in the Physical Planning related sector.
- iii. Supervision of Physical Development plans and the establishment of nationwide framework of development.
- iv. Give specific advice on physical planning impacts and liaise with other sectors to promoted coordinated sustainable development.
- v. Review the applicability and effectiveness of physical planning legislation for the purpose of development promotion and management.
- vi. Assist staff programs in matters of policy, research and development planning and research into the preparation of development plans.
- vii. It has 13 positions headed by the manager-Development Planning.

4.1.1.1.3. Development Assessment Unit

- i. Facilitate the process for the consideration of planning matters by Physical Planning Boards to ensure that land use and built environment is in accordance with the Development Planning frameworks and Zoning plans.
- ii. Provides executive, professional and secretariat support for the National Physical Planning Board.
- iii. Provide central coordination for the preparation of agenda items, inclusive of planning applications submitted via provincial offices to the NPPB.
- iv. Identify planning applications which may be determined under delegated powers, process the submissions as appropriate, and inform applicants accordingly.
- v. Prepare appeals statements on behalf of the NPPB to elaborate the decisions of the Board in the event that Appeals are lodged against decisions of the Board.
- vi. Support the Physical Planning Appeals Tribunal by way of providing professional, executive and secretariat support and maintain records of Appeals, Processes

and Decisions and liaise with the office of the Minister for statutory decisions on Appeals.

- vii. Assist in the preparation of planning proposals
- viii. Maintain Development Control and Zoning Records.
- ix. Maintain and update a full set of adequate and accurate zoning plans for all Physical Planning Areas nationwide.
- x. Maintain a register and files of all applications of planning permission lodged with the Board in the national interest, and register decisions and notices issued in the provinces and under delegated powers and report to the NPPB accordingly.

4.1.1.2. Regional Physical Planning Offices

Establish and operate a regional base support system to carry out the inspectorate activities. There are four regional Physical Planning Offices based in;

- i. Goroka-Highlands Region
- ii. Port Moresby-Southern Region
- iii. Kokopo-Islands Region
- iv. Lae-Momase Region

The roles of Regional Physical Planning offices are to establish and maintain norms of performance in quality and quantity of work programmed by each Physical Planning Office within the region. The regional office also monitors the output of Physical Planning Offices nationwide and report to the Chief Physical Planner accordingly.

Where provinces within the region do not have an established Provincial Physical planning Board and Office, it is the responsibility of the Physical planners in the region to assist in planning matters. Where a development plan is under preparation, the Regional Development Planner must assess the need for the preparation of the development plan and the input provided should include the preparation of the Terms of Reference of the development plan before it is submitted to the National Physical planning Board. In case where applicants within the respective provinces within the region submitting their applications for physical planning permissions, the application should be accompanied with a planning report by the regional planner based on the investigations he has conducted.

4.1.1.3. Provincial Physical Planning Offices

The Physical Planning Act 1989 provides for the establishment of the Provincial Physical Planning Boards and their support office. There are 22 provinces in the country and each Province is required to establish its board and a office to support physical planning activities in the provinces. The Primary functions of the Provincial Physical Planning Office include;

- i. Forward planning to assess and report to the physical development and socio-economic characteristics and projected needs to be in relevant areas.
- ii. Assist in compiling data and analyzing the population (size, distribution. projections)
- iii. Carry out surveys of use of land and collection of other information which contributes to the preparation or review of physical development plans.

- iv. Contribute to the preparation of the physical development plans in the provincial interest and plays a major supervision role.
- v. Prepare local policies and strategies on land mobilization, site identification, and provision of employment opportunities, density and type of development, environment amenity, provision of infrastructure and social facilities.
- vi. Prepare site-specific design briefs, town centre and neighborhood plans to deal with urban design, landscaping, vehicle and pedestrian circulation and separation, car parking and environment amenity.
- vii. Responsible for development control by way of guiding future uses of land to approved zoning plans.
- viii. Survey and report on unauthorized use of land and development of land within the physical planning area.
- ix. Prepare and screen sub-division plans for infill and urban expansion according to development plans which are approved or under preparation.
- x. On behalf of the Chief Physical Planner, issues Certificate of Conforming Use and deemed Planning Permission to facilitate those planning proposals which are automatically exempted from board decision making processes.
- xi. Exercise other powers and functions as delegated by relevant Physical Planning Board and the Chief Physical Planner.
- xii. Promote the use of Section 81 Agreements to ensure the Planning Gain is achieved as and when major development projects take place.
- xiii. Promote the preservation and enhancement of environment amenity including the preservation of trees, planting of trees and identification of Conservation Areas.
- xiv. Provides Statutory Authority support to the Provincial Physical Planning Boards.
- xv. Register applications for Planning Permission and prepare Case Reports for consideration of the Boards.
- xvi. Provide executive and professional support for Local and provincial Physical Planning Boards.
- xvii. Prepare representations to elaborate upon Board's decisions in the Appeals are lodged against decisions of the Boards.
- xviii. Maintain adequate and accurate zoning plans for the relevant physical planning area.
- xix. Liaise with Regional Lands Administrators, Regional Valuers, Regional Surveyors and Provincial Administrators on matters of consecutive line activities in land use sector.
- xx. Provide information to and solicit advice from the Regional Physical Planning Inspectorate on any matter related to physical planning statutory responsibilities.
- xxi. Carry out any duties, functions or activities which are compatible with the role of Physical planning Offices as identified in the professional advice from time to time.

4.1.2. Recommended for Improved Management Agency

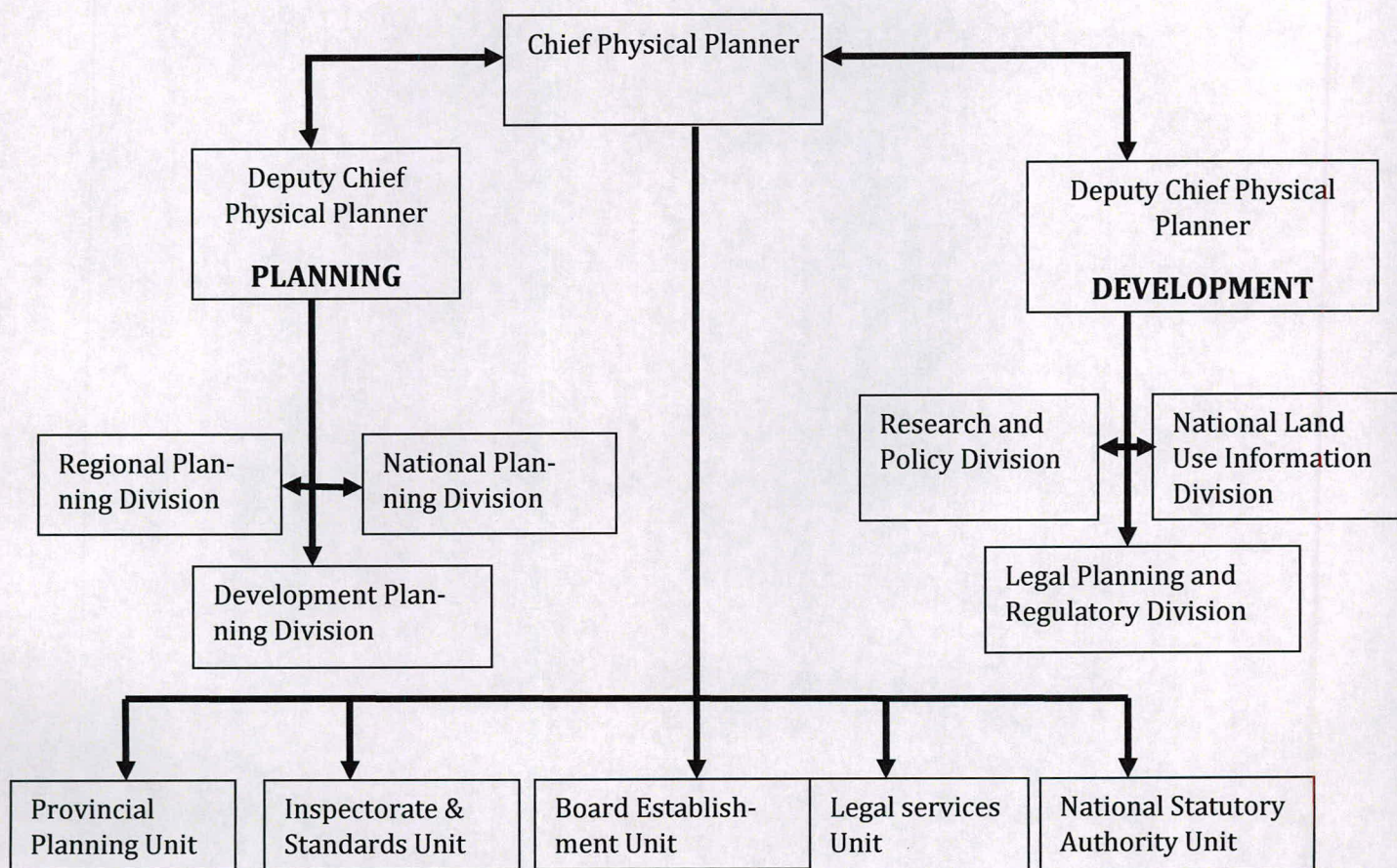
The recommended agency or body to implement the National Sustainable Land Use Policy will be the Department of Lands and Physical Planning through the Office of the Chief Physical Planner. The implementation of the Physical Planning Legislation and the National Sustainable Land Use Policy is a complex professional and administrative responsibility which is shared between both National and Provincial Administration. The task involves building the

institutional capacity at the National, Provincial and Local levels of Government to do forward planning and development control throughout the country.

There are 22 Provinces in the country and each of the Provinces should have;

- i. A Physical Planning Office with adequate staff to support the operation
- ii. Appointed a qualified Senior Physical Planner who is to administer the Physical Planning Act in the Province.
- iii. Adequate funding for the operation of the Provincial Physical Planning Board.
- iv. Adequate technical and administrative support to effectively carry out Physical Planning functions.
- v. The necessary equipment and resources to conduct its normal activities.

Diagram 1: Proposed Physical Planning Organizational Structure



5. THEMATIC POLICY AREAS

In order to achieve sustainable land use planning, land use, physical and related planning activities shall proceed within the principles that support the allocation and use of land and water resources with due regard to their sustainability. The National Sustainable Land Use Policy has five major areas for sustainable development. These principles include; sustaina-

ble economic development, food security, biodiversity and wildlife conservation and depletion of finite resources to be managed.

5.1. Sustainable Economic Development

Development indicators show a lack of equitable development in income distributions patterns. We need to develop a dynamic urban industrial sector and a dynamic agriculture sector to promote urban and rural development. Furthermore, increase the level of production and productivity in agriculture, forest, mining industry and tourism sector in order to address existing supply gaps, increasing demands from the people and their consumption levels and thus increase completion from the foreign investors.

Achieving sustainable economic growth many dispersed income-earning activities and opportunities through promoting a strong, stable and productive economy that aims to bring jobs and prosperity for all by;

- i. Recognizing that economic development can deliver social and environmental benefits.
- ii. Recognizing the wider provincial, district and national benefits of economic development and consider these a long side any adverse local impacts.
- iii. Ensuring that suitable locations are available for industrial, commercial, retail, public sector (e.g. health and education, tourism and leisure development, so that the economy can prosper;
- iv. Providing for improved productivity, choice and competition, particularly when technology and other requirements of modern business are changing rapidly.
- v. Recognizing that all local economies are subject to change; therefore planning should be sensitive to these changes and the implication of development and growth. Actively promote and facilitate good quality development, which is sustainable and consistent with their plans.
- vi. Ensuring the provision of sufficient, good quality new homes (including appropriate mix of housing and adequate level of affordable housing) in suitable locations, whether through new developments or the conversion of existing buildings. This will aim to ensure that everyone has the opportunity of a decent home, in locations that is convenient.
- vii. Ensuring that infrastructure and services are provided to support new and existing economic development and housing;
- viii. Ensuring that development plans take account of the national economic development strategies;
- ix. Identifying opportunities for future investment to deliver economic development objectives.

Papua New Guinea will not continue to rely on extractive industries to drive its economy and as such sustainable options are necessary for the future development of the country.

Development Strategic Plan 2010-2030 is a long-term development framework which is intended to promote and guide PNG onto a path of sustainable economic growth, achieving economic prosperity and a high quality of life for all Papua New Guineans. It is an integral policy document that considers all objectives and strategies in terms of how they will contribute to the vision of PNG's prosperity. It thereby guide development by guiding how best to utilize scarce resources and by focusing development efforts on policy areas with great potential.

Economic corridors are regions in which the government provides a well planned zoning system, a comprehensive and effective network of transport and utilities and quality education and health services. Economic corridors are proposed to alleviate poverty and transform the lives of the people in Papua New Guinea. Without the corridor system the people who have already experienced poverty will not be integrated into the mainstream economy. Within these regions, businesses are able to operate on low costs and under well designed incentives, thereby encouraging foreign and domestic private sector investments. By concentrating the construction of essential infrastructure within certain regions the economic corridor approach takes advantage of the substantial economies.

The government has identified ten regions of PNG to be categorized as economic corridors for the purpose of development and they include;

- i. Petroleum Resources Areas Economic Corridor (PRAEC)-Southern Highlands, Parts of Enga, Gulf, and Central,
- ii. Border Corridor-Western, Southern Highlands and Saundau,
- iii. Central Corridor- Central, Milne Bay, Oro and Morobe,
- iv. Madang-Baiyer, Karamui-Gulf Corridor-Madang, Chimbu, Gulf and Western Highlands,
- v. Morobe-Madang Corridor
- vi. Enga-Sepiks Corridor-Enga, East and west Sepik provinces
- vii. South Coast Corridor- East New Britain and west New Briatin Province
- viii. Momase Corridor- Madang, East Sepik and West Sepik Provinces
- ix. Solomons Corridor- Autonomous region of Bougainville
- x. Free Zone Corridor-Manus, New Ireland, East and West Sepik

The PNG Liquefied Natural Gas (PNG LNG) is one of the biggest impact projects in Papua New Guinea. The PRAEC will extend the benefits of the LNG project beyond the gas site to the nation as a whole. The PRAEC will direct LNG revenues into a network of transport, utilities and services in the PRAEC areas that is fully integrated with the national network.

5.2. Food Security

Food security is essential for sustainable development. It is important for internal security of the country. Utilizing the country's land resources in a manner that produce all of what we need to eat and enough of what we want to eat.

There is an abundant of land in the country which could be productively uses to meet the food security needs of the country. There is at least 30% of land in Papua New Guinea is arable. Production land use refers to the direct or indirect utilization of land resources for crop production, fisheries, livestock and poultry production. Land under this category include agriculture areas, coastal and marine zones... etc, where productive activities could be undertaken to meet the country's requirement for food and economic growth.

Despite the abundance of arable land, there is a sign of food insecurity, thus malnutrition is evident in both urban and rural areas. This is because the rural people consume only on what they produce in their gardens thus taking in an imbalance diet that leads to malnutrition. In urban areas, many of the people are regarded as urban poor. They are marginalized and denied basic services which ultimately lead to malnutrition and urban poor.

In Papua New Guinea, 97% of land is customary owned. Due to steep slopes and inundation, only 30% of the land which is arable is suitable for commercial agriculture. Large areas of this productive land are found in the Markham/Ramu Valley, Tari Basin in Southern Highlands, Waghi Valley in Western Highlands, Sepik Plains in East Sepik Province, Sogeri Plateau in Central province, etc...

Over 85% of the total of Papua New Guinea's population practices intensive subsistence agriculture, defined here as where land is cropped for up to a quarter of the entire cultivation cycle. When the number of cultivation increases, the fallow period decreases.

The National Food Security 2001-2010 plan has 14 programs. Sub goals (5) of the programs specifies to ensure integrated management and sustainable use of natural resources, land, water, fisheries, forest and genetic resources. The main goals are;

- i. To support conservation, improvement and sustainable use of natural resources for food and agriculture,
- ii. For conservation, rehabilitation, and development of environment which is at risk
- iii. To ensure that development is sustainable by designing and implementing activities that meets local needs and participation.
- iv. To support appropriate environment legislations, structure and management practices.

Department of Agriculture and Livestock's aim for Papua New Guinea is to attain national food security through sustainable use of biological resources, guaranteed supply and accessibility of food fiber through improved production and distribution network for the nations alarming growing population. The primary objective of planning for production land use is to determine the most efficient and equitable manner of utilizing and managing land resources such that there is adequate and accessible space for sustainable food production. The primary focus in production land use for food security is on feeding the population. The primary target of the rural population is to make them be self-sufficient in food production.

Land use planning contributes to improve availability of food in a number of ways including;

- i. Through land use planning, areas of food production can be defined, zoned and protected from being converted into construction land;

- ii. Through the integration of rules regulating to access to land and/or improving tenure security, food production can be improved as farmers will invest in long term measures to improve the soil or start more expensive cultivations that provide higher yields in the long run.
- iii. Land use planning in combination with market analysis and infrastructure planning can improve access to food.

5.3. Biodiversity Conservation

Papua New Guinea is blessed with vast biological diversity. It is more diverse and thus very difficult to identify the potential of each species. Some species are of great economic and medical importance to us and we can't predict which ones. Each species is unique and irreplaceable product of million years of evolution. Each species is of scientific importance and thus contributes meaningfully to the ecosystem. Some are key species whose demise can take other species with them. Furthermore, every species has an inherent right to exist and does not need to be of value to us to justify their existence (*Albert Nita, 2007, 38*).

However, due to increase human population and related socio-economic desires and policies have fail to value the environment and its vital ecosystems services, and thus promote unsustainable exploitation. As our population grows, we occupy, clear, and damage more land to supply food, fuel wood, timber and other resources. The rapid population growth and poverty push the poor to cut forests, grow crop on marginal land, overgrazing, depleting marine resources and kill or hunt endangered species.

Consequently, conservation and wise management of biological resources through;

- i. Maintaining essential ecological processes and life-support systems on which human survival and economic activities depend, mostly by combining wildlife conservation with sustainable development.
- ii. Preserving species diversity and genetic diversity.
- iii. Ensure that any use of species and ecosystem is sustainable.
- iv. Minimizing the depletion of non-renewable resources.
- v. Improving the quality of human life.
- vi. Including women and the local people in the development of conservation plans.
- vii. Promoting an ethic that includes protection of plants and animals as well as people.
- viii. Encouraging recognition of harmful environmental effects of armed conflicts and economic insecurity.
- ix. Encouraging rehabilitation of degraded ecosystems upon which human depends on food and fiber.

The sustainable use and protection of biological diversity is an integral component of successful land use planning. The guiding principle here is to catalogue biodiversity together with the local population and thus to perceive it more clearly and appreciate its importance. In successive steps, conflicts of interest are to be brought to light and fairly resolved, resulting in greater social acceptance. At the same time, partners are to be mobilized who can play a role in using biodiversity and thereby improve value creation. Another element is to

document traditional wisdom as a prerequisite for access and benefit sharing regulations are to prevent restrictions on use. Protecting biodiversity does not mean concentration on individual species, but rather forming ecosystems and contributing to their sustainability or resilience. This requires a spatially oriented approach such as that offered by land use planning. For instance, ecosystems can be interconnected in networks which can help to avoid a genetic impoverishment.

5.4. Environment Management

The rate of environment deterioration and degradation is increasing rapidly in line with the increase in population. As the consumption rate increase so as the degradation rate. The rate of development and also the rural impact projects that are taking place in the country had fast track the changes in the environment and much of our rare, unique and endangered flora and fauna are disappearing (Miller, 1994, 18-21). Several types of environmental degradation can change potentially renewable resources into non-renewable or unusable resources. These include;

- i. Covering productive land with water, concrete or building so that plant growth declines and wildlife habitats are lost.
- ii. Cultivating land without proper soil management, causing soil erosion and depletion of plant nutrients. Topsoil is now eroding faster than its form.
- iii. Irrigating cropland without good drainage causing salinization and waterlogging. Salt built-up has cut yields and waterlogging has reduced productivity.
- iv. Taking fresh water from groundwater or aquifers and from streams and lakes faster than it is replaced by natural processes.
- v. Destroying wetlands and coral reefs.
- vi. Cutting trees from large areas or deforestation without adequate replanting.
- vii. Overgrazing of grasslands by livestock, which converts productive grasslands into unproductive grasslands or deserts
- viii. Eliminating wild species through destruction of habitats, commercial hunting, pest control and pollution.
- ix. Pollution of air, water and soil.

In Papua New Guinea, major environmental degradation is caused by the economic impact projects such as mining, large scale commercial logging, commercial agriculture, and fisheries using modern weapons and chemicals, creation of towns, built environment and so on.

The root causes of environment degradation include;

- i. Overpopulation
- ii. Overconsumption of resources
- iii. Poverty and under-consumption of resources by the poor. This is a result of our failure to achieve a more equal distribution of national income that meets everyone's basic needs.
- iv. Inefficiency. This involves massive waste of energy, water and other resources.
- v. Addiction to fossil fuels. This applies especially to oil and gas.

- vi. Oversimplification of Earth's life support systems. The key factor is excessive reduction in biological diversity.
- vii. Poor political and economic management. This involves our failure to encourage Earth sustaining forms of economic development and discourage Earth-degrading forms of economic and population growth.
- viii. Failure to have market prices represents the overall environmental cost of economic goods or services. This promotes inefficiency and depletion of earth's capital for short-term profits by concealing the harmful effects of the products we buy.
- ix. Our urge to dominate and control nature.

Land is normally defined as a physical entity in terms of its topography and spatial nature that includes natural resources. These components are organized in ecosystems which provide a variety of services essential to the maintenance of the integrity of the life-support systems and the productive capacity of the environment. Land resources are used in ways that take advantage of all these characteristics. Land is a finite resource, while the natural resources it supports can vary over time and according to management conditions and uses.

Expanding human requirements and economic activities are placing ever increasing pressure on land resources, creating competition and conflict and resulting in suboptimal use of both land and land resources. Integrated land use and physical planning and management is extremely eminent practical way to achieve this. By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development.

The essence of the integrated approach finds expression in the coordination of the sectoral planning and management activities concerned with the various aspects of land use and its resources. The integrated approach to planning and management of land resources, which deals with reorganization,, strengthening of decision making structure, including existing policies, planning and management procedures and methods that can assist in putting in place an integrated approach to land and resources planning.

5.5. Sustainable Utilization of Finite/Non Renewable Resources

Worldwide the demand for non-renewable mineral commodities is soaring because both population and per capita consumption are rising. Concentrations of non-renewable resources were formed millions of years ago and are being depleted in decades. The future supply of such resources depends on the actual or potential supply and the rate at which that supply is being used. Non renewable resources becomes economically depleted when finding, extracting, transporting and processing them cost more than the results are worth. At that time, find alternative ways such as recycle or reuse existing supplies, waste less, use less, find substitutes or do without.

The greatest danger from high levels of resource consumption may not be the exhaustion of resources but the damage that their extraction and processing do to the environment. Extracting and processing of non-renewable resources are the most environmentally damag-

ing. By reducing unnecessary ways of non renewable resources can extend supplies even more dramatically than recycling and reuse. Cutting down on wastes generally saves more energy and virgin resources than recycling; reduce the environmental impacts of extracting, processing and using resources.

Planning for wise use of non renewable resources in order to maximized option over limited resources and to for the enjoyment of the future generation. A larger perspective of planning and the wider coverage of the planning area are required. Suitable procedures for physical planning should enable 97% of land use planning coverage of the country especially where the majority of the population lives and can sustain themselves. Land use planning practices should extend the area of planning from 3% of land in the country to 97%. This will balance the system of the entire landmass in the country, and wider coverage of planning can lead to more manageable, protection and wise usage of land and its finite resources.

6.0. SUITABLE LAND USE MANAGEMENT PROCEDURES

The best way to identify the best use of land is to use a zoning mechanism. Zoning can be defined as the allocation of a set of consistent characteristics to an identifiable piece of land (*National Framework for Sustainable Land Use 2006-2037*). Zoning is shown pictorially, as a range of colors on a map. A key or legend is created to explain the map. The zoning is not to be confused with land use. A land use survey will identify the current situation while the zoning plan identifies what the future land use should be. Therefore, it can be seen as the zoning plan is in fact a policy statement.

6.1. Zoning of Land

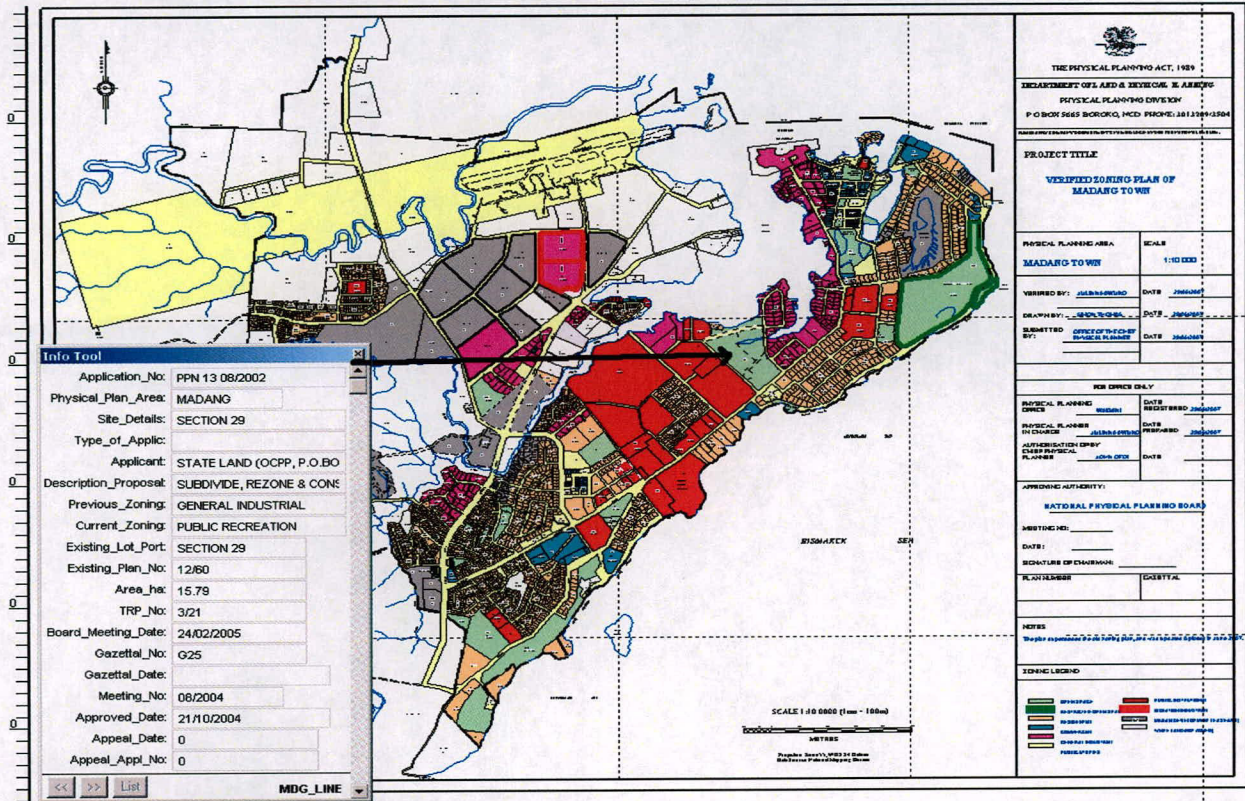
A zoning plan is a plan to control the use of land in a physical planning area. It is a plan approved by notice in the National Gazette in accordance with Section 71 of the Physical Planning Act. For the purposes of the Act, a zoning plan is a map zoned in accordance with Schedule 1 of the Physical Planning Regulation. Zoning plans serves many of the functions of a physical development plan. They enable urban land to be reserved for particular uses, they reduce the possibility of land use conflict and the likelihood of ad-hoc decisions which are inconsistent with each other. Zoning plans can be quiet detailed policy documents containing policies on density and phrasing of development.

Zoning plans are necessary for controlling development. They are necessary where change is very rapid. They are useful development guides in areas where development is occurring but it is slow and spasmodic, placing no serious constraints on the physical infrastructure, e.g, small Government stations. Zoning plans have the following advantages;

- i. The approval process is quicker and simpler even though the zoning plan is an official plan.
- ii. The planning authority is entirely responsible for the preparation and approval of plans
- iii. Plan preparation does not have to require extensive technical resources.

- iv. Zoning plans are easily revised.

Diagram 2: An example of Zoning Plan-Madang Province



Source: GIS Administration, Office of the Chief Physical Planner

6.2. Local Control for Land Use Management

6.2.1. Delegation of Physical Planning Powers and Functions to Provinces

The Organic Law on Provincial and Local Level Government under Section 50 generally gives the mandate to the National Government Departments to devolve their powers and functions to lower arms notably the Provincial and Local Level Governments. The Physical Planning Act 1989, Section 19 and other relevant provisions, further gives effect to the establishment of Provincial Physical Planning Boards with the devolved functions. These two legislations are done to make the Provincial Governments to be equally responsible and take ownership of the established functions. Physical Planning Act does not empower the Department of Lands and Physical Planning to provide the required administrative capacity. This option is entirely left to the Provincial Administrations so that they become responsible not only in establishing the Board but also sustaining the physical planning office. Therefore, the Provincial Governments are led to think that they are entirely responsible to decide when to establish and also to commit the prerequisite requirements and administrative capacities.

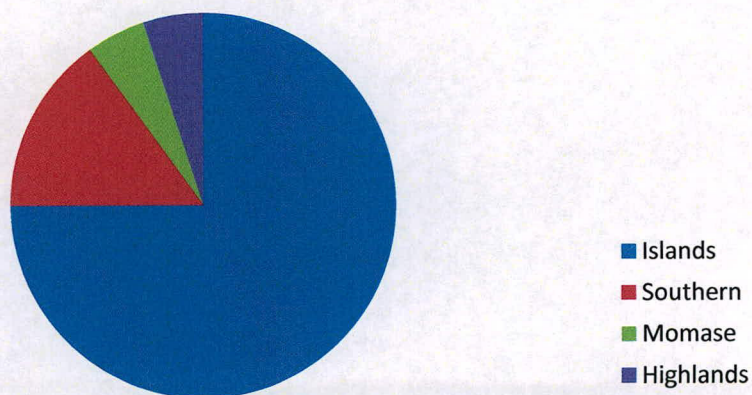
The Department of Lands and Physical Planning through the Office of the Chief Physical Planner, coordinates the devolution of Physical Planning Powers and Functions in Provinces under the following conditions:

- i. Provincial Administrations show genuine involvement in the long term interest in adopting the decentralized Functions;
- ii. OCPP is satisfied and recommends Board Establishments in provinces where its administrative climate is conducive;
- iii. Provincial Administrations show clear financial and organisational commitment towards Physical Planning Activities;
- iv. Provincial Governments feel that there is a need and formally express themselves through the prerequisite requirements such as:
 - Recruitment of a Provincial Physical Planner;
 - Office Set up with Office Equipment;
 - Clear Financial Commitment from provincial Government;
 - Updated Zoning Plans for the assigned province;
 - Have a Development plan in place

The delegation of Physical Planning powers to the Provincial Physical Planning Boards empowers the resource owners, the developers and the Provincial Planning Boards to make wise decisions in using the land and resources. The powers that are delegated include;

- i. Consider and determine all physical planning matters primarily of provincial interest within the province concerned,
- ii. Where any matter is primarily of national interest, the Provincial Physical Planning Board referred it to the National Physical Planning Board for decision, and in doing so may advise the National Physical Planning Board to its view on the matter,
- iii. Where there is doubt to whether a matter is primarily of national interest, a Provincial Physical Planning Boards may consult with the National Physical Planning Board and in the event of disagreement the matter shall be dealt with,
- iv. Where a Provincial Government is suspended and an administrator is appointed, the Provincial Physical Planning Board shall continue to operate unless it also has been suspended.

Diagram 3: Regional Basis-Delegation of Physical Planning Powers



The Pie Chart showing the Provinces which already established the Physical Planning Boards..

The roles of Boards and Authorities are very important in extending the sphere of influence of physical planning throughout the country. Boards are established under the legislation to be the “authority” a decision making body established under the Physical Planning Act. Physical Planning Boards are autonomous decision making mechanisms established by the Government through the Physical Planning Act to consider, assess and approve plans and policies in addition to authorizing development within a declared physical planning area. For Physical Planning Boards to effectively operate within a Provincial setting it must have a high degree of relative autonomy without political interference. A planning system established at the province with a relatively small autonomy is limited in the choices of ends which it pursues.

To date the number of Provincial Physical Planning Boards established throughout the country has reached seven. They are NCD Physical Planning Board which deals with all Physical Planning Matters within the boundaries of National Capital District. East New Britain Provincial Physical Planning Board, Morobe Provincial Physical Planning Board, West Sepik Provincial Physical Planning Board, Milne bay Province Physical Planning Board, Western Highlands Provincial Physical Planning Board and Bougainville Autonomous Region Physical Planning Board.

The delegation of full physical planning powers and functions to the Provincial Physical Planning Board can only be done if that Province has a development plan for the main centre, and also if the other physical planning requirements are in order then relate to the establishment of a proper office with adequate staff and other logistical support. The delegation of Powers is mainly done by the Chairman of the National Physical Planning Board and the Secretary of Department of Lands and Physical Planning by way of gazettal in the National gazette. Provinces such as Western Province, Gulf Province, Oro Province in the Southern Region and Simbu, Southern Highlands, Hela and Jiwaka Province in the Highlands Regions and East Sepik in Momase and Manus have yet to show the commitment required to take up the powers and functions of Physical Planning.

6.2.2. Issue of Compliance Certificates

The performance of officers in the Provinces that already have the Physical Planning Boards in dealing with the development issues in the Provinces concerned determined the awarding of Compliance Certificates. It is further determined by the staff capacity, the resources such as computers, printers, and other office equipments that will assist in planning and controlling the development in the Provinces. Furthermore, there must be support from the Provincial Administration that boost in controlling and managing the developments in the Provinces. The awarding of compliance certificates are characterized in three categories;

- i. Category C=a newly established office. They just recruit a planner and are not confident to run the office. More guidance, support and assistance is provided by the office of the Chief Physical Planner.
- ii. Category B= they can run their board effectively with little guidance and assistance from the office of the Chief Physical Planner.
- iii. Category A= this office is fully resourced and is capable of running its own board and the office.

The Office of the Chief Physical Planner, its staff, mainly the Standards and Compliance Officers goes around inspecting the compliances of the provinces that already have the Physical Planning Powers to run their own boards.

6.3. Land Tenure Conversion

The land tenureship in Papua New Guinea is of two types and there are customary landownership and state land which is controlled by the state mainly the Department of Lands and Physical Planning. The customary land is land which owned by indigenous communities and is administered in accordance with their customs as opposed to statutory tenure usually introduced during colonial period. Common ownership is one form of customary land ownership and hence its boundaries are defined by natural features symbolizing one traditional landowning clan's boundary from another. Customary land is held under two tenure systems which are the matrilineal and patrilineal systems.

6.3.1. Voluntary Customary Land Registration and Incorporation of Land Groups

One of the factors of production in Papua New Guinea is land, which is locked up because of outdated and inefficient land administration legal framework and divergent customary land tenure system. Consequently Papua New Guinea remains shackled in poverty, in a land rich country. The purpose of the registration of customary land is to act as a mirror of the land, reflecting the interest over the land, the physical area, and the title to it. If the registration is to be relied on then it must be accurate in all its details. Registration formalizes titles so that this no longer becomes just a matter of birth, name of residence, but the question of law. Registration serves as a useful purpose where land is a marketable commodity and changes hands frequently. It also provides security of tenure where registration is deemed to be indefeasible. There is the argument with customary land that much of it is still not marketable commodity and not subject to economic exploitation.

Customary land is held by a land group according to local custom. Traditionally, customary owners never consider their land as property but as a domain for survival of land group members, past, present and future. All kinds of social, spiritual and ecological and subsistence values intend in such land. But from business point of view in modern sector it is an asset with no value. It is a property, it is outside the modern sector and isolated from mainstream development (CLRC, 2012). In order for the majority of the population to be involved in the mainstream economy, the people must make a transition from being masters of a domain to being communal property owners. Customary land management is the social contract for customary land and this social contract between the members and the land group sets the terms and conditions for land use within the land group. The customary social contract remains intact after registration, ownership remains intact, issue of title to an Incorporated Land Group (ILG) as empowered the group to convert its previous locked up and commercially valueless asset (land) to a valuable property able to be shaped and employed to the group's advantage.

Under the new arrangement, customary landowning social units stand to earn income for leasing their land for exploration. Their involvement, subsequently in any project that be-

comes commercially viable is a separate matter. Portions of forest area may be protected in return for income to be generated from carbon trading. Likewise, vast areas of grasslands maybe replanted to gain income. The above describes examples of the kind of impacts the application of customary land tenure reform laws may have on the way land and land based resources enterprises are viewed, accessed and developed. IUCN (1991) care for the environment, natural resources and sustainable living may depend upon the beliefs and commitments of individuals, but it is through their communities that most people can best express their commitments.

Reforms are aimed at using the economic potential that is available in customary land. The availing of economic potential would enable customary landowners to do business on their land while ensuring their interests are protected. Enabling landowners to recognize the economic potential of customary land requires more than having a legal and administrative framework. Landowners have to appreciate land in a modern economic sense, which differs from a customary perspective. A main feature of the empowering process is to weigh out the advantages and disadvantages of using land in economic terms so that landowners can make informed choices about what to do with their land.

The reasons and drivers include socio-economic change, new and rapidly changing forces, empowerment of landowners, and equitability in customary land usage, security for all parties and the need for an efficient and effective legal framework. The concept of the amended legislations on Voluntary customary land registration and Incorporated Land Group Registration is the way forward for PNG as much of the time, people are being exploited over their own land and especially during the former days where they were being manipulated into acquiring their land and as such, they have missed out on real tangible benefits. These

6.3.1.1. Socio-Economic Changes and Forces

The customary land use arrangements are significantly influenced and altered by socio-economic changes based on the modern cash economy. Land that was once used for subsistence livelihood with its own land use management arrangements is now being used for longer term economic development. The introduced alternative uses for land have their own land use structures, governance and management framework. It must be recognized that new and rapidly changing forces are impacting on use and management of customary land. It is worth noting that land is central to these challenges. On the other hand, these forces provide an opportunity for customary landowners to create wealth from their land through proper land use arrangements. On that note, landowners may no longer enjoy secure land tenure without proper land use arrangements to deal with these socio-economic forces.

The socio-economic changes and forces of progress in economic, environmental and political spheres are altering customary land tenure management. The Government of Papua New Guinea has a responsibility to ensure that landowners are assisted through legal and administrative mechanisms to manage their customary land for the benefits of all the members of the social unit that owns the land. The land held under customary tenure supports the livelihood of more than 85% of the total population, most of them residing in rural areas and draws their livelihood from subsistence production. Customary land tenure laws of the

areas define and enforce property rights, including ownership, access and use rights. This operates outside of the formal law and administration system. Legally, however, the Papua New Guinea Constitution and the Land Act 1996 and the underlying Acts recognize customary land tenure laws.

Land reform remains an important and yet a sensitive microeconomic reform agenda for Papua New Guinea. Land reform is far more difficult to undertake in Papua New Guinea for several reasons, including the fact that customary land tenure predominates and supports the livelihood of 85% of the rural population. At the same time, the country and its people are undergoing a rapid change caused by the demands of the broader modern economic and political systems because Papua New Guinea is part of a global community. These changes are irreversibly changing the way land is managed and used thereby making land reform in Papua New Guinea inevitable.

There are other social and economic benefits emerged from land reform. Changes in labour mobility, creation of income opportunities, and the increased flow of income to the broader community should lead to changes in the livelihoods of the community at large. In the traditional customary land tenure system, everyone in a households or society has to make a contribution to the subsistence way of life. It is anticipated that a growing number of people would want to own properties, either as investment or for housing on land with formal titles. The change in the underlying status of land would have created the incentives sufficient to make ownership of land with formal titles more valuable than land without title. Collectively, both factors should be able to change gender relationships as any person, irrespective of gender with the capacity to pay would be able to purchase and own land with formal titles.

6.3.1.2. Empowerment of Landowners

From the view point of modern economic enterprise, customary land has vast economic potential. Legal and administrative mechanisms are required to empower landowners to maximize these economic potential in order to improve their livelihood. The Land Groups Incorporation (Amendment) Act 2009 and the Land Registration (Amendment) Act 2009 of Papua New Guinea are intended to empower landowners to unlock the economic potential of customary land and improve the security of tenure. This reform is aimed at using the economic potential that is available in customary land. The availing of economic potential would enable customary landowners to do business on their land while ensuring their interests are protected. Enabling landowners to recognize the economic potential of customary land requires more than having a legal and administrative framework. Landowners have to appreciate land in the modern economic sense which differs from customary perspective. The main feature of the empowering process is to weigh out the advantages and the disadvantages of using land in economic terms, so that landowners can make informed decisions or choices about what to do with their land.

The rural sector is the source of income for close to 85% of the rural population. The substantial gains from land reform accruing to the rural sector are therefore worth scrutiny. Subsistence remains a critical source of living for most rural residents. Land reform opens up alternative income earning opportunity for rural residents, leading to a strong shift away from subsistence to market-based agriculture, employment and income generation. Produc-

tion in subsistence agriculture declines while large scale and smallholder agriculture expands. Land reform leads to a shift away from small holder agriculture to large scale operations such as block holders. There is however a possibility that some smallholder operators do obtain additional access to credit as a result of land reform. For example, they may be able to use their savings from tenure security improvement as collateral. Therefore in the high impact scenario, smallholders are assumed to access some credits with the result that the discrepancy between large-scale agriculture and smallholder agriculture is marginally less.

Across the board, improvements of the average household income levels are anticipated. However, the impacts on income may not be consistent across the board. There could be a series of strata. One stratum consists of those that are members of a customary landowning unit engaged in land development. Their income generating opportunities should range from payments to their ILGs, income earned from employment, and income from their own savings and investments. A second stratum would consist of other Papua New Guineans engaged in the formal sector as employees of enterprises developed on land released for development. A third stratum is other Papua New Guineans and foreigners, who invest in the land released by the ILG or State. Overall, it is anticipated that the average household income to rise across the board for all households.

The broad-based economic growth and development is the major outcome of land reform in Papua New Guinea. Development is measured in different ways. However, there are specific components that the land reform could directly impact on. These include poverty, family size, education level and infant mortality. While poverty has several types of measures, here it is narrowed down to few measures that can be tracked at household level. Examples includes income, access to clean water and sanitation, and access to basic health and education services, infrastructure improvements which makes mobility much easier and level of education is expected to change as households divert their savings to human capital, invest in quality housing with appropriate ventilation and study atmosphere. Infant mortality may decline as people use their savings and or credits to improve their housing conditions, improve their diet and quality of water intake and could afford to meet their health expenses.

The World Conservation Union (IUCN) (1991) has identified some key indicators of development which range from explicit statistics such as those relating to life expectancy, literacy and the availability of basic necessities through measures of adequate goods and services provided at the household levels. The most low income level households had improved income indicators. There has been a rise in the provision of water and sanitation, had access to safe drinking water and other services. The basic needs of food, water, health and education have improved since the introduction of land reform. Quality of life also depends on the opportunity and capacity to play a meaningful part in the community. Illiteracy and unemployment issues were of the past as people move into the new pace of development with land reform.

Miller (1994) explains the beneficial economic development can be achieved by;

- i. Protecting what works. Learning where and how people are living sustainably, and not disrupting their lives and culture.

- ii. Fostering individual and community self-reliance. This can be accomplished by promoting fairer distribution of land and income, encouraging corporation among community members, using locally controlled methods such as the land reform initiative and resources wherever possible, relying on sustainable use of local and regional renewable resources whenever possible, keeping the fruits of economic activities in local communities in Papua New Guinea, which creates jobs and thus improves living standards.
- iii. Involving the local communities or resource owners in the planning and execution of all the projects. This means asking the poor or landowners what they need, giving it to them, putting them in charge and telling others what works.
- iv. Making use of local wisdom, skills and resources. The poor know far more about poverty, survival environmental sustainability, local needs and what will work locally than other experts and professionals.

From the survey that was conducted, it shows that all working class people have land in their own villages and thus their parents, brothers and sisters look after the land while they are away working in urban areas. Even though, they are not physically at the village, there are some portions of land that are kept aside. Resources utilization is also restricted at these portions of land. The view of the people that was interviewed revealed that land reform is for 'development and poverty reduction'. Consequently, the aim of land reform is to effectively use land for economic development and to protect the rights of the vulnerable sections of the community. This requires the government to have a forward looking strategy on land policy, land use planning for customary land and state owned land and to adequately inform the people of land reform implications. The major benefits of customary land registration empowers customary landowners to participate in economic development through the incorporation of their existing customary groups and getting recognized as legal entities. It also allows landowners to voluntarily run businesses on their customary land. When a land is registered, this will be done accordingly as all the members of the clan will be included provided they have a birth certificate which is a legal document that confirms the person is part of the clan that owns the land instead of the genealogy system that was used in the past. With these, none of the clan member misses out on the economic benefit because once they register as part of the clan; they are entitled to any benefit forthcoming.

The vulnerable people as well as the women and the aging will all be given fair share under the process and procedures of benefit sharing under a registered customary land or ILG. Also under the new legislations, there will be at least two women representative on the executive management of an ILG or customary land registered so that women and girls or children's rights will not be overlooked this time as women have been given an opportunity in the decision making level of the ILG. Land reform addresses inequality in the sharing of benefits and recognizes social inclusive in the economic development of their land since it is a communal ownership. Some of the major improvements in addressing inequalities in the traditional societies of PNG include;

- i. Formalize and strengthen the process of incorporation
- ii. Prohibition of multiple membership to ILGs
- iii. Link a citizen to a person named on the list of membership of the proposed ILG
- iv. Link actual customary land to proposed ILG

- v. Avoid protracted court battle over the disputed boundaries and stifle the process of incorporation of ILG
- vi. Greater transparency and accountability of ILG Management Committee
- vii. Equal opportunity for women and girls.

Since the introduction of Land Registration in 2009 when the Incorporation Land Group (Amendment) Act 2009 and the Land Registration (Amendment) Act 2009 became effective, many of the local people realized the potential of land reform and thus they registered their customary land for economic development and spin offs. Generally, from the information collected through interviews, there are over 18,000 ILG being registered in Papua New Guinea and some landowner groups are in the process of registering their land.

6.3.1.3. Equitability in Benefit Sharing

Under the customary tenure system, customary groups manage land rights according to their own customs. There are different types of customary tenure in Papua New Guinea but some characteristics are similar.

Characteristics of customary land tenure systems;

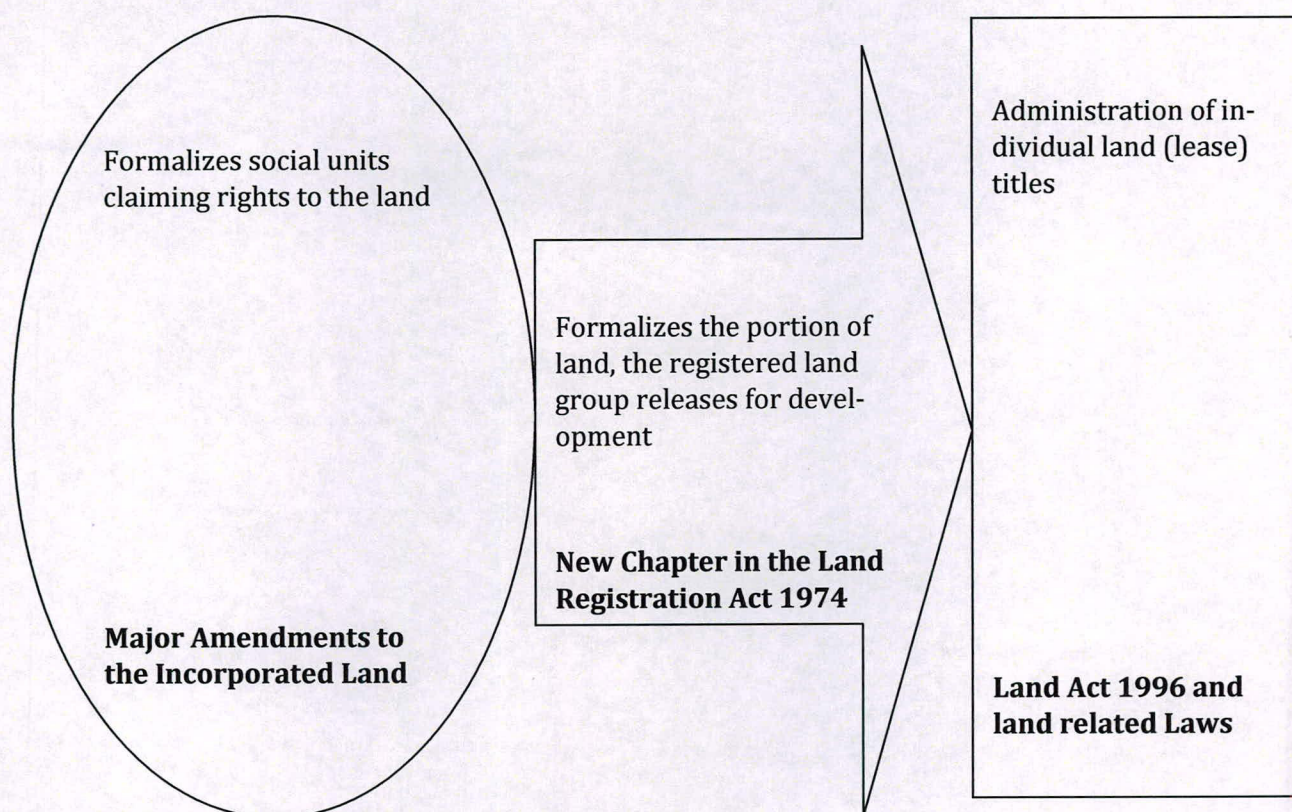
- i. Access to land primarily stems from birth into a kinship group. Groups based on kinship or other forms of relationship are the main landowning units,
- ii. The main land use units are individuals or small household units. Men, particularly chiefs, elders or senior men within the customary group have the main say in decisions over the group's land matters.
- iii. As well as being a source of power, land is a focus for many social, cultural and spiritual activities. Land can be transferred only within existing social and potential relationships.
- iv. Rights to access land are constantly adjusted to take account of changes in group membership.

Although a group owns customary land, this does not necessarily mean that all members of the group have equal access to the land. Each individual within a customary group has distinct and often different interests and rights to use, control, transfer land and land based resources. Some rights are vested exclusively with a particular individual, some are vested in families or households, and some may be shared equally between all or a large number of group members. One of the challenges for landowners is ensuring fair and equitable access to the use of customary land by all land owners. In the midst of rapid social change, some influential members of the social unit may ignore customary land rights and discriminate against vulnerable members.

Land under customary tenure is collectively held by a social unit, consisting of clans or tribes. Within these are bundles of rights accessible only to individual members, often associated with lineage defined by birth or marriage. The rules that define and enforce security of property rights are understood and accessible to the members of the landowning social units. In the purest customary land tenure system, there are no systems facilitating transactions with non-members. Development of enterprises on land held under customary title in Papua New Guinea has been of two extremes either large scale or small scale. Operators with large economies of scale are able to invest in coordination strategies that mitigate the

incentive and asymmetry of information problems inherent in customary land tenure. Examples include large scale enterprises within the mining, petroleum, gas and forestry industries and large-scale agricultural operators such as in oil palm. Producers without large economies of scale remain small operations.

Diagram 4: *represents the framework envisioned by NLDP. The Legal framework of Customary Land Tenure Reform in Papua New Guinea.*



Source: *National Land Development Handbook*

6.3.1.4. Security in Business Transactions

The Land Group Incorporation Act 1974 was introduced to allow customary land groups to hold title to and manage land that has been alienated during colonial times but returned to them under the Plantation Redistribution Scheme. However, under this arrangement, it is difficult to use the title as security for commercial borrowing. Lease-lease back is a workable option that provides security for the customary land group while also being acceptable to commercial financial institutions. In the past, it has been very difficult for commercial banks to deal with customary landowners seeking to get bank loans to do business on customary land and wanting to use land as security for loan.

The institutional structures include the Government, Landowners, womens' groups and youths. These institutions ensure that both direct and indirect financial benefits are directed to those most affected by any development that will take place on the land. Johnson (2012) explained that the direct benefits or compensation is defined as an amount not greater than the dislocation and inconvenience suffered by those most exposed to the development. This

includes occupation fees, general compensation payments, community assets and relocation payments and environmental payments. Benefits above and beyond direct compensation include employment, business and training opportunities and additional infrastructure. Other benefits include education, health and infrastructure services such as bridges, clean water supply and sanitation and improved road services. Landowners businesses diversity and reduce poverty, hunger and malnutrition.

The responsibilities and obligations between the Government, the landowners and the developers were underpinned by a number of negotiated settlements which are effective. These agreement offer an insight into the expectations of the communities before any development can take place on the land and also the landowners expect the Government and the developers to deliver what have been promised. There are various types of income the local landowners can benefit from once they register their land for any economic development purposes. The table below shows these different types of income the stakeholders will receive.

Table 2: Income Streams and Distributions

Income Type	Recipient and Shares (%)			
	Customary Landowners	LLG/Municipal Authority	Provincial Government	National Government
Upfront Leases	100%			
Land Rentals	100%			
Land Tax	20%	80%		
Stamp Duties	25%	25%	25%	25%
Capital Gains Tax	25%	25%	25%	25%

Source: Yala, C. 2012.

The investors are not able to directly engage with customary landowners due to insecure and sometimes and indeterminate nature of customary land holdings. This reform provides greater security for all parties wanting to access customary land for economic development and wealth creation. Voluntary Customary Land Registration gives secure titles to the customary landowners. The parcel of the land identified for development will be surveyed and boundaries demarcated. The Incorporate Land Group retains the title over the registered portion, and customary law ceases to apply to this portion.

6.3.1.5. Efficient and Effective Legal System

The land dispute settlement component aims at improving the system of land dispute settlements by establishing a land court system which will be relied upon to identify land boundaries when incorporating ILGs (incorporation of Land Groups). The proposed land court is expected to facilitate the verification of land boundaries when a customary landowning social unit has decided to incorporate an ILG. It is also expected to adjudicate if there are disputes over ownership, especially with a neighboring social unit. There could be

subsequent disputes over land boundaries. These issues will also be handled by the land court. However, with the view to ensuring security of tenure, decisions on land boundary disputes at this stage should be restricted to the proportional distributions of incomes rather than on changing the status of the land. For all practical purposes, the alienated portion should never be allowed to revert to the customary land tenure laws.

It is important to note that the land court system being established is to deal with land disputes related to land held under customary tenure only. Disputes on individual land titles, which are formal land titles, issued on the portion released for develop will be adjudicated through the main stream formal court system comprising of district, national and supreme courts.

In a rapidly changing society like Papua New Guinea, customary groups are embracing the need to interact with modern formal economies and legal systems. Land is central to economic and social development in contribution to improvements in people's lives because it is often their only real asset. Because the social units own land, it is imperative that the members of the social unit benefit as a group, a family, clan or a tribe. This is a challenging time for Papua New Guinea because while the people are attracted to engage in the modern formal economy, they would also like to protect and preserve their customary interests and rights as well. Balancing these customary obligations in a modern business and legal environment is a challenge. Through this reform, a legal alliance has been introduced to unlock in the new incorporation of land group processes with voluntary customary land registration enabling customary landowners to utilize portions of their customary land for economic development activity should they wish to.

7.0. THE BEST USE OF LAND

Planning the use of land is through the identification and categorization of land as capable of sustaining intensive or Development Promotion activities, Sustainable Rural Development activities or suitable for Conservation with minimum interference to natural ecosystems provided for within the Physical Planning Act. The declaration of Physical Planning Areas, identifying areas for conservation under scientific and cultural criteria including zoning within Provincial, Local and Subject Development Plans through facilitating and controlling land use conversion and enforcing evaluation of the best use of land for settlement development, production land use, protection land use and infrastructure land use. The Physical Planning Board's operation and exercise the delegated physical planning powers to appropriate levels.

7.1. Declaration of Physical Planning Areas

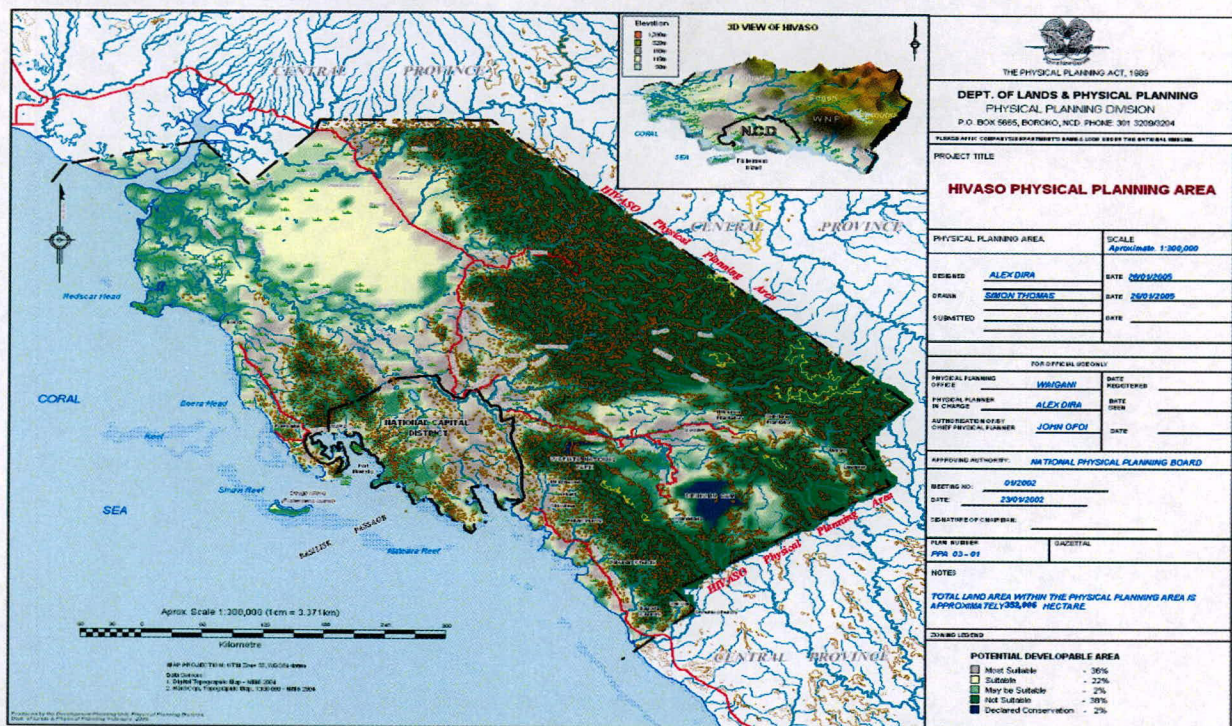
The declaration of Physical Planning Area is in the national interest. The Minister of the Department of Lands and Physical Planning may after consideration of advice from the National Physical Planning Board and the Chief Physical Planner and in consultation with the province affected, the Provincial Minister of that Province, by the notice in the National Gazette, declare an area to be a Physical Planning Area in the national interest (*Physical Planning Act*,

Section 66 and 67). The map shown below illustrates a declared physical planning area which is Hivaso, in Central Province.

The declared physical planning area map should depict the following;

1. Most Suitable Area
2. Suitable
3. Maybe suitable
4. Not Suitable
5. Declared Conservation Area

Diagram 5: Map of Central Province highlighting the declared physical planning area known as Hivaso Physical Planning Area.



Source: GIS Administrator, Office of the Chief Physical Planner, Department of Lands and Physical Planning.

Planned use of land is through the identification and categorization as capable of sustaining intensive or Development Promotion activities, Sustainable Rural Development activities or suitable for Conservation with minimum interference to natural ecosystems provided for within the Physical Planning Act. The declaration of Physical Planning Areas, identifying areas for conservation under scientific and cultural criteria including zoning within Provincial, Local and Subject Development Plans through facilitating and controlling land use conversion and enforcing evaluation of the best use of land for settlement development, production land use, protection land use and infrastructure land use. The Physical Planning Board's operation and exercise the delegation of powers to appropriate levels.

This is when there is an interest in developing a Satellite town in a case where there is a new development such as a mining or a major impact agricultural project is taking place in an area. After screening the development proposal by concerned Government Agencies, land area in which the development will proceed will be surveyed and regard this as a Physical

Planning Area. This is to control all the development that are taking place in the area and plan to use the land wisely to meet all the needs and wants of the people residing there. With the sustainable land use planning, it is aimed in declaring all the land in Papua New Guinea as Physical Planning area so that the entire land can be controlled and managed from sustainable development that leads to wise use and management of resources and boost economic growth.

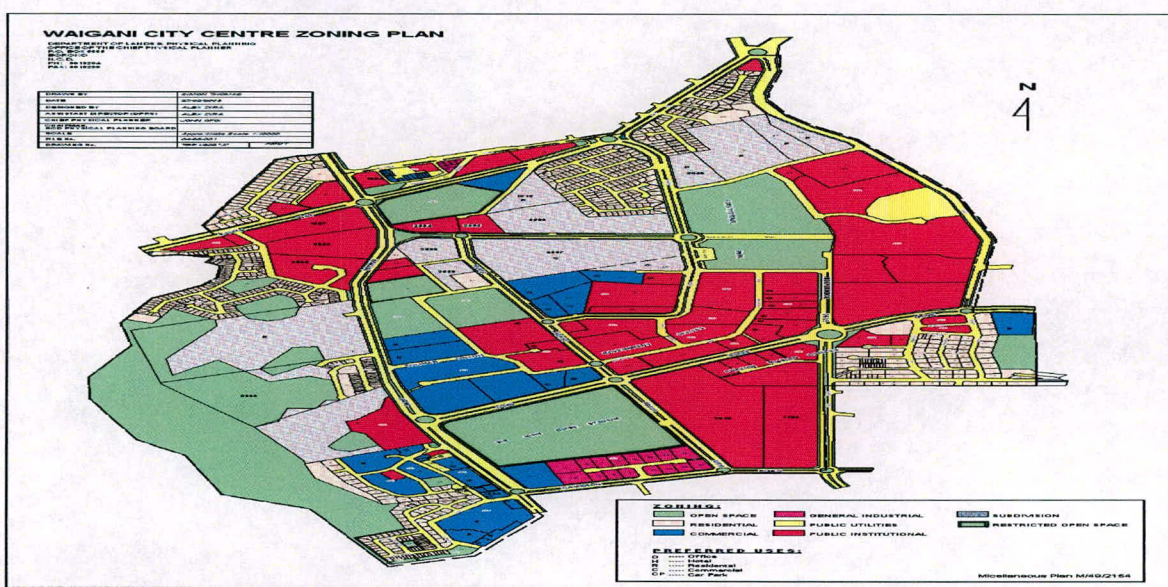
The Physical Planning Act reveals that all land in Papua New Guinea is to be declared as Physical Planning Area. However, due to the tenureship which recognize the importance of local people and so the local people owns the 97% of the land, it is very difficult to apply that in Papua New Guinea. When the sustainable land use policy is in place, it aims to control the use of all land in Papua New Guinea.

7.2. Land Capability and Land Use Categorization

7.2.1. Development Promotion Areas

In defining the extent of the land in the country to be declared as Development Promotion Areas the parameters of the areas to be declared is as provided for by the National Urbanization Policy 2010-2030 and the Strategic Development Plan 2010-2030. The existing declared physical planning areas in the country automatically fall under areas declared as Development Promotion Area. However the extent to which Development Promotion Areas is likely to extend will very much follow the development of a hierarchy of Megacities, major cities and national interest cities in the country in accordance to the national Urbanization Policy. The Development Strategic Plan 2010-2030 has identified 10 economic corridors through which economic development is likely to take place throughout and this will define the full extent of Development Promotion Area. By 2030 at least 10% of the land in the country will come under Development Promotion Area.

Diagram 6: An example a land classified as Development Promotion Area-Waigani City Centre



Source: GIS Administrator, Office of the Chief Physical Planner, DLPP, 2006

The pattern of urban development is likely to follow the 10 economic corridors provided by the Strategic Plan if future infrastructure development and investment will target the 10 economic corridors identified in the Strategic Plan. The pattern of urban development in the country is therefore likely to follow the 10 economic corridors. Declared physical planning areas are likely to extend towards the 10 economic corridors. Out of the total occupied land, at least 10% of the land will be identified as suitable for urbanization process. Policy measures within the development promotion areas focus on developing a dynamic urban industrial sector.

7.2.2. Sustainable Rural Areas

These areas are concentrated with people who are mainly engaged in economic, political, cultural and social activities which are primary oriented. They vary from small agriculture based villages to large scale economic projects based on commercial agriculture or extractive industries that accommodates thousands of people who work in these sites or projects areas. The type and scale of activities, the conditions of physical environment where these projects takes place depends on the type of economic activity as well as the intensity of the use of land.

The National Sustainable Land Use Policy aims at managing, controlling and planning all the land that is utilized under this area to make sure that land is used wisely that satisfies the needs of all people involved in the development in the rural areas.

Out of the total occupied land, at least 20% of the land identified as suitable for Sustainable Rural Development. Policy measure is to focus on developing a dynamic rural agriculture sector. Much of the land use activities are currently on subsistence agriculture production. Therefore, the intention is to increase agricultural productivity within the rural areas.

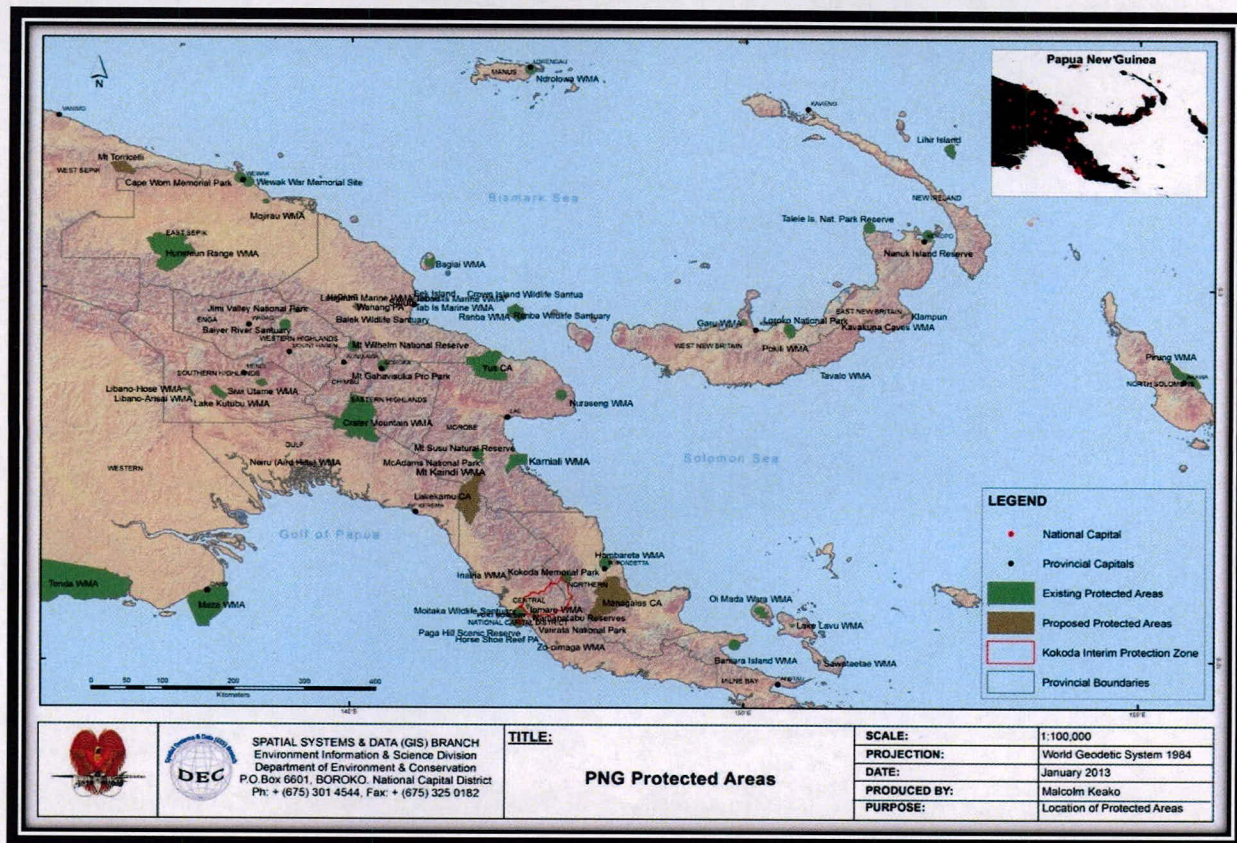
7.2.3. Conservation Areas

Protected areas (PA) are part of land use broadly categorized as Conservation Area. Under the protected area system the total land that is identified as protected area is 1, 897, 595 hectares. There are a total of 61 protected areas in the country.

The number, types and area of protected areas in PNG are as follows for Fauna (Protection and Control) Act, Under Wildlife Management Area, there are 38 protected areas with a total area of 1,723,773 hectares or 90.8% of the total protected area. Fauna (protection and Control) Act Sanctuary Areas there are 5 existing Sanctuary with a total area of 75,271 hectares or 3.9% of the total protected area. For Fauna (Protection and Control) Act identified as Protected there are two of those with a total area of 20,245 hectares or this makes up to 1.1 % of the total protected areas in the country. Under the Conservation only 1 area has been declared as a Conservation area, the total area is 76,000 hectares which makes up 4% of the total area under conservation

All unoccupied areas in the country shall be reserved for conservation purposes. At least 50% should be under strict protection while the rest of the land should be managed under conservation guidelines and converted to other uses when need arises. Map out and demarcate all areas that are critical or sensitive.

Diagram 7: An example of land use declared as Conservation area.



Source: Department of Environment and Conservation, 2012.

Under the National Parks Act, there are 8 National Parks with a total area of 8,059 hectares or 0.4% of the protected areas. There is 1 Provincial park with a total area of 77 hectares or 0.004 hectares. There is three reserves with a total area of 49 hectares or 0.003 hectares and 3 Memorial Park with a total area of 5 hectares or 0.0003%.

The extent of the Conservation Area cannot be clearly defined at present until such time a proper assessment is undertaken to determine the extent of the area to be brought under conservation.

7.3. The Role of Development Plans

Development plans are written or illustrated statement of policy and proposals in respect of the development and other use of land in the development plan area and may include;

- i. Measures of the improvement of the physical environment and the management of traffic
- ii. The zoning of land.

Development plan shall be based on a survey of the development plan area, which shall, in the case of a development plan other than a subject development plan, include;

- i. The physical, social and economic characteristics of the area including the purposes of which land is used and in so far as they may be expected to affect the development plan area, of any neighboring areas.
- ii. The size, composition and the distribution of the population of the development plan area.
- iii. Any considerations not included above which may be expected to affect any matters.

A development plan is prepared in order to ensure that physical development takes place in an orderly manner in accordance with stated goals and objectives. The need for a development is greatest where development pressures are most acute. Development plans may be prepared for any area in Papua New Guinea, whether in or not it is a physical planning area and may include;

7.3.1. Provincial Development Plans

These are plans for the entire Province and seek to integrate environment, social, economic, physical and other principle development policies in physical terms. The plan should have a fifteen years lifespan, but would be reviewed after ten years. These plans are suppose to integrate and translate social and economic planning objectives with spatial policies to set out a land use and infrastructure development program for each province (*National Framework for Sustainable Land Use Plan 2006-2036*). The spatial dimension to planning is lacking in most provinces. The provincial development plans would be produced under the framework set by the sustainable land use policy with the principle objective of each plan being to identify areas for conservation, areas for development promotion and areas of different types of rural based sustainable development. The infrastructures linkages are to be emphasized in such plans.

A zoning plan for the entire province can be incorporated which identifies the Conservation Zones (for protection), the development Promotion Areas (for declaration as Redevelopment Zones and management of Land Use Conversion), with the remaining bulk of the province zone for sustainable rural uses. These areas are almost entirely under customary ownership and are to be the subject of constructive locally based land use management to address rural poverty. Only when these areas are to become urbanized would they are identified with urban land use zones. Sustainable Land Use can be managed under Environment Plans if projects are identified to be called in by DEC. Activities under approved Environmental Plans would be seen to be conforming uses.

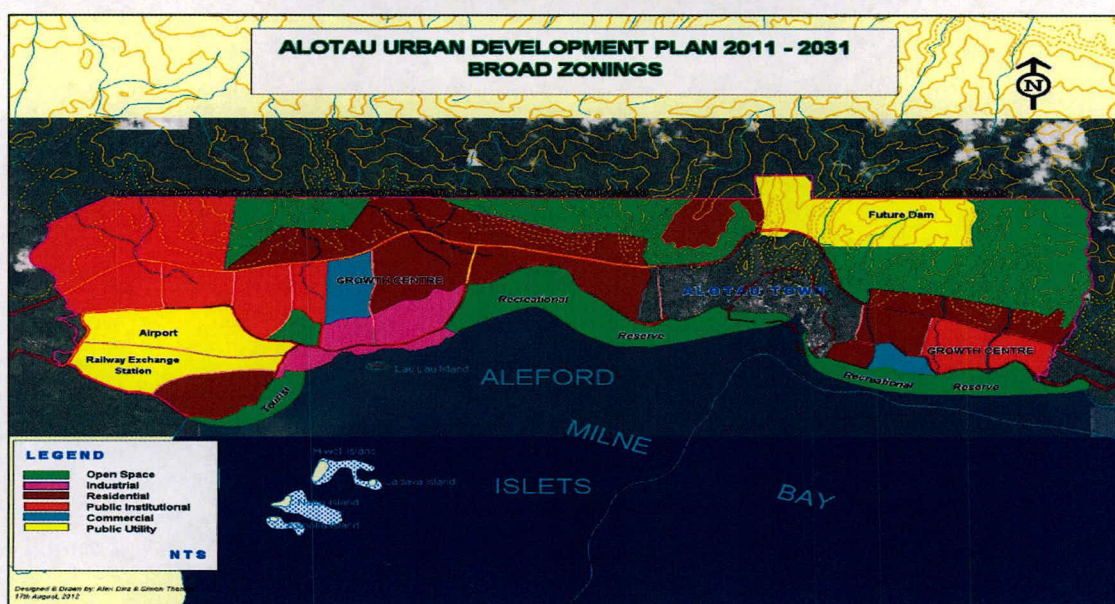
7.3.2. Urban Development Plans

These are plans for the whole town and include land outside a gazetted town boundary. These plans shall specify land use within the area of the plan and thus identify infrastructure and services needed to support physical development and show the basis on which orderly physical development will proceed. These plans are prepared under the framework set by the National Urbanization Plan. In the case of the larger urban centers, which are declared as being of the "national interest" due to their impact extending beyond any provincial

boundary, the contents of the development plans will be aligned to the strategic objective of dispersal of the benefits of urbanization. Development of seven or eight regional centers should absorb a higher proportion of the total volume of urbanization as experienced nationwide.

It is anticipated that each of the other eleven or twelve provincial administrations (not hosting a “national interest” centre) would order an Urban Development Plan for their provincial respective provincial capitals. Smaller urban centers (Ialibu, Tambul, Maprik, and Kupiano) need to be a comprehensive urban development plans. There might be one or two exceptions to this rule. Within the spirit of decentralization provinces are obviously at liberty to determine the details of a lower order planning framework. For example, a Subject or zoning Development Plan could be identified, within each District Development Plan, for separate and detailed treatment of the urbanized areas of the province.

Diagram 8: An example of Urban Development Plan



Source: GIS Administration, Office of the Chief Physical Planner

7.3.3. Local Development Plans

These are development plans for a part of a town or a part of a Province, whether or not within physical, and shall consist of a more detailed than is undertaken in either provincial development plan or urban development plans. These plans are prepared as predominantly rural development plans for each of the districts (electorates of the province. The same zoning mechanism would be used. Only in respect of districts where there are urban centers declared “in the national interest” would there be deviation from this principle. Either the entire district might be ordered for the preparation of an urban development plan (as in the case of Kokopo, Goroka, Mt. Hagen and central or a substantial part of a district might be declared (as in the case of Madang-Abenod, Lae-Nazab and a greater Wewak urban area). Then the remainder of the district might be linked with adjacent district for development

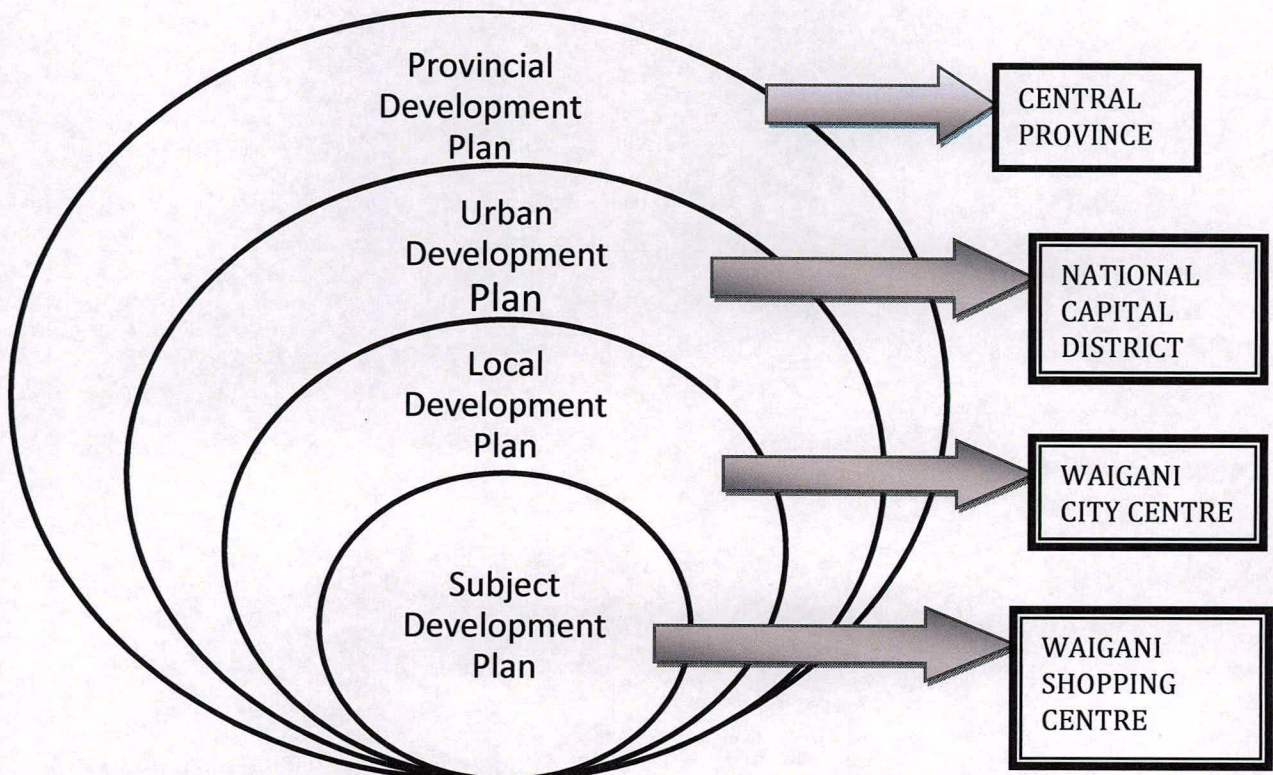
planning purposes (Nawae combined with Huon Gulf, Madang and Sumkar, Wewak Rural and Yagoru-Sausia).

District Development Plans would have to be a shorter timeframe than the Provincial Development Plans and should be reviewed every five years. The outline plans identified in Provincial Development Plans would be expanded in greater details as projects and activities in District Development Plans and linked specifically to budgetary implementation programs.

7.3.4. Subject Development Plans

These are development plans for a particular subject matter which may require detailed attention. These plans can be ordered according to perceived needs. There is perceived needs at the national level for there to be a Subject Development Plan for National Urbanization Plan. These will address the strategic objective of National Urbanization Policy which is now confirmed as, " dispersals of benefits of urbanization both between and within communities". This subject plans covers the largest topic identifiable to date under the new Development framework. Any success in dispersal of the benefits of urbanization will in turn, address the rural development focus of the National Development Strategy. Only by revitalizing the smaller district centers can there be a viable service basis for rural development to be promoted.

Diagram 9: An illustration of Development Plans in a diagrammatic form.



Sources: Mase Udu, Office of the Chief Physical Planner, DLPP

7.4. The Role of Environment Council and Physical Planning Boards

7.4.1. National Physical Planning Boards

The National Physical Planning Board considers and determine;

- i. All physical planning matters that are considered to be primarily of national interest except those which are wholly within the National Capital District,
- ii. All physical planning matters from provinces where a Provincial Physical Planning Board has not been established or is not presently empowered to hear matters due to suspension of Physical Planning powers,
- iii. Advise the Minister on the declaration of an area as a physical planning area and the exercise of the Minister's power to order the preparation of development plans.

7.4.2. Environment Council

In carrying out its powers and functions under Environment Act 2000, (*Gerald Natera, and verbal interview*), the Council pursues the following objectives:-

- i. carrying into effect the objects of the Environment Act
- ii. management, development and protection of the nation's environment in such a way as to conserve, restore and enhance the environment for present and future generations;
- iii. Maximizing Papua New Guinean participation in the wise use and development of the environment,

The Powers and Functions of the Environment Council include;

- i. to make recommendations and give advice to the Minister or the Director on any matter referred to it by the Minister or the Director,
- ii. to provide advice to the Minister on the making of Environment Policies;
- iii. to report to the Minister on any matter relating to ;
 - the administration of the Environment Act
 - the amendment of the Environment Act
 - the protection of the environment and the prevention, control, and minimization of environmental harm
 - the management of water resources
 - to consider and make recommendations to the Minister on environmental impact assessments;
 - to review decisions of the Director of Environment
 - to approve terms of reference for environmental audits and investigations
 - To establish a Working Committee
 - To carry out such other functions as are required of it under the Environment Act or any other law.

8.0. AN INTEGRATED APPROACH TO PHYSICAL PLANNING SYSTEM IN PAPUA NEW GUINEA

The program to establish the national framework for physical planning aims to provide a holistic approach to planning rather than emphasizing on one aspect of the planning system, which are land use planning, environment management and conservation as well as economic development. It is simplistic and inaccurate to suggest that one factor in planning is the secret to sustainable land use.

The planning systems are part of the body of the Government which is made up of different organs and parts. When all the planning systems are balanced with each other, they will create a healthy planning environment conducive to facilitate sustainable development. There is a need for a larger perspective of the planning system. It is important to have a larger perspective of the whole planning system which recognizes the importance of balancing all three purpose of sustainable land use.

Physical Planning is concerned with the rational and orderly allocation of land for development purpose. The immediate need is to establish effective procedures to enable Physical Planning to cover the whole of Papua New Guinea. This will be achieved through;

- i. Legislating for the three broad land use zones (development promotion, sustainable rural and conservation areas) to provide an over-arching policy framework for land use.
- ii. Realigning existing zoning in accordance to the purpose of three broad land use zones.
- iii. Establishing guidelines, terms of references, codes and practices and standards of land use planning in Papua New Guinea.
- iv. Applying zoning schedule for sustainable land use planning in the country.
- v. Taking stock of all state land in the country and encourage customary landowners to release land for development through the Land Reform Program.
- vi. The preparation and Implementation of Land Management Plan for Papua New Guinea.
- vii. The facilitation and Introduction of a Comprehensive Urban and Rural Zoning Plan for Papua New Guinea.
- viii. The facilitation of a Comprehensive Development Plan framework throughout Papua New Guinea.

There is a greater need to improve land use planning practices to promote sustainable land use. The improvement of Physical Planning systems in Papua New Guinea will boost the ideology of using, developing and managing the land wisely that will have positive impacts on the lives of all people regardless of gender, age, poor or rich. Land belongs to the people and thus whatever type of development or use that it may accommodate, the Physical Planning system ensures that it satisfies the needs of all people.

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10.0. ANNEX

10.1 Legislative Context

Within the established framework of higher order policies which gives the process of development, separate government agencies have developed their own policies, legislations, strategies and plans to facilitate sustainable development.

The Department of Lands and Physical Planning administer thirteen Acts of Parliament whose objectives are to facilitate the gazettal of land that is owned by the State. The main Acts includes the Land Act 1996, Land Registration Act 1981 and the Physical Planning Act 1989 which facilitates for sustainable land use planning and best use of land and its resources.

At the lower level tier of policy and planning in the country, the focus of policy and planning is through land use planning and managing the spatial impact of development of land use activities upon the physical environment. The Physical Planning Act and the Environment Act provides the framework for the process of planning for sustainable land use. The other supporting legislations that promote the best use of land in Papua New Guinea includes the Land Act, Land Registration Act, Building Act Chap.301, Mining Act, Free Trades Zones Act, National Housing Commission Act, Fisheries Act and Informal Sector Development and Control Act.

Through the adoption of a suitable over-arching framework for sustainable land use, we intend to focus our planning towards achieving the major purpose of planning in the country. The purpose is to shape the social and physical environment to achieve the development goals and directive principles of the country. The application of suitable methods of planning for sustainable land use must be within the framework of the established system of planning.

10.1.1. Land Act 1996

This is the legislation that is relating to land and the resources that are found on land. It generally provides for 3-4% of alienated stock to be administered and encouraged for wise development in urban areas or areas that are declared as Physical Planning areas. This Land Act is a law that is made for the purpose of giving effect to the national interest in public order and public welfare, the purpose of protecting the exercise of rights and freedom of other persons, and public purposes that are reasonably justified in a democratic society that has a proper regard for the rights and dignity to the people of Papua New Guinea.

The Land Act 1996 elaborates on the ownership, allocation and release of state and customary land for development purpose thus to alleviate poverty and improve the lives of the people. In terms of ownership, land is either owned by the state or the local people. In Papua New Guinea, much of the land is owned by the local people which are about 97% and the state owned about 3% of the land.

The allocation of land for different land uses is facilitated by the Physical Planning Division of the Department of Lands and Physical Planning. For allocation, the state land has been con-

trolled and allocated for various types of land use and thus planning for this 3% of land has progressed well thus far, but regarding the customary land, it was all controlled, allocated and managed by the landowners themselves. However, much of the state vacant land has been occupied by illegal settlers and this is a very serious issue that contributes to state land shortage in Papua New Guinea.

10.1.2. Land Registration Act 1981

This Act aims to protect the rights of the person who is the legal owner of the land. Registration of land is done to recognize the owner of the land by issuing a title to the land. This act applies to all State land in Papua New Guinea. The registration of land formalizes the title and thus identifies who is the legal tenant of that property.

10.1.3. Land Registration (Amendment) Act 2009

After the title is issued the owner has the power to lease the land to a developer who has an interest over that land. This is possible through the land reform program which initially takes its stall in 2009 by implementing the two new legislations which are the Incorporated Land Groups (Amendment) Act 2009 and the Land Registration (Amendment) Act 2009.

The amendments to the Land Registration Act 2009 are intended to provide a system of registrations of those portions of customary land which the customary landowners through their ILG decide to register to put to economic development activity. The main features of the amendments include;

- i. A Director of Customary Land Registration will be appointed to oversee and manage the administrative process and facilitate the process of customary land registration—where the Director will be responsible for receiving and verifying the applications for customary land registration to ensure compliance with all the requirements under the Act,
- ii. The application for registration will be in the form of draft Registration Plan and after the verification process, the Director of Customary Land will then be required to forward a copy of the Registration Plan taking full account of any adjustments arising from the public submissions and the verification process conducted by the Director of Customary Lands and submit to the Director of Customary Land.
- iii. At the expiry of 90 days, and only where necessary and appropriate, the Regional Surveyor shall be required to prepare an Adjusted Registration Plan taking full account of any adjustments arising from the public submissions and the verification process conducted by the Director of Customer Land and submits it to the Director of Customary Land.
- iv. The Director of Customary Land is then required to prepare a Final registration Plan as soon as practicable and return to the ILG concerned. The ILG concerned will then be required to submit to the Registrar of Title the necessary documentation inclusive of the final Registration Plan and the particular ILG Certificate of Incorporation for issuance of the certificate of Title.

The Land Registration (Amendment) Act 2009 'gives effect to the National Goals and Directive Principles of the Constitution of Papua New Guinea as they relate and apply to the ownership of land held under customary tenure and dealings in those lands and in particular to;

- i. Allow development to take place primarily through the use of Incorporated Land Groups;
- ii. Encourage traditional villages and communities to remain as a viable units of Papua New Guinea society and for active steps to be taken to improve their culture, social, economical and ethical qualities,
- iii. Promote and facilitate the registration of the land held under customary law' (CLRC, 2008:92).

Land is plentiful in Papua New Guinea and wealth is locked up in land, however, that plentiful land in economic terms is actually a mountain of dead capital because of the inherent nature of customary tenure system. Therefore appropriate measures or reforms are required for conversion of land as dead capital to land as live capital.

The legal apparatus is necessary so that land is freed up for recognition by financial institutions. This should leads to achieving broader development objectives and reducing economic poverty for the majority of Papua New Guineans. Most specifically, the direct outcomes are;

- i. To acquire land title for customary land and use land as loan guarantee for development activity,
- ii. Help reduce land disputes over boundaries
- iii. Access to customary land for resettlement of people affected by natural disasters and government needs to responds to demands on infrastructure and public services by accessing customary land.

One of the important factors of production in Papua New Guinea is land, which is locked up because of outdated and inefficient land administration and legal frameworks and divergent customary land tenure system. Consequently, Papua New Guinea remains shackled in poverty, in a land rich country. Customary land is what that is owned by the indigenous communities and administered in accordance with their customs as opposed to statutory tenure usually introduced during colonial period.

The release of customary land is one of the options and that is to free up the customary land for development purpose. The voluntary customary land registration is to act as a mirror of the land, reflecting the interests over the land, the physical area, and the title to it. Registration formalizes titles so that land is no longer becomes just a matter of birth, name of residence, but the question of law. Furthermore, registration serves as a useful purpose where land is marketable commodity and changes hands frequently. It also provides security of tenure where registration is deemed to be indefeasible.

Customary land is held by a land group according to local custom. Traditionally, customary owners never consider their land as property but as a domain for survival of land group members, past, present and future. All kinds of social, spiritual and ecological and subsis-

tence values intend in such land. But from business point of view in modern sector it is an asset with no value. It is a property, it is outside the modern sector and isolated from mainstream development (CLRC, 2012). In order for the majority of the population to be involved in the mainstream economy, the people must make a transition from being masters of a domain to being communal property owners. Customary land management is the social contract for customary land and this social contract between the members and the land group sets the terms and conditions for land use within the land group. The customary social contract remains intact after registration, ownership remains intact, issue of title to an Incorporated Land Group (ILG) as empowered the group to convert its previous locked up and commercially valueless asset (land) to a valuable property able to be shaped and employed to the group's advantage.

Lease-Lease Back Titles (Special Agriculture and Business Lease) are only issued to the Landowners over their customary land upon their request in the form of formal application. Their application is processed through the normal process as provided for in the Land Act 1996, under Sections 11 and 102. The customary landowners agreed to release their land for agriculture purposes and thus with one heart, release their land for agriculture project development. The Lease-Lease Back process is one where landowners lease their customary land direct to the State hence the State will lease it back to them for 99 years giving them a Special Agricultural and Business Lease Title. Should there be a developer or investor, a separate agreement is made between the two parties. The sublease agreement is between the landowners and the developer and it must be registered.

10.1.4. Incorporation Land Group (Amendment) Act 2009

This legislation recognizes the corporate nature of customary groups and allows them to hold, manage and deal with land in their respective customary groups. The purpose of this Act are to encourage greater participation by local people in the national economy by the use of land, better use of such land, greater certainty of title and better and more effectual settlement of land disputes.

Our customary land is essential and important to our lives in Papua New Guinea. Therefore the issue of land reform in customary land tenure is a very sensitive and emotional one. Previous attempts made were failed. Our customary land in particular is the very basis upon which above 80% of our people live off and from. . The customary land that we own through our land owning social units such as clans, gives to many of us our livelihood. Therefore, it is very central to our lives.

However, due to the changes introduced through this modern economy in particular, some of the uses we make of our customary land have changed. In other words, customary land use is changing and in some sections of our country, they are changing very fast. We no longer use slash and burn shifting cultivation but we are now increasingly using our customary land to plant commercial or income earning crops to enable us to meaningfully participate in cash economy. Because such land use is largely longer term use and exclusive in nature, there are now tensions and signs of strains of customary land tenure. Consequently, we are now witnessing relatives, cousins or even brothers killing each other over disputes over the use of customary land.

In order to address these issues, the National Government has a responsibility to ensure that it has the necessary interventions to ensure that the social and economic changes that are occurring do not bring disunity and other social problems but rather peace and prosperity to all. The National Government therefore has recommended appropriate legislations involving the systems of voluntary customary land registration through;

- i. The incorporation of ILGs but with the injections of appropriate accountability mechanisms and management processes for transparent and effective governance and management of ILGs by causing appropriate amendments to the existing Land Group Incorporation Act;
- ii. Subsequent voluntary customary land registration utilizing the ILG as the corporate person and vehicle for perpetual ownership for and on behalf of all the customary landowners by causing appropriate amendments to the existing Land Registration Act.

These Acts marks the first most important step towards reform in customary land tenure which empowers customary landowners to participate meaningfully for economic development in a fair, equitable and convenient manner that satisfies all people in the society without depriving their rights. Unfortunately, under the prevailing arrangements, the access too and use of customary land is not all that is fair and equitable because the vulnerable groups in the societies of the land owning units do not enjoy much economic benefits, if any, derived from the use of their collective customary land by the other fellow customary landowners who may be in a stronger economical, political and physical situation.

Therefore, these reforms now found in the Lands Group Incorporation (Amendment) Act 2009 and the Land Registration (Customary Land) (Amendment) Act 2009 are designed to enable Papua New Guinea to be in control through their respective land owning social units via their ILG and then develop their customary land in a fair and equitable manner that must not disadvantage any fellow member of respective land owning social units.

The key features of the land reform introduced by the two laws that includes the Lands Group Incorporation (Amendment) Act 2009 and the Land Registration (Amendment) Act 2009 are;

- i. The first stage involves the incorporation of ILGs and second stage involves the registration of portion only of customary landowners through the ILG if the people wish to put their registered land to economic development activity with secured titles.
- ii. The amendments to the ILG legislations are intended to;
 - o Formalize and tighten up on the process of incorporation by involving the District Administrator, Village Court Officials and local ward members in the incorporation process to inject greater transparency and accountability into the whole process of incorporation.
 - o To link people through a formal statutory instrument to person manned on the list of membership by requiring the submission of a formal birth certificate obtained under the Civil Registry Act for all persons on the list of membership of the proposed ILG.

- Just as a Papua New Guinean belong to only one clan, tribe or such other land owning social unit, multiple members to ILGs is prohibited.
- Link customary land to proposed ILG, an application for incorporation will be required to have attached to it a full and complete sketch map of all the land which the members of the ILG own if there are disputes over boundary with neighboring clans then such disputes will be required to be clearly marked out and signed by the representatives of the disputing parties on the body of the sketch map to mark the extent of the disputed boundaries. This is designed to avoid the need to go through a protracted court battles over the disputed boundaries and stifle the process of incorporation of ILGs.
- Greater transparency and accountability will be injected into the management of ILGs holding the ILG Management Committee responsible and accountable through the imposition of strong Code of Conducts with strong fiduciary obligations and the imposition of criminal sanction where is a failure on the path of the Management Committee to discharge the various duties and obligations imposed under the new provisions of the law.

The Land Group Incorporation (Amendment) Act 2009 'gives effect to the National Goals and Directive Principles of the Constitution of Papua New Guinea as they relate and apply to the ownership of land held under customary tenure and dealings in those lands and in particular to;

- i. Allow development to take place primarily through the use of Papua New Guinea forms of social and political organization,
- ii. Encourage active steps to be taken to facilitate the organization and legal recognition of the groups engaging in development activities,
- iii. To ensure the integrity and viability of these associations,
- iv. Provide for their transparent and effective management' (CLRC.2008:54).

Land is the single most important material asset of the people of Papua New Guinea. From fertile soils, abundant marine life and rich mineral resources to some of the world's most biodiverse ecosystems and unique landscapes, land provides Papua New Guinea with the potential for great prosperity. Yet this has not been Papua New Guinea's experience. Despite Papua New Guinea's rich supply of land resources, there has been next to no progress in developing land-based industries. Past efforts to reform land systems have largely failed. It is obvious that less than 5% of land is currently contributing to economic development. Meanwhile, eighty-five percent of the country's population remains dependent on subsistence for their livelihood, earning less than K200.00 per annum. Furthermore, half of the rural population has little to or no access to basic services.

The land reforming of customary land has sound promising as it will sustain the lives of rural poor who have been neglected for so many years without services. After the formal titling of the customary land, there is a great need for physical planning where the experts in physical planning need to identify and allocate the uses of the registered customary land. This has not been the case in the past and so we are now working towards it to improve on that. In order to realize the Goals of the higher order policies such as the Development Goals and

Directive Principles, Vision 2050 and Development Strategic Plan 2010-2030 and implement the Government policies on sustainable economic and social development which require an integrated approach to physical planning in Papua New Guinea.

10.1.5. Environment Act 2000

This legislation aims to protect the environment and also regulate the environmental impacts of development activities in order to promote sustainable development of the environment, economic, social and physical wellbeing of people by safeguarding the life-support capacity for present and future generation. Furthermore, The Environment Act provides for the management, conservation and protection of the environment from unsustainable land use activities outside Physical Planning Areas.

The three broad land uses includes, Development Promotion, Sustainable Rural Development and Conservation Area. Therefore, the control, protect and management of the environment and its natural resources falls under the category of conservation area. The National Protected Area Policy is part of land use broadly categorized as Conservation Area. The Department of Environment and Conservation is responsible for planning and management of these areas, whilst the Development promotion is the responsibility Physical Planning whilst Sustainable Rural Development is the shared responsibility of the Department of Environment and Conservation and Physical Planning within the framework of Sustainable Land Use Policy.

The immediate need or requirement for policy and planning for Protection Land Use are as follows;

- i. Identification of land suitable for protection land use for the rehabilitation, conservation and management of sensitive or critical ecosystems.
- ii. Demarcation: while some protected areas have been mapped out, these areas have to be marked out on the ground. The identification and demarcation on the ground will lead to the resolution of conflicts in so far as defining the extent to which certain land use activities are to be allowed in protected areas.
- iii. Mapping out these areas: Mapping out areas such as Critical or Sensitive such as Critical Watersheds, Priority Terrestrial Areas, Priority Wetland Areas, and Marine Priority Areas is important to determine the extent of land to be brought under Conservation Zone.
- iv. Marking out these areas on the ground: Areas that pose extreme and frequent danger should be given priority in resolving conflicts.
- v. Preparation of Subject Development Plans: protection Land Use seeks to achieve environment stability and ecological integrity; ensure balance between resource use and the preservation of some educational, cultural and historical significance and protect people and man-made structures from ill effects of natural hazards. The Physical Planning act provides for the preparation of Subject development Plana for this purpose.

10.1.6. Physical Planning Act 1989

The Physical Planning Act sets as a guideline on the physical development, management and the best use of land and land resources in Papua New Guinea. It further guides the use and development of land within areas declared as physical planning areas. The legislation provides for there to be three categories of development or land use matters which are either exemption from or subject to control under planning system;

- i. Development or use of land which are outside of physical of physical control
- ii. Development or use of lands which are within the sphere of planning control but which are automatically approved via once and for all decisions.
- iii. Development or use of land which is within the sphere of planning control and requires a specific decision by authority.

The Physical Planning Act provides the framework for Spatial Planning in Papua New Guinea. This enables the three levels of government to guide the planned allocation, development, management and best use of land and land resources in urban and rural areas.

10.1.7. Building Act Chap.301

The purpose of this legislation is to regulate the construction of physical structures throughout the country. The focus is to regulate the construction of building structures within urban areas in the country. The permanent building structures within the urban areas have been assessed for their standards. It further regulate, control the use of a building and the land on which the building is erected, both during and after construction of the building. The Building Boards are established to assess the building plans provided by the developer.

10.1.8. Mining Act 1992

The Mining Act 1992 regulates the minerals and mining in Papua New Guinea. The Act stipulate thus, giving effect to the people in fulfill their interest and thus satisfies their needs and wants which leads to a decent and healthy lifestyle. This means that when an exploration is carried out in an area, the company must consider the national interest in promoting sustainable development so that all people in the society can live a peaceful and decent lifestyle.

All minerals existing on, in or below the surface of any land in Papua New Guinea, including any minerals contained in any water lying on any land in Papua New Guinea, are the property of the state. Subject to this Act, all land in Papua New Guinea, including all water lying over that land, is available for exploration and mining and the grants of tenements over it. The Mining Act sets as a cornerstone in controlling, regulating and wise use of land resources and mineral exploration in Papua New Guinea.

10.1.9. Informal Sector Development and Control Act 2003

The purpose of this legislation is to optimize the use of land to promote development of the informal economy. Community development's main focus is in community welfare and development.

The act encourages and facilitates the development of informal businesses in both urban and rural areas. It further regulates and controls the development of informal businesses in the interest of protecting people's health and safety. It also gives mandate to the under-privileged and disadvantaged people to actively involved in small business activities to sustain themselves in order to participate in the democratic society earning proper regard or respect for the dignity of their contribution in economic development.

10.1.10. National Housing Commission Act

The purpose of this legislation is to plan for the better use of land in providing adequate and decent housing to all people in Papua New Guinea. It further elaborates on providing affordable and decent housing in urban areas. It encourages the development of land for residential purposes in both urban and rural areas and allows for wise use of land. At present, since the human population in towns and the city of Port Moresby is increasing that increases the demand for affordable housing to the urban areas as a result there is an increase in squatter settlements.

Adequate housing is critical to fostering healthy living standards which in turn enhances development in other sectors such as health, education, economic development and employment. Thus, housing is a basic need which stimulates growth in the land and housing industry.

10.1.11. Fisheries Act

The purpose of this legislation is to promote the management and sustainable development of fisheries. The Act aims to promote the objective of optimum utilization and long term sustainable development of living resources and the need to utilize living resources to achieve economic growth, human resource development and employment creation and thus a sound ecological balance. The act further encourages the management of fish stocks within the archipelagic and national waters of Papua New Guinea.

This ensures that management measures are based on the best scientific evidence available, and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors including fishing patterns, the interdependence of stocks and recommended international fishing standards.

10.2. National Institution's Roles under their Legislations

10.2.1. Department of Lands and Physical Planning (Land Act, Physical Planning Act & Land Registration Act, Incorporated Land Group Act)

The Land Act 1996 applies to grant, lease, license, permit, estate, right, title, interest, power, duty to land that is owned by the State. The Land Registration Act 1981 deals with the registration of titles to land. The Physical Planning Act 1989 binds the state meaning all land in Papua New Guinea is subject to planning regardless of either State or customary tenureship. The Act establishes a comprehensive mechanism for physical planning at national and provincial levels of Government and to provide powers for the planning and regulation of physical development on land in Papua New Guinea. The management agencies to achieve the

purpose are the National Physical Planning Board and the Land Board. All land in Papua New Guinea, other than customary land is the property of the State. In terms of land administration the agency has not been able to release customary land to meet the demand for physical development in the country. Physical Planning has focused in planning for the best use of land within state land which makes up 3% of land in the country. The large proportion of land (97%) is under customary control indicates the emphasis placed by the Government on protecting the rights of customary landowners.

10.2.2. Department of Environment and Conservation (Environment Act 2000)

The purpose of the agency and its legislation is to manage and protect the environment throughout the country. The main focus at present is to assess environmental plans and economic projects and manage protected areas throughout the country. The management agencies to achieve the purpose of the agencies and legislations are through the Environment Council. The success in terms of agencies record in effectively managing economic projects and protecting the environment in the country has suffered a great deal of from poor environmental practices.

10.2.3. Department of Works (Building Act)

The purpose of the agency and its legislation is to regulate the construction of Physical structures throughout the country. Its main focus at the moment is to regulate the construction of building structures within urban areas in the country. The management agency to achieve the purpose of the agency and legislation is through the Environment Council. The level of success is seen whilst permanent building structures within the areas do not meet these standards.

10.2.4. Department of Mining (Mining Act)

The purpose of the agency and its legislation is for the best use of mineral resources to promote sustainable economic development in the country. Its main focus at the moment is to promote the extraction of mineral resources in production land use areas to facilitate economic development in the country. Management agencies to achieve the purpose of the agency and legislation are through the Environment Council. The level success is seen through the mining development in the country, which has contributed immensely to the economy of the country, whilst at the same time destroying the environment.

10.2.5. PNG Forest Authority (Forestry Act)

The purpose of the agency and its legislation is to manage the use of forest resources and develop forest resources throughout the country. Its main focus at the moment is to promote the extraction of forest resources to contribute towards economic development in the country. The management agency to achieve the purpose of the agency and legislation is through the Environment Council. There has been extensive damage done to the natural vegetation of the country as a result of deforestation.

10.2.6. Department of Community Development (Informal Sector Control and Development Act)

The purpose of the agency and its legislation is to plan for the better use of land to promote the development of the informal economy. Its main focus at the moment is in community welfare and development. Management agency to achieve this is through the Physical Planning Board. At the moment, the rate of informal market is growing very fast due to the fact that many of the people in Papua New Guinea do not receive a formal employment and thus through the informal sector they sustain themselves. There should be some assigned location for the people in the informal sector to do their business.

10.2.7. National Housing Commission (National Housing Commission Act)

The purpose of the agency and legislation is to provide adequate and decent housing needs to all the people in the country. Its main focus is to provide affordable housing to the urban population. The management agency to achieve this purpose and legislation of the agency is through the Physical Planning Board and the Building Board. The National Housing Corporation has not been able to meet the demand for affordable housing to the urban areas as a result there has been an increase in squatter settlements.