

CHAPTER 3- SOCIO-ECONOMIC SITUATION

CHAPTER 3 SOCIO ECONOMIC BACKGROUND

3.1 Introduction

When PNG gained political independence 26 years ago, the country was on track in terms of economic growth and development. This was attributed to three major factors: firstly, the Australian Government's Budgetary support to PNG, secondly, a sound income base from the Bougainville copper mine, and thirdly, the Hard Kina policy.

Investment in infrastructure, health, education, service industries and agriculture flourished together with their associated employment opportunities. However, these developments were short lived by the mid 1980s through to the 1990s as a result of various events particularly the closer of Bougainville Copper Mine.

This chapter reviews the development path that PNG has taken, the problems that have been encountered and the reforms that have been forced on the country to address these problems. Agriculture and rice in particular is then discussed within the context of these economic policies. One of the major policy reforms that is covered in debt is the Provincial and Local-Level Government Reforms. Agriculture and rice is discussed within the context of this reform. Then some discussion is advanced on the national and provincial socio-economic situation. The chapter ends with a brief overview of the current and future direction of economic and financial policy. A concluding remark is then offered with reference to the smallholder village rice farmer for subsistence consumption type concept against the backdrop of the findings above.

3.2 Economic Development and Market Economy

Since the colonial administration and the subsequent transition to independence in 1975, both the colonial and the in-coming administration had followed an open market policy approach. With a democratic parliamentary and administrative process of government and bureaucracy, democratic principles of private investment in agriculture, commerce, trade and industry were implemented, hence the role of private investment were left to private sector investors and individuals. The government only ensured stable environment was maintained for the private investment to 'take-off'. The government, however, being mindful of its social obligations towards the majority of its citizens, maintained and controlled essential and service oriented institutions like the Electricity Commission, National Air Line (Air Niugini), Papua New Guinea Banking Corporation (PNGBC), Post & Telecommunications, Water and Transport Boards etc.

Immediately during and after independence, the country's economic prospects and growth to a greater extent depended on how the finance and economy was managed. A hard Kina policy as a financial measure for economic management and stability was maintained until 1994 when the local currency was devalued and subsequently floated. Since floating, the Kina has slipped by at least 74% against the US Dollar to an average of 0.311 US Dollars at the end of 2001.

A number of events in the 1980s leading through to the 1990s had a major influence on foreign exchange earnings, employment, income and the general social and economic conditions of the citizens and the country that ignited the introduction and implementation of major reforms. Briefly, some of these major events included:

- collapse in the international market prices of major agricultural commodities; including minerals, hence reduced export earnings;
- closure of Bougainville copper mine, a major revenue earner during the period;
- increasing public sector bills due to high number of citizens employed in the civil service; and
- increased unemployment and related social disorder.

The reforms mainly contained in the recommendations of the World Bank were in line with the globalization and liberalization of international trade and commerce. Structural Adjustment Policy as recommended for PNG included:

- (a) Devaluation and floating of the domestic currency;
- (b) Introduction and implementation of broad-based tax system (VAT);
- (c) Privatization of state-run entities;
- (d) Down sizing of the Public Service and
- (e) Provincial and local-level government reforms.

Most of these recommendations had been or are currently being implemented and conform to the initial objective of economic development and open market approach adopted and implemented during and after the colonial administration.

3.3 National Plan

The National Goals and Directive Principles as enshrined in the National Constitution form the basis of the national development plans during the political independence of the country. Basically the same is true and stipulates to foster socio-economic development in the country by way of exploiting, processing and exporting the country's rich natural resources for the maximum and collective benefit of the citizens. This, again, were spelt out in various annual national budgets which were by and large national plans in themselves.

The overall economic policy was to achieve economic stability, wage and employment through greater participation by a largely rural-based population and gradual production and reduction of dependence on imported goods and services

Until the 1997 budget, the government's national annual expenditure plans were based on the Medium Term Development Strategy (MTDS) passed by the National Parliament in 1996. The plan, as implemented, was on a five-year roll-on basis with a medium term resource framework. The major priorities set in the MTDS were; health, education, infrastructure and private investment. Private investment encompasses manufacturing, trade, commerce and agriculture.

Following on from 1997, the National Government of PNG once again proposed and adopted a National Program for Reconstruction in 1999 with the chief aim to create a conducive environment for the citizens to mobilize and use their resources in a sustainable and beneficial manner to enhance their livelihood. The National Program for Reconstruction and Development was based on:

- Government's ability to focus and clearly define major functions and priorities,
- All levels of governments to participate in a manner of partnership to set the base for effective development and
- Papua New Guineans to take full control of this development process.

This again, stemmed to serve four main key objectives of the government and the country in its economic endeavors. The four main objectives of the national plans were:

- i) Good governance and macro-economic stability, through a transparent, accountable and commitment to the national development goals;
- ii) improvement of the planning and budgetary systems with the main focus on the MTDS priorities;
- iii) an effective delivery system; and,
- iv) income earning opportunities, especially in the rural areas.

3.3.1 Agriculture in the National Plan

Agriculture sustains the livelihood of more than 85% of the 5.1 million Papua New Guineans engaging in subsistence and semi-subsistence, and the plantation and estate based production systems. 60-70% of all cash crops are exported. It provides income, employment and livelihood for over 75% of the population. Over the last decade, the average production in the agriculture sector was around K1,558.86 million (US\$463.92). Since its beginning, it has maintained consistent contribution of approximately 26% to the country's GDP.

It has continued to support the tree crop sector. Coffee and oil palm have been a success for PNG. The non-tree crop sector (such as vanilla, chillies, ginger etc) has recently received greater attention. Successes in these were through cost effective and well-managed research programmes and the development of new and improved technologies adopted in the estates and with smallholders, which is transferred through extension services provided by its own industry. National Department of Agriculture and Livestock (DAL) has put in place a National Food Security Policy as part of its National Agriculture Development Strategy. The promotion of non-tree crops is in line with the goals of the National Food Security Policy. However, the promotion of Smallholder Rice is not explicitly mentioned in the NFSP. In addition, there has been an increase in foreign donor assistance to the sector. To date, it is believed that foreign aid has contributed well over K300 million (US\$89 million) for the agriculture and livestock sector and is anticipated to increase by the end of the decade.

Some institutional reform and capacity building has taken place. Accomplishments seen in this regard include the establishment of the National Agricultural & Research Institute in 1998 that aimed at improving productivity through research and development and at conducting food crops and livestock research. The Coconut Cocoa Research Institute is another with emphasis on research and development on coconut and cocoa. Also, the establishment of the National Agriculture Quarantine Inspection Authority in 1998 which was aimed at protecting and inspecting quality agriculture products. The restructure of the National DAL and the establishment of regional offices were aimed to improve provincial and regional coordination of agriculture development.

Between 1990 and 2000, agriculture grew at a rate of 2% per annum lagging behind a population growth rate of 3.5% over the same period. This basically indicates a trend of increasing demand for food, particularly in the urban centers, coupled with stagnant domestic production, indicating PNG as a food import dependent country. Under the FAO classification of Low Income Food Deficit Country (LIFDC), PNG is classified as one of the 77 countries under this category.

Being mindful of this and in line with the national plans and aspirations, agriculture sector has in place a comprehensive National Agriculture Development Strategy for 2002 – 2012.

This not only augments, but is complimentary to the national plan and based on specifically identified industry issues, plan of action and set targets.

The National Department of Agriculture and Livestock, line Departments and Agencies view this as an appropriate or opportune time and has placed a high priority on local food production, particularly, rice. This does not by any means support the argument for import substitution, rather it is for self sufficiency and cost reduction in terms of the national import bill. To some extent, it supports the argument for import-competing activities.

Table 3.1 shows percentage of agriculture's share of contribution towards the National GDP in comparison to the mining and petroleum sectors from 1991 to 1999. The marginal decline in agriculture's share of GDP was in direct result of increases in the mining and petroleum share, however, its contribution had been fairly consistent.

Table 3.1. Mining, Petroleum and Agriculture contribution to GDP: 1991-1999.

Year	Mining as % of GDP	Petroleum as % of GDP	Agriculture as % of GDP
1991	17	-	26
1992	22.3	-	24.7
1993	12.4	14.6	26.6
1994	16.6	13.5	25.7
1995	17.2	11.2	26.8
1996	12	13.3	26.5
1997	9.7	10.7	27.4
1998	16.7	9.4	24.4
1999	17.7	11	23.9

Source: Bank of PNG and Department of Agriculture & Livestock

In terms of National Food Policy, successive governments had little or no commitments as all efforts were geared towards production and exports of basically raw and primary products in export tree crops. This, to a large extent indicated that the country was heavily dependent on imports of its basic food items, mainly rice. This was in support of the traditional view that from the exports of these primarily products, income derived would be used to buy imported foodstuff. This is true when Gibson (1992) showed that despite the low commodity export prices of the 1980s, hence lower consumer purchasing power, a given quantity of agriculture exports were increasingly used to purchase rice.

3.3.2 PNG National Food Security Program (PNG NFSP)

3.3.2.1 Global Framework for the PNG NFSP

The total land mass of PNG is in excess of 450,000 square kilometers consisting of a mainland with rugged mountains and several scattered islands that are separated by hundreds of kilometers of sea from the mainland. A quarter of the total land mass is considered as suitable for agricultural purposes. Only a fraction of this agricultural land is cultivated for food production by the local inhabitants. The current population is 5.1 million.

National Food Security is defined by the Food and Agriculture Organization as the socio-economic condition of a particular country whereby its average citizen has access to the right food in sufficient quantity at all times so as to be able to live a productive and healthy life. It

is perceived that the average citizen in PNG does not have full access to the right types and amounts of food on a daily basis.

The business sector of the food industry in PNG is faced with difficulty in distributing and marketing locally produced food at low and affordable prices in two major cities and more than a dozen provincial capitals because of poor road conditions or lack of roads and economic means of transport. The quickest and most reliable means of transporting produce to population centres is by air. But it is expensive and is used only for high-value food items with high market demand.

Sea freight is cheaper. It is the common means to deliver food items that are bulky and high in calorie content ie potatoes. This form of transport has limited use in the distribution of fresh and frozen produce. Most fresh produce food items normally depreciate in value on arrival. Because of high costs of transport by road and air, locally produced food items had become unaffordable to low-income earners who make up the bulk of the consumer population in urban centres of Papua New Guinea.

According to the Food and Agriculture Organization of the United Nations Organization, PNG is one of the 77 countries that are classified as Low Income and Food Deficit Countries (LIFDC). PNG is listed as an LIFD country because of the growing dependency of its population on food imports and its low per capita energy food intake.

This is despite the fact that PNG has enough agricultural land with good soil and climate and the fact that PNG has relatively a small population to feed. The subsistence gardening systems in rural and urban areas cannot supply enough affordable food for the rest of the country during normal and emergency periods.

In recent times, the delicate state of National Food Security in PNG was exposed by natural disasters that recently affected the country. During the El Nino drought of 1996-97, energy and protein food had to be brought into the country from overseas by donor countries such as Japan and Australia. During floods, volcanic eruption and tsunami, the government of PNG could not rely on its own food supply from neighbouring Provinces in order to feed the affected population. The National Disaster Emergency Services had to bring in relief food from overseas. The country does not have national or provincial food buffer stocks that are based on subsistence gardens across the country.

The status of National Food Security in PNG deteriorated as a result of the slow growth in the agriculture sector during the last two decades. According to the National Statistics Office, the agriculture sector grew at an average of 2% per annum while the population in PNG grew at 3.5% per annum from 1990 to 2000. It is further reported that this slow growth in the agriculture sector has resulted in a decline of 20% in the per capita income in rural areas. Seventy percent of the population in PNG live in rural areas. PNG is a signatory to the Rome Declaration on World Food Security (RDWFS). During the World Food Summit organized by FAO in Rome in 1996, the PNG delegation pledged to support the implementation of the resolutions in the World Summit Plan of Action (WFSPA) that were agreed upon in that summit.

In line with the foregoing WFSPA of 1996, the Government of PNG adopted in 2000 the National Food Security Policy. It is a smallholder agriculture production programme that was formulated by the Department of Agriculture and Livestock for the purpose of addressing the issue of national food security in PNG.

A few years later, FAO produced the “Strategic Framework for FAO, 2000-2015” (SFFAO, 2000-2015). The section of Corporate Strategies of the SFFAO, 2000-2015 sets out the basic framework for the formulation of national food security policies and programmes by member countries. The PNG National Food Security Policy was formulated along the guidelines set in the SFFAO, 2000-2015.

In PNG, sometime in 2002, the Government of PNG formally adopted the National Agriculture Development Strategy, Horizon 2002-2012 to replace the 1996-2001 White Paper on Agriculture. The PNG NFSP was incorporated into this 10-year Agriculture Plan.

3.3.2.2 Collaboration between Government Institutions and NGOs in PNG NFSP

In order to achieve full implementation of the PNG NFSP, it adopted the strategy of using the holistic approach of involving all stakeholders in food security from the planning stage right to implementation. All stakeholders were made aware that Food Security deals with educating the PNG population with problems of malnutrition and under-nutrition and their practical solutions, encouraging subsistence food production by rural and urban households, and assisting them to build their capacity to increase household incomes.

In order to strengthen coordination at the national level, the National Food Security Council was formed and headed by the Minister for Agriculture and Livestock with representatives from the following stakeholders- Departments of Health, Education National Planning & Monitoring, Finance, Prime Minister & NEC, Provincial & Local Government Affairs, Works, Religion, Home & Youth Affairs, Commerce & Industry, and representatives of WHO, UNICEF, UNFPA, Save the Children Fund, PNG Council of Churches, PNG Trust, and the National Council of Women.

In order to strengthen the collaboration between stakeholders at the provincial level, provincial administrators were requested to form and head the Provincial Food Security Council with representatives from government departments and institutions, church groups, NGOs and CBOs operating in the Provinces.

3.3.2.3 Role of Rice Production in the PNG NFSP

Rice in Asian economies is the most common energy food in any national or provincial food buffer stock that is maintained throughout the year either by a national government agency or by a commercial group engaged in the local food trade. Rice is the main staple food item that is maintained by commercial food traders throughout the developing countries in Asia. The obvious reason for choosing rice is its relative advantage over other food items in terms of calorie value, price, volume, weight, durability, ease of handling, and shelf life.

In any food relief operations in PNG during natural disasters, rice is the preferred food item to pass around to affected victims¹. In ordinary times in PNG, it was found out in the recent JICA Rice Survey that rice is also the preferred food item by most of the urban and rural respondents. It is safe to conclude that rice has now become an indispensable food item in the National Food Security of PNG.

¹ We have contacted the National Disaster Management but are still awaiting their response in relation to the volume and value of rice that was supplied for food relief operations during various natural disasters.

Trukai industries Ltd is the only company that imports rice and distributes it throughout PNG. The rice is imported from Australia. According to the company's website, Trukai supplies over 95% of the PNG rice market. Therefore Trukai has the monopoly status in the PNG rice industry. The remaining 5% is supplied by other minor local importers and locally grown rice, which is consumed in the areas where it is grown.

Table 3.2. Annual Rice Imports 1985 – 2000.

Year	Volume (Tonne) ^a	Costs (Kina) ^b	Costs (US\$) ^b	International Price (US\$/Ton) ^c	Per capita supply (kg/capita/annum)	Per capita supply (gm/capita/day)
1985	128,000			N/A	40	110
1986	167,500			N/A	51	140
1987	131,500			N/A	39	107
1988	119,000			N/A	35	95
1989	130,000	24116995	28055300	215.81	37	101
1990	120,000	7755114	18662400	155.52	33	92
1991	121,500	20642732	21670740	178.36	33	90
1992	128,500	22837395	23127430	179.98	33	91
1993	147,000	23123288	23562630	160.29	37	101
1994	157,500	34547908	29313900	186.12	38	104
1995	157,500	56048708	42288750	268.5	37	100
1996	161,500	50047253	37800690	234.06	36	99
1997	201,000	61709970	43018020	214.02	43	119
1998	166,000	73551400	35716560	215.16	35	95
1999	145,000	75150000	29473830		29	80
			27761700	191.46		
2000	143,000	52338000	18962057		28	76
			20443280	142.96		

Source: IRC and FAO.

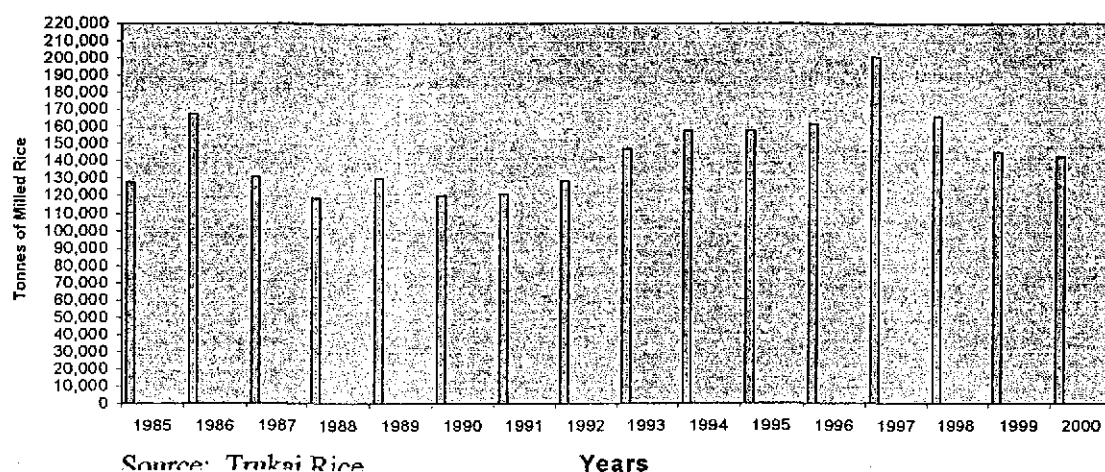
^aASYCUDA, Internal Revenue Commission (IRC), 2002.

^bSince we were not able to obtain the cif price of rice from 1985 – 1998 from Trukai, the National Statistical Office and the Consumer Affairs Council, we decided to estimate the value of imported rice based on the international price of Thailand rice. IRC only provided the cif value of imported rice in Kina for 1999 and 2000. The Kina/US\$ exchange rate was applied to obtain the US\$ equivalent for 1999 and 2000. The justification for using the international price of Thailand rice for the period 1989 to 1998 was based on the following procedure. The Thai international price was multiplied by the tonnage in 1999 and 2000, and the resulting values (US\$27.8 million and US\$20.4 million respectively) were found to be close enough to the US\$ equivalent values of US\$29.5 million and US\$19.0 million respectively. Therefore the Thai international fob price of rice was used to obtain some crude estimates of the value of imported rice into PNG. We acknowledge the fact that there are differences between Thai and Australian produced rice.

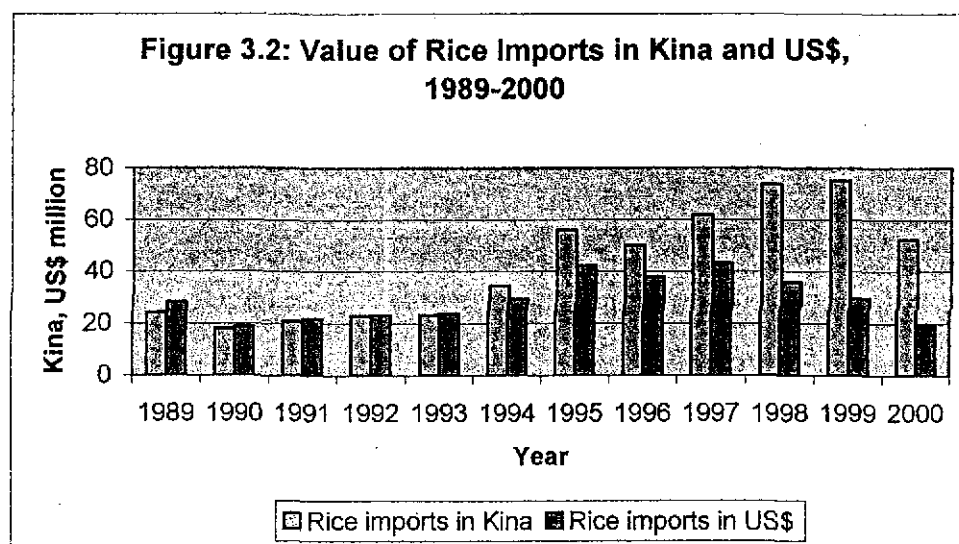
^cThe international price of rice is the Friday closing price of the White Broken Rice, Thai A1 Super, f.o.b Bangkok (annual averages). These figures were obtained from the Food and Agriculture Organisation (FAO) website, www.fao.org.

Table 3.2 and Figure 3.1 shows that rice imports, in terms of volume, has steadily increased since 1990. It peaked at 201,000 tons in 1997. This was also the year of the El Nino driven drought and the Aitape Tsunami (Tidal Wave) natural disaster in the West Sepik province. Import volumes have declined since 1997. While the supply of rice per capita has fallen steadily since 1994 (with the exception of 1997) when the Kina was devalued and then floated, the softness of

Figure 3.1: Annual Rice Imports, 1985 - 2000



the local currency has driven up retail prices exponentially. Trukai reports that the price of rice in PNG has increased by up to 117.5% over the past 3.5 years. In fact, per capita supply of rice (in terms of kg / ton) has remained relatively stable from the latter part of the 1980's and the first half of the 1990s.



Source: Generated from data in Table 3.2 above.

Figure 3.2 shows that the Kina value of rice imports was relatively stable around K20 million from 1990 to 1993. The value of imports in Kina, as well as its foreign exchange requirements, started to increase after 1993 due to the devaluation and floatation of the Kina in 1994, and favourable international rice prices. An interesting observation emerges when comparing Figures 3.1 and 3.2. Notice that while import volumes fell in 1998 and 1999, the corresponding values

increased. You will notice from Table 3.2 that international prices remained stable in 1997 and 1998 but fell below the US\$200 / ton mark. This result can be attributed to the weakening Kina. Every year since 1994 the Kina value has trended downwards. Import volumes appear to be falling particularly since 1997. In the year 2000, import volumes declined to 143,000 tons, well below the 1993 levels.

Some policy questions emerge from the above analysis. It is very clear that the weakening Kina and the fall in import volumes will translate into further increases in the retail price of imported price. The softening local currency coupled with Trukai's efforts to meet domestic demand will place a lot of pressure on foreign reserves. Therefore, the proposed domestic production of rice through the Smallholder Rice Scheme, is very critical and well justified.

At the national level, rice production in PNG is promoted and coordinated by Food Security Branch of DAL as a sub-programme of the PNG NFSP. The Food Security Branch of national DAL is responsible for the implementation of the PNG NFSP. Figure 3.3 below is the chart for the organizational structure of the Department of Agriculture and Livestock. Figure 3.4 below shows the position of the National Rice Coordinator within the Food Security Branch.

At the provincial level, the Provincial Agriculture Advisor prepares and oversees the provincial rice production programme. Ideally under the current government reforms, the provincial rice programme should comprise of rice-producing districts where rice production is given priority by the District Planning and Budget Priority Committee. Figure 3.3 below is the chart for the organizational structure of District staff who are involved in the promotion of rice production at the district level.

Figure 3.3 Organizational Structure of National DAL

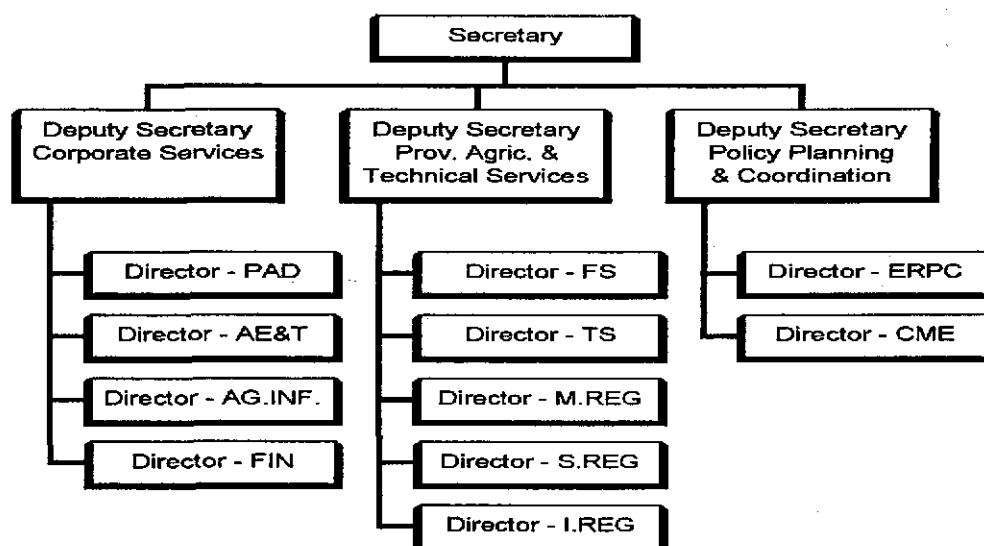


Figure 3.4 Organizational Structure of Food Security Branch

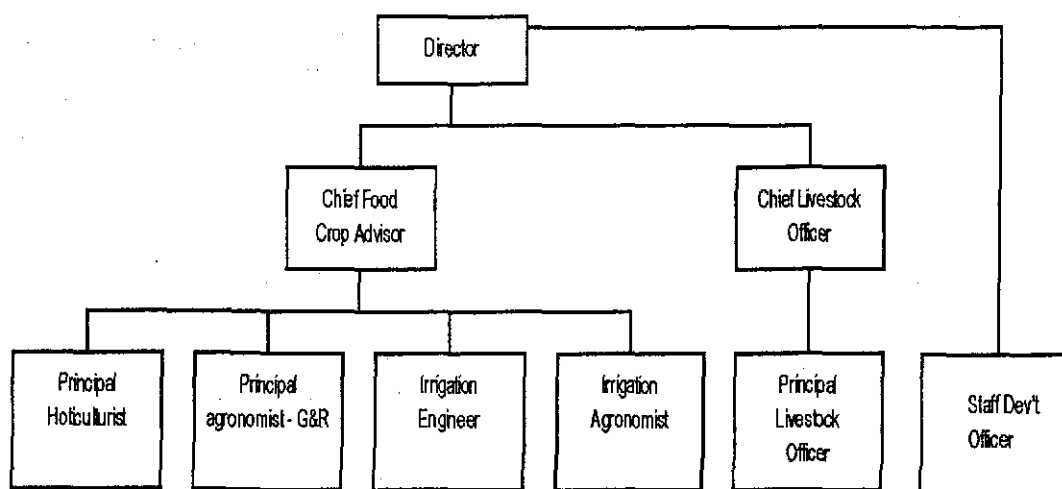
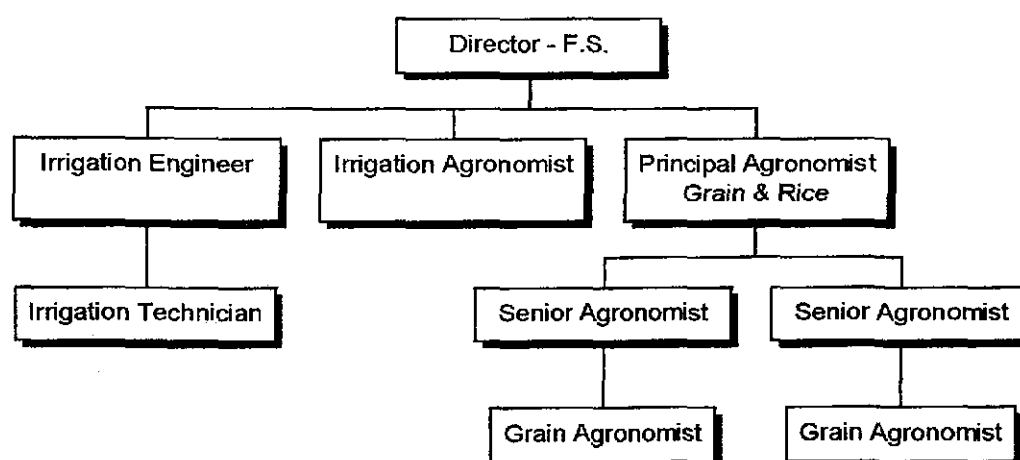


Figure 3.5 Organizational Structure for Grain & Rice Sub-Programme



3.3.2.4 Sub-programmes of the PNG NFSP

- i) Traditional staple crops
- ii) Rice & grain industry development
- iii) Irrigation and water control management
- iv) Horticultural fruit trees
- v) Integrated vegetable production
- vi) Urban and peri-urban gardening
- vii) Downstream processing, preservation, storage and utilization
- viii) Agro-forestry
- ix) Livestock production, including aquaculture and honeybee.

- x) Special program for food security
- xi) Information, publication and agricultural statistics
- xii) Improvement of extension methods and approaches
- xiii) Rehabilitation and development of farmer training centers
- xiv) Farm machinery and equipment

3.4 Ministries and Institutions involved in PNG NFSP

In order to create awareness for support to increase and diversify food production for food security at all levels; including national, provincial, district and household levels by 2015, the National Government through the National Department of Agriculture & Livestock, has a strategic multi-sectoral medium term plan for food security program.

Of the 27 National Government Ministries and Departments, ministries directly or indirectly involved but not limited in the task to implement the National Food Security Policy are:

- i) Department of Agriculture & Livestock,
- ii) Department of Finance,
- iii) Department of Prime Minister & NEC
- iv) Department of Works,
- v) Department of Health,
- vi) Department of Education,
- vii) Department of Planning and Implementation,
- viii) Department of Commerce and Industry
- ix) Department of Provincial and Local Government Affairs,
- x) Department of Religion, Home Affairs and Youth
- xi) National Fisheries Authority
- xii) Department of Foreign Affairs
- xiii) Department of Trade and Tourism

Apart from the above government Departments, other agencies, including donor agencies, NGO groups, church and women representatives are involved. Specifically, the Departments of Agriculture, Health and Education more or less play a lead role in the implementation of the food security program.

3.4.1 National Agricultural Research Institute (NARI)

NARI was established in 1996 under the National Research Act of Parliament. NARI directs, coordinates, oversees, and monitors all research activities in the agricultural sector of PNG that are carried out by government departments, institutions, corporations, statutory bodies as well as NGOs, CBOs and aid donors engaged in the agricultural industry in PNG. NARI is directly under the Ministry of Agriculture and Livestock.

As a line Agency of the National DAL and the National Government of PNG, NARI is wholly and directly responsible for the rice research programs in the country. In line with the mission statement of the institute, NARI conducts research in to both the introduced and indigenous staple food crops, vegetables and animal species of the country. NARI is tasked under the government's PIP program to conduct research programs on rice and grain in the country.

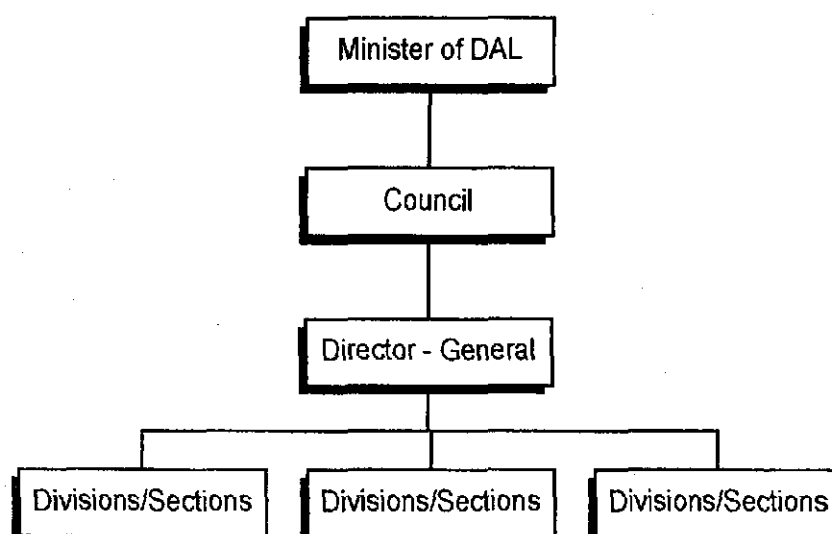
Research programs in respect to rice are carried out towards the mission objectives of improving productivity, quality, marketing and demand, skills and knowledge, and the research programs are conducted using the farming systems approach. Major research programs on rice include cropping systems, adaptive and applied research in to different management practices, pest and disease management, collection, management and evaluation, selection for different environments, market research and economics of production.

With the recognition of the goal for achieving self reliance in food security, employment and income, NARI is mandated to cover all agro-ecological zones in the country with regards to research on rice. It has an average annual budget of K1.015 million for rice and grain research work.

The research functions of NARI are regulated by the NARI Council whose chairman is appointed by the Minister for Agriculture and Livestock. The Council is responsible for preparing a corporate plan of activities that requires the approval of the Minister. The Minister gives directions to the Council that are consistent with government policies and programmes and are not in conflict with the provisions of the NARI Act. The Council reports to the DAL Minister on its activities as required in the Act. The Council is required to furnish to the DAL Minister an annual report by March 31 of each year for the previous fiscal year for the Minister to present to Parliament.

The Secretary of National DAL or his representative is an ex-officio member of the council. All agricultural research functions, funding, and facilities of DAL (with the exception of Land Use and Soils Study, Project Appraisal and Formulation, and Economic Research, Planning and Programming) were taken over by NARI as of 1999. For research work in Rice and Grain, NARI has identified suitable varieties of rice for PNG irrigated lowland, rainfed lowland and upland conditions. The staff of the Rice and Grain Development Sub-Programme of the PNG NFSP work closely with NARI. It is responsible for regulation and certification of seed quality and purity.

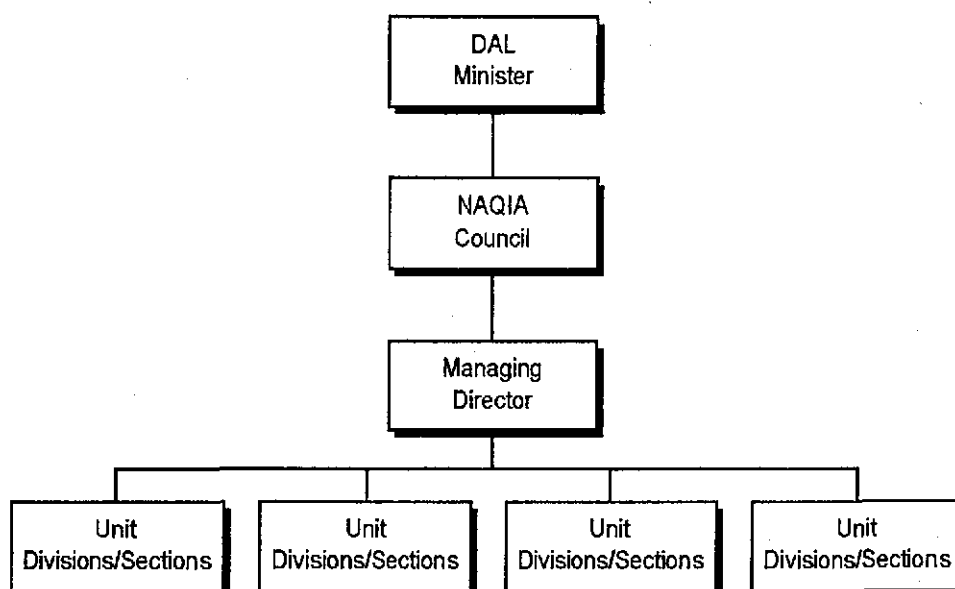
Figure 3.6 NARI Organizational Chart



3.4.2 National Agriculture Quarantine and Inspection Authority (NAQIA)

The National Agriculture Quarantine and Inspection Authority was established by the NAQIA Act of 1997. The main function of NAQIA is to conduct quarantine and inspection of imports of all animal, fish and plant species and their products before they can enter any port in Papua New Guinea. Importation of breeder or foundation seeds of suitable varieties of rice and grain for screening or multiplication and distribution to growers usually goes through quarantine and inspection regulations of NAQIA. The corporate and management structure and system are somewhat similar to that of NARI.

Figure 3.7 NAQIA Organizational Chart



3.4.3 Health Department.

To improve the state of poor health and delivery systems in the districts, Provinces and the country, the national health plan focuses on five policy areas. These are:

1. Increase services to the rural majority,
2. Expansion of health promotion and prevention of diseases,
3. Re-organization and restructuring of the national health system,
4. Developing staff to enhance the professional, technical and management skills, and
5. Up-grading and maintaining investment in infrastructure.

3.4.4 Education Department

The Education Department aims to provide quality education for all, through awareness campaigns. DAL and the Department of Education have collaborated by sharing and discussing

appropriate knowledge on the formulation and implementation of food security program. Under the PNG NFSP, the Department of Education has acknowledged its role in addressing food and nutrition needs of urban and rural communities by introducing or strengthening subject areas on food production and self-sufficiency in the curricula of pilot primary schools, high schools and secondary schools throughout PNG.

3.4.5 Joint Institutional Food Security Programme

The National Department of Agriculture and Livestock through the Food Security Branch launched the Joint Institutional Food Security Programme with NGOs, overseas donors and other government departments, such as the Department of Chimbu, Department of Education, the Corrective Institution Services, City Mission, Sivarai Namona, and Hope Worldwide. Food production projects are planned and carried out by these institutions for self-sufficiency in food supply and acquisition of related skills for village community application. Collaborating institutions provided project manpower and most of the production inputs costs. DAL provided technical advice and supervision and some materiel assistance. MOAs between the DAL Minister and officials of the said institutions have been signed to formalize working arrangements on food security projects. Rice production for institutional consumption and milling services provided in adjoining villages by collaborating institutions in PNG are anticipated to contribute significantly to the national program of reducing rice import by 10% in 2010.

3.5 Performance of Donors and NGOs

Economic Insights (1998) reported that PNG enjoyed the highest level of external aid for its budgetary support compared to other similar low income earning countries. The existing bilateral and multilateral agreements are the vehicles through which assistance are sourced. In 2000, the total national budget constituted 80% external donation.

Specific to agriculture, various governments under varying capacities and programmes assisted the country in research, human resource development, facilities upgrading, strategic planning, capacity building and rehabilitation. Table 3.3 shows various, government and institution's contribution to the agriculture sector since 1985.

Table 3.3. Donor and value of assistance to agriculture sector

Country Donor	Project	Start	End	Total Value
AusAid	Cocoa Quality Project	1993	1995	10.0
AusAid	Agriculture Quarantine & Inspection Support	1996	2001	25.0
AusAid	BioControl of Water Hyacinth	1996	1998	1.5
AusAid	Contribution to National Agriculture Research Systems	1998	2001	11.0
AusAid	Human Resource Development	2000	2003	A\$11.0
AusAid	Rehabilitation of sheep breeding station	2000	2004	3.0
ACIAR	Agricultural Research	1995	2000	10.0
ACIAR	Cocoa Quality Improvement – Extension Phase 1	1998	2000	1.0
ADB	Cocoa and Coconut Rehabilitation & Redevelopment	1989	1998	25.0
ADB	Agricultural Research & Extension Phase 1	1992	1996	25.0
ADB	Provincial Smallholder Support Service	1999	2003	16.0
EU	Cocoa & Coconut Extension	1998	2000	3.0
EU	Oil Palm Research	1998	2000	1.0
EU	Coffee Quality Research	2000	2003	2.5
EU	Cocoa and Coconut Research	1997	1999	3.0
EU	Coconut Beetle Control	1999	2001	0.5
EU	Bougainville Cocoa and Cocoa nut rehabilitation	2000	2002	6.3
FAO	Special Programme for Food Security – Pilot Phase	1996	1999	1.5
FAO	Special Programme for Food Security Extension Phase	1999	2001	2.5
GOJ	2KR	1996	1999	Yen 100
GOJ	Upgrading University Facilities	1997	1998	Yen 761
GOJ	Highlands Aquaculture Development Centre	1997	1999	Yen 200
NZODA	National Sheep Breeding	1985	1996	NZ\$15.0
NZODA	Women in Agriculture Development	1995	1999	3.0
NZODA	Agriculture Institution Strengthening	1995	1999	5.0
NZODA	Women in Agriculture – Phase 2	2000	2003	3.0
JBIC	Rural Credit On-Lending	1989	1999	20.0
PRC	Kandep Agriculture Station	1998	2000	3.0
ROC	Taiwanese Mission in PNG	1993	2001	10.0
WB	Oro Oil Palm	1996	2000	20.0

Source: Department of Planning and Implementation; Agriculture & Livestock

Donor and aid funding to agriculture sector from 1985 to 2000 valued at K243.8 million, NZ\$15 million and Yen 1,061 million.

3.6 Agricultural Education and Training

There are six different types of institutions engaged in agricultural education and training in the country whether as institutions specializing in agricultural training alone or teaches agriculture as an integral part of its curriculum and or its other mandated or part of its corporate activities. These are;

- i). National Department of Agriculture and Livestock,
- ii). National Education Department,
- iii). Provincial Administrations,
- iv). Universities Agriculture Education and Training,
- v). Private Sector and,
- vi). NGOs - such as the Churches and Donor Agencies.

Below is a brief description of their roles in agriculture education and training.

i). National Department of Agriculture and Livestock.

The national DAL is engaged in agricultural training through its two remaining agriculture colleges at the Highlands Hagen Agricultural College and the Popondetta Agricultural College. Both theory and applied courses are taught for all crops and livestock. Hence, there is no specialized certificate or diploma courses taught in rice agronomy and production, processing and marketing management.

Although so much in agriculture development is taking place in the East Sepik Province, it is sad to note that the Sepik Agriculture College at Maprik had been closed down since the early 1990s.

Student intake for those colleges still open come from high schools after students have completed their grades 10 and 12 and also from non-school leavers who are practising agriculturalists employed in the agriculture sector and also who meet the minimum educational standard requirement of grade 10 with good grades.

Special donor assisted joint DAL programs such as the FAO funded Special Project on Food Security in Morobe Province has had a training component, notably short courses in rice cultivation, harvesting, post-harvest practises and machinery in the late 1990s. Farmers in and around the Markham Valley and the greater Lae areas benefited immensely from such training on rice.

The Food and Grain Project of the national DAL in the middle 1990s also had the same objective as the FAO funded project mentioned above. Training given had benefited the farmers in the three areas of Bereina in the Central Province, Markham Valley of the Morobe Province and Maprik area of the East Sepik Province where the emphasis on rice cultivation promotion was concentrated. However, other Provinces had both their extension staff and farmers trained on rice cultivation upon request by their respective DPI extension administrations.

Agriculture education and training for national DAL staff is also an on-going exercise. Selected officers attend short to long-term training in agriculture both in-country and overseas through bi-lateral and multi-lateral aid arrangements with various donor governments and agencies to strengthen national technical capacity and capability.

An important area is counter-part training through technical assistance programs with bi-lateral donor agencies such as those assistance programs from the Government of Japan, Australia, China and the European Union. One such technical assistance program that provides counter-part training is through the one provided for the DAL by the Japanese Government on rice development that is currently being implemented.

ii). National Department of Education.

Agriculture courses are taught at all secondary high schools, national high schools and Vocational Centers and their curricula contain subjects in agriculture theory and practise. However, excepting perhaps the Seventh Day Adventist (SDA) run high schools such as the

Kabiufa Secondary High School near Goroka, these agriculture courses were and are not core subjects in their curricula.

iii). Provincial Administrations.

Training programs in agriculture and particularly on food crops and livestock management areas are conducted by respective Provincial Administration agriculture extension service agencies. They include rice and some of these programs have proven very successful such as rice training and development program for subsistence farmers through-out the Morobe, Madang, East Sepik and the East New Britain Provinces. One notable example is the Subsistence Agriculture Improvement Program (SAIP) of the Morobe Province's DPI extension service which was very successful in the early 1980s and which had been instrumental to the promotion of smallholder rice in many districts and areas of the Morobe Province.

Training of extension officers and managers that are engaged by the agriculture sector development is an on-going exercise for all the staff in all the Provinces. Selected extension staff attend both in-country and international education and training at certificate, diploma and post-graduate levels.

iv). University Agriculture Education and Training.

The University of Papua New Guinea was the premier agriculture training institution providing graduate and post-graduate training qualifications for its graduates from the early 1970s to the late 1980s. The responsibility for such training had been transferred to the University of Technology at the Lae Campus of Morobe Province in the early 1990s. More recently, the opening of the Vudal Agricultural University, an affiliated institution to the University of Technology in the East New Britain Province had expanded this training base. Since the early 1990s, rice had become a main subject in the syllabus of both these institutions.

Other higher learning institutions that provide core training in agriculture include the SDA run Pacific Adventist University outside of Port Moresby, NCD and the government-run University of Goroka in the Eastern Highlands Province.

v). Private Sector Agency Agriculture Education and Training.

There are many private sector organizations engaged in various training programs that are related to their respective nature of activity in the agriculture sector. In terms of rice training, only Trukai Industries Pty Ltd., a joint venture company has recently participated in joint rice research and training with the University of Technology in Lae, Morobe Province.

From 1995 to 1999, short courses in rice agronomy research for national DAL and provincial DAL extension staff in overseas institutions particularly at the University of the Philippines, Los Banos, were funded by Trukai industries Pty Ltd. This was under the joint PNG-IRRI Rice Research and Development Program, which has since ceased.

vi). NGOs - the Churches and Donor Agencies.

The main NGOs providing agricultural training to mainly farmers and youth groups fall under three categories. The churches, the community based NGOs and the donor agencies.

a). Church-run Agriculture Training.

The main church denominations that run agricultural training programs are the Catholic and the Lutheran Churches. The Catholic Church and Lutheran Church have various High Schools and Vocational Colleges that have curricula that have an agricultural training component in them. Notable for the Catholic Church is the St. Benedicts College in Madang. For the Lutheran Church, notable agricultural training program is the 'Yanpela Didiman' which is aimed at youths in the community to learn to be self-sufficient in food production back in their communities and are very active in the Momase Region, particularly in the Morobe and the Madang Provinces.

Other churches such as the Evangelical Alliance of PNG also run agricultural training programs at the CLTC near Banz of the Western Highlands Province for their youth and Christian Leaders but are not as active as the Catholic and Lutheran Churches in its out-reach.

b). Community-Based NGO Training.

There are many community-based NGOs often having international roots that conduct agricultural training programs in the village communities. They are too numerous and cover many village communities. However, often these NGOs are transient, of low sustainability, and coverage of land area and village communities are very low.

c). Donor Agency-Based Agricultural Training.

Many donor agencies have funded and or are funding and facilitate agricultural training programs for DPI extension staff, youth groups and farmers in various Provinces under their bi-lateral and multi-lateral technical aid arrangements with the national government. An example is the Republic of China (on Taiwan) rice development technical assistance scheme. Another is the Technical Assistance given to the national DAL, the Provinces and their districts by OISCA and the JICA in promoting small-holder rice development.

The following are the types of short courses sponsored by JICA in various training institution in Japan for NDAL and PDAL extension staff in PNG.

- Irrigation, Drainage and Reclamation (3 months)
- Farmer Machinery Management (9 months)
- Rice Management Course (3 months)

In terms of rice production and management training, the OISCA and ROC are the main training providers.

1. OISCA Training Program

The Japan based NGO, OISCA provides short but comprehensive training for farmers and Provincial Administration extension staff on all activities in rice cultivation and processing management. Its objective is to train farmers from various Provinces and locations to form a nucleus of Model Farmers. These trained farmers go back to their communities and pass on their knowledge and skills to farmers. The OISCA staff conduct follow-up visits of these model farmers under the joint DAL-JICA Rice Training and Visit Program which started in 2001.

2. ROC Training Program.

This agency conducts practical hands-on training by the ROC technical officers during farm visits and open days at the ROC Rice Stations or Farmer Leader's rice farms.

3.7 Provincial and Local-Level Government Reforms

The major recent social reforms are mainly political and administrative in nature, namely, the Organic Law on Provincial and Local-level Government. It is important to discuss these reforms as it sets the parameters for services, especially to small rural people. Since independence in 1975, Provinces were granted limited powers to govern their respective Provinces, except for centralized powers such as defense and police, foreign affairs, mining and petroleum and a few others. Provincial governments in various Provinces ran at differing paces, notably with those in the New Guinea Islands running far more smoothly than elsewhere. Institutions such as the National Planning Office, National Research Institute, Universities, etc. were used as think-tanks by both the National and Provincial Governments to plan and direct programs such as the National Public Expenditure Plan and Medium-Term Strategy Plan. Power struggles were experienced between the Central government and the Provinces at times plus allegations of mismanagement, saw most provincial governments at one time or another being suspended. Suspensions of Provincial governments have also resulted in legal battles with the National government.

These experiences plus a perceived desire by the central government to bring basic goods and services to the grass roots resulted in the above-mentioned reforms. Whether those desired ends have been achieved will be discussed below. Whilst the Provincial Governments were retained, its membership was changed. Unlike in the past where its membership was made up of representatives elected directly to its assembly, membership now constitutes presidents of LLGs and MPs of each province.

Incorporation of the Local Level Government System is the emphasis in the reforms of 1995. LLG is not a new invention. The first LLG in the form of local level government council was established in PNG in 1949 and the Local Government Act 1963 was enacted during the Colonial Administration to administer councils or community governments. The 1963 Act was adopted under the reforms and bringing all its powers under the National Government legislative control (Notes & personal communication, Office of Provincial Affairs).

In theory the perceived desire to bring basic goods and services to the ordinary people at the village level is honourable. However, the financial and manpower bureaucratic arrangements are such that desired intentions are not always met. For example the health department needs a policy implemented at a council level, but unlike in the past, it has no control over staffing or manpower. Another example is village courts, which can be set up by LLGs and Provinces, but funding comes from the Attorney General's Office. Many village court officials in the past had their allowances delayed, although this institution is fundamental for the maintenance of law and order at the grass roots level.

Tables 3.4 and 3.5 shows the level of transfers to Provincial Governments from 1994 – 2001. Funding to local level governments began in 1998 as required under the Organic Law. Local level representatives were first elected in 1997. As can be seen from the tables above, the more populated Provinces (such as Southern Highlands, Morobe, Western Highlands, Eastern Highlands and Madang) tended to receive higher levels of grants compared to the less populated

Provinces (e.g., Manus, Gulf, Northern, New Ireland and Central). Less populated but resource rich province like Fly River has also tended to receive higher levels of funding. Note that much of the development budget for East New Britain Province since 1997 is related to the Gazelle Restoration Project while for the North Solomons Province, the development budget is for the reconstruction of the province.

Table 3.6 tends to contradict the observation made above. On a per capita basis, for the five Provinces under study, Central the less populated province has tended to receive more compared to the more populated Provinces like Morobe, Madang and East Sepik. Per capita transfers for East New Britain is the highest among not only the five Provinces under study but also among most Provinces since 1997. This is partly due to the funds allocated under the development grant for the Gazelle Restoration Program.

Table 3.4: Level of Transfers to Provincial Governments 1994-2001 (in '000 Kina).

	1994	1994	1995	1995	1996	1996	1997	1997	1998	1998	1999	1999	2000	2000	2001	2001
Provinces	Rec.	Dev.	Rec.	Dev.	Rec.	Dev.	Rec.	Dev.	Rec.	Dev.	Rec.	Dev.	Rec.	Dev.	Rec.	Dev.
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Budget	Budget	Budget	Budget
Fly River	14210.9	1000	17469.1		27791.7		31755.8	0	32622.2	236.2	29865	0	25150.8	4200	27692.5	4200
Gulf	10963.4	1000	14993.2		19418.4		19229.7	0	19910.7	0	18076.3	1473	14997.8	2000	15803.5	4000
Central	2811.2	0	15300.3		21667		23512.6		25549.4	1000	25205.7	2245	23643.8	2000	27328.2	3067.3
NCD					7082.2		15680		12187.6	450	6608.1		7218.7		7536.7	
Milne Bay	2242.7	1000	16685.8		20196		28322.4		29824.7	0	27409	0	25256.6	2010	27563.8	2010
Oro	11536.2	0	5047.1		14897.7		18702		18088.3	0	17020	0	16938.6		20008.9	600
S. Highlands	24294.8	1000	45322.9		41933.9		50402.8	0	50974	0	43965.9	4664	37262.5	4621	91868.1	5100
Enga	4775	1410	30481.5		28430.8		36098	0	35665.2	0	33753	759.6	28228.6	4000	31593	4500
W. Highlands	6652	0	19281.8		30525.5		42044.5		41618.1		37705.3		36252.4		42450.5	
Simbu	5145.1	0	14899.2	0	21819.9		26654.2	3497.5	28608.4	1385	26329.5	2871.6	25455.3	2712.6	30059.9	300
E. Highlands	16657.2	0	16476.2		31078.8		40171.6		41992.9		38719.9	0	38047.9		43524.4	300
Morobe	18433.8	0	20628.9		39534.6		52730.7		52418.6	0	47669.3	0	47077.3	200	52849.3	1000
Madang	10274.3	0	8235.6		26188.9		34011.1		33422.2		33173.5		32257.8		34653.8	
East Sepik	975.8	0	2563.4	0	25130.3		35661.5	222.8	36426.2	424.2	33230.5	960	32807.5	4150	37543.6	6400
Sandaun	2609.4	0	13640.6		16132.1		22506.7		22415.2		21121.9		20258.9		22542	
Merus	2262.4	0	6904		12068.9		10211.2		11647.4		10705.2		10667.1		11422.7	
New Ireland	8086.3	200	9861.4		22431.1		21161.9		26654.5	0	27347.9	0	20258.9	3500	22650.9	3000
E. New Britain	9041.4	0	7478.4	0	20222.5		29751.8	37294.8	33657.9	22399	30755.9	25339	30158.5	19412.6	33994.9	15114.6
W. New Britain	7683.3	0	9982.5	0	17421.5		22786.1	2241.3	24685.9		25289.8		24565		29469.3	
North Solomon	5636.3	5636.3	13500.9	0	10763.9		22054.5	10844.8	19717	39130.7	21933.7	2812.8	22678.2	2000	24117.3	20915.8
Total	164311.5	11246.3	288752.8		454735.7		583449.1	54101.2	598086.4	65025.1	555885.4	41124	519182.2	50806.2	634673.3	70507.7
Total Exp.	1335759.9	410000	1802292.9	237544.4	1721930.7		2442952.4	339163.8	2141278.4	502245.7	2315895.2	744830.2	2596472.4	779875.6	2917547.4	1051060.2

Source: Estimates of Revenue and Expenditure, Budget Papers, Volume 2 - Parts 2 and 3.

Table 3.5: Level of Transfers to Provincial Governments 1994-2001 (in '000 Kina).

	1994		1995		1996		1997		1998		1999		2000		2001	
	Total	% of	Total	% of	Total	% of	Total	% of	Total	% of	Total	% of	Total	% of	Total	% of
Provinces	Transfers	total	Transfers	total	Transfers	total	Transfers	total	Transfers	total	Transfers	total	Transfers	total	Transfers	total
	Actual	exp.	Actual	exp.	Actual	exp.	Actual	exp.	Actual	exp.	Actual	exp.	Budget	exp.	Budget	exp.
Fly River	15210.9	0.87	17469.1	0.86	27791.7	1.61	31755.8	1.14	32858.4	1.24	29865	0.98	29350.8	0.87	31892.5	0.80
Gulf	11963.4	0.69	14993.2	0.74	19418.4	1.13	19229.7	0.69	19910.7	0.75	19549.3	0.64	16997.8	0.50	19803.5	0.50
Central	2811.2	0.16	15300.3	0.75	21667	1.26	23512.6	0.85	26549.4	1.00	27450.7	0.90	25643.8	0.76	30395.5	0.77
NCD		0.00	0	0.00	7082.2	0.41	15680	0.56	12637.6	0.48	6608.1	0.22	7218.7	0.21	7536.7	0.19
Milne Bay	3242.7	0.19	16685.8	0.82	20196	1.17	28322.4	1.02	29824.7	1.13	27409	0.90	27266.6	0.81	29573.8	0.75
Oro	11536.2	0.66	5047.1	0.25	14897.7	0.87	18702	0.67	18088.3	0.68	17020	0.56	16938.6	0.50	20608.9	0.52
S. Highlands	25294.8	1.45	45322.9	2.22	41933.9	2.44	50402.8	1.81	50974	1.93	48629.9	1.59	41883.5	1.24	96968.1	2.44
Enga	6185	0.35	30481.5	1.49	28430.8	1.65	36098	1.30	35665.2	1.35	34512.6	1.13	32228.6	0.95	36093	0.91
W. Highlands	6652	0.38	19281.8	0.95	30525.5	1.77	42044.5	1.51	41618.1	1.57	37705.3	1.23	36252.4	1.07	42450.5	1.07
Simbu	5145.1	0.29	14899.2	0.73	21819.9	1.27	30151.7	1.08	29993.4	1.13	29201.1	0.95	28167.9	0.83	30359.9	0.77
E. Highlands	16657.2	0.95	16476.2	0.81	31078.8	1.80	40171.6	1.44	41992.9	1.59	38719.9	1.27	38047.9	1.13	43824.4	1.10
Morobe	18433.8	1.06	20628.9	1.01	39534.6	2.30	52730.7	1.90	52418.6	1.98	47669.3	1.56	47277.3	1.40	53849.3	1.36
Madang	10274.3	0.59	8235.6	0.40	26188.9	1.52	34011.1	1.22	33422.2	1.26	33173.5	1.08	32257.8	0.96	34653.8	0.87
East Sepik	975.8	0.06	2563.4	0.13	25130.3	1.46	35884.3	1.29	36850.4	1.39	34190.5	1.12	36957.5	1.09	43943.6	1.11
Sandaun	2609.4	0.15	13640.6	0.67	16132.1	0.94	22506.7	0.81	22415.2	0.85	21121.9	0.69	20258.9	0.60	22542	0.57
Manus	2282.4	0.13	6904	0.34	12068.9	0.70	10211.2	0.37	11647.4	0.44	10705.2	0.35	10667.1	0.32	11422.7	0.29
New Ireland	8286.3	0.47	9861.4	0.48	22431.1	1.30	21161.9	0.76	26654.5	1.01	27347.9	0.89	23758.9	0.70	25650.9	0.65
E. New Britain	9041.4	0.52	7478.4	0.37	20222.5	1.17	67046.6	2.41	56056.9	2.12	56093.9	1.83	49571.1	1.47	49109.5	1.24
W. New Britain	7683.3	0.44	9982.5	0.49	17421.5	1.01	25027.4	0.90	24685.9	0.93	25289.8	0.83	24565	0.73	29469.3	0.74
North Solomon	11272.6	0.65	13500.9	0.66	10763.9	0.63	32899.3	1.18	58847.7	2.23	24746.5	0.81	24678.2	0.73	45033.1	1.13
Total	175557.8	10.06	288752.8	14.16	454735.7	26.41	637550.3	22.92	663111.5	25.08	597009.4	19.51	569988.4	16.88	705181	17.77
Total Exp.	1745759.9		2039837.3		1721930.7		2782116.2		2643524.1		3060725.4		3376348		3968607.6	

Source: Estimates of Revenue and Expenditure, Budget Papers, Volume 2 - Parts 2 and 3.

Table 3.6: Per capita^a transfers to Provincial Governments, 1994-2001 (in Kina).

	1994	1995	1996	1997	1998	1999	1999	1999	2000	2000	2000	2001	2001	2001
	Total	Total	Total	Total	Total	Re-	Devel-	Total	Re-	Devel-	Total	Re-	Devel-	Total
Provinces	Transfers	Transfers	Transfers	Transfers	Transfers	current	opment	Transfers	current	opment	Transfers	current	opment	Transfers
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Budget	Budget	Budget	Budget	Budget	Budget
Fly River	121	135	208	230	230	203	0	203	165	28	193	176	27	203
Gulf	147	177	220	208	207	180	15	195	143	19	162	145	37	182
Central	18	95	131	139	153	141	13	154	129	11	140	145	16	162
NCD	0	0	31	67	52	27	0	27	29	0	29	29	0	29
Milne Bay	18	91	108	147	150	134	0	134	121	10	130	128	9	137
Oro	105	45	127	155	145	132	0	132	128	0	128	146	4	150
S. Highlands	64	109	96	109	104	85	9	94	68	8	77	160	9	169
Enga	24	117	106	132	128	119	3	121	98	14	111	106	15	122
W. Highlands	18	50	77	104	100	88	0	88	83	0	83	94	0	94
Simbu	24	68	97	129	124	105	12	117	98	10	109	112	1	114
E. Highlands	48	46	83	104	105	93	0	93	89	0	89	97	1	98
Morobe	42	46	84	109	104	92	0	92	88	0	88	95	2	96
Madang	35	27	83	104	99	95	0	95	89	0	89	92	0	92
East Sepik	3	9	83	115	115	101	3	104	96	12	108	107	18	126
Sandaun	17	85	97	132	128	117	0	117	109	0	109	118	0	118
Manus	62	181	307	252	279	249	0	249	245	0	245	250	0	250
New Ireland	84	97	214	196	239	238	0	238	171	30	201	185	25	210
E. New Britain	46	37	98	321	264	142	117	260	137	88	225	152	68	220
W. New Britain	51	64	108	150	143	142	0	142	133	0	133	154	0	154
North Solomon	76	92	74	227	410	154	20	174	161	14	175	172	149	322
Total	41	66	100	136	138	112	8	120	101	10	111	120	13	133

^aPopulation figures based on the 2000 population level and average annual growth rates from 1990 to 2000.

Source: Estimates of Revenue and Expenditure, Budget Papers, Volume 2 - Parts 2 and 3.

The Organic Law increased the powers, resources, and responsibilities of provincial and local level governments, while, reducing that of the national government. In all, this was aimed at getting goods and services to the people in the rural areas, and increase their participation in decision making on investment, planning and implementation at the district level so as to improve the people's living standards. The fact of the matter is, to date, many provincial functions at the national level have yet to be transferred to the Provinces. Those functions that have been transferred have in most cases exist at the Provinces only in name because the transfers took place without the accompanying funds. The Provincial and local level governments are also ill equipped to handle such responsibilities. Lack of capacity at the Provinces is a major concern. Institutions at the provincial level are generally weak. Inter-agency linkages particularly between the national departments and the Provinces are weak. Information dissemination particularly from the national to the Provinces has almost been non-existent.

3.7.1 Implication of the Reforms on Agriculture Development Program

Understanding of the bureaucratic arrangements of the reforms discussed above are pertinent to a successful implementation of agricultural projects, such as the present one with provincial and local level government support. The would-be farmers of Tutubu and Amau villages, especially the former, were upset with the lack of extension services by Provincial DPI, neither from Kupiano nor from Moreiguna. Brief discussions with PDI officers in those areas indicate a lack of support for vehicles and funds from superiors. Consequently around sixty rice farmers had their crop grown and harvested in 2000 waited for milling opportunities up to the day the JICA, OISCA and the study team arrived in March 2002. It is noteworthy that this lack of support is despite the fact that National DAL had a Food Security policy in place. This concern was highlighted in the consultation session between JICA, OISCA, DAL and the study team.

3.7.2 Provincial and District Priorities

The introduction of the reform system implied bottom-up planning, which meant each LLG and provincial government makes development plans and priorities as per their perceived requirements. Each district has a Joint District Budget Priorities Committee, comprising the local MP as chairman and includes LLG presidents, managers and community representatives. This committee allocates funds as per their plans, which are normally five-year plans. Thus priority one in one LLG or province may not be a priority in another. For example this team's selection of study districts for Morobe as per the TOR, were not its priority districts for rice growing. However, the team was advised on suitable sites as per its TOR. Whether there will be long-term support is questionable and needs careful consideration. Externally designed projects therefore need to link up with the local establishment. And more importantly, stakeholders need to be identified and network established to make a project viable.

3.7.3 Linkages between National, Provincial, District & LLG Agencies

As per the intentions of the reforms, and thus in theory, a national government department formulates policy plans. The provincial counterparts incorporate that policy into a Provincial Expenditure Plan (5 years) with budget estimates. That would normally include identification for funding sources for specific programs and projects. The district administration coordinates the provincial priorities and LLG plans by incorporating plans based on the LLG's community and ward needs. It further ensures capacity building for the LLGs to implement the plans.

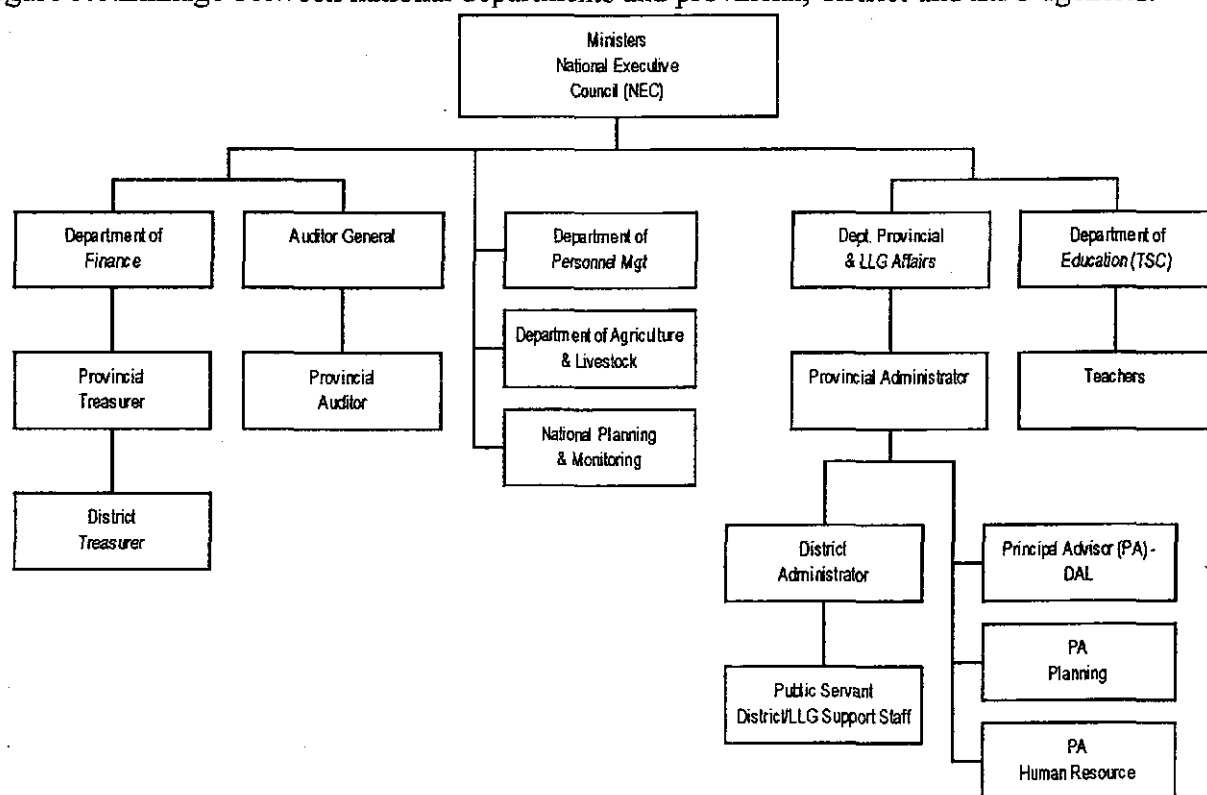
The LLGs submit their budgets to the Joint District Planning and Budget Priorities Committee (JDP and BPC). The LLG then submits this budget to the Department of Finance for approval. Theoretically funds should go direct from finance to the LLG, but in most cases these funds go through the provincial headquarters. This is mainly due to lack of capacity of the LLGs to manage the funds. For example for an LLG to be financially autonomous, it must have an accountant and not a cash clerk.

The membership of the JDP and BPC comprises the National MP, presidents of LLGs and community representatives of women, youth and churches with the District Administrator as the EO.

At the political level, the national MP could be a National Minister or provincial governor and the LLG presidents are members of the provincial assembly and could be chairman (provincial minister) or even a deputy governor.

At the bureaucratic level, a department at the national level has provincial counterparts with a program advisor (PPA), followed by district program managers or coordinators and LLG extension officers. In terms of daily administration, the PPA comes under the Provincial Administrator, program coordinator under the District Administrator and extension officers under the LLG Council Manager. Figure 3.8 below shows the linkage between national, provincial, district, and LLG administrations. Figure 3.9 shows the membership of the JDP and BPC at the district level.

Figure 3.8. Linkage between national departments and provincial, district and LLG agencies.

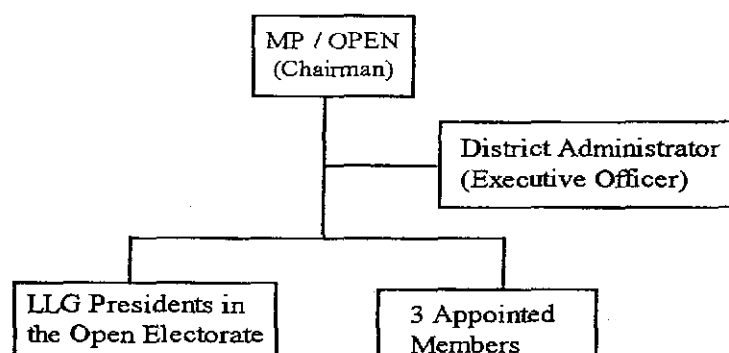


Note:

- (1) Provincial Administrator -- Appointed under Section -- of the OLPLLG by the NEC to be Administrative Head of the Province. The PA is also the head of the Public Service of the Province.
- (2) The following provincial functions/divisions report to the National Department:

- Provincial & District Treasurers - Finance Department
- Provincial Auditor – Auditor General of PNG
- Teachers – Department of Education (teaching Services Commission (TSC))

Figure 3.9 Structure of Joint District Planning & Budget Priorities Committee (JDP & BPC)



The reform system now allows for mandated distribution of roles and responsibilities and functions and operations of government agencies as well as clear demarcation of political responsibilities to the rural level. The reform is a vehicle from which basic goods and services can now be delivered to the rural areas; at the same time the rural population can effectively participate in the political, economic and social decisions that have bearings on their livelihood.

However since the reform in 1995, the government mechanism had experienced difficulty in implementing the reform. That has resulted in a lot of basic goods and services not reaching the masses.

Thus for National Food Security to be implemented successfully, it must be recognized and accepted by both the national representative (MP), Provincial and local Political establishments as well as the respective provincial and district administrations. Furthermore, that, villagers at the ward levels must identify with it and have ownership of the concept. In the areas where reforms has not really taken off yet it, would be incumbent on DAL to liaises and ensure that the Five Year Development Expenditure Plans for the respective districts and the Provinces incorporate the intents and recommendations of this study, for further implementation.

3.8 National Socio-Economic Situation

3.8.1 National Economic Condition

Between 1990 and 2000, the economy grew at an annual rate of 4.8% while the annual population growth rate between 1990 and 2000 was 3.5%. Gross Domestic Product (GDP) per capita has steadily declined to K730 (US\$264) in 2000. Inflation grew at an annual rate of 9.5% between 1990 and 2000. There has been very little employment growth since 1992². The Kina has depreciated against all major currencies since 1994 when the kina was devalued

² PNG does not provide regular unemployment data. According to the 1990 and 2000 National Census, 3% of the economically active population 10 years and older were unemployed in 2000 compared to 8% in 1990. The 'unemployed' is defined as those who are waiting to start a job and those who are looking for work.

and then subsequently floated. Kina has steadily weakened over the years to US\$0.2976 in 2001. Interest rates have also generally increased over the same period. Lending rates (interest) as an indication of the level of business and economic activities are comparably high by other country's standards.

International reserves hit a low of K112 million (US\$95 million) (equivalent to one months import cover) in 1994 but rebounded over the next two years to hit a high of K789 million (US\$596 million) in 1996. Since then reserves have been gradually depleted partly to support the Kina. Reserves have increased over the last two years but the Kina has continued to depreciate against the US\$ and other major currencies. In 1992, public debt was about 46% of GDP. This has grown to about 58% of GDP in 2000 and has further increased to 70% of GDP in 2001.

The economic indicators show that the economy has contracted since 1994. Economic growth has basically oscillated around the zero% growth rate mark. The economy began to slide especially after 1995 after the Kina was devalued in 1994 and then floated. The policy shift from a fixed exchange rate regime to a flexible regime was necessitated by the severe cash flow and balance of payments (BOP) problems that were been faced by the government during the early 1990s. PNG recorded BOP deficits from 1990 to 1994. Between 1995 and 2000, the economy grew at an average annual rate of 1.2%. During this period the population grew by 3.5%. The economy has been in recession for the past three years. The poor economic performance and contraction in the economy is attributed to high interest rates, lower exchange rates, rising prices, poor infrastructure maintenance, weak investment, very little employment growth, depressed commodity prices, falling mining revenues and activities, decline in exploration activities, lack of funding, corruption and instability, poor budgeting, poor financial management, and increasing law and order problems. Past efforts at reform were undermined by political instability, instability in the public service, management failure, lack of attention to implementation and lack of political support.

Table 3.7 Economic Indicators

Table 3.7 Economic Indicators										
	Year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Real GDP (Kina) *	2931.5	3465.1	3671	3549.4	3823.9	3674.6	3536.1	3803.5	3774.3	3649.2 ^a
Real GDP (US\$)*	2968.7	3530.9	3114.8	2678	2888.2	2561.6	1717.1	1491.7	1367.4	1086 ^a
Real GDP growth %	13.8	18.2	5.9	-3.3	7.7	-3.9	-3.8	7.6	-0.8	-3.3 ^a
Real GDP per capita (Kina)*	760	866	885	825	856	793	736	763	730	680 ^a
Real GDP per capita (US\$)*	770	883	751	622	647	563	357	299	264	202 ^a
Employment growth %	3.2	-2.8	7.3	-4.7	7.5	-0.2	-2.3	2.6	1.5	-6.1
Inflation %	4.3	5	2.9	17.3	11.6	4.6	13.6	14.9	15.6	9.3
Interest rate ^a %	6.5	6	10.0	15.4	10.2	10.6	20.2	18.2	15.5	14.6
Balance of Payment (Kina)*	-68	-96	-26	244	432	-123	-276	160	359	708
International reserves Kina*	244	138	112	357	789	667	391	351	910	1617
International reserves US\$*	247	141	95	270	596	465	190	138	330	481
Import cover	3.2	1.6	1.0	2.6	4.8	3.8	2.1	2.4	4.0	6.1
Public debt Kina*	1945.2	2320.0	2961.2	3324.2	3780.8	4418.0	5177.6	5834.2	5621.6	7097.3
Public debt US\$*	1969.5	2364.1	2612.6	2508.1	2855.6	3079.8	2514.2	2288.2	2036.7	2112.2
Exchange rate US\$	1.0127	1.019	0.8485	1.0927	0.7553	0.6971	0.4856	0.3922	0.3623	0.2976
Exchange rate AS	1.4708	1.5077	1.0927	1.0176	0.9653	0.9365	0.7708	0.6086	0.6256	0.5476

* The monetary values are in millions. ^b Estimate. ^c Weighted average total advances.

Source: Bank of PNG, various issues and PNG Government Budget Documents various issues.

3.8.2 Inflation and Exchange Rate (Re-visited)

A hard Kina policy of the 1970s to the early 1990s was aimed at keeping the local currency on par with the other major trading currencies. This effectively controlled imported inflation until 1994. Table 3.8 show the trading rate of Kina against the US and Australian Dollar since 1994. The flexible exchange rate regime was a mixed blessing to agriculture. On the one hand, exports became attractive while on the other hand, imported production inputs became very expensive. Any net gains that may have resulted, may have been diminished by the prolonged low crop prices. When the Kina was devalued and subsequently floated in 1994, the government's main aim was to create a conducive environment for export, especially, agricultural exports.

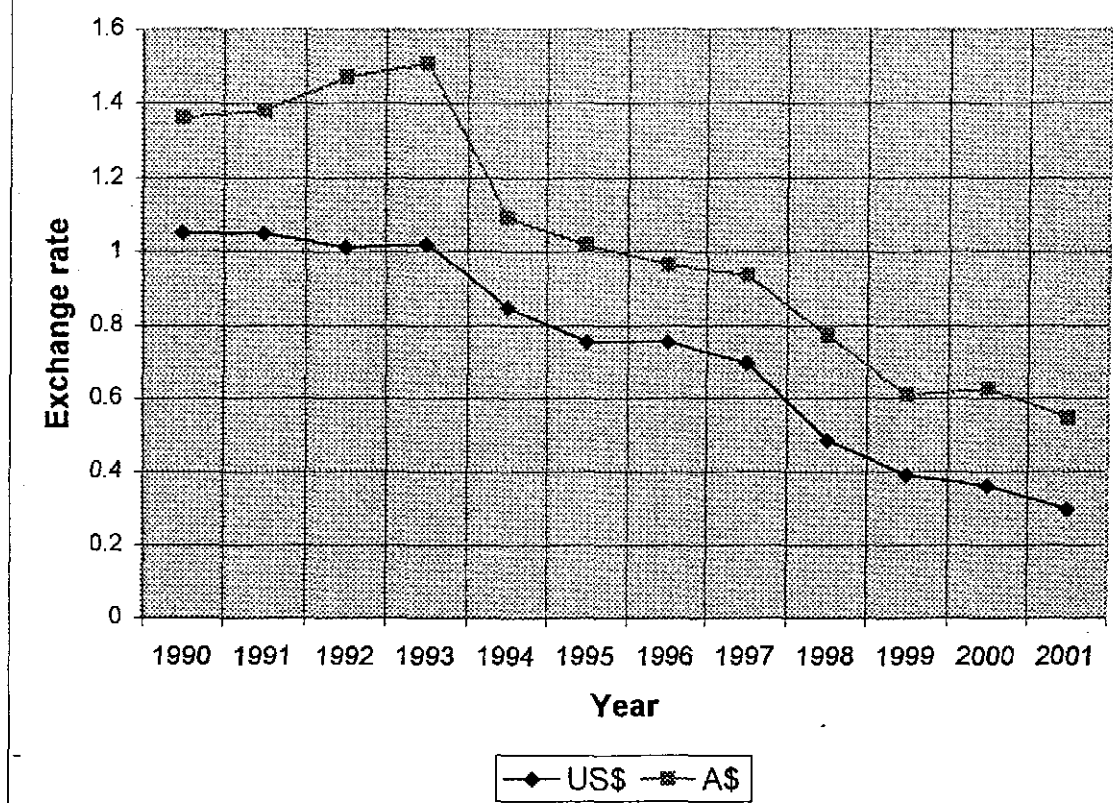
Since 1994, the exchange rate trend showed that the Kina has weakened against the US Dollar by an average of 13% per year from an average of 0.848 US Dollars in 1996 to 0.2976 in 2001. The kina depreciated against the Australian Dollar by an average of 9% per year (refer to Figure 3.10). The Kina has steadily weakened over the years to 0.2976 in 2001. Despite the positive impact on export revenue due to the depreciated Kina, increasing costs related to production inputs, consumer goods and services are notable. Again, this is typical of countries whose economies are export oriented and import dependent. Figure 3.10 below shows the steady decline of the Kina against the two currencies mentioned over a period of twelve years.

Table 3.8 Inflation Rate and Nominal Exchange Rate (\$US and Australian Dollar): 1990 – 2001

Year	Nominal Exchange Rate		Inflation	
	US \$	A\$	All Groups	Food
1990	1.0511	1.3616	6.9	9.6
1991	1.0498	1.3818	7.0	7.8
1992	1.0127	1.4708	4.3	3.3
1993	1.0190	1.5077	5.0	2.4
1994	0.8485	1.0927	2.9	1.9
1995	0.7545	1.0176	17.3	18.0
1996	0.7553	0.9653	11.6	13.7
1997	0.6971	0.9365	4.6	6.5
1998	0.4856	0.7708	13.6	13.4
1999	0.3922	0.6086	14.9	17.0
2000	0.3623	0.6256	15.6	13.6
2001	0.2976	0.5476	9.3	9.6

Source: Bank of PNG, various issues

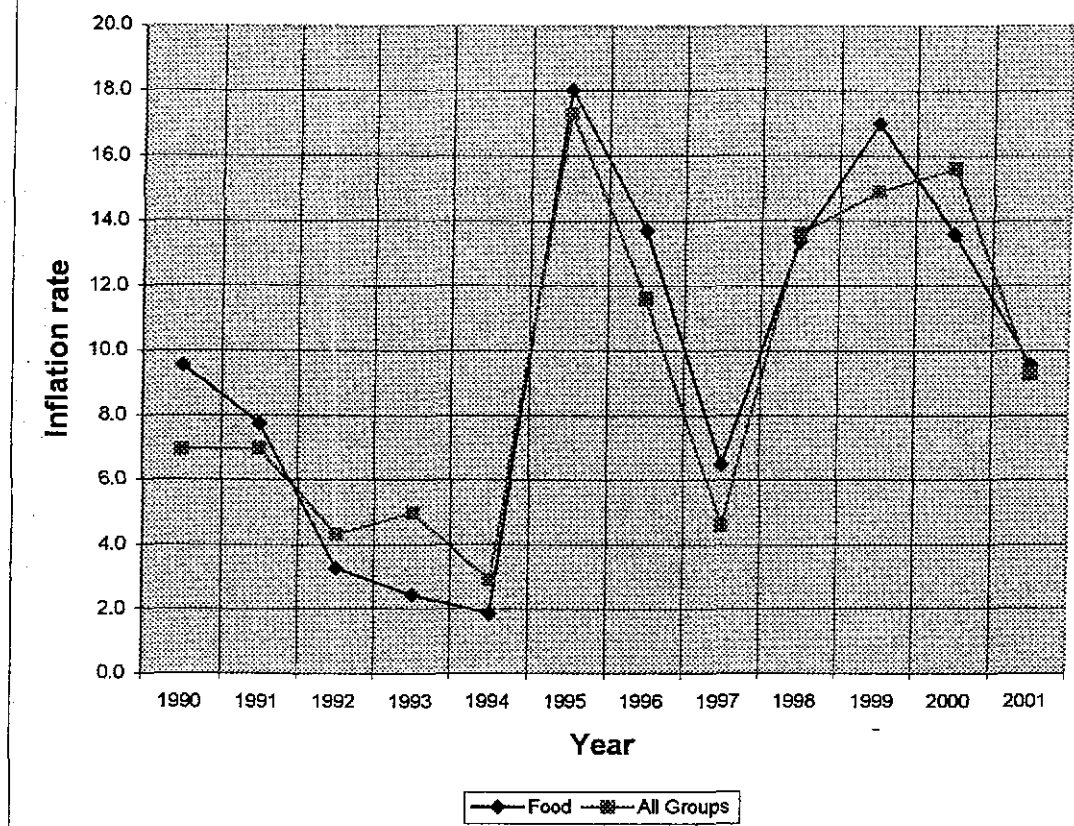
Figure 3.10: Kina Exchange Rate against US\$ and A\$: 1990 - 2001



Source: Bank of Papua New Guinea, 2002

The Consumer Price Index (CPI) measures quantity change in the prices of a "basket" of goods and services which account for a high percentage of expenditure by urban wage earners' household in the country. This basket covers a wide range of goods and services arranged in the following seven groups: food; drink, tobacco and betel nut; clothing and footwear; rent, council charges, fuel and power; household equipment and operations; transport and communication and miscellaneous (NSO, 2001). The inflation rate has shown an upward trend since 1994 (refer to Figure 3.11).

Figure 3.11: Inflation Rate 1990-2001



Source: Bank of Papua New Guinea, 2002

There appears to be a correlation between movements in the nominal exchange rate and the inflation rate. Notice that since 1994, the Kina has weakened steadily against the US\$ and the A\$ (Figure 3.10) while over the same period, the inflation rate has tended to trend upwards (Figure 3.11). As mentioned earlier, this result is typical of a raw material export oriented and import dependent economy such as PNG.

Food is a significant component of the CPI basket. Price instability and exchange rate uncertainties pose critical food security issues. Rice, a non-native food for example has become a staple food. More than 95% of the rice is imported. Attempts at local production has failed in some areas such as Bereina in the Central Province while in other areas domestic production of rice has not taken root yet. Domestic production is confined to institutions and localized areas. Therefore it is very critical that PNG grows its own rice. Local production of rice is been promoted using the smallholder rice project model.

3.8.3 National Social Conditions

PNG is endowed with rich natural resources including forestry, marine, land and a very significant number of non-renewable resource projects. Exploitation of these resources had mainly generated income in the form of tax, foreign exchange and direct employment. However, given the enclave nature of the non-renewable resource developments social and economic indicators suggests that the economy is faced with a bleak future prospect in terms of job opportunities, wide spread lawlessness, general deterioration in rural infrastructure,

and rising costs of living. The social indicators in Tables 3.2a and 3.2b summarizes the social conditions in PNG.

3.8.3.1 Human Development

An important measure of the country's social condition is the United Nations Development Programme (UNDP) Human Development Index (HDI). The HDI reflects three essential elements of human life; longevity, knowledge, and a decent level of living. Four variables are used to calculate the index- life expectancy at birth, aggregated gross enrolment ratio for grades 1 through 12, adult literacy rate, and domestic factor income. The 1996 the UNDP Global Human Development Report, showed that PNG's HDI value of 0.504 was the lowest when compared to Fiji, Western Samoa, Solomon Islands and Vanuatu. In fact, on a global scale, PNG ranks in the lower one-third of all nations. This revealed that PNG lagged behind in terms of the four social indicators compared to the other Pacific neighbors. The national HDI value was 0.363, lower than the global HDI³. The poverty rate is measured by the Human Deprivation Index (HPI)⁴. The HPI also represent the three essential elements of human life discussed above. The HPI value is 43.7 indicating that a larger proportion of the population is denied or cannot access basic education, health and infrastructure services.

3.8.3.2 Population

The population in the year 2000 was 5.1 million compared to 3.8 million in 1990. This represents an annual growth of 3.5%. The average annual growth between the 1980 and 1990 national census was 2.3%. In other words, population growth has accelerated. Population density is 130 persons per 1000 hectares. Much of PNG is still unoccupied.

3.8.3.3 Land

PNG has a total land area of 46,410,000 hectares. Of this, 30% is arable land and 57% is forest and woodland.

³ The national HDI is not comparable to the global HDI because (1) domestic factor income is used instead of gross domestic product, and (2) because the national HDI was based on actual census and survey data.

⁴ The HPI was computed using the following variables: life expectancy at birth, the percentage of adults who are illiterate, the percentage of people without access to health services, and the percentage of moderately and underweight children under five.

Table 3.9a: Some economic, social and environmental indicators for Papua New Guinea

Indicator	Unit	Year	Measure
Human Development Index	No unit: Global National	1999 1996	0.534 0.363
Poverty rate	Measured as human deprivation index	1998	43.7
Poverty rate	Measured as human poverty index (HPI-1)	1999	36.2 rank = 60
Population size	million	2000 1990	5.1 3.8
Annual growth rate	%	1980-1990 1990-2000	2.3 3.5
Population density	Persons per 1000 hectares	2000 1990	110 130
Land area	In 1000 hectares	1996	46410
Arable land	% of total land area	1996	30
Forest and woodland	% of total land area	1996	57
Formal labour force	As % of EAP age 10 and older	2000 1990	15 18
Subsistence & semi-subsistence labour	As % of EAP age 10 and older	2000 1990	75 74
Unemployed	As % of EAP age 10 and older	2000 1990	3 8
Labour force in Agriculture	%	2000 1990	 75
Labour force in Industry	%	2000 1990	 7
Labour force in services	%	2000 1990	 3
Gross enrolment ratio (grades 1-12)	%	1996 1980	47.7 36.2
School attendance	% of school age group 5-29 years old	2000 1990	26 20
Adult literacy	% age group > 10 years	2000 1990	54.6 45.1
Infant mortality rate	Per 1,000 live births	1999 1996	79 73
Total fertility rate	Births per woman	1996 1980	4.8 5.4
Crude birth rate	Per 1000 population	1996	36
Crude death rate	Per 1000 population	1996	12
Nutritional status	% of underweight children under the age of 5	1997 1982	29.0 38.1
Life expectancy at birth	years	1999 1996	56.2 54.0
Contraceptive prevalence	Any method %	1990-98	26
No of doctors	Nos of people per doctor	1990-93 1996	12754 17,210
HIV/AIDS	AIDs cases per 1,000 # of aids cases identified	1999 1997 1987-97	2.2 350 913

Table 3.9b: Some economic, social and environmental indicators for Papua New Guinea (continued)

Indicator	Unit	Year	Measure
Population without access to safe water	%	1996	76
Population without access to health service	%	1995	21
Population with access to sanitation	%	1996	83
National roads	Usable > 90% of year km	1995	8815
Trunk roads	Usable > 75% of year km	1995	7737
Feeder roads	Usable > 60% of year km	1995	68
Newspapers, daily in English	Per 100 people	1997	1.8
Radio, transistors	% of all household	1996	31.8
Television	% of all household	1996	7.2
Telephone	% of household with connections	1997	2.9
Public Expenditure on Health	% GDP % total govt. expenditure	1997	5.8 9.3
Public Expenditure on Education	% GDP % total govt. expenditure	1997	9.7 16
Agriculture as a % GDP	%	2000 1993	28 27
Industry as a % GDP	%	2000 1993	37 36
Services as a % GDP	%	2000 1993	35 33
Deforestation	Average annual rate of deforestation	1990-95	0.40
National Protected Areas	% all protected areas - IUCN categories I-V of total land area	1996	0.1
National Protected Areas	% by PNG criteria	1997	3.0
Murder, reported cases	Per 100000 persons	1997	10
Break & enter, reported incidence	Per 100000 persons	1997	55
Rape & sexual assaults, noted cases	Per 100000 women ages 15+	1997	110

Sources: UNDP's 2001 Human Development Report; World Resources 2000-2002 Report; 1998 PNG Human Development Report; and some data from 1996 Demographic Health Survey, the 2000 National Census and Quarterly Economic Bulletin, Bank of PNG, March 2002.

3.8.3.4 Labour Force

The formal labour force, the subsistence and semi-subsistence labour force and the unemployed comprised of 15%, 75% and 3% respectively of the economically active population aged 10 years and older in 2000. Compared to the 1990 census, the formal labour force has declined and so as the unemployed. The subsistence labour force has maintained its share. The fall in the formal labour force is consistent with the downturn in the economy outlined earlier. More than 70% of the labour force is engaged in agriculture (see Table 3.9a).

3.8.3.5 Education

Gross enrollment ratio (grades 1-12) and school attendance rates (for the school aged population aged 5-29 years old) have improved between 1990 and 2000. The adult literacy rate has also improved from 45.1% in 1990 to 54.6% in 2000. This is not surprising because this is the period in which educational reforms were implemented. Many community schools were topped up with grades 7 and 8 classes, some high schools were converted to secondary schools and new schools were established. Elementary grades were established to promote

learning in vernacular languages. Public expenditure on education accounted for 9.7% of GDP and 16% of total government expenditure.

3.8.3.6 Health

Health indicators have generally improved. Births per woman have fallen slightly from 5.4 in 1980 to 4.8 in 1996. The percentage of underweight children under the age of 5 has decreased from 38.1% in 1982 to 29% in 1997. The population is living a little bit longer 56.2 years in 1999 compared to 54 years in 1996. However, infant mortality has worsened slightly from 73 deaths per 1000 live births in 1996 to 79 deaths per 1000 live births in 1999. The number of people per doctor has increased and the use of contraceptives is still very low. Not surprisingly, aids cases have escalated. From 1987 – 1997 a total of 913 aids cases were identified, 38% (350 cases) were identified in 1997 alone. In 1997, public expenditure on health accounted for 5.8% of GDP and 9.3% of total government expenditure (refer to Table 3.9b).

3.8.3.7 Access to Services (Infrastructure, information and communication)

Only 24% of the population have access to safe water. Reticulated water is provided mainly in urban areas. The rural population rely on rain water and raw water from creeks, springs and rivers. A higher proportion of the population, 79%, have access to health services and 83% have access to sanitation.

For every 100 people, only about 2 people have access to the English daily newspaper. The daily newspapers are mainly circulated in major urban areas. In 1996, about one third of the households owned a transistor radio but less than 8% owned a television set. Only about 3% of the households had a telephone connection. These sorts of data reveal that the PNG population have very little access to information.

The 1998 PNG Human Development Report show that in 1995 more than 90% of the year, 8815 km of the national roads were usable, more than 75% of the year, 7737 km of trunk roads were usable and more than 60% of the year, 68 km of feeder roads were usable. Feeder roads and to some extent trunk roads are the lifeline to markets and services. Over the last couple years, roads have deteriorated into unacceptable levels and in some cases in a state of disrepair. The cash economy has been severely affected by this situation.

3.8.3.8 Law and Order

The increasing law and order problem is a major concern in PNG. Break and enter and rape and sexual assault cases are major problems in the country (refer to Table 3.2b). Law and order situation has been a problem to business and private life in PNG

3.8.3.9 Environment

Deforestation occurred at an average annual rate of 0.4% from 1990-95. Close to 90% of the households still rely on wood as their major source of energy. Fuelwood consumption has been a contributing factor to deforestation. Industrial logging, mining, petroleum and gas activities and subsistence farming are other causes. A mere 0.1% of the land area is classified as protected area.