PACIFIC POLICY PAPERS NO 1

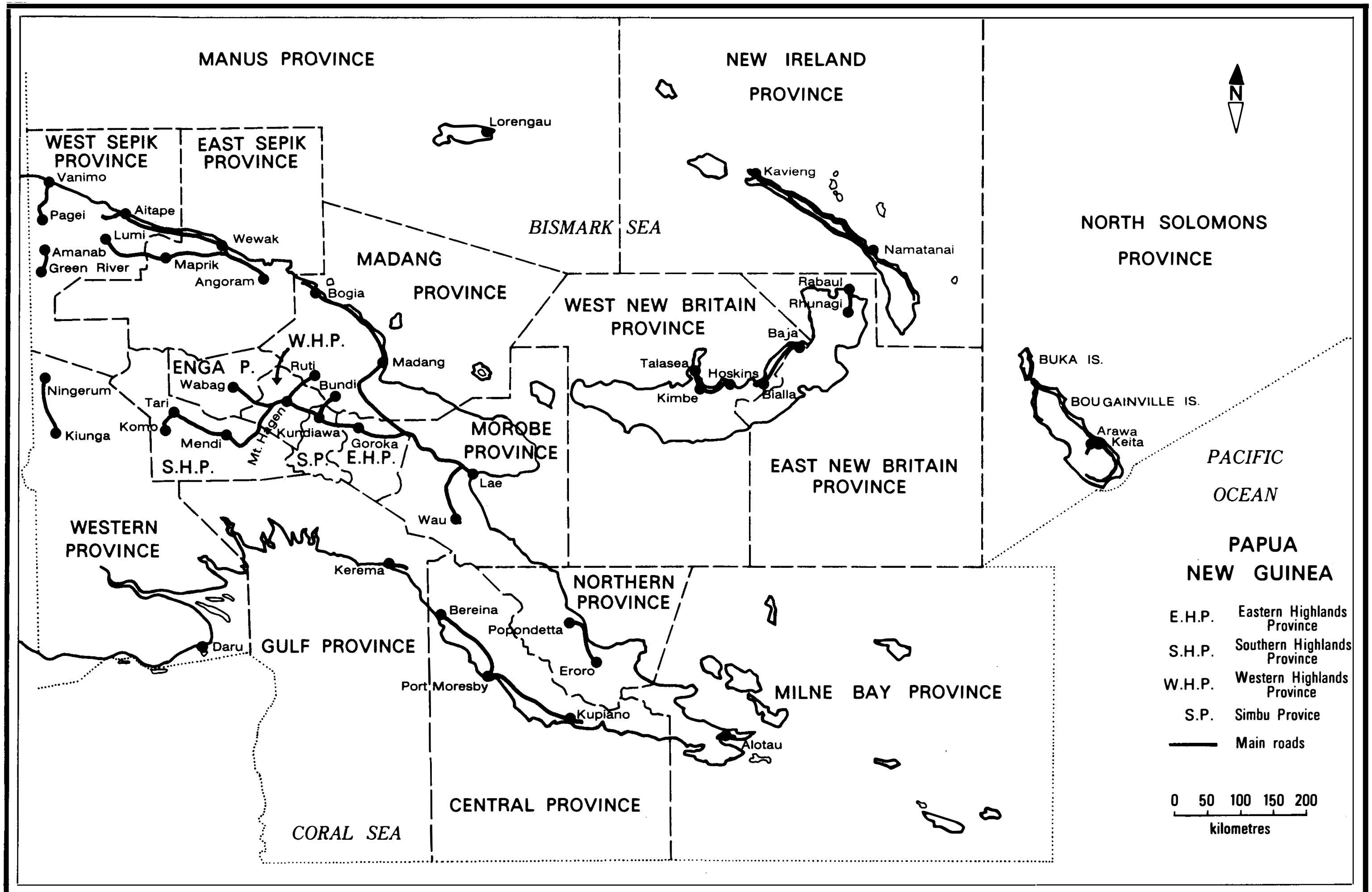
The Economy of Papua New Guinea

An Independent Review

Raymond Goodman
Charles Lepani
David Morawetz

National Centre for Development Studies
The Australian National University

The Economy of Papua New Guinea



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MILNE BAY PROVINCE
BISMARK SEA
PACIFIC OCEAN
CORAL SEA
BUKA IS.
BOUGAINVILLE IS.
Lorengau
Vanimo
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Aitape
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Amanab
Green River
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National Centre for Development Studies
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Canberra Australia
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PREFACE AND ACKNOWLEDGEMENTS

In October 1984 the Government of Papua New Guinea requested the Australian Government to arrange for an independent review of the economy of Papua New Guinea. The terms of reference of the review, which were proposed by the Government of Papua New Guinea, were as follows:

"(1) The Committee is to undertake an independent review of the Papua New Guinean economy in the light of the following:

(a) performance of the economy in achieving the Eight Aims and achieving the priorities set by the National Development Strategy, in the nine years since Independence;

(b) the changing emphasis of the Government towards growth and the creation of productive employment opportunities, under the auspices of the Medium Term Development Strategy;

(2) The Committee is to undertake a sectoral review of the economy, examining the development of each sector and identifying the problem areas in the future;

(3) The Committee is to examine Papua New Guinea's economic policies, assessing their performance in the light of the priorities of the Government and suggesting improvements or areas that may require greater emphasis."

The Development Studies Centre of the Australian National University was asked to manage the review. The Committee (also referred to in this report as the review team) was to comprise a nominee of each of the two Governments and a team leader. It was to be completely independent in carrying out the review and reporting its findings.

The results of the Committee's work are presented in this report. The report begins with an executive summary that recapitulates the principal conclusions and outlines the policies and actions that the team considers will help achieve the Government's aims of economic growth and the creation of productive employment.

The main text gives an overview of Papua New Guinea's progress and problems in the nine years since Independence in 1975, and then assesses the Government's general economic policies. This is followed by a review of the principal economic and social sectors. The available information for some sectors is much greater than for others, being particularly scanty for subsistence agriculture, and for the analysis of trends in the standard of living among the population generally and between areas of the country. If there are to be further reviews of this nature, these would be important subjects for concentrated study.

The team began work in December 1984 when a first visit to Port Moresby was made by Dr Morawetz accompanied by Dr James Guest, the Committee's Executive Secretary. A second visit to Papua New Guinea was made by all Committee Members in January and February 1985. This visit included a tour of several provinces in the islands and in the highlands. During the two visits to Papua New Guinea and also in Canberra, a large number of ministers, officials and private persons were good enough to meet and share their views with the Committee. Their names are listed in Appendix A.

The Committee is grateful to Professor Helen Hughes, Executive Director of the Development Studies Centre (Research School of Pacific Studies) of the Australian National University, and to the staff of the Centre for their invaluable support throughout the review period and particularly during the book's editing. Without their assistance, this report could not have been completed in the allotted time. The Centre commissioned a number of background papers that have been drawn on extensively in the review; these are listed in Appendix B.

The Committee also wishes to thank Dr James Guest, who did an invaluable job as Executive Secretary, and Ms Kathryn Kerkin, who acted as research assistant and participated in the second visit to Papua New Guinea. Dr Guest prepared the Appendix C Tables which cover the period from Independence to the latest year for which data are available. It is recommended that the tables in this report be updated periodically to provide a continuing record of Papua New Guinea's economic and social progress.

Although the Committee received helpful advice and comments from many people, the facts and opinions contained in this report are our responsibility alone.

RAYMOND GOODMAN

CHARLES LEPANI

DAVID MORAWETZ

Canberra and Port Moresby, April 1985

ABBREVIATIONS AND SYMBOLS

DDT	Dichloro Diphenyl Trichloroethane
FAO	United Nations Food and Agriculture Organization
f.o.b.	free on board
GDP	gross domestic product
MRSF	Mineral Resources Stabilization Fund
NPEP	National Public Expenditure Plan
OPEC	Organization of Petroleum Exporting Countries
p.a.	per annum
U.N.	United Nations
UNDP	United Nations Development Program
World Bank	International Bank for Reconstruction and Development

KEY TO SYMBOLS

FY	Financial years for Papua New Guinea ran from July 1 to June 30 until 1976; calendar years have been used since 1977.
Y/E	Year ending
K	kina, the Papua New Guinea unit of currency; 100 toea equal one kina. For pre-1985 values see Table A28. On 22 April 1985, \$A = 0.6556 K \$US = 1.0350 K.
n.a.	is not applicable
p	preliminary estimate subject to revision
..	not available
-	zero
A\$	Australian dollar
US\$	United States dollar

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

THE GENERAL ECONOMY

1 OVERVIEW

The conditions in which Papua New Guinea came to Independence in 1975 made the task of the new administration extremely difficult. The economy was largely owned and managed by foreigners; the Government lacked the instruments essential for national policy-making; doubts about the country's viability led to massive capital flight; and it was a time of world-wide inflation following the oil crisis. In these conditions, Papua New Guinea's achievements in taking over the management of the country and the economy, maintaining political and economic stability under a democratic form of government, and introducing a new currency while maintaining a low rate of inflation, have been remarkable. Nevertheless, there remain serious problems which, if not resolved, threaten to abort these achievements. Skilled and trained people and financial resources for development are in short supply; wages are higher than in competing countries; not enough jobs are being created; protectionist pressures are increasing; and lawlessness appears to be on the rise.

2 PROGRESS TOWARDS NATIONAL GOALS

In terms of the original objectives of economic and social policy there has been considerable progress since Independence. Economic, currency and price stability have been attained; the proportion of the national product accruing to nationals has grown; the proportion of persons participating in the cash economy has increased; there appears to have been a rise in average village living standards; community school education opportunities have become more widely distributed across the country; and there has been some increase in national economic self-reliance.

On the other hand, even after allowing for the need to adjust official statistics, the rate of growth of aggregate output has been relatively slow; creation of new job opportunities has fallen short of the increase in numbers seeking jobs; the gap between richer and poorer provinces and between urban and rural sectors has widened; and the proportion of export receipts needed to service the foreign debt, although still moderate by international standards, has increased rapidly in recent years.

3 GENERAL ECONOMIC POLICIES

The three main sets of general economic policies that have been used in Papua New Guinea since Independence are exchange, fiscal and wages policy. The hard currency policy that was pursued until the early 1980s helped to ensure that the kina was widely accepted and remained convertible, and was instrumental in keeping Papua New Guinea's inflation rate low. Against that, the policy hindered the growth of existing and potential exports, and discouraged the local production of goods that might have competed with imports. Given the generally unfavourable outlook for the prices of the commodities that Papua New Guinea exports, and hence for the country's balance of payments, the kina should be allowed to continue to depreciate gradually to encourage the production of exports and import substitutes.

The policy of fiscal or budgetary restraint that has been pursued has helped to protect the country's balance of payments, but has left little margin for increased government expenditure on goods and services, especially for investment. To attack this problem, the Government should: raise more internal revenue, perhaps by increasing the general import levy and broadening the tax base; make more use of non-budget-support aid from a variety of donors; encourage the private sector to increase its investment; and reserve government spending for essential purposes, especially investment in infrastructure.

High minimum wages and other benefits adopted from Australian practice have contributed to the unemployment problem by making it difficult for Papua New Guinea to get started in even the simplest manufacturing industries, reducing employment on plantations, and encouraging the search for labour-saving techniques of production in both industry and agriculture. In addition, the almost complete linkage of wages to the cost of living index that was in force until 1983 prevented the Government from using exchange rate adjustment as a means of increasing Papua New Guinea's international competitiveness. To make the country more competitive, ways need to be found to reduce real wages to bring them into line with productivity. Consideration should be given to scrapping the inherited centralized wage-fixing system; productivity-based wages should be permitted; and the categories of workers and employers who are exempt from minimum wage legislation should be expanded.

THE RURAL ECONOMY

4 FOOD PRODUCTION

The production of food by households for their own consumption and for sale is the base on which the Papua New Guinea economy rests, but there are no reliable data on the trends of food production. Imports of food have been increasing, and this has led to a concern that food production may have been declining. However, village nutrition studies suggest that per capita consumption of locally grown food has not been falling, indicating that total food production has been rising.

Just over half of all households in Papua New Guinea sell some homegrown vegetables and fruit. The value of such sales is only marginally less than that of householder sales of coffee, and appears to have been increasing strongly over time. There is no evidence of a general shortage of food in Papua New Guinea, though deficiencies are apparent in certain regions and at particular times. Imports of tinned meat, tinned fish and rice have added variety, protein and fats to the diet.

A poultry industry has been established under protection and, although it is presently based on imported feed, it appears to be viable. Medium-sized piggeries and a few large-scale cattle ranches have been set up with some success, but smallholder cattle schemes have generally failed.

Government efforts should concentrate on finding out where and when groups of the population suffer from food shortages; implementing measures to help in such cases; investigating methods of intensifying food production and disease control; and stimulating the growth of food production for sale by improving rural roads and market facilities and encouraging market gardening in peri-urban areas.

5 EXPORT TREE CROPS

Tree crops account for just under one-third of the value of rural output in Papua New Guinea and for one-third of export income. Performance among tree crops has varied considerably since Independence. Output growth of oil palm has averaged 20 per cent a year; production of coffee, copra oil and tea has grown faster than the population; the growth of cocoa and copra has been close to zero; and there has been a significant decline in rubber.
Except for tea (which is grown almost solely on estates) and rubber, smallholder production of all major tree crop products has increased. By contrast, estate production of all these products except palm oil and tea has either declined or remained constant, and aggregate employment on estates has fallen. Seventy per cent of all households in Papua New Guinea now grow some tree crops, and smallholders account for 48-75 per cent of national output in coffee, cocoa, copra products and palm oil.

Tree crop production and average agricultural cash income per head are unevenly distributed among the provinces. This is largely a consequence of the differential availability of suitable land and of infrastructure (especially roads) providing access to markets.

The strong past performance notwithstanding, there is considerable room for improvement in <u>coffee</u> production. Priorities for the

Government include ensuring that smallholders have access to improved extension services; supplying credit and other assistance to growers who wish to replace ageing plants and improve management practices; providing smallholders with the opportunity to sell coffee in cherry form; and stimulating increased research into higher-yielding and disease-resistant varieties.

The cocoa industry seems set for a rapid expansion of production during the rest of the 1980s. This is the result of the development and distribution of improved planting materials and the provision of up-to-date management assistance by the Cocoa Industry Board and by private management and research companies. Priorities for the Government include measures to ensure that cocoa estates with ageing and senile trees are rehabilitated, and the distribution of improved planting materials to provinces (other than those in which these materials were developed) that have proven potential for cocoa growing.

Copra products, once Papua New Guinea's main export, have lost ground in recent years. The average yield on estates is so low that replanting is not profitable, thus increasing the senility of the coconut stock. In many parts of the country, to be financially attractive, new plantings of coconuts will need to be combined with either cocoa or cattle. The key requirements for future expansion are the development and distribution of hybrid or other superior seednuts and the promotion of improved management systems.

The oil palm industry consists of three nucleus estates comprising estate and smallholder plantings and processing facilities. Conditions for production in Papua New Guinea are favourable: the quality of the palm oil is good; research financed and controlled by the industry has yielded important benefits; and the estates are large enough to ensure efficient production and milling. The main requirement, if the rapid rate of growth of output is to be maintained, is to attract to the industry additional estate companies which are capable of developing and managing new schemes.

The yields and quality of tea produced in Papua New Guinea are high, but depressed world prices and the high cost of local plantation labour have made production relatively unprofitable. More recently, a rise in the international price of tea (due to increased domestic consumption in the main exporting countries) and the mechanization of tea plucking have materially improved the prospects of the Papua New Guinea industry.

Rubber is a long established but small industry in Papua New Guinea. There has been little replanting on rubber estates as poor yields, low prices and high labour costs have all depressed profitability. Smallholders' yields have been low because poor quality materials and techniques are used and marketing facilities and services are inadequate. Recently, some new estate owners and managers have begun to plant higher-yielding trees and improve farming techniques. The future of the industry probably lies in areas, including parts of the Papua region, which are not suitable for cocoa.

6 FOREST PRODUCTS AND FISHERIES

The value of exports of forest-products has more than trebled since Independence and now represents nearly 10 per cent of total export earnings. The cost of processing logs in Papua New Guinea is too high to permit the export of processed timber at competitive prices; on the other hand, there is a growing demand for hardwood logs which Papua New Guinea is able to supply at world prices. The international demand for tropical hardwoods is strong, especially in fast-growing wood-deficit Asian countries, while the capacity of competing countries to increase supplies is limited by the depletion of their resources and local processing requirements.

The initial policy of the Papua New Guinea Government that required foreign investors to establish facilities to process logs hampered the growth of the industry. This is because the costs of processing timber in Papua New Guinea are so high that the world price of logs is more favourable than that of processed timber. It was the removal of the local processing requirement in 1979 that unleashed the industry's rapid growth.

The two main issues that need to be addressed by the Government relate to reforestation and the conditions for foreign investors. Reforested timber stands have higher yields than virgin stands, making both logging and timber processing economically more attractive. In addition, reforestation has important environmental benefits, and is a labour-intensive activity that could create much useful employment. Given the budgetary constraints that limit increases in government spending, consideration should be given to making reforestation the responsibility of the logging companies. With regard to foreign investment, the Government should find ways to shorten the period (often several years) that is needed for agreements regarding the development of forest resources to be completed; it should also eliminate the requirement that foreign firms obtain local equity participation. In these and other matters, the role and responsibility of the Forest Industries Council might be increased.

Large-scale fishing for export, which has been in the hands of foreigners, contributed nearly 5 per cent of total exports at its peak in 1980-81. Soon after that time, the tuna companies ceased operations because of the depressed state of the world market; commercial lobster fishing was halted because of a decline in stocks; and the volume of exports of prawns stagnated. Interest in tuna fishing by foreign companies has revived recently, and the export potential of the industry is considerable.

7 POLICIES AFFECTING AGRICULTURE

Given that 85 per cent of the people of Papua New Guinea live in villages, the availability of high quality agricultural extension and research services is central to the nation's welfare. At present, government extension officers are expected to advise smallholders on too broad a range of activities, with the result that they have insufficient expertise in any of them. In addition, extension officers lack effective supervision and clear direction in their work. In crops and areas in which private management agencies and industry bodies (like the Cocoa Industry Board) have shown the ability and the willingness to provide high quality services to smallholders, the Government should stimulate and encourage the development of these organizations. The Government should concentrate its own research and extension efforts on doing the jobs that the private sector is unlikely to be able or willing to do. These include undertaking long-term research into improved methods of growing traditional food crops and eradicating diseases in them; improving the training, specialization and supervision of government extension workers; providing specialized extension services for food crops and poultry; and providing extension services of all kinds to people living in isolated areas. The Government can also help smallholders by continuing to improve the nation's road and coastal shipping network, and by increasing the coverage and reliability of buying and other marketing services.

In the estate sector of agriculture, one of the key barriers to growth has been the land problem. Although the Plantation Redistribution Scheme was suspended in 1980, the fact that it is still on the books increases significantly the risks involved in engaging in plantation agriculture. The Government should repeal the Plantation Redistribution Scheme, and allow leaseholders and owners of plantations to dispose of them to anyone, without regard to nationality, at a price to be negotiated between the two parties. It should devise and implement measures requiring holders of run-down and senile estates to rehabilitate them. Steps are now being taken to strengthen the Department of Lands, which should remedy the administrative inefficiencies that cause lengthy delays in the processing of land transactions, or failure to complete them at all.

INDUSTRY, MINING AND COMMERCE

8 MANUFACTURING

Manufacturing accounts for about 10 per cent of both GDP and formal employment in Papua New Guinea. Production is almost entirely for the domestic market, and includes food processing, beverages, tobacco, timber products, wood and fabricated metal. Employment in manufacturing in 1983 was only 26,000, which is less than the number of persons entering the Papua New Guinea work force each year. The expansion of manufacturing has been hampered by the small and fragmented domestic market, the shortage of persons with entrepreneurial, managerial and labour skills, the difficulty of acquiring land on which to build a plant, and the high cost of labour relative to productivity.

In the absence of significant changes in policies, the prospects for the expansion of manufacturing are not good. In particular, if real wages are not reduced significantly, the only items in which Papua New Guinea is likely to be able to compete internationally are those in which a large proportion of final value is made up of inputs special to Papua New Guinea, such as high quality furniture made of tropical hardwoods.

Pressures have been mounting in Papua New Guinea recently to broaden manufacturing industry by protecting new firms against competition from imports. However, the experience of numerous countries indicates that such protection, once granted, is difficult to remove or reduce; that industries set up behind protective barriers frequently save little foreign exchange; and that the costs to consumers in higher prices from the establishment of such industries often more than outweigh the benefits from the creation of a relatively small number of jobs.

In small countries like Papua New Guinea, the only way that efficient-sized plants can be established in many industries is if part or all of the output is exported. Export processing zones could help Papua New Guinea to begin to export manufactured goods. Such zones have been used successfully in several small countries as a way of expanding industrial production and exports. If designed and implemented creatively and carefully, they could help Papua New Guinea to overcome the main constraints that currently limit the expansion of manufacturing.

9 MINERALS, PETROLEUM AND ENERGY

Papua New Guinea has considerable potential in the production of minerals. Large-scale operations began with the Bougainville copper and gold mine in 1972. Since that date, this mine has been the most important single contributor both to export earnings and to government internal revenue. A second large copper and gold mine is being developed at Ok Tedi in the Star Mountains. The quality of the ore in this deposit is higher than that at Bougainville, but the progress of the project has been hindered by technical problems, cost overruns, the low world price of copper and disputes between the overseas investors and the Government. Even if these problems can be overcome, the first revenues from Ok Tedi are not expected to be available to the Government until some time in the 1990s. It is estimated that the Bougainville mine has a further life of about 15 years and that Ok Tedi has another 10 or 20 years beyond that, depending on the rate of exploitation. Although other copper deposits are available, they are unlikely to be exploited at prevailing prices.

Three gold-mining prospects are currently under investigation: the Porgera deposit in Enga Province, the Lihir Island deposit in New Ireland, and the Misima deposit in Milne Bay. All three present technical problems which require the use of new techniques. If these problems can be resolved successfully, and if the price of gold does not fall significantly below current levels, the first two of these projects should be in production by the end of the decade. The third is regarded as marginal at current prices.

The legal and fiscal regime for mining in Papua New Guinea was developed in the light of the Bougainville experience, and permits agreements to be negotiated that protect the national interest while being fair to the investor. The Government took a minority equity position in both Bougainville and Ok Tedi, but no more investment in mineral projects is anticipated or recommended as this would divert scarce funds from more essential government purposes.

The geology of Papua New Guinea is considered promising for hydrocarbon discoveries, though more for gas than for oil. The number of petroleum prospecting licences issued increased sharply after the second international oil price increase in 1979. So far only two wells have yielded liquids, one offshore in the Gulf of Papua and the other at Juha in the Southern Highlands. Drilling is proceeding at Juha to establish the nature and extent of the reserve. Access to the area is difficult, and the cost of exploitation is likely to be high. Even if commercial quantities can be proven, production of oil is not expected to begin until the 1990s.

The consumption of energy per person in Papua New Guinea is about average for developing countries in Papua New Guinea's income group. The distribution of energy consumption is heavily skewed: the Bougainville mine is by far the largest single consumer, whereas the large mass of the population has little or no access to electricity or commercial fuels and depends largely on fuelwood. The scattered location of population centres does not permit economies of scale to be gained in power generation and transmission; it also means that much petroleum is required for transport. As a result of these transport and other demands, petroleum products doubled their share of merchandise imports between Independence and 1983. Papua New Guinea has not fallen into the trap of underpricing energy, though some anomalies should be removed. A study of power tariffs has recently been completed which recommends a phased move to a system based on marginal costs. Conservation measures, based on energy audits, are an important means of saving energy and should be actively encouraged. The cost of producing energy in Papua New Guinea requires analysis.

Apart from hydrocarbons, the most promising indigenous energy source for the future is hydro-electric power, which now supplies about 10 per cent of the energy consumed by the commercial sector. Two large hydro-electricity projects are under construction, and there is considerable potential for the replacement of inefficient diesel sets by mini-hydro-electric schemes in smaller commercial centres and rural areas. Even with these developments progress in bringing electricity to rural areas will necessarily be slow, and government measures are needed to encourage the conservation of fuelwood resources and reforestation in depleted areas.

10 GOVERNMENT STATUTORY AUTHORITIES AND COMMERCIAL INVESTMENTS

Public investment in commercial and industrial activities takes three forms: direct equity participation with private investors in major mining and agricultural projects; ownership of public utilities and other commercial companies; and ownership of financial intermediaries which hold equity in or make loans to private enterprises.

Direct investment in major projects has run into hundreds of millions of kina, but with the exception of Bougainville Copper Ltd and (in 1984) Hargy Oil Palm, these projects have yet to yield a return to the Government. Of the 37 commercial enterprises owned by the national or provincial governments, only 12 operate profitably. These include the Post and Telecommunication Corporation, the Electricity Commission and the Papua New Guinea Harbours Board, which have undergone major reforms in recent years.

Government has not always been clear in its objectives for setting up commercial statutory corporations or investing in private businesses. In future, where private funds are likely to be available, the Government should refrain from undertaking new investments. Where private money is not likely to be available, the Government should only invest its scarce funds if the normal commercial test of profitability can be met.

State-owned companies that do not operate profitably and are unlikely to be efficient even with better management, should be wound up or otherwise disposed of. Public servants who represent the Government on the boards of such enterprises need special business training.

11 FINANCIAL INSTITUTIONS

The financial sector in Papua New Guinea is well-developed. The Bank of Papua New Guinea performs standard central bank functions and is the repository for the receipts of the Mineral Resources and

Commodity Stabilization Funds. The largest commercial bank is wholly owned by the Government and there are five other commercial banks, two of which are new. Despite the scope for competition, it is doubtful whether the demand for bank services in Papua New Guinea is sufficient to sustain six banks at internationally competitive service charges. The government owned Agricultural Bank (formerly the Development Bank) aims to increase the proportion of its lending that is devoted to agriculture from 60 to 80 per cent. Because of the greater risk of losses in such lending, this may require increased injections of government capital. The Investment Corporation, also owned by the Government, buys shares in existing (mostly foreign owned) companies for eventual resale to nationals, assists nationals in their businesses, and provides a facility for the investment of savings. It has been relatively successful in its operations but has been criticized for being too passive and insufficiently development-oriented in its lending policy. In response to these criticisms, its policy has recently been broadened.

In addition to the services provided by these institutions central to the sector, a wide range of other financial services are offered by savings and loan associations, provident funds, finance companies and insurance companies. Despite the breadth of this array, the financial needs of important groups of the population have proved difficult to meet. These include, in particular, the needs of rural smallholders for agricultural credit and of urban workers for housing finance. The problem is not so much lack of funds; rather, it is that smallholders find it difficult to prepare and present viable schemes for financing, while urban workers have difficulty establishing a savings record. Collaboration between the Government and the relevant institutions could help to solve this problem. For example, courses could be established to train finance officers in ways of assisting prospective borrowers and in appraising their projects.

OTHER SECTORS AND ISSUES

12 TRANSPORT AND COMMUNICATIONS

The transport and communications networks are central to Papua New Guinea's economic future. Because of the rugged terrain and the scattered location of the main population centres, transport is difficult and expensive. Most roads are unsealed; the only major sealed highway connects the port of Lae with the highlands. Only two-thirds of the population are within walking distance of a main or rural road. Investment in extending the system to thinly populated areas presently not included would be desirable (on social equity grounds) but uneconomic. By contrast, a number of cases have been identified in which improving existing roads would yield a satisfactory economic rate of return.

Coastal shipping is an important and neglected industry in Papua New Guinea. Its revitalization is essential for the efficient movement of people and freight, especially the produce of smallholders. The government owned Papua New Guinea Shipping Company is unprofitable; it should be wound up and its assets sold off. Deregulation of the industry would encourage competition and lead to a reduction in the number of unsuitable vessels in service. Investment in upgrading existing ports would be economically attractive.

Air services are extensive and of major economic importance, but costly. Despite charging high fares, the national airline, Air Niugini, runs at a loss, and the Government recovers only a fraction of its annual expenditure on aviation facilities and services. The removal of restrictions on the entry of new operators and the liberalization of regulations governing routes and types of aircraft should increase competition and lead to lower costs and better service.

Papua New Guinea's communications system is well-developed. A micro-wave system links the eight major centres of the country, and remote rural areas are served by radio. The telex network is growing, and international cable links are good. The extension of the commercial radio network and the introduction of television continue to cause controversy and require the formulation of clear government policies and guidelines.

13 SOCIAL SERVICES

Papua New Guinea has one of the most extensive health care services of any developing country, the system having been established in colonial times by the Administration and the churches. In the post-Independence period, the Government has concentrated on attempting to provide basic health care services to the rural population. This has contributed materially to better health, a decline in infant and child mortality rates, and an increase in life expectancy. However, major diseases such as malaria, tuberculosis and venereal disease either are not declining or are on the increase. Simple therapies are available for some of these complaints and could be delivered through the network of health facilities, but overlapping responsibilities and inadequate staffing and training reduce their effectiveness. Because the health service already accounts for 9 per cent of the national budget, reforms in these areas will have to be financed by increases in efficiency elsewhere in the service. The churches, which provide effective services at low cost, might be asked to increase their role.

Only about 10 per cent of the population has easy access to a safe water-supply, which is important both for good health and to save villagers (mostly women) having to walk long distances for water.

Much time and money have been spent on schemes to improve the supply of water, but many of these schemes have ceased to function. There is considerable scope for further improvements.

A national survey of nutrition that was carried out in 1982 should shed light, when the results are published, on the extent and incidence of malnutrition. The indications at present are that malnutrition is not a national problem but is confined to specific areas and times.

Unlike the great majority of developing countries, Papua New Guinea does not have an official population control program. The official estimate of the rate of population growth is 2.3 per cent a year, but some authorities believe that the true rate is markedly higher. Moreover, improvements in health and living standards are likely to cause a decline in mortality before fertility falls. Even at the official rate of growth, Papua New Guinea's population will double in just over 30 years. The extent to which progress can be made in reducing the rate of population growth will have an important bearing on the pressure of population on land (which is already a problem in some areas) and on the demands for the creation of extra jobs and the provision of additional social services.

Family planning services are presently offered through urban and rural health centres and clinics. Although they are currently designed to improve family health and welfare rather than to reduce the population growth rate, these services could provide the basis of an effective population control policy. What is needed now is a commitment by the Government to the need for population control, reorganization of the administrative and delivery system, and an increase in the number of trained staff, especially females.

In education, significant progress has been made since Independence. At the community or primary school level, the proportion of children aged 7-12 who attend school has increased; the proportion of girls enrolled has risen; the teachers, once largely expatriate, are now entirely national; and disparities among provinces in the proportion of children enrolled have been reduced. Secondary school enrolments have increased slightly, and the proportion of girls enrolled has risen to some extent. The first university students in Papua New Guinea graduated only a few years before Independence, but there is now a wide range of post-secondary institutions.

Despite these advances, serious problems remain. The quality of education is widely believed to have deteriorated; at the present rate of progress, the attainment of universal primary education will take half a century; there are divided and overlapping responsibilities for education between the two levels of government and among national government departments; and at the post-secondary level, there are too many small institutions with overlapping programs and high unit costs.

The medium term strategy that has been proposed is to expand the provision of primary education (in which the social and economic returns are greatest) and to reduce net public outlays on post-secondary education, in part by imposing tuition charges. Though the strategy as presented is in general sound, it assumes that both the size of the national budget and the share of education in it (already over 20 per cent) can be increased. If such increases prove to be impossible to achieve, further savings will need to be found within the sector itself by increasing efficiency.

Housing, especially in urban areas, has been a major concern of the Papua New Guinea Government since Independence, but little progress has been made in solving the problems of the sector. The main problem does not appear to be lack of finance for housing, but the shortage of land and the lack of credit-worthiness of borrowers. Construction costs appear to be high.

14 ROLE OF WOMEN

One of the Eight Aims adopted at the time of self-government was to achieve "a rapid increase in the equal and active participation of women in all forms of economic and social activity". Since then, the Government has financed women's associations and conferences, assisted the formation of women's business groups, and provided funds through the National Public Expenditure Plan for women's projects.

Despite these efforts, much remains to be done. As is the case in many countries, women are still under-represented in public life. There is only one female Member of Parliament, there are few female Local Government Councillors, and there is no elected female member of a provincial government. Each provincial government does have one nominated female representative, however, and an increasing number of women have been nominated to serve with provincial governments. In the public service, females tend to occupy lower-rank positions; in 1980, nearly one-quarter of all public employees were women but only 5 per cent of them held managerial positions. Government budgetary allocations for women's projects have declined since 1979, and are mostly for welfare purposes.

The Government should continue to raise the proportion of females in schools not only for reasons of equity but also because this is likely to lead to reduced fertility (and hence lower population growth) and to higher productivity in food production (which is mostly the work of women). More women should be trained and employed in the family planning program and as agricultural extension workers. General measures to improve roads and marketing facilities should help to increase the cash incomes available to women from the sale of fruit and vegetables. A policy paper should be prepared on the role of women to provide guidance for women's organizations and to help co-ordinate women's programs both in government and in the private sector.

15 GOVERNMENT AND THE PUBLIC SERVICE

At Independence Papua New Guinea inherited a large, centralized bureaucracy. Secessionist pressures in some areas led to the decision to transfer important governmental powers and functions to the provinces, together with the revenues needed to finance them. A few provinces have run their affairs efficiently and could probably be given more flexibility in managing capital as well as current expenditure than they now have. But many lack the skills and experience required for good administration; three provincial governments have recently been suspended for mismanagement. The two-tier system has resulted in overlapping responsibilities between the two levels of government, duplication of representatives and officials, and increasing administrative costs.

The need to improve the administrative system is widely recognized in Papua New Guinea, and there have been seven official committee reports on administrative reform since Independence. The new objectives of economic growth and employment require more efficient administrative machinery for translating policies and plans into action, and a program of administrative reform has been set in motion. The emphasis is on revenue generation, and improved fiscal practices, and the more effective use of existing resources to foster growth. Key management responsibilities are to be devolved to line and provincial departments under the guidance and support of the Departments of Finance, National Planning, and the Public Service Commission, which are also to be fortified. Training is to be expanded and personnel management strengthened.

A Bill is before Parliament to give legislative effect to these reforms. A Program Management Unit, composed of senior officials, has been set up to prepare and supervise the program, and K16 million has been budgeted for priority activities during the three years 1985-88. The Unit has begun work on three line departments and two provincial governments. A companion Bill that is before Parliament will clarify the duties and responsibilities of department heads; provide for an annual report on the performance of each department; lay down stricter rules for the assessment, promotion and discipline of officials; and permit contracts to be offered to highly qualified nationals to serve with the administration. General Orders for the service, which have not been used for some years, are to be revised and re-issued.

The proposed reforms, in support of which the World Bank is considering a project to be implemented during the next 10 years, are a serious attempt to improve the quality of Papua New Guinea's public administration. If they are to be carried out successfully, they will require the sustained commitment of ministers and public servants for many years.

16 FOREIGN AID AND FOREIGN INVESTMENT

Papua New Guinea is unique among developing countries in receiving almost all of its aid in the form of budget support from one donor - Australia - without conditions or restrictions. Since this form of aid is expected to decline, albeit slowly, other forms and sources of aid must be sought to help finance the country's development. In the past, Papua New Guinea has felt that it lacked both the experienced personnel needed to identify and prepare aid proposals and the budgetary funds that donors usually require to be contributed to the cost. However, if the purposes for which aid is sought rank high on the national list of priorities, as they should, aid relieves government of part of the financial burden and so extends the range of investments that can be undertaken.

The possibility of forming an aid group for Papua New Guinea should be considered when the Medium Term Development Strategies, now being completed, are consolidated into the Medium Term Development Program to see whether the quality and quantity of aid could be increased to facilitate the Program's implementation.

Given that the most severe constraint on Papua New Guinea's development is the shortage of educated and trained people, in both the public and private sectors, donors could be asked to finance schemes for sending post-graduate students and public servants abroad for higher education; for the secondment of qualified personnel to government agencies, utilities and educational institutions by their counterparts in the donor country; and for the recruitment of qualified staff on contract for key technical and supervisory positions in agriculture, industry and education. Agricultural research institutes abroad could be asked to help in long-range research on traditional food crops and tree crops. For specific investment projects more aid is available than Papua New Guinea has been willing or able to request. Staffing assistance could be sought to help establish and operate a unit specialized in identifying and preparing projects for aid funding.

Support could be requested from donor governments for small projects run by foreign voluntary agencies. Some of the latter also supply volunteers to developing countries; they could be asked to provide teachers who would retrain, supervise and support groups of national teachers in community schools and so help to raise the standard of primary education. Small "grass roots" projects, financed jointly by villagers and the provincial government, have proved popular in North Solomons Province, and could well be extended to other provinces with financial assistance from donors.

Increased foreign investment is needed in industry, mining and estate agriculture if economic growth and employment are to be accelerated. Foreign investors bring with them not only capital but also management, technology and marketing expertise, of which Papua New Guinea is in need. However, negotiating investment agreements with Papua New Guinea authorities, and obtaining the necessary approvals, is a slow and tortuous process. The National Investment and Development Authority was set up as a one-stop-shop to avoid such delays, but in practice it has become an additional agency whose requirements have to be met. Its two objectives of investment promotion and regulation conflict and should be given to separate agencies. Many of the regulations that were adopted in the early years are no longer necessary and should be dropped. In general, foreign investors should be made to feel welcome and actively assisted to get started.

CONCLUSIONS

The changing emphasis of the Government of Papua New Guinea towards economic growth and the creation of productive employment opportunities will not be easier to achieve in the future than in the past because, at least in the near term, the conditions that have constrained their attainment seem unlikely to become more favourable:

- The population of Papua New Guinea is growing rapidly, creating demands for food, employment and public services that have to be met before a general improvement in living standards can be achieved.

- The skills needed to implement development plans quickly and effectively are still limited.

- The price prospects for most of Papua New Guinea's exports are not bright.

- Budgetary resources continue to be limited by the difficulty of raising additional revenue and the desire to continue moving along the path towards fiscal self-reliance, that is, making do with less external budgetary support without resorting to excessive borrowing.

In these conditions, the general prescription for economic growth and employment creation includes some elements that are already present in government policies, some that need to be emphasized, and others that are relatively new:

- Maintain law and order, without which the efforts of the Government to stimulate economic and social development will be undermined.

- Increase the financial and human resources that are available for development.

- Reserve government resources for activities that only the government can undertake while deregulating other areas to clear the way for private initiative.

- Maintain sound foreign exchange, monetary and fiscal policies.

- Raise the productivity of producers of both food and export crops and by so doing encourage the majority of the country's population to remain in the rural areas.

- Promote only those industries that make intensive use of the resources that Papua New Guinea has in abundance.

The main specific policy prescriptions that follow from these general guidelines (and that are discussed in more or less detail in the body of this report) are:

Law and Order

- Implement the recommendations of the Report on Law and Order that was published by the Institute of National Affairs.

Resources for Development

- Raise more internal revenue by broadening the tax base and by increasing the general customs levy.

- Make more extensive use of the financial and technical assistance that is available from aid agencies, especially education, training and staffing assistance.

- Let it be known that foreign investors in productive enterprises are welcome and simplify the procedures for establishing foreign-owned businesses and joint ventures with local entrepreneurs.

- Encourage the recruitment of competent expatriate managers, supervisors, trainers and technicians for positions for which there are not yet enough qualified national personnel.

General Economic Policies

- Continue to reduce gradually the external value of the kina so as to stimulate the production of exports and import substitutes and discourage imports.

- Find ways to reduce real wages in order to increase the country's international competitiveness in industrial and agricultural estate production.

- Resist pressures to establish industries that cannot compete against imports without high tariffs or import restrictions.

Efficiency of Government

- Rationalize the currently overlapping system of national-provincial power-sharing so that the division of responsibilities for policy implementation between the different levels of government is clear.

- Implement vigorously the program of administrative reform that is under preparation and sustain it for whatever period may be required to ensure that the reforms are permanent.

- Implement also the reforms intended to improve the efficiency of the public service, and its responsiveness to the objectives of economic growth and employment.

- Enact the Public Finances (Management) Bill 1985 and the Public Services (Management) Bill 1985 that will provide the legislative basis for these reforms.

- Increase the efficiency of government owned commercial enterprises, and wind up or dispose of those whose continued existence cannot be justified.

Allocation of Government Resources

- Increase investment in infrastructure especially by improving the network of roads, bridges, ports and harbours.

- Raise the standard of agricultural extension services and take advantage of the capacity of private organizations to provide these services in particular crops or locations.

- Reform land policy and administration by: repealing the Plantation Redistribution Scheme; adopting measures to ensure that run-down agricultural estates are rehabilitated; improving procedures for the registration of customary land; and strengthening the Lands Department.

- Undertake research aimed at intensifying food production, improving productivity in smallholder commercial agriculture and controlling pests and diseases.

- Raise the standard of primary education and extend it to a larger group of children; re-orient courses at secondary schools and post-secondary institutions to meet the needs of the economy for qualified professional and technical personnel; reform post-secondary education to reduce inefficiency and waste; and provide more fully for the education of girls and women.

- Adopt an official population control policy and implement it actively through the health and education services; and recruit and train more women to work in the program.

- Collect, analyse and publish systematically information in areas where the data, on which government policies must be based, are inadequate. These areas include the production of food for subsistence and for sale; health, nutrition and mortality; and household income and expenditure. Surveys of these and other important subjects should be carried out at regular intervals; one-off surveys are of less value because they do not permit the observation of changes over time.

Progress in these areas would enable Papua New Guinea to increase economic growth and employment creation and would lay the basis for sustained long-run development.

PART 1

THE GENERAL ECONOMY

1. OVERVIEW

Given the difficult political and economic circumstances at the time of Independence in 1975, the management of the Papua New Guinea economy since then has been good. In the nature of such things, much of this report will be devoted to the areas in which there is room for improvement. Nevertheless, it is important not to lose sight of the many important successes that have been attained.

Background to Independence

In the early 1970s there was concern among the then administrators and foreign observers that the gaining of Independence might be accompanied by greatly increased tribal fighting and by secessionist pressures in the North Solomons and other provinces(1). There were even fears that the country would experience civil war and authoritarian, possibly military, rule. Precedents for such an outcome in African countries after Independence were not hard to find.

In terms of economic management, as late as 1972 the administration in Port Moresby lacked the instruments and institutions by which national policy is framed and implemented. There was no national currency and no means of effecting counter-cyclical fiscal or monetary policy or directing the use of credit. The small and fragmented monetary economy was owned and managed almost entirely by foreigners, the only important exception being the expanding village production of export crops. In FY1972 Australian aid financed more than half of public expenditures.

Many foreign observers expected that the economic consequences of the withdrawal of the colonial administration would be disastrous. The experience of other countries suggested that a weak and ineffective central administration might try to accommodate strong domestic pressures by giving in to them, bankrupting itself in the process. In the last year before Independence, the government was forced to cope with massive personnel turnover and the political crises of the constitution, Bougainville and Papua Besena.

Internationally the period around the time of Independence was the aftermath of the first world oil crisis, economic recession and unprecedentedly high inflation. Not having a separate currency,

1. This section draws on material from R. Garnaut, "The Framework of Economic Policy-Making" in J.A. Ballard ed., Policy-Making in a New State: Papua New Guinea 1972-77, St Lucia: University of Queensland Press, 1981.

Papua New Guinea had no means of insulating itself from these disturbances and the Papua New Guinea inflation rate reached 23 per cent in 1974. Many local people associated the rapid loss of purchasing power of their money with self-government; the Chief Minister's office in Konedobu was invaded for this reason. Not unnaturally, the control of inflation went to the top of the policy agenda.

To make matters worse, in the early 1970s the expatriate community was alarmed when any discussion of the possibility of monetary independence arose, and responded by sending its savings abroad. There was further massive capital flight immediately before and after currency separation from Australia on 1 January 1976. These outflows, which occurred at a time when Papua New Guinea's export income was low, reflected anxieties about the possibilities of exchange control and devaluation, Australian aid, the future of the Ok Tedi gold and copper project, the secession attempt in Bougainville and the World Bank's initial caution about Papua New Guinea's post-Independence credit-worthiness.

In summary: at the time of Independence there were widespread and serious doubts about the country's political and economic viability; the ownership and management of the monetary economy was mostly in foreign hands; the institutions required for the formulation and implementation of national policy were not yet in place; the education system was barely developed, especially at the post-secondary level; and the establishment of a Papua New Guinea currency was greatly complicated on the one hand by the world oil crisis and imported inflation, and on the other by massive capital flight.

Achievements

In the face of these extremely difficult initial conditions, the political and economic achievements of Papua New Guinea have been remarkable. In the political sphere, since Independence Papua New Guinea has experienced nine years of uninterrupted democratic government, including two peaceful changes of administration under a widely respected constitution. There is an official Parliamentary Opposition with a recognized leadership and its own offices. Inter-tribal and inter-regional conflict appears to be considerably less now than it was at the time of Independence. Papua New Guinea's military forces have remained entirely outside politics, unlike those of many other developing countries. Throughout the period since Independence a free and independent press has exercised vigorously its right to be critical of the government of the day.

On the economic side there have also been many important achievements. First, the institutions required to formulate and implement national policy have been established and, with some exceptions, have worked well. Particularly noteworthy in this regard are the planning and budgetary mechanisms that have been set up both to control the overall level of government spending and to oversee its allocation in accordance with national priorities. The fears that a weak and ineffective central administration might capitulate to regional and foreign interests and bankrupt itself have been groundless. Many other countries, developing and developed, have had less success in maintaining fiscal discipline during the late 1970s and early 1980s than Papua New Guinea.

Second, the direction of the national economy is now firmly in national hands. All ministers and permanent department heads are nationals. Expatriates continue to occupy important posts in the administration, but they are no longer in the top policy-making positions.

Third, the dependence of Papua New Guinea on Australian budget support aid, while still considerable, has fallen significantly during the last decade. Compared with 53 per cent of total public expenditure in FY1972, Australian aid was expected to finance 28 per cent of such expenditure in 1984. The reduced dependence on Australian budget support has been in part permitted by an increase in foreign borrowing.

Fourth, despite the fact that the national and international environment for such a step was strongly unfavourable, Papua New Guinea has succeeded in introducing a new currency and having it widely accepted. This has been achieved without exchange controls having to be imposed. As a result, there is no black market premium for foreign exchange in Papua New Guinea and the kina is freely convertible.

Fifth, and closely related to the successful establishment of the currency, the Papua New Guinea inflation rate since 1975 has been among the lowest in the world. Given the inflationary stresses that existed at the time of Independence, and the openness of the economy which makes it potentially highly vulnerable to imported inflation, this is a considerable achievement.

Sixth, Papua New Guinea has set up effective commodity stabilization schemes that have helped to iron out the extreme fluctuations in earnings to producers and in government revenues that otherwise would have occurred while facilitating adjustment to changes in long-term price trends. The Mineral Resources Stabilization Fund has been similarly well designed and, with the exception of a couple of years, well operated, reducing the fluctuations in government revenues from minerals that otherwise would have occurred.

Seventh, although the data are patchy, it seems clear from impressionistic evidence that the benefits of development have been spread quite widely, if unevenly, throughout the economy. More than three-quarters of all village households now receive some cash income, whether it be from growing and selling tree crop products, food and betel nut, working for wages, engaging in trading and other small entrepreneurial activities, or receiving remittances from relatives who are working in the towns or in other provinces. Compared with a decade ago, large numbers of villagers now have improved access to transport, education for their children and health care.

An eighth achievement since Independence has been the flexibility of policy-making in the face of changing circumstances. In the early 1970s, it was widely taken for granted both in Papua New Guinea and elsewhere that economic growth would come almost automatically and that what mattered was the form that it would take and the distribution of the resulting benefits. Much of the world had enjoyed rapid growth for two decades or more, while in Papua New Guinea real growth in Gross National Product (GNP) averaged over 10 per cent a year from FY1963 to FY1973. The prestigious visiting Faber mission, after pointing out that expatriates had hitherto gained a larger than proportional share of the benefits of growth in Papua New Guinea, suggested in 1973 that something like the Eight Aims could be achieved while GNP continued to grow at 7-9 per cent a year in constant prices(1). Thus, it is understandable that the top priorities of the Government at the time of Independence were not growth and employment creation but a rapid increase in the proportion of the economy under the control of Papua New Guineans, greater self-reliance, and a more equal distribution of the benefits of development.

As elsewhere, it took some time in Papua New Guinea for the worldwide drop in growth rates to be recognized as something other than a purely temporary phenomenon. Once this recognition occurred, the Government moved decisively to adjust to the changed circumstances. Since growth and employment creation can no longer be taken for granted, they have now been given higher priority among the Government's objectives. The policy review that has been initiated in an attempt to redirect emphasis towards these two goals has been a wide-ranging and fundamental one involving all departments of the Government and extensive consultations with the private sector as well.

1. Overseas Development Group, University of East Anglia, 'A Report on Development Strategies for Papua New Guinea' (The Faber Report), Port Moresby, 1973.

In summary, since Independence:

- political and economic stability, which were by no means assured, have been achieved and maintained;

- the direction of the economy, the society and the polity have been placed firmly in national hands;

- the institutions of economic policy-making have been established and have operated effectively;

- a new currency has been successfully introduced and its value has been maintained without the need for exchange controls;

- at a time of world-wide inflation, inflation rates have been kept low;

- effective commodity and mineral stabilization schemes have been established;

- the benefits of development have been spread quite widely, if unevenly, among villagers as well as townspeople; and

- policy makers have shown flexibility in responding to changing international and national circumstances.

These are indeed impressive achievements. Nevertheless, there remain serious economic, administrative and social problems which, if not resolved or ameliorated during the next few years, threaten to abort the successes of the first decade.

Unresolved Problems

The wage structure in Papua New Guinea is far out of line with the country's labour productivity and with real wages in competing nations. This consequence of Papua New Guinea's colonial heritage did not cause much of a problem before Independence when unemployment among nationals was not significant and growth prospects looked bright. Now, however, with unemployment more of a problem and the prospects for growth dimmer, it is crucial that real wages be brought into line with productivity.

A second central problem is Papua New Guinea's shortage of skilled and trained people. It is understandable that there should still be such a shortage; in some areas of the country formal education has existed for only a single generation. Nevertheless, if the rate of economic growth is to be raised and more jobs are to be created, a significant increase in the quality and quantity of education and training services will be needed.

Third, there is a shortage of resources for development. This means that the government will have to restrict itself to the provision of goods and services that the private sector would be unlikely to provide (such as roads, social services and special assistance to disadvantaged groups and areas) while removing the impediments to private sector growth and employment creation. The Government will also need to find ways of raising more internal revenue and making fuller use for the country's development of available aid and foreign investment.

Fourth, the Government needs to find effective ways of increasing employment and income-earning opportunities in rural areas, thereby reducing the incentive for rural people to migrate to the towns. In the longer term, an active family planning program would help to limit the number of future entrants to the labour market.

Fifth, the Government needs to stem the tide of lawlessness that is giving the country a bad image and discouraging potential investors and individuals who might be willing to offer their services. It is not necessary to elaborate the point in this report as it has been the subject of a recent thorough study sponsored by the Institute of National Affairs(1). Among the principal recommendations of that study are that a new policy is required which recognizes the importance of informal and community institutions in maintaining law and order; that governmental institutions and services, including the police, learn to support the community's own resources for settling disputes and handling offences; and that village courts be developed to complement and support these community structures.

Sixth, a solution needs to be found to land problems that is compatible with the traditional system of land ownership. Inability to obtain land quickly is an important hindrance to investment both for rural development and in urban areas.

Seventh, pressures are mounting to establish highly-protected local industries that will create little local employment at high cost to the consumers and industrial users of the goods so produced. It is important that the Government resist these pressures so that Papua New Guinea can avoid building up what many other developing countries have found later is a millstone around their necks: an inefficient industrial structure that hampers development and lowers the welfare of all citizens except those employed in the enterprises concerned.

1. W. Clifford, L. Morauta and B. Stuart, 'Law and Order in Papua New Guinea', 2 vols, Port Moresby: Institute of National Affairs, 1984.

Eighth, the need to improve the management of the public sector, simplify government regulations and procedures, and strengthen the capacity of the public service to implement policy is widely recognised in Papua New Guinea. A comprehensive program of administrative and financial reforms is being prepared, which will require sustained support if the reforms are to be accomplished.

2. PROGRESS TOWARDS NATIONAL GOALS

The central objectives of economic policy in Papua New Guinea since Independence may be summarized broadly as follows:

- Equitable distribution of the benefits of development - movement towards equalization of incomes among people, equalization of services among different areas of the country, and a rise in the share of aggregate income accruing to Papua New Guineans.

- Self-reliance and economic independence - increased ownership and control of the economy in national hands and an increased capacity for meeting government spending needs from local revenue.

- External balance - balance in the country's external accounts, or the maintenance of free convertibility of domestic into foreign currencies without excessive foreign borrowing.

- Employment balance - balance between the number of persons who want wage jobs and the number of jobs available.

- Price stability - a low rate of increase of average prices.

More recently, as the terms of reference of this review indicate, there has been a shift in emphasis among the Government's priorities. The two goals that have received greatest emphasis in the last year or two are:

- Growth in output per head and in average standards of living; and

- Growth in productive employment opportunities to ensure that the rapidly increasing numbers of youths and young adults are able to find jobs.

In this chapter, an attempt is made to assess Papua New Guinea's progress since Independence towards these objectives.

Growth in Output per Head

If growth in real GDP (1) per head is taken as the measure of economic growth, Papua New Guinea's performance since Independence has been disappointing.

According to officially published data, real GDP (GDP adjusted for the effects of changes in prices) was the same in 1979 and 1983 as it was in FY1976 immediately after Independence.

Given that population appears to have been growing by at least 2.3 per cent a year, this implies that the average rate of growth of GDP per head from Independence to 1983 was about -2.3 per cent a year. Provisional figures for 1984 suggest that the real GDP rose by about 4.9 per cent in that year, or by about 2.6 per cent a head.

As both compilers and users of Papua New Guinea national accounts data agree, officially published national accounts data for the period immediately after Independence are misleading. In an attempt to overcome this problem, Garnaut and Baxter have published a revised set of GDP growth rate data for the years from Independence to 1981(2). They found that real GDP increased by 1.9 per cent a year between FY1976 and 1981 compared with an increase of 0.1 per cent a year in the officially published figures. If the Garnaut-Baxter figures for 1976-81 are combined with the official figures for 1982-84, real GDP growth is seen to have been 1.4 per cent a year during 1976-83, or about 2.0 per cent during 1976-84.

1. GDP is the sum of the value of all goods and services produced within the country. It includes goods that are subsequently exported and services that are provided to non-residents, but does not include imports.

   Real GDP is the same sum measured in constant prices, that is, discounting the effects of inflation.

   Market GDP comprises only those goods and services that are sold for cash. In Papua New Guinea, it therefore excludes the substantial share of production that is consumed directly by the producers (subsistence).

2. R. Garnaut and P. Baxter, in consultation with A. Krueger, Exchange Rate and Macro-economic Policy in Independent Papua New Guinea, Port Moresby: Department of Finance, 1983.

Table 2.1

Rates of Growth of Gross Domestic Product, Developing Countries, 1976-83

	Per cent a year
All developing countries	2.6
Non-oil developing countries	4.1
Low income countries	5.7
Excluding China and India	3.6
Developing countries in:	
Africa (excluding South Africa)	1.9
Asia	6.2
Europe	2.9
Middle East	5.7
Western Hemisphere	2.6
Papua New Guinea	1.4

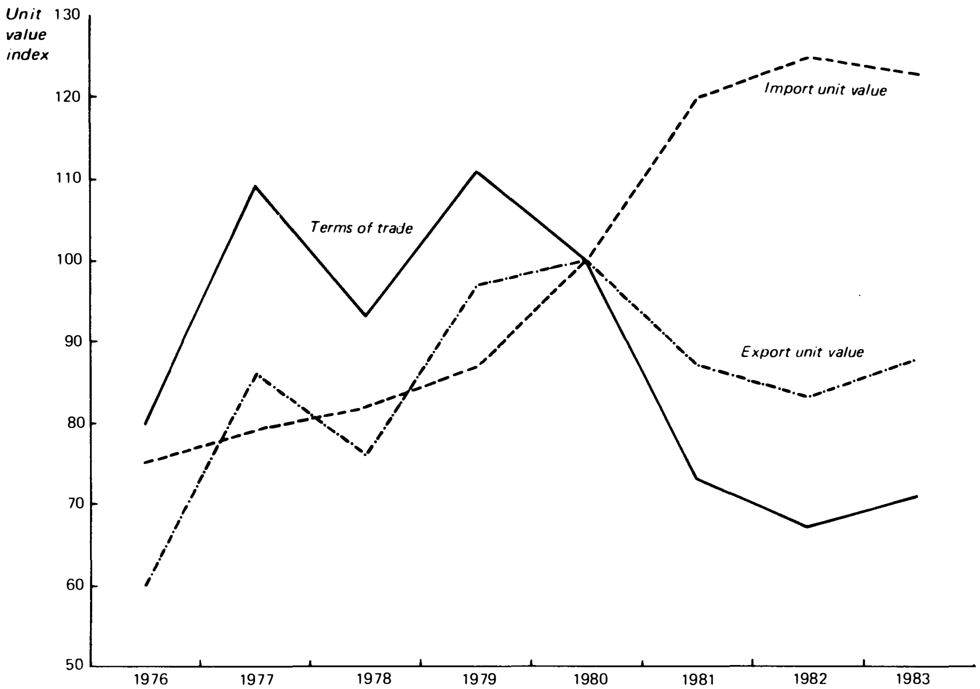
Sources: International Monetary Fund, World Economic Outlook, Washington D.C., Sept. 1984. Papua New Guinea: estimated on the basis of revised national accounts data.

Whichever set of data is used, at this aggregate level it is clear that Papua New Guinea's economic performance has not been good. GDP has been growing more slowly than population, which means that (on this measure) output per person has been declining. Further, on most relevant international comparisons, Papua New Guinea has done considerably less well than average (see Table 2.1). However, although this assessment is probably correct, the data on incomes are less reliable in Papua New Guinea than in most developing countries owing to the importance of subsistence agriculture, the scale and value of which can only be estimated. This problem is discussed in more detail later in the report.

Export Prices and the Terms of Trade

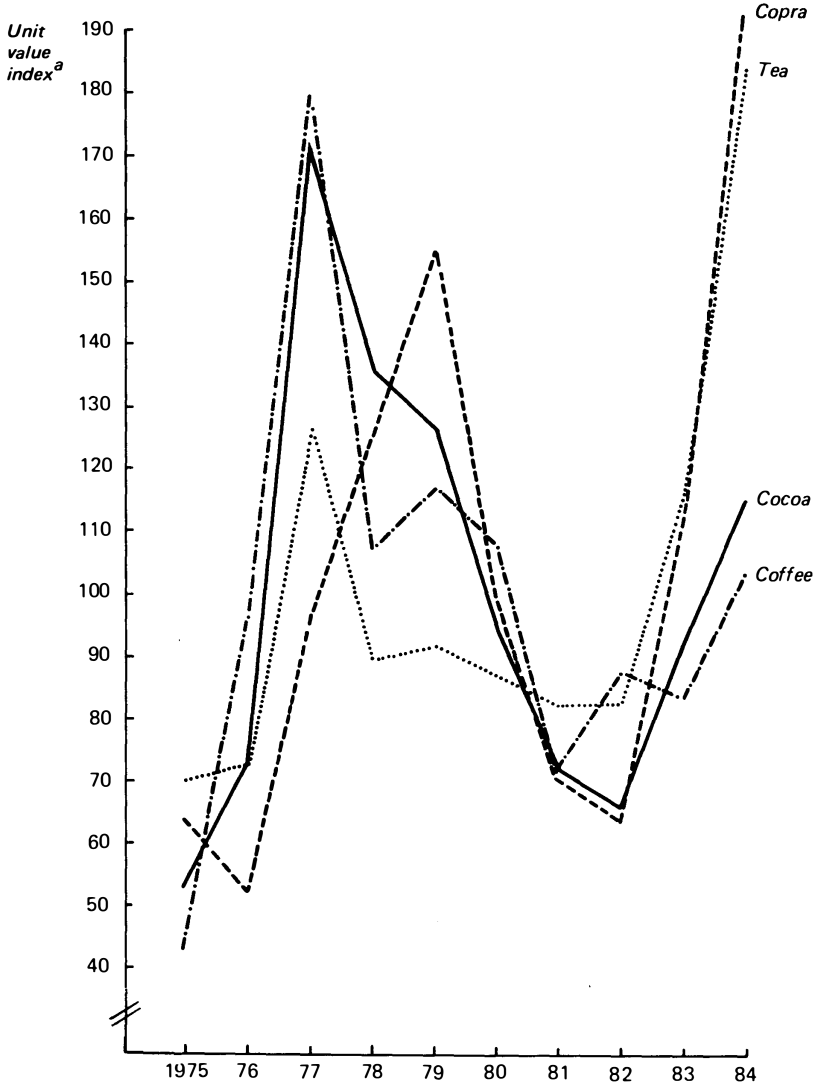
The terms of trade (the ratio of export prices to import prices) cannot be held responsible for the poor growth of output in the second half of the 1970s. On the contrary, the terms of trade improved by 54 per cent between FY1976 and calendar year 1977, and were a fraction higher than the 1977 level in 1979 (see Chart 2.1). Since the late 1970s, however, a sharp decline in the prices of the metals and tree crop products that Papua New Guinea exports has no doubt hampered growth. On balance, despite the recovery that occurred in 1983-84, the terms of trade in these two years were about 27 per cent worse than they had been in 1979 and 23 per cent worse than they had been on average in 1977-79. The extreme volatility of the prices of Papua New Guinea's main exports may be seen in Charts 2.2-2.4.

Chart 2.1 Indices of the Terms of Trade, 1976-83 (1980=100)



Sources: Data provided by the Papua New Guinea authorities.

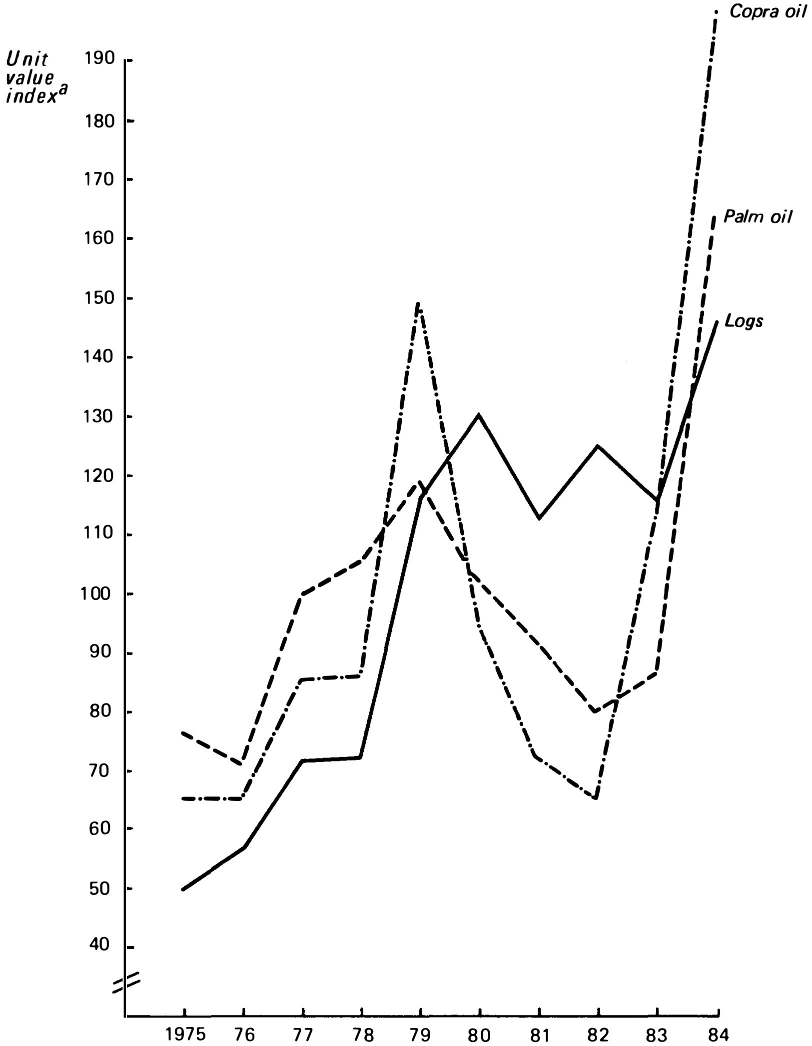
Chart 2.2 Prices of Coffee, Cocoa, Copra and Tea, 1975-84



[a] Average for 1975-1984=100.

Source: National Statistical Office.

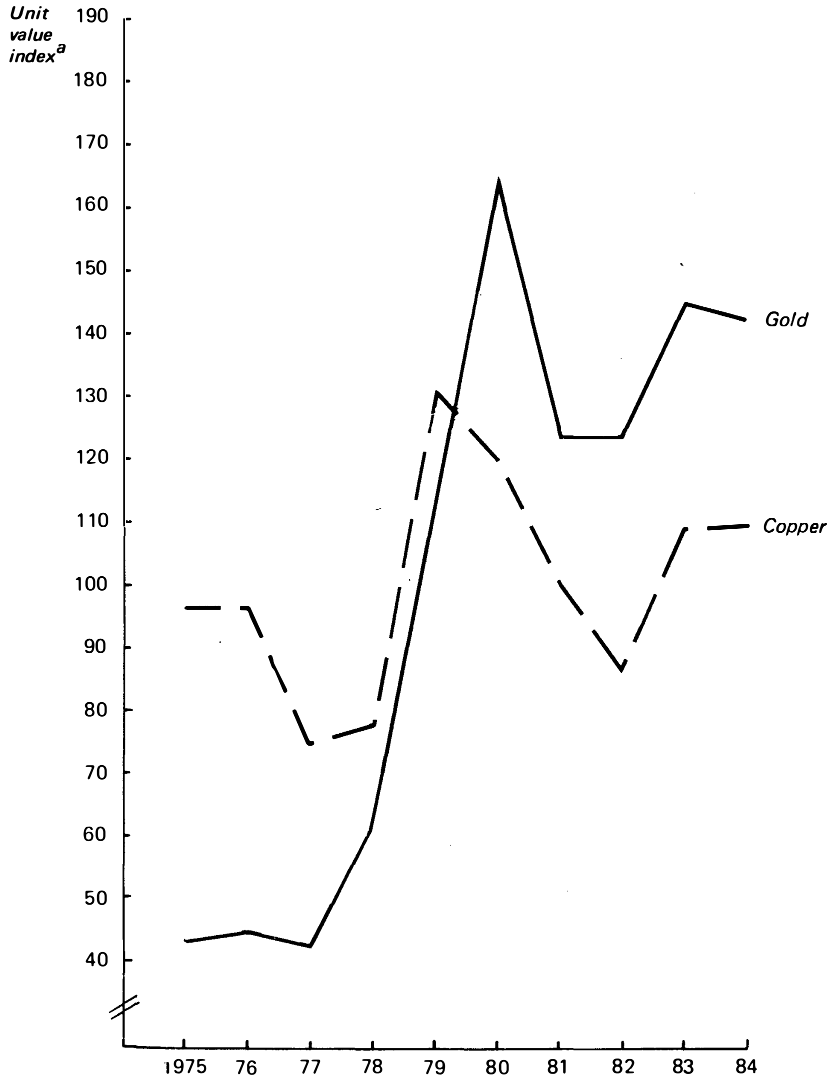
Chart 2.3 Prices of Copra Oil, Palm Oil and Logs, 1975-84



[a] Average for 1975-1984=100.

Source: National Statistical Office.

Chart 2.4 Prices of Copper and Gold, 1975-84



[a]Average for 1975-1984=100.

Sources: Bougainville Copper Ltd., Annual Report 1983; for 1984, Bank of Papua New Guinea.

Government and Bougainville

The above measures of the growth of aggregate output are dominated by the relative stagnation of the public sector and of output at the Bougainville mine. One of these was constrained as a result of declining Australian aid, especially during 1977-83; the other was hampered by an unexpectedly rapid decline in mineral ore grades from 1980 onwards. To get an idea of the rate of growth of the non-Bougainville private sector since Independence, Garnaut and Baxter estimated the growth of real GDP excluding the government sector and Bougainville mining production for the period FY1976 to 1981. They found that the rate of growth of output was 3.2 per cent a year, compared with 1.9 per cent a year when the public sector and Bougainville are included. These estimates suggest that, at least through 1981, the rate of growth of incomes in the non-Bougainville private sector was somewhat greater than the rate of growth of population, that is, that average incomes in the non-Bougainville private sector were rising.

Social Indicators of Living Standards

Data on GDP per head are not the only available indicators of changes in living standards. Evidence of a different and complementary kind is available from social indicators. This evidence is examined in more detail later in the report (Chapter 13) but in brief:

- Life expectancy at birth increased by 23 per cent between 1971 and 1980, reaching 50 years in 1980. The most important determinants of life expectancy at birth are infant and child mortality. Infant mortality decreased by 46 per cent during 1971-80, reaching 72 per thousand in 1980. Child mortality decreased by 51 per cent during the same period, reaching 45 per thousand (see Table 2.2). Such figures indicate that, while Papua New Guinea has not yet caught up with other developing countries in its income group, there were significant improvements in the nation's standard of health during the 1970s.

- The proportion of children aged 7-12 enrolled in community schools increased from 56 per cent in 1975 to 60 per cent in 1983, although actual attendance is lower. Whereas in 1960 only 1 per cent of secondary school age children attended high school, by 1984 enrolments were about 14 per cent. There is little evidence as to what has happened to the level of literacy over time, though it is to be assumed that it has increased somewhat.

Table 2.2

Social Indicators of Changes in Living Standards, 1971-80

	1980	Change 1971-80
Life expectancy at birth (years)	50	+23%
Life expectancy at age 25 (years)	35	+10%
Infant mortality (per thousand)	72	-46%
Child mortality (per thousand)	45	-51%

Source: Christine McMurray, "Recent Demography of Papua New Guinea", background paper prepared for this review, 1985.

- The extent of malnutrition differs among and within provinces and at different times of the year. It appears to be greatest in isolated settlements and also in areas in which there is pressure of population on available land. Until the results of a recent national survey of nutrition have been published, the extent of malnutrition will not be known precisely. But preliminary impressions and the comments of competent observers suggest that the general standard of nutrition in Papua New Guinea has improved.

Changes in Village Living Standards

Although it is difficult to document with figures, there have clearly been important changes in village living standards in Papua New Guinea over the last decade. Since 85 per cent of Papua New Guineans live in villages, it is important that these changes be taken into account.

Between 1966 and 1980 the proportion of cash earners within the economically active population rose from less than half to about three-quarters. More than half of all village households now earn some income from selling traditional vegetables and fruits, about half sell coffee, 19 per cent grow copra and 13 per cent grow cocoa. In general, smallholder incomes from the production and sale of cash crops have increased significantly faster than the rate of population growth.

An additional source of cash for village householders is remittances from relatives working outside the village. This is of particular significance in parts of the country where average rural incomes are low and/or population pressure on available land is high and hence out-migration has been high.

In general, across most parts of the country, villagers now have better access to transport, health services and education for their children than they did a decade ago. Improvements in roads have brought with them an increase in the number of village-owned trucks and passenger motor vehicles, and have been the principal means of enabling the increase in village cash cropping that has taken place.

The fact that a generation with at least a rudimentary education has now grown up in the villages has helped village people to own and run an increasing number of trade stores. This, in turn, means that villagers in many parts of the country now have better access to a balanced diet, since tinned meat, tinned fish and rice are now more easily available. They also have easier access to soap, kerosene for lanterns, batteries for torches and radios, and the like, all of which have brought small but important improvements in living standards. In general, there are now more people in the villages who have an understanding of how the modern economy works and are therefore able to take part in it.

In some areas, cash incomes have been used to upgrade village housing standards, including an increase in the use of semi-permanent building materials. Across much of the country, people are now able to spend more on clothing than they could a decade ago.

The improvements that have taken place in village living standards have not been spread evenly across the country, and in most areas villagers would like progress to be faster. Nevertheless, in a country which is in most respects just beginning to develop, small improvements such as these spread widely across the population mark the beginnings of sustained, relatively equitable economic growth.

Distribution of the Benefits of Development

Available evidence suggests that there has been a steady increase in the proportion of domestic product in the monetary sector accruing to Papua New Guineans, and that money incomes earned by nationals have grown much more rapidly than GDP. For example, between FY1974 and 1981, total earnings of national employees in money terms grew at about three times the rate of that of expatriates. This contrasts with the experience of the 1960s and early 1970s, when the proportion of the GDP accruing to nationals declined. As a crude estimate and disregarding subsistence output, the GDP accruing directly to nationals appears to have grown by something like 10 per cent a year in real terms between FY1974 and 1981.

Wage and salary differentials among Papua New Guineans working within urban areas have been reduced considerably,but the gap between urban and rural wages for unskilled workers has increased. The rapid rise in urban wages has cost many jobs, increasing the disparity between those fortunate enough to obtain a job and the unemployed.

There has been a more equal distribution of some government services among regions and provinces since Independence. For example, differences among provinces in the percentage of school age children enrolled in community schools are significantly less now than they were at Independence, which implies that there has been an increase in equality of educational opportunity.

In the rural sector, average incomes have risen much more rapidly in the successful cash cropping provinces (e.g. parts of the New Guinea islands and the highlands) than in provinces where, because of physical isolation or unsuitable land, cash cropping has been less widespread (e.g. parts of the Papuan coast). In addition, within most provinces, some areas have advanced more rapidly than others. This increasing disparity of incomes is observed in most countries at the earliest stages of economic development. The disparities observed to date in Papua New Guinea are still small by the standards of many countries (e.g. in Latin America).

Overall, then, inequality has decreased in some senses (Papua New Guineans now receive a larger share of the national pie, an increasing proportion of nationals has access to a cash income, intra-urban differences in wages among Papua New Guineans have declined, and community school educational opportunities are distributed more equally across the country), but it has increased in other respects (urban-rural differences have increased and some areas have developed faster than others, as is to be expected).

Self-Reliance and Economic Independence

The Australian budget support grant to Papua New Guinea declined by over 20 per cent in constant prices in the first half-decade after Independence (see Table 2.3). However, this decline has been halted in the 1980s. In constant dollars the budget support grant in FY1985 was only marginally below that of FY1982 while in constant kina the grant in 1984 was the same as that in 1980.
Australian budget support as a proportion of total Papua New Guinea budget expenditure declined from 43 per cent in FY1977 to 29 per cent in 1984 (see Table 2.4). This appears to reflect an impressive increase in fiscal self-reliance, but other evidence points to a more modest improvement. First, almost the entire decline had occurred by 1980; since that year budget support as a proportion of spending has remained approximately constant. Second, budget support as a percentage of total budget receipts has

Table 2.3

Australian Grant-In-Aid to Papua New Guinea, FY1976-FY1985

Year	Constant A$ (millions)[a]	% change	Year	Constant kina (millions)[b]	Per cent change
FY1976	200	n.a.	FY1976	n.a.	n.a.
FY1977	271	+35.7	FY1977	176	n.a.
FY1978	261	-3.9	-[c]	n.a.	n.a.
FY1979	259	-0.7	1978	163	-7.6
FY1980	244	-5.8	1979	157	-3.3
FY1981	232	-4.9	1980	140	-10.7
FY1982	219	-5.8	1981	136	-3.3
FY1983	214	-2.3	1982	131	-3.7
FY1984	219	+2.5	1983	138	+5.5
FY1985	216	-1.4	1984	140	+1.2

[a] Current values deflated by Australian consumer price index, in FY1981 prices.

[b] Current values deflated by Papua New Guinea consumer price index, in FY1977 prices.

[c] During 1977, Papua New Guinea changed to a calendar year basis for statistical records and the budgetary process.

Source: Data supplied by the Department of Finance, Canberra, A.C.T.

declined somewhat less, from 44 per cent in FY1977 to 34 per cent in 1984, the 1984 figure being the same as that for 1980. Third, although significant increases in government internal revenue were achieved during 1977-81, the main offset for the decline in budget support has been an increase in foreign borrowing to cover budget deficits (Table 2.4).

Self-reliance in Papua New Guinea means not only raising the degree of financial independence but also increasing reliance on local entrepreneurship and skilled labour. Since Independence, there has been increasing national ownership, private and public, in areas of business that were formerly the exclusive preserve of expatriates. In the public service and in private firms considerable progress has been made in replacing expatriates with nationals, especially

Table 2.4

Papua New Guinea Fiscal Self-Reliance, FY1976-1984

	Australian budget support as per cent of:		As per cent of government expenditure		
	Total budget receipts	Total budget expenditure	Government borrowing	Budget support plus government borrowing	Internal revenue
FY1976	38	34	11	46	54
FY1977	44	43	3	46	54
1978	39	37	4	41	59
1979	38	34	12	46	54
1980	34	29	13	43	57
1981	32	28	13	41	59
1982	33	28	14	42	58
1983	33	30	10	40	60
1984	34	29	13	43	57

Source: Bank of Papua New Guinea, Quarterly Economic Bulletin.

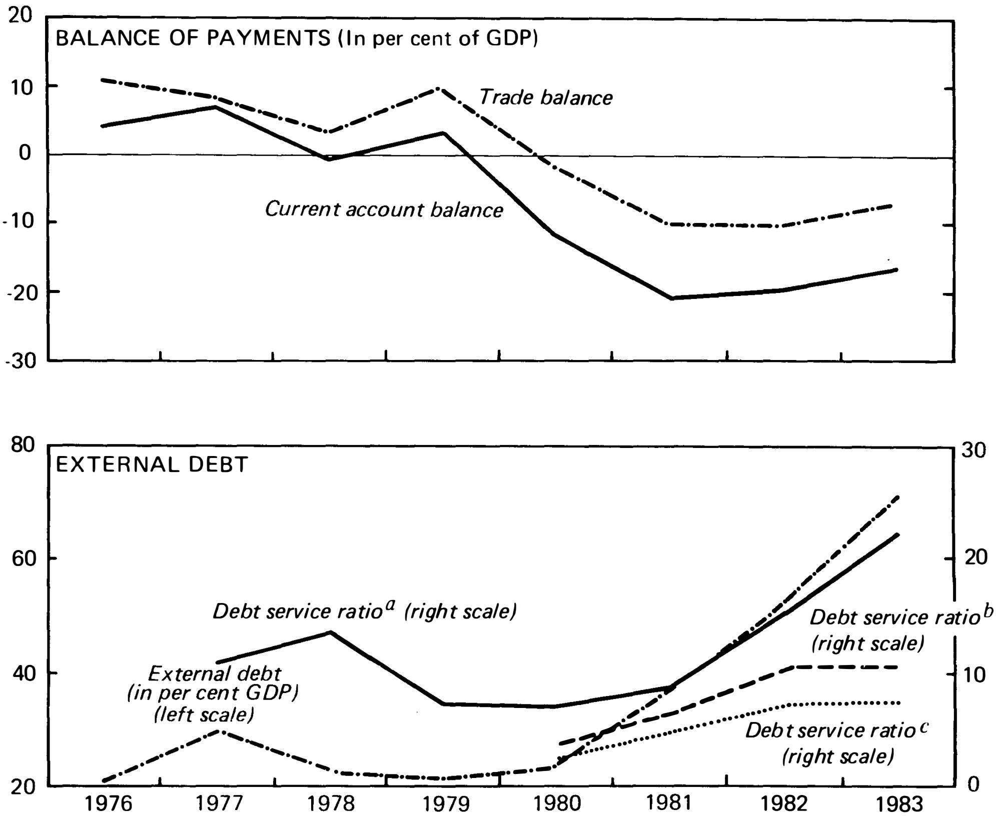
considering that the University of Papua New Guinea produced its first graduates as recently as 1972. At the same time the sources of expatriate workers have become more diverse. Before Independence the vast majority were from Australia; significant numbers are now recruited from the United Kingdom, New Zealand, and South and South-East Asia.

The increasing localization of the public sector has not been without cost in terms of efficiency. A number of Papua New Guinea nationals now say that, although it was important for reasons of national self-esteem to localize jobs rapidly after Independence, the process went too far too fast. It would be a sign of national maturity, they argue, if the Papua New Guinea Government were to invite a limited number of expatriates to do certain key jobs that are currently not being done as well as they might be. Examples include training and supervising teachers and agricultural extension workers, and improving the quality of institutions of post-secondary education.

External Balance

Papua New Guinea's balance of payments was strong in the 1970s, weakened markedly in the early 1980s, and has been recovering since 1982 (see Chart 2.5).

Chart 2.5 Balance of Payments and External Debt, 1976-83



[a] Public and private debt service as per cent of current account receipts.
[b] Public debt service as per cent of exports of goods and services.
[c] Public debt service as per cent of current account receipts.

Sources: Data provided by the Papua New Guinea authorities, and International Monetary Fund International Financial Statistics.

In the 1970s, the trade account of the balance of payments was substantially in surplus. The current account was also in surplus, albeit to a lesser extent, because growing deficits on the services and private transfer accounts were only partially offset by foreign aid receipts. Foreign borrowing was moderate, mostly project-specific and on concessional terms, and the debt servicing burden remained low. International reserves rose to keep pace with import growth. During most of this period, the Government's fiscal policy was successful in maintaining external balance. At the same time, relatively favourable price developments in major export markets had a strengthening effect on the balance of payments. The country's external strength was attained without tight controls on foreign payments, which suggests that the economy was in external balance.

In the early 1980s, the external trade account turned into a sizeable deficit. The turnabout was even more pronounced on the current account because further increases in service and transfer payments were associated with a levelling off of foreign grant receipts. By 1981, the current account deficit had widened to almost 21 per cent of GDP. The deficits were financed by high levels of foreign borrowing, including government borrowing from commercial sources, and by moderate drawdowns from official reserves.

The weakening in the balance of payments during 1980-82 was mainly the result of a sharp deterioration in the external terms of trade. Moreover, domestic demand remained strong after the terms of trade weakened, reflecting momentum gained during the earlier boom and some delay in adjusting to a policy of fiscal restraint. The current account deficit remained at 20 per cent of GDP in 1982 and was still 16 per cent of GDP in 1983, partly because of heavy import and service payments for Ok Tedi development which were financed by long-term private capital inflows; excluding these transactions, the current deficit was substantially lower in each of these years.

Mainly as a result of a rebound of 7 per cent in the terms of trade (an improvement in export prices of 6 per cent and a decline in import prices of 1 per cent), the trade and current accounts strengthened in 1983. Nevertheless, the terms of trade index remained substantially below the level prevailing in the late 1970s. Volume changes barely affected the trade balance in 1983 because of a matching 3 per cent increase in export and import volumes.

Preliminary data for 1984 indicate that the improvements of 1983 have continued. During the first nine months of the year, the aggregate value of Papua New Guinea's exports increased by 13 per cent. This was the result of an increase of 74 per cent in the value of agricultural exports (reflecting both price and volume increases) which was not fully offset by a reduction of 19 per cent in revenue from mineral exports. Imports, by contrast, had yet to recover strongly from the stable level of recent years.

Despite the improved performance of 1983-84, the medium term outlook for the balance of payments is not bright. The prices of tree crop products seem unlikely to return in the second half of the 1980s to their level of the late 1970s, there are few signs of recovery in the all-important prices of copper and gold, and Ok Tedi no longer looks like the bonanza that it once seemed to be.

Partly as a result of the Government's continued borrowing abroad to cover its budget deficit, Papua New Guinea's level of foreign exchange reserves remains healthy. In late 1984, reserves were sufficient to cover 7.4 months' imports; this was the highest reserves to imports ratio since Independence.

External Debt

External debt has been rising rapidly in recent years (see Chart 2.5), with debt owed to private sources outstripping debt to official sources. By 1983, outstanding disbursed external debt amounted to about 70 per cent of GDP. About half of this debt was owed by the private sector, almost 70 per cent being related to the Ok Tedi mining project.

Like total external debt, the debt service ratio has been rising. For public debt, the ratio of debt service payments to exports of goods and services more than doubled from 4.7 per cent in 1980 to 10.5 per cent in 1982 and remained at about the 1982 level in 1983 and 1984. The ratio of public debt service payments to current account receipts (including grant aid) also rose rapidly from 3.8 per cent in 1980 to 7.5 per cent in 1982 and had reached 7.8 per cent by 1984.

The ratio of private debt service payments to current account receipts rose more than fourfold from 3.3 per cent in 1980 to 14.7 per cent in 1983; and the ratio of total (public plus private) debt service payments to current account receipts rose threefold from 7.1 per cent to 22.3 per cent between 1980 and 1983. The fastest growing component in this latter increase was interest payments, which rose from 2.4 per cent of current account receipts in 1980 to nearly 10 per cent in 1983. This reflected partly the high levels of interest rates in international financial markets and partly the rising share of commercial debt, mainly on account of Ok Tedi. The latter is legally an obligation of the Government only to the extent of its minority shareholding; but a default on such a large debt would seriously damage the country's credit and for practical purposes it should rank with public debt.

Although the ratio of public debt service payments to exports is still not high by international standards, it is the size of the total debt and the rate of increase in the recent period that cause concern. Interest payments on new borrowing and the bunching in the next four years of large interest and repayment obligations resulting from loans entered into after 1978 are expected to mean that total public debt service costs will amount to about one-third of total internal revenue during 1985-89.

Growth in Employment

There is no comprehensive, reliable series of wage employment data in Papua New Guinea, though some data of greater or lesser reliability are collected regularly about employment in particular sectors or types of enterprises. As in most developing countries, the industrialized-country concept of open unemployment has relatively limited applicability in Papua New Guinea, and no consistent data are available on changes in unemployment or underemployment over time.

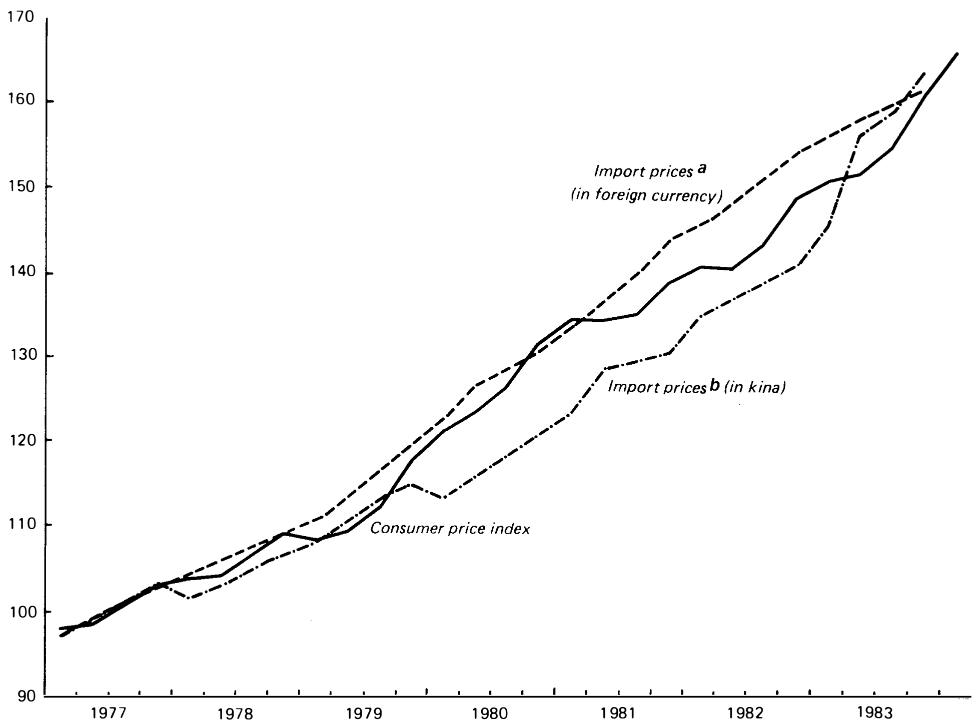
Of the estimated labour force of 1.5 million persons, about 13 per cent are engaged in formal wage employment either in urban areas or in rural areas outside villages (non-traditional settlements such as plantations, mining camps, etc.). The public sector is the largest formal employer, accounting for almost a third of identifiable employment, with the plantation sector a close second. Altogether, formal employment appears to have grown quite slowly during the second half of the 1970s; by 1981, it had only just regained the level that it had reached a decade earlier during the construction of the Bougainville mine. During the recession in 1981 and 1982, employment in the formal sector dropped by about 13 per cent. This accentuated the rise in unemployment that had persisted for a number of years, especially in urban areas, and played a part in prompting the Government to shift its policy priorities from promoting economic stability and equity to putting increased emphasis on the creation of productive work opportunities through economic growth. The employment situation improved slightly in 1983, the cutback in public sector employment being more than offset by an increase in the private sector. The latter reflected in particular a substantial increase in construction work at the Ok Tedi mine.

Prospects for formal job creation in the future depend on a number of disparate factors. Declining (or at least non-increasing) Australian aid combined with limited prospects for raising significantly larger amounts of domestic revenue mean that public sector employment seems unlikely to grow markedly in the medium term. Some jobs may be created in the construction of new mines, but whether or not the plans that are in the pipeline go ahead depends heavily on the extent to which metal prices recover and on private foreign investors' reaction to the Ok Tedi situation. Some growth in employment may occur on plantations if the land and ownership problems can be solved and if the prices of the commodities produced on these plantations do not decline drastically. Employment growth in most other sectors, including the bulk of manufacturing, will essentially be determined by the overall growth of the economy. Unless there is a drastic change in economic policies, in particular those related to wages, the prospects for employment growth are not good. This is especially so if these prospects are compared with the expected increase in the economically active population. Even with changes in policies, the only way the larger part of the increase in Papua New Guinea's labour force will be accommodated is through increasing economic opportunities in the villages.

Price Stability

One area in which Papua New Guinea's economic policy has been consistently successful is in maintaining price stability (see Chart 2.6). Except in 1980, when inflation reached 12 per cent, the rate of price increase in Papua New Guinea since Independence has been held within the narrow range of 4-8 per cent a year. This performance is superior to that of most countries, industrialized or developing, and is especially outstanding for a new country with a new currency that was introduced at a time of world-wide high inflation.

Chart 2.6 Import Prices and Consumer Prices, 1977-84 (1977=100)



a Calculated on the weighted average of Papua New Guinea's major importing partners' consumer price indices.

b Calculated on the weighted average of Papua New Guinea's major importing partners' consumer price indices converted into kina.

Sources: Data provided by the Papua New Guinea authorities, and International Monetary Fund, International Financial Statistics.

Conclusions

Papua New Guinea's economic performance since Independence, assessed on the basis of the objectives of government at the beginning of the period, has been considerably successful. Economic, currency and price stability have been attained, the benefits of development have been distributed quite widely among the population, nationals now play an increased role in the economy, and modest progress has been made towards increased national self-reliance and economic independence. However, the economy's growth performance, and thus its ability to satisfy the growing needs and expectations of a rising population, has not been good. Even allowing for data problems and special factors, the aggregate rate of growth of output has been low (though it has been higher than the national average for the 85 per cent of the people who live in villages), growth in the generation of productive employment has not kept pace with the increase in the number of persons seeking jobs, and the burden of servicing external debt has increased significantly in recent years. As was pointed out in Chapter 1, the initial lack of emphasis on growth and employment creation reflected an assumption that these would be attained without special effort on the part of the Government rather than a denial of their importance. Thus, while there is much to be proud of in the historical record, the overall picture is mixed.

3. GENERAL ECONOMIC POLICIES

The three main sets of general macro-economic policies that successive Papua New Guinea governments have employed to achieve their economic ends have been exchange rate policy, fiscal or budgetary policy and wages policy(1).

Exchange Rate Policy

The core of macro-economic policy since Independence has been what is known as the "hard currency" strategy. This was defined by the first Finance Minister as the maintenance of a strong balance of payments with manageable levels of foreign debt through restraint on real levels of domestic expenditure and wages rather than through exchange controls, while at least maintaining the foreign exchange value of the freely convertible kina against major world currencies.

Two conditions facing the governments of Papua New Guinea after Independence were central in the decision to implement this policy. First, as a result of a ruling by the independent Minimum Wages Board, wages were (in practice) fully linked to the consumer price index. As long as this full linkage persisted, the exchange rate could not be used as an instrument to affect Papua New Guinea's international competitiveness and hence the balance of payments. If, for instance, there was a deficit in the balance of payments and devaluation of the kina seemed called for, the effect would have been to raise domestic prices - and, because of full linkage, domestic wage costs - by almost the full amount of the devaluation. All that devaluation would have achieved would be to raise domestic prices and wage costs without improving the country's competitiveness.

The second key condition facing policy makers was that the economy was (and remains) extremely open, so that a large proportion of any increase in government or private spending spills over into imports. This means that the level and rate of growth of public expenditure has a strong, direct and fairly predictable impact on the balance of payments. For these reasons the Government decided to direct exchange rate policy to the goal of maintaining price stability and to maintain balance of payments equilibrium by controlling the level and rate of growth of public expenditure.

1. In the parts of this chapter that deal with the historical record, use is made of material drawn from the comprehensive recent review of macro-economic policies by Garnaut and Baxter that was cited in the previous chapter; and of Christopher Colclough and Philip Daniel, _Wage Incomes and Wage Costs in Papua New Guinea: Challenges for Adjustment, Distribution and Growth_, Port Moresby, 1982.

The exchange rate between the kina and a basket of currencies of Papua New Guinea's principal trading partners appreciated (on an import-weighted basis) by about 8 per cent between January 1976 and the end of 1979. This appreciation was slightly more than offset by Papua New Guinea's inflation rate being lower than that in partner countries. The net result was that Papua New Guinea's international competitiveness, taking into account both exchange rate changes and differential rates of inflation, improved by about 4 per cent by the middle of 1979.

The kina appreciated by a further 5 per cent by the end of 1982, but Papua New Guinea's performance on inflation relative to its trading partners was less successful in this period, and the country's international competitiveness declined by 6 per cent during 1979-80, and by 3 per cent during 1979-82.

The deterioration that occurred during 1980-82 in Papua New Guinea's terms of trade, balance of payments, and international competitiveness prompted important policy initiatives. In a marked departure from previous policy, the kina was depreciated early in 1983 in step with the devaluation of the Australian dollar. Without any formal announcement of a policy change, the kina was allowed gradually to depreciate further, until by mid-1984 the kina-basket exchange rate was about 10 per cent below what it had been two years earlier. Taking differential inflation rates into account, by mid-1984 Papua New Guinea's international competitiveness was about 5 per cent better than it had been two years earlier, and about 7 per cent better than it had been at currency independence in January 1976.

Preliminary data for 1984 indicate that, over the full year, the kina fell by 7.2 per cent against the U.S. dollar, while appreciating marginally (0.7 per cent) against the Australian dollar. The redistributive effect of these gradually administered exchange rate changes has been to boost the kina returns to Papua New Guinea's rural export industries while very mildly squeezing urban living standards, which are heavily dependent on imports.

Fiscal Policy

The public sector in Papua New Guinea consists of the National Government, nineteen provincial governments, local authorities, and a number of non-financial public enterprises. The operations of the national government dominate the economy: budgetary expenditures averaged about 37 per cent of GDP during 1981-83 (or 28 per cent if grants to provincial governments are excluded), while domestic revenue averaged about 21 per cent of GDP. The difference between expenditures and revenues was made up by the Australian budget support grant (11 per cent of GDP) and government borrowing (5 per cent of GDP). The share of government expenditure in the GDP is considerably larger than for most countries in the region (Table 3.1); this is in part a legacy of the Australian colonial administration .

Throughout the period since Independence, fiscal (or budgetary) policy has been dominated by the need for restraint in the growth of aggregate expenditure because of the need to ensure that external balance is maintained. In FY1977, to consolidate monetary independence, the Government implemented reductions that have been

Table 3.1

Government Spending and Revenue in Selected Developing Countries, 1980 (Percentage of Gross Domestic Product)

	Expenditure			Revenue
	Total	Current	Capital	
Sri Lanka	41	24	17	20
Papua New Guinea	34	29	5	20
Fiji	25	19	6	22
Malaysia[a]	23	18	5	23
Indonesia	24	13	11	23
Singapore	22	17	5	28
Pakistan	17	14	3	16
Republic of Korea	19	16	3	19
Thailand	21	16	5	16
India	14	12	2	13
Philippines	12	9	3	13
Developing country averages[b]				
Middle income countries		14		
Low income countries		11		

[a]1979 data.

[b]Public consumption as a share of GDP, taken from World Bank data.

Sources: International Monetary Fund, Government Finance Statistics Yearbook, 1982; World Bank, World Development Report 1983, Oxford University Press, New York, 1983.

estimated at 9 per cent in its total real expenditure. From 1978 onwards it was intended that there should be a steady increase of 3 per cent a year in real public expenditure on goods and services. This target was met in 1978 and 1979 (see Table 3.2). However, in 1980 there was substantial over-expenditure: allocations to goods and services rose by 7 per cent in constant prices. That was the only year since Independence in which over-expenditure occurred, which is a tribute to successive governments' overall fiscal responsibility.

Table 3.2

Increase in Real Government Expenditure on Goods and Services, 1978-84

	Per cent a year
1978	3
1979	3
1980	7
1981	1
1982	-1
1983	-2
1984 (budget)	-1
1978-84	1.3

Sources: Ross Garnaut and Paul Baxter, in consultation with Anne Krueger, Exchange Rate and Macro-economic Policy in Independent Papua New Guinea, Port Moresby, Feb. 1983; and Department of Finance, Port Moresby.

Since 1980, developments largely outside the control of policy makers have combined to bring to a halt the planned increases in government spending. Indeed, real government spending on goods and services declined by more than 2 per cent during 1981-84. The principal factors causing this decline have been the need to curtail drawdowns from the Mineral Resources Stabilization Fund (MRSF), the decline in agricultural commodity export prices (and hence government tax revenues derived directly and indirectly from exports) and, more recently, problems at the Ok Tedi mine. Underlying the first factor have been the unexpectedly sharp decline in the quality of ore grades at the Bougainville mine and the fall in mineral prices, both of which caused the profits and company tax payments of Bougainville Copper Limited to be lower than projected. This is of more than marginal significance: whereas the Mineral Resources Stabilization Fund withdrawals amounted on average to 16 per cent of National Government internal revenue during FY1976 - 1978 and to 21 per cent in 1981, they had fallen to only 7 per cent during 1982-84 and seem likely to fall still further during 1985 (see Table 3.3).

Such increases in real government spending as did take place during 1977-81 were made possible by increases in internal revenue. The Australian budget support grant declined by 23 per cent in constant kina between 1977 and 1981, which meant that internal revenue had to increase sharply if significant spending increases were to take place. The increases in revenue that were achieved were spread quite widely among indirect tax, personal income tax, company tax (in 1978), withdrawals from the Mineral Resources Stabilization Fund and other miscellaneous internal revenue. From 1981 onwards, it was largely the difficulty of further increasing internal revenue that caused real expenditure increases to come to a halt.The estimated share of capital expenditure in total government

Table 3.3

Summary of the National Government Budget, FY1976-1984
(K million)

	Actual								
	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984 Budget estimate
Receipts									
Personal tax	55	52	67	62	76	91	109	122	121
Company tax	24	28	49	41	48	44	42	44	42
Other direct tax	3	3	5	6	7	9	10	13	14
Indirect tax	58	74	84	98	109	116	132	146	170
MRSF	45	35	31	38	57	81	40	21	30
Other internal revenue	29	30	36	39	48	45	54	79	69
Total internal revenue	214	223	274	283	344	386	387	425	445
Foreign grants	129	176	172	176	176	184	187	213	228
Total receipts	337	399	445	460	519	570	574	638	673
Expenditure									
Departmental	227	253	222	233	283	302	291	261	303
Capital works	38	44	41	33	56	56	45	44	52
Maintenance works	29	33	33	32	35	31	35	37	32
Provincial governments	-	-	84	126	141	150	159	196	212
Net lending and investments	12	-	6	10	13	14	32	40	51
Interest payments	18	23	21	28	26	51	61	68	74
Other grants and expenditure	55	50	55	63	43	54	44	62	52
Total expenditure	380	409	461	524	597	658	667	709	777
Surplus/deficit	-43	-10	-16	-64	-78	-88	-93	-71	-104
Deficit financing									
International agencies	9	10	8	14	16	22	20	45	61
Commercial	4	0	-6	13	31	56	54	63	30
Total overseas financing	13	10	2	26	47	79	74	108	91
Domestic financing	30	1	13	37	31	9	20	-38	13
Overall financing	43	10	16	64	78	88	93	71	104

Note: Totals do not necessarily sum due to rounding.

Source: Bank of Papua New Guinea *Quarterly Economic Bulletin*.

expenditure depends crucially on the definition of capital expenditure that is used. On the definition used here (Table 3.4), capital expenditure fluctuated between 16 per cent and 20 per cent of total expenditure during 1979-84 without showing any clear upward or downward trend.

Table 3.4

Capital Expenditure in the National Government Budget, 1979-84
(K million)

	1979	1980	1981	1982	1983	1984 Budget estimate
National Government	51.4	88.2	84.3	75.0	80.9	100.0
Purchase of capital assets[a]	(6.6)	(17.8)	(7.4)	(8.0)	(14.9)	(19.7)
National development projects	(3.1)	(3.5)	(2.9)	(3.3)	(3.0)	(3.1)
Capital works program	(33.4)	(56.4)	(56.0)	(44.0)	(43.2)	(47.6)
Capital works grants to statutory institutions	(2.3)	(1.0)	(0.7)	(2.9)	(0.0)	(0.0)
Acquisition of existing assets and equity purchases	(6.0)	(9.5)	(17.3)	(16.8)	(19.8)	(29.6)
Capital transfers to provincial governments[a]	24.1	27.0	28.2	25.7	10.5	27.3
Capital transfers to public enterprises	7.1	4.4	9.5	26.7	19.5	21.2
Total capital expenditure	82.6	119.6	122.0	127.4	110.9	148.5
Capital expenditure as a percentage of total expenditure	16.4	20.0	18.5	19.1	15.6	19.1

[a]From 1983, data are not fully comparable with those in earlier years owing to change in data classification.

Source: Data provided by the Papua New Guinea authorities.

An alternative way of analysing changes in government expenditure is to look at its breakdown by functional groups (see Table 3.5). Taking the average of FY1977 and 1978 and comparing this with the average for 1983 and 1984, the main items that increased in importance were grants to provincial governments (increased by 5.4 percentage points to reach 9.6 per cent of total expenditure) and education (up by 3 points to 20.3 per cent). The main items in decline were transport, infrastructure and communications (down by 4.4 percentage points to 4.2 per cent of total spending), capital works (down by 3.2 points to 7.9 per cent), loans and capital contributions to statutory authorities (down by 2.6 points to 1.5 per cent) and maintenance works (down by 2 points to 5.3 per cent). On this breakdown, it seems that key development items such as transport, infrastructure, capital works and maintenance works have suffered as the brakes have had to be put on public spending - though it is not clear to what extent grants to provincial governments, the item with the largest increase, may include some of these categories of spending.

Table 3.5

Expenditure on Goods and Services in the National Government Budget by Functional Groups, Percentage Shares, FY1975-1984 (per cent)

	Y/E June			Y/E December						
	FY1975	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984 (budget)
Education	13.6	16.4	18.0	16.6	15.2	14.2	15.4	18.3	20.0	20.5
Policy and administration	13.8	19.3	16.5	16.0	16.0	17.2	16.8	17.1	18.0	18.0
Provincial grants and financing	1.1	1.1	1.0	7.3	12.4	11.9	10.3	9.8	9.8	9.4
Health	5.2	3.9	6.9	7.2	7.2	7.2	7.4	7.9	8.4	8.8
Capital works	8.5	10.4	12.3	9.9	7.7	11.2	10.5	9.1	7.9	7.8
Civilian law and order	4.7	6.5	6.3	6.4	6.4	6.4	6.7	7.4	7.3	7.7
Maintenance works	7.9	7.8	7.7	6.8	6.1	6.1	4.8	4.8	5.6	4.9
Defence	1.6	4.7	4.2	4.2	4.1	4.4	3.8	3.9	4.3	4.8
Primary industry	4.3	4.7	5.2	5.5	5.3	4.4	4.4	4.1	4.1	4.5
Transport, infrastructure, communication	8.5	9.2	9.2	8.0	7.3	5.9	6.1	6.0	4.2	4.2
Other economic opportunities	1.6	2.3	2.2	3.2	3.0	3.6	5.4	3.7	4.5	3.7
Other community services	3.0	3.5	3.8	3.4	2.7	2.3	3.1	2.6	2.3	2.2
Lands, minerals, energy	2.2	2.5	1.8	2.0	1.8	1.9	1.8	1.7	1.8	2.2
Loans, capital contributions to statutory authorities	5.2	4.6	4.7	3.4	4.8	3.3	3.6	3.6	1.7	1.3
Transferred functions	18.6	3.0	-	0.1	-	-	-	-	-	-
Expenditure on goods and services	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
National functions	98.5	98.4	95.7	79.0	73.8	76.2	77.1	73.9	68.4	66.8
Provincial functions	1.5	1.6	4.3	21.0	26.2	23.8	22.9	26.1	31.6	33.2

Source: Department of Finance, Estimates of Revenue and Expenditure.

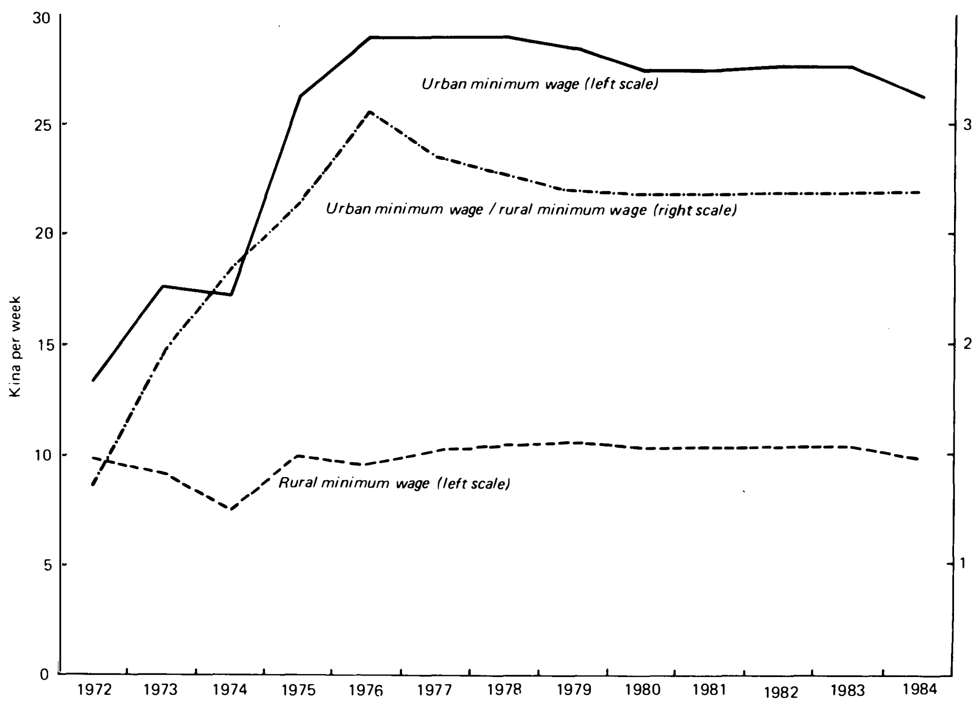
Wages Policy

Following Australian practice, Papua New Guinea has a long history of official intervention in the labour market through the setting of minimum wages. In the private sector minimum wages are determined by the independent Minimum Wages Board, which takes into account submissions from employers, unions and the Government. From Independence until March 1983, wages were almost fully linked to the consumer price index. For example, in the Minimum Wages Board determination for 1980-83, there was a full linking of wages to increases in the consumer price index up to 8 per cent a year and partial indexation for rates of inflation up to 14 per cent.

In March 1983, for the first time, this link between prices and wages was significantly weakened. The Board determined that, from March 1983 to March 1986, there should be full indexation of wages up to an inflation rate of 5 per cent, but zero indexation beyond that. Later in 1983, the Government was successful in its efforts to extend this decision to cover workers in the public sector.

In the period immediately preceding Independence, between September 1972 and March 1975 the real urban minimum wage increased by over 50 per cent or over 100 per cent depending on the definitions used (Chart 3.1). From 1976 to 1980 the real urban minimum wage declined very slightly, while from 1980 to March 1983 it remained roughly constant. In March 1984, in the first adjustment under the new partial linking determination of March 1983, it fell by about 3.5 per cent. During the three years of the present agreement the Government reportedly plans to attempt to achieve a total reduction in real urban minimum wages of about 10 per cent. During the 12 months to September 1984, the increase in the consumer price index was about 7.5 per cent.

Chart 3.1 Real Urban and Rural Minimum Wages, 1972-84 (As of end of March every year. Deflated by the Consumer Price Index 1977=100)



Source: Data provided by the Papua New Guinea authorities.

Wages in Papua New Guinea are high compared to those in other developing countries. This is particularly the case for urban wages, as can be seen in Tables 3.6 and 3.7. Although the figures in these tables are somewhat dated, the overall conclusion still holds true in 1985: Papua New Guinea's urban minimum wages are between 2 and 10 times greater than those in neighbouring competing countries.

Wages give information on the cost of labour per hour or per day worked, but what a business manager needs to know is the cost of labour per unit of output produced. The missing link is the number of units of output produced per hour or per day. No precise international comparisons are available on Papua New Guinea's labour productivity. However, data gathered during visits to some of the better-managed manufacturing establishments suggest that, even in simple consumer goods like clothing and wooden furniture, labour productivity in Papua New Guinea is perhaps one-third to one-half what it is in Hong Kong, Korea or Taiwan. Yet wages in the clothing industry in Papua New Guinea are about the same as those in Korea. Thus, producers in Korea have a twofold or threefold advantage in labour costs. The point of this comparison is not to denigrate Papua New Guinea labour productivity; it is understandable that in the earliest stages of industrialization labour productivity should be low. Rather, the lesson is that if Papua New Guinea is to have any chance of getting started in even the simplest of industries real wages will have to be reduced substantially.

Table 3.6

Minimum Wage Rates in Selected Developing Countries, 1978
(US$ a day)

	Manufacturing	Agriculture
Papua New Guinea	7.00	2.60
Malaysia	3.85	1.90
Western Samoa	3.40	2.70
Philippines	1.85	1.55
Thailand	1.70	1.25
Sri Lanka	0.90	0.65
Indonesia	0.60	n.a.

Note: These figures are orders of magnitude only.

Source: World Bank, unpublished data (figures have been rounded to the nearest 5 cents).

Table 3.7

Average Non-Agricultural Wage Rates in
Selected Lower Middle Income Developing Countries, 1980
(US$ a week)

Papua New Guinea	62.07
Honduras	35.93
El Salvador	29.14
Western Samoa	26.41
Nigeria	21.98
Philippines	10.50

Note: These figures are orders of magnitude only.

Source: International Labour Organization Yearbook of Statistics, Papua New Guinea Pocket Book of Labour Statistics.

Rural minimum wages in Papua New Guinea also appear to be considerably higher than in many competing countries. However, there is evidence that rural wages in Papua New Guinea may not be too far from the level that would equate the supply of labour with demand. There do not seem to be large numbers of unemployed persons seeking but unable to find work on plantations, and it is reportedly sometimes difficult to find enough labour for unpopular tasks such as copra cutting and rubber tapping. In addition, in areas where smallholder commercial agriculture is well developed, estate labourers tend to be migrants from less developed regions of the country. That is, villagers in areas of agricultural potential often seem to prefer growing their own cash crops to working for wages on an estate. Finally, the fact that piece rates, which generally promote efficiency, are now permitted on plantations, has no doubt reduced labour costs per unit of output.

Consequences of General Economic Policies

Before discussing the policies that are appropriate for the future, it is necessary to assess briefly the consequences of the policies that have been followed in the past.

Exchange Rate Policy

In the early years, the hard currency strategy was instrumental in ensuring that the new currency was widely accepted and remained freely convertible. It was also instrumental in keeping the inflation rate low relative to that in most other countries.

On the liabilities side of the ledger, maintaining a hard currency caused the number of kina received per dollar of exports to be lower than it would otherwise have been. This is likely to have hindered the growth of some existing and potential exports, especially exports of agricultural commodities produced by smallholders who employ little or no paid labour and are therefore relatively unaffected by the level of wages.

The hard currency strategy also caused the number of kina paid out per dollar of imports to be lower than it would otherwise have been. This encouraged the purchase of imported commodities and discouraged the production in Papua New Guinea of goods competing with imports. In particular, the consumption of imported rice, tinned fish and tinned meat was encouraged at the expense of locally grown root crops, vegetables, fruits and alternative sources of protein. Other existing or potential import substituting industries are also likely to have been discouraged.

Fiscal Policy

The policy of budgetary restraint that was applied successfully in every year but 1980 helped to protect the country's balance of payments and, until recently, to keep the debt servicing burden from rising too rapidly.

On the other hand, the fact that real government spending on goods and services increased on average by only 1.3 per cent a year from 1978 to 1984 means that real government spending per head of population has been falling. Particularly worrisome in this regard is the apparent decline in spending on transport, infrastructure, capital works and maintenance. These are all items on which the Government must significantly increase its outlays if it is to have a chance of even partially meeting the expectations of Papua New Guinea's citizens for a rising standard of living.

Wages Policy

The main advantage of the Papua New Guinea wage indexation system is that it appears to have bought a measure of labour peace and some predictability about the future course of real wage costs.

The main disadvantage of the system arises from the fact that minimum urban wages are so much higher relative to productivity than wages in competing countries that it is difficult for Papua New Guinea to get started in even the simplest manufacturing industries; and it is equally difficult for industries, once started, to grow. High wages discourage investment in manufacturing both for export and for import substitution and they discourage plantation activity. High wages also intensify the search for labour-substituting techniques of production in both urban and rural areas. The large differential between urban and rural minimum wages - the ratio between the two more than doubled from 1.4 in 1972 to 3.1 in 1976 and has been stable at about 2.7 since 1979 (Chart 3.1) - has encouraged migration from rural to urban areas and aggravated urban unemployment. It is only in the face of extreme difficulty in finding jobs that such migration appears to have declined in recent years.

At least as important as all of the above, the linking of minimum wages to the consumer price index has meant that real wages could not be reduced significantly even though sharply worsened economic circumstances and prospects for the remainder of the 1980s have made this imperative. The centralized wage indexation system, inherited from the colonial administration, has significantly reduced the extent to which Papua New Guinea authorities are able to adjust to changed economic circumstances.

General Economic Policies for the Future

Economic development is a long slow process which takes decades rather than years. There are no "quick fixes". It is important to bear this in mind when examining economic policy options.

In a small open economy like that of Papua New Guinea, the general economic policies that are appropriate depend heavily on the outlook for the terms of trade and the balance of payments. In early 1985, these prospects do not look good. The price of copper shows no signs of recovering from its extremely depressed level, while that of gold has risen only marginally. The prices of Papua New Guinea's agricultural exports, the recovery in 1983-84 notwithstanding, seem likely to remain significantly lower during the rest of the 1980s than they were during the late 1970s. The contribution of Ok Tedi remains to a degree uncertain, and the cost of servicing the country's foreign debt, while not yet over-burdensome by international standards, has been increasing at a disturbingly rapid rate. The rate at which Australia's budget support aid will be maintained has yet to be decided.

This combination of circumstances means that, if the burden of servicing the country's foreign debt is not to get out of hand (as has happened in many developing countries) all instruments of macro-economic policy must be directed at least in part to reducing, and if possible eliminating, the medium-term deficit in the balance of payments. Looked at another way, the decline in the terms of trade that has occurred since the late 1970s, the set-backs at Ok Tedi, and the rising debt servicing burden mean that, for reasons partly outside its control, Papua New Guinea is now significantly worse off economically than it was only a few years ago. Since during the 1980s the prices of the goods that it sells internationally have fallen relative to the prices of the goods that it buys, if international solvency is to be maintained Papua New Guinea must make every effort to sell more abroad and buy less.

Exchange Rate Policy

Now that wages are no longer fully linked to the consumer price index, it is desirable to continue the policy that has been in force de facto since early 1983: namely, the kina should gradually be allowed to depreciate. This will ensure that exporters and producers of import substitutes will receive more kina per dollar of output, which means that the production of exports and import substitutes of all kinds will become more profitable. As a result, there should be an improvement in the balance of payments and an increase in GDP and employment.

It might be argued that a single jump devaluation would be preferable to allowing the kina to depreciate gradually. However, experience in most developing countries suggests that the effect of a jump devaluation is likely to be wiped out quite quickly by demands for a wage increase to compensate for the rise in prices, whereas a gradual depreciation is less abrupt in its effect on prices, and is thus less likely to lead to special wage demands.

It cannot be stressed too much that allowing the exchange rate gradually to depreciate will not magically solve Papua New Guinea's balance of payments problem. As noted above, the essence of the problem is that, the terms of trade having turned sharply against Papua New Guinea in the 1980s, the country is in a real and fundamental sense worse off. In order to deal with this reality, not only exchange rate policy but all policies, macro- and micro-economic, will need to be adjusted.

Fiscal Policy

The national budget which was brought down in November 1984 proposed real growth in government expenditure on goods and services of only 0.5 per cent a year from 1986 to 1990. This planned increase was based on the four assumptions that: the copper price would average 78 US cents a pound in 1985 prices during 1985-90; the price of gold would average US $410 per ounce (US $375 in a revised version); the second stage of Ok Tedi would go ahead as originally planned; and Australian budget support would decline at 3 per cent a year in real terms. In early 1985, the mineral price assumptions look extremely optimistic, while Ok Tedi is now not expected to yield revenue to the Government until after 1990. If, as seems likely, the assumptions are not fulfilled, in the absence of a marked change in policies the prospect for any increase at all in government spending during the rest of the 1980s looks dim.

Assuming that the relatively unfavourable outlook for Papua New Guinea's exports is unlikely to change in the next few years, fiscal policy will need to obey three dictates if government is to continue to play an effective role as an engine of growth in the economy. First, the Government should restrict itself to what only government can do, and leave the rest to the private sector. This means, on the one hand, foregoing investments in mining or agricultural ventures and devoting the resources saved to such things as improving roads and training teachers; and on the other hand, making every effort to deregulate private sector activities so that government rules, regulations and red tape do not hinder domestic and foreign private sector growth. Second, the Government must continue its efforts to reallocate its existing resources more efficiently along the lines already being pursued in the Medium Term Development Strategy. Third, the Government must redouble its efforts to increase the resources available for development. It may do this both by seeking and accepting more non-budget support aid from a variety of donors, and by attempting to raise more revenue domestically.

One possible candidate for increasing domestic revenue is to raise the customs levy from its present level of 4 per cent of the value of imports to 10 per cent. It is estimated conservatively that, in a full year, this could raise upwards of K35 million of extra revenue, which compares favourably with the K7 million or so of new revenue raised in each of the last few budgets. An across-the-board import levy of 10 per cent would still be low by international standards.

The advantages of raising the import levy in this way include: increased protection is granted across-the-board in a non-discriminatory way to local producers of import substitutes; the tax is easy to collect and is not easily avoided or evaded; and richer persons tend to pay a higher proportion of their income in tax than poorer ones since the import content of their expenditure tends to be higher. Villagers who are 100 per cent subsistence farmers would pay nothing at all.

The main potential disadvantage of raising the import levy is that it could be interpreted as meaning that the Government is adopting a protectionist approach to development. Assuming that this is not the Government's intention, it should be made explicit at the time the measure is introduced. Streamlined procedures are needed, whether the import levy is raised or not, to ensure that imported inputs used in producing exports are available duty-free and without delay.

The amount of revenue raised by an increase in the import levy could be further increased if <u>all</u> imports other than those used in the production of exports were to pay it. If rice, tinned fish and tinned meat were included in the levy base, for example, an estimated extra K5 million a year could be raised. The inclusion of these items would have several advantages. First, the tax base would be broadened to include many people who up to now have paid little or no tax but could afford to contribute something. Second, those with little or no cash income would still pay little or no tax. Third, modest protection would be granted to domestic producers of foods competing with these imports. Because of the nature of likely popular reaction to taxing such essential items, it would be necessary to introduce the levy on them gradually, say over three years. It would also be necessary to ensure that any increase in the prices of imported foods resulting from the levy was not automatically translated into wage rises.

Other prospects for increased revenue raising include broadly based consumption taxes and further increases in excises on fuels, beer, etc. The latter imposts all have positive side-effects in addition to their revenue raising potential.

Wages Policy

Given the high priority currently placed on increasing the provision of productive employment opportunities and reducing the level, or at least the rate of growth, of unemployment, it is essential that the Government find ways to reduce wage costs significantly. There are various options in this regard.

The first option is to recognize that the system of centralized wage fixing that Papua New Guinea inherited with all its trappings (wage indexation, shift work bonuses, long service leave provisions that are among the most generous of any country in the world) is totally inappropriate for a country at Papua New Guinea's level of development. The Government might well consider scrapping the system and starting again, moving as quickly as possible to a level of wages that will ensure that unemployment will not continue to rise in the long run. Garnaut and Baxter guessed in 1982 that a reduction in urban wages relative to international prices of some 25-30 per cent would be needed simply to contain unemployment at its 1980 level. The rate of unemployment has grown significantly since then.

Whether or not abolition of the present wage fixing system is judged to be desirable or feasible, at least two other steps ought to be taken. First, it should be widely permitted for productivity-based wages to be paid. Even if hourly wages remained the same under this system, the increase in productivity that is likely to be obtained would cause labour costs per unit of output to fall.

Second, if some form of minimum wage is retained, the categories of workers and employers exempt from the legislation should be greatly expanded. At present, domestic servants are exempted from the provisions of the legislation. Other workers who might be exempted include, for example, youths and security guards. Firms that might be exempted include enterprises exporting at least 50 per cent (say) of their output; firms owned and/or managed by nationals; and small businesses employing fewer than 50 or 100 workers.

These are only examples of what might be done, and reasonable people may disagree on the details. The important thing is that the Papua New Guinea Government recognize that, at the present post-1983 rate of decrease of real minimum wages, it will be decades before Papua New Guinea becomes internationally competitive in manufactures, by which time unemployment and the attendant law and order problem will have grown to many times their present proportions. Some way needs to be found for Papua New Guinea to reduce real urban wages quickly to a level that is sustainable in the long term. Provided that restraint on wages is seen to be fair and to be part of a co-ordinated effort to overcome present difficulties in a way that improves the prospects for employment and the incomes of the majority of the population, it could be widely acceptable and could make a major contribution to Papua New Guinea's development in the second decade after Independence and beyond.

PART 2

THE RURAL ECONOMY

4. FOOD PRODUCTION

Introduction

The economy of Papua New Guinea is primarily agricultural, and all but 13 per cent of the people live in rural areas. Most of them are smallholders. A minority is engaged mainly in agricultural production for export, but even these families grow much of their own staple food. The subsistence farming majority increasingly sell part of their produce in local markets, have a few coffee trees, or both. Thus most rural families have some cash income. The traditional rural economy is changing, but since so much activity still takes place without the exchange of money, the extent and nature of the changes are difficult to measure.

The main subsistence food crops are sweet potato, taro, yams, bananas and other starchy staples such as sago in the lowlands. Shifting cultivation of the "slash-and-burn" type is traditional, with extensive areas left fallow to recover their fertility for periods that may be as long as several decades. Only some 15 per cent of the cultivable land is being worked at any time, but increases in population and the competition of cash crops are leading to more intensive methods in some parts of the country.

Production of Traditional Foods

The growing of food for consumption by the household - subsistence agriculture - is the base on which the Papua New Guinea economy rests. In the 1980 census over 80 per cent of the population was reported to be engaged in subsistence food production, which includes food eaten by domestic animals, mainly pigs, and food presented to others in fulfilment of social obligations. The scale and value of this production can only be estimated since by definition there are no monetary transactions to be observed.

The only direct evidence of national subsistence production is a survey carried out in 1961-62. This is considered to have overstated production since it was based on estimates of the area planted with various food crops rather than the amount harvested at any time. It is known that most households in Papua New Guinea plant more than is required for family consumption as insurance against crop failure or loss. As there are no marked seasons in most areas, root crops (except yams) are in effect stored in the ground and harvested as needed. Moreover, there is a considerable variation in the amounts planted and harvested at different periods. Another source of error is that a substantial part of subsistence production in Papua New Guinea is eaten by pigs (as much as 30 per cent overall and more in the highlands) so that human consumption is less than total production. In addition, fishing, hunting and bush foods make an important (but hard to quantify) contribution to food production.

By the mid-1970s it became apparent that for national accounting purposes production estimates should be superseded, or at least supplemented, by inferences drawn from consumption. Calorific intakes were calculated for various groups of the population, and a deduction was made for expatriates and citizens to allow for the consumption of non-traditional foods. The net consumption of traditional food so derived was allocated to particular commodities based on production data from the 1961-62 survey, and the quantities of each were converted to values using appropriate prices(1).

Short of conducting an up-to-date national survey of subsistence production and consumption based on a carefully designed sample of rural households, this is the best that can be done. But it leaves much room for differences of interpretation about the trend of subsistence production. Estimates range from a rate of growth a little greater than that of the population (whether 2.3 or 2.8 per cent p.a.) to an actual decline.

Official opinion in recent years has tended to the view that subsistence production is either stagnant or growing only slightly, and needs to be boosted. This view has been strongly influenced by the growth in imports of food, which have been rising in value by an average of 7.7 per cent a year since 1974-75. It led to the formulation in 1978 of a National Food and Nutrition Policy(2) under which the volume of food imports was to be held approximately constant with the potential growth of imports replaced by domestic production. The volume of some food imports was to be reduced - rice and sugar being two - while that of others was to be allowed to increase until demand had grown to a point where it became economical to produce commodities within the country. Subsistence production per head was to be at least maintained over the next ten years, and food consumption per head was to be increased, so that the level of malnutrition declined significantly.

The objective of holding down imports has clearly not been achieved; the volume of imports has continued to rise at an average

1. A full account of the methods used in calculating the amount and value of subsistence production, and suggestions for improving their accuracy, is given in Appendix II (by G.J. Eele) to FAO/UNDP 'Profile & Planning Study for Subsistence Food Production', Port Moresby, 1983.

2. Described in National Planning Office, <u>National Public Expenditure Plan 1979-1982</u>, Waigani, 1978.

rate of 4.2 per cent a year (See Table 4.1). As noted earlier, there is no reliable evidence on the trend of subsistence production or per capita consumption. The decline in infant and child mortality, the increase in longevity, and the absence of signs that malnutrition has increased in the country as a whole suggest that the average level of consumption has been at least maintained, and has probably increased.

Has Domestic Food Production Declined?

The implication for domestic production of stable or slowly rising per capita consumption is examined in Chart 4.1. Starting from the estimate that in 1976 food imports accounted for about 23 per cent of total food consumed, which was used as the basis for the 1978 policy described above, the volume of imports then rises at the rate of 4.2 per cent a year, corresponding to the average increase in the volume of imports over the period to 1983. In the upper diagram, per capita consumption is assumed to remain constant - the assumption underlying official estimates of production - and the food consumption line thus rises at the rate of population growth (assumed to be 2.3 per cent a year). In the lower diagram, consumption per head is assumed to increase at 1 per cent a year, taking for illustrative purposes the rate that the Health Department hoped could be achieved. In both cases, domestic food production is seen to increase. In fact, unless national consumption per head has fallen, of which there is no evidence, these estimates of per capita consumption lead to the conclusion that domestic food production has increased during the period.

In the absence of direct evidence about the rate of increase of domestic food production, an indication can be derived from an estimate of the probable change in food consumption per head, since the volume of food imports is known. Thus, an increase in per capita consumption of 1 per cent a year on average during the period since Independence would be associated with an increase in domestic food production of about 3 per cent a year. No change in per capita consumption would be associated with an annual increase of 1.7 per cent in domestic food production. In between, a 0.5 per cent increase in per capita consumption gives a rise in domestic food production at the same rate as the population (2.3 per cent a year). As the general level of food consumption does not appear to have fallen, the actual rate of increase in domestic food production during the period is likely to lie within this range.

Increase of Food Production for Sale

What is not known are the respective contributions of subsistence food production and production for the market. It was estimated in the National Public Expenditure Plan 1979-1982 that marketed domestic production accounted for 24 per cent of food consumption in 1976, imports for 23 per cent, and subsistence for the remaining

Table 4.1

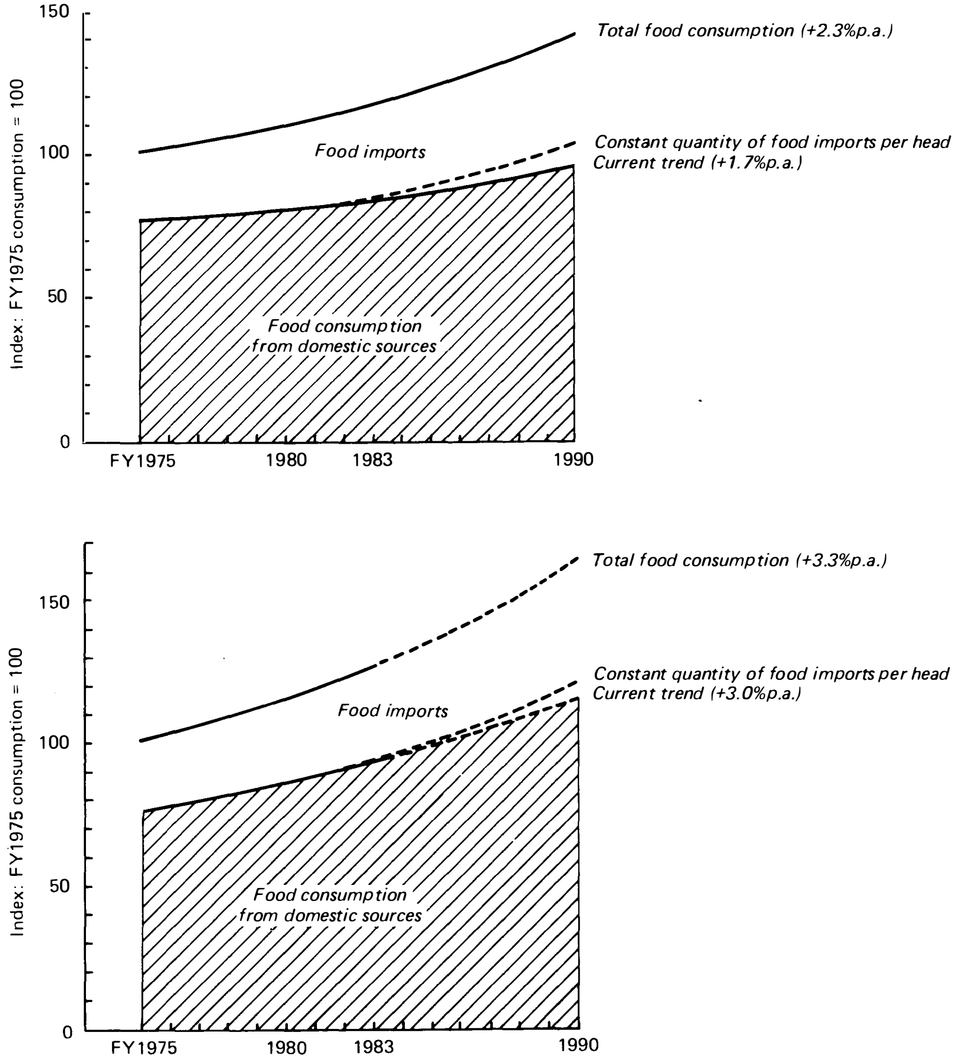
Food Imports, FY1975-1983[a]

	FY1975				1983p				Rate of growth FY1975-1983 (per cent per year)		
	Value		Quantity		Value		Quantity				
	K'000	Per cent	Tonnes	Per cent	K'000	Per cent	Tonnes	Per cent	Value	Quantity	Price
Meat and meat preparations	17,703	25.5	17,688	10.8	39,019	30.0	28,236	12.2	9.8	+5.7	+3.9
Dairy products and eggs	4,121	5.9	5,456	3.3	8,889	6.8	8,403	3.5	9.5	+5.2	+4.1
Fish and fish preparations	5,404	7.8	11,641	7.1	23,725	18.3	31,951	13.2	19.1	+12.7	+5.7
Margarine and fats	1,454	2.1	2,342	1.4	3,616	2.8	4,923	2.1	11.3	+9.2	+2.0
Total meat, dairy, fish, fats	28,682	41.3	37,127	22.7	75,249	57.9	73,513	31.7	12.1	+8.4	+3.4
Cereals and cereal preparations	23,314	33.6	90,713	55.4	33,238	25.6	130,001	53.8	4.3	+4.3	-0.1
Fruit and vegetables	4,784	6.9	11,412	7.0	10,620	8.2	19,271	8.0	9.9	+6.4	+3.3
Sugar and sugar preparations	8,354	12.0	20,620	12.6	2,171	1.7	4,903	2.0	-14.7	-15.6	+1.1
Coffee, tea, cocoa, spices	1,822	2.6	691	0.4	3,809	2.9	1,068	0.4	9.1	+5.3	+3.6
Miscellaneous foods	2,446	3.5	3,241	2.0	4,793	3.7	3,286	1.4	8.3	+0.2	+8.1
Totals	69,402	100.0	163,804	100.0	129,880	100.0	232,042	100.0	7.7	+4.2	+3.3

[a] Imports of live animals and animal feedstuffs are not included. Annual change in price index and quantity index do not sum to equal the change in total value because of compounding effects. Import values are f.o.b.; unlike most countries, Papua New Guinea does not include insurance and freight costs in import valuations.

Source: Staff estimates using data supplied by the National Statistical Office, Port Moresby.

Chart 4.1 Food Consumption, Production and Imports, FY1975-1990



Source: Barry Shaw, Review of Agricultural Sector of Papua New Guinea.

53 per cent. Whatever the validity of this estimate - and there has never been a systematic attempt to measure marketed production - the impression of officials and others in Papua New Guinea who are familiar with the rural sector is that this activity has been sharply on the increase in recent years. It has happened without any initiative or assistance on the part of Government; in many rural areas produce is sold in places which do not have permanent

market installations (stands, shelter and washing facilities), though these amenities do exist in some of the urban centres. It seems that this is not merely the sale by subsistence farmers of occasional surpluses, but rather the emergence of regular food production for sale. According to the 1980 census, just over half of all households in Papua New Guinea sell some fruit and vegetables, and the total annual income derived from such sales (K90 million, or K308 per household) was only marginally below that from sales of coffee. If production for sale has grown faster than food production as a whole, it seems that it may be beginning to substitute at the margin for subsistence farming.

Implications for Food Policy

Are these trends a matter for concern? Does the steady increase in imported food signal a failure of the 1978 policy, or was the policy itself directed at the wrong target? From the viewpoint of nutrition, imports provide variety and an important source of protein, fats and oils in an otherwise starchy diet. As can be seen from Table 4.1, the biggest increase among imports is in fresh, canned and dried fish, followed by fresh and canned meat. Papua New Guinea tends to import cheaper (but no less nutritious) types of fish and meat, mainly mackerel, corned beef, and the like. Cereal imports have remained steady, increasing imports of rice being offset by lower imports of other cereals. There is an increasing tendency for rice to be substituted for traditional root crops, especially by institutions - boarding schools, prisons and others. It would be worth drawing the attention of provincial governments to this trend, and pointing out the importance of the institutional market for the sale of domestic produce.

These trends in the types of food imported and the implied dietary shifts are normal for a developing country with rising incomes. Any radical attempt to control the import of these food items in order to stimulate domestic production would risk a reversal of the trend towards better nutrition and improved health. A practical target might be to attempt to increase domestic production at the same rate as consumption, with the result that imports would also grow at the same rate. At a minimum, food production ought to grow at least as fast as the population.

Production for Subsistence or Market

Without more detailed information it is not possible to estimate the extent to which production of food for the local market is taking the place of production for household consumption; or to reverse the point, the extent to which rural households are turning to the market to meet or supplement their food requirements.

A provisional judgement is that increased trading in food is a natural response to rising cash incomes, in rural areas as well as towns, and a sign that the Papua New Guinea economy is maturing. Access to market produce provides households with more choice, and with insurance against failure of their own food gardens. Substitution of market produce for food produced in and for the house-hold is therefore likely to continue to increase. So long as domestic food production as a whole continues to increase at least as fast as the growth in population, this should not be cause for concern.

Government efforts should therefore be directed first towards assisting food production for sale by such measures as the improvement of rural roads and market facilities and encouragement of market gardening in peri-urban areas. Second, in view of the reduced possibilities for extensive shifting cultivation, research and extension work are needed to intensify traditional crop production. Third, national government help is needed to identify, monitor and assist food-deficit areas or areas suffering from actual or potential food stress. Provincial governments cannot do this alone. Production and nutrition standards in these areas have to be observed and monitored. Special action teams could be mounted to assist farmers in the more seriously affected areas, including those that come under periodic stress from drought or frost.

Local Variations in Food Supply

Climatic and soil conditions in Papua New Guinea vary, resulting in substantial differences between regions in agricultural production, employment and incomes. The country can be divided broadly into four regions, although even within regions there are large variations in soil fertility, rainfall, altitude, access to transport and other factors affecting living standards. The four regions (in ascending order of agricultural cash income per head) are:

1. The western parts of the mainland on both coasts - lowland areas dominated by swamps and wetlands, with high humidity, endemic malaria, generally low population densities and poor transport. The main food crop is sago but fish and coconuts are also important.

2. The lowlands of the eastern mainland - have irregular rainfall subject to periodic drought, poor soils, low population densities and poor transport. Farming systems are mixed, with taro, sweet potato, yam and banana being cultivated. Fish and coconuts are also eaten. Population densities are generally low.

3. The highlands - possess fertile soils, with sweet potato being the main food crop for humans and pigs. Forty per cent of the total Papua New Guinea population lives in the highlands, and population densities are relatively high.

4. The New Guinea islands and parts of the New Guinea coastal area (Madang and Morobe) - have mixed farming similar to Region 2 but soils are generally fertile. Some areas are of high population density.

Although comparative data on subsistence production in these four regions are not available, a good indication of their relative prosperity can be gained from information on cash incomes and internal migration (Table 4.2).

In addition to migration from region to region, there is also considerable movement of population within the highlands, from the less prosperous provinces - Southern Highlands and Enga - to the more prosperous Eastern and Western Highlands. In principle the movement of a resource - in this case people - from an area of low returns to one where earnings are higher would tend to reduce the differences. But the view among officials and observers in Papua New Guinea is that the movement of population is tending to increase the disparities between the disadvantaged and more prosperous provinces. The reasons include the fact that migration is largely of males, which leaves the dependent family without a male head, and the probability that the migrants are often the abler and more enterprising members of the community.

The FAO/UNDP team suggested that "about one-eighth of the Papua New Guinea population live in areas where the food systems are under great stress"(1), and that although food supply is mainly adequate in other areas of the country, there may be problems for sub-groups of the population. This they attributed more to problems of food distribution and intake than to inadequacy of supply. They note that there is little political pressure coming from the rural areas for resources to be devoted to food production. The demand is more for better roads, improved communications and higher incomes from cash crops. These comments refer to the rural, food-producing areas. There is also a sub-group of urban poor whose problem is lack of income due to unemployment and loss of contact with a home village.

1. 'Profile and Planning Study for Subsistence Food Production', Op. cit. p.22.

Table 4.2

Citizens' Cash Income from Agriculture and Net Migration by Region, c1980

Province	Rural population (thousands)	Estimated agricultural cash income[a] (K thousands)	Income per head (K)	Net migration (per cent)
Western	68	48	.71	-4.2
Gulf	58	376	6.48	-15.8
West Sepik	108	865	8.01	-3.7
REGION 1	234	1,289	5.51	-7.5
Milne Bay	122	1,485	12.17	-5.1
East Sepik	198	5,619	28.38	-6.9
Central	112	4,057	36.22	-8.7
Oro	71	4,668	65.75	-1.0
REGION 2	503	15,829	31.47	-6.4
Southern Highlands	231	1,373	5.94	-7.2
Enga	162	2,493	15.39	-5.7
Simbu	172	12,899	74.99	-12.6
Eastern Highlands	252	21,458	85.15	-2.4
Western Highlands	248	22,693	91.50	+9.8
REGION 3	1,065	60,916	57.20	-3.0
Manus	21	406	19.33	-10.3
Morobe	238	5,844	24.55	+2.3
Madang	118	5,995	50.81	-1.0
New Ireland	60	5,414	90.23	+3.1
West New Britain	83	9,484	114.27	+15.4
North Solomons	106	14,099	133.01	+10.3
East New Britain	114	16,476	144.53	+3.5
REGION 4	740	57,718	78.00	+4.1
TOTAL	2,542	135,752	53.40	

[a]Cash income includes own earning and agricultural employment.

Sources: Cash income data were estimated by the Department of Primary Industry. Migration data are from the 1980 census; regional migration figures were calculated by Christine McMurray.

From such information as is available it appears that the food system in Papua New Guinea is generally adequate - indeed, the FAO/UNDP team thought the limited evidence at the national level pointed to an improvement; but that there are areas where the food situation is poor and probably deteriorating.

This emphasizes the need for detailed studies at the local level so that remedial measures can be addressed to specific problems. The results of the national nutrition survey, when available, will throw light on the incidence of food deficiencies in the provinces. The National Statistical Office has been preparing to carry out a rural household income and expenditure survey, starting in two provinces, with the intention of extending the survey to two additional provinces each year. This survey should show how much households spend on purchases of food.

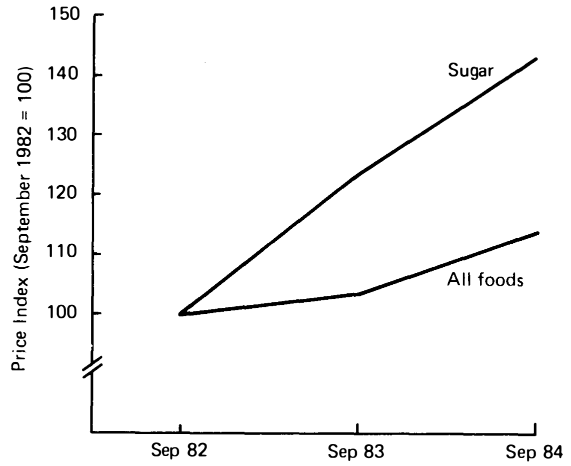
Costs and Benefits of Import Substitution

In planning for an increase in the contribution of domestic production to the nation's food supply, the economics of particular schemes should be carefully considered. Schemes that cannot compete against imports without continuing protection are costly to the consumer and divert resources from more efficient uses. Among the projects that were launched or supported under the 1978 National Food and Nutrition Policy, the only one that has been implemented is the project to replace sugar imports by domestic production. The Ramu Sugar Company started production in 1983 and sugar imports were banned from that time. The result was a sharp increase in prices (See Chart 4.2). At present refined sugar can be obtained on the international market at about 20 US cents a pound (about 47 toea a kilo); the retail price of sugar in Papua New Guinea is about three times as high. Unless it can be shown that this increase is temporary and will moderate when the new plant is fully run in, the increased cost to the consumer and the economy must be set against any employment or other benefits likely to accrue from the planting and processing of sugar.

Sugar has little nutritive value apart from its utility as a source of energy, so that the increase in price does not affect nutritional standards. This would not be the case with fish and meat, the domestic canning of which has been proposed. Because the Papua New Guinea market is small, and in the case of meat because the better cuts would have to be canned or otherwise disposed of, the domestic canning of fish and meat would probably result in higher prices than the imported products, which would put them out of reach of some consumers. The nutritional loss would therefore have to be added to the economic cost.

Attempts have been made for many years to expand the production of rice, another large item in the import bill, presently confined to

Chart 4.2 Price of 1 kg White Sugar and All Foods Price Index for Five Urban Centres, Sept. 1982-Sept.1984 (Index: September 1982=100)



Source: Calculated from National Statistical Office data (white sugar price weighted by urban weightings as used in consumer price index).

a small area in the East Sepik Province, but the economics of dryland rice in Papua New Guinea have so far not proved favourable.

Commercial poultry and pig production is largely dependent on imported feed. A local feedstuff industry is developing and should be encouraged to bring down prices of feed to international levels.

Fisheries

Considering the great extent of the fishing grounds surrounding Papua New Guinea's long coastlines and hundreds of islands, fishing is an undeveloped industry. Fish are an important item in the diet of people living near the coast, perhaps one-sixth of the total population. Inshore fishing grounds are regarded as communal property and most of the catch is kept within the local community. Freshwater fish are caught in the Fly, Sepik and other rivers for local consumption. There are a few small commercial enterprises that purchase fish from local fishermen and distribute it fresh or frozen to towns and villages inland. Government programs to develop commercial coastal fisheries have proved a disappointment with high costs and low returns, and no more are to be started. Although some development of coastal fishing will take place, on present indications it is not expected to expand faster than the population.

Livestock

Among domestic animals reared for human consumption only the pig is native to Papua New Guinea, or was introduced long before contact with Europeans. It remains the most important domesticated animal; there are around 1.5 million pigs, concentrated in the highlands where pig/person ratios may reach as high as three to one before a festival. Pigs are a central part of family wealth and play a very important part in social ceremonies and exchange. They are being increasingly commercialized and sold at urban and rural markets, but their main impact remains within the subsistence agricultural system, where they consume a large proportion of total food production. Their contribution to human diets is variable but not as significant as their numbers suggest because consumption is mainly at festivals or social occasions. They suffer from numerous parasites and diseases, with mortalities up to 40 per cent in the first year. Some 500 village commercial smallholder piggeries based on improved breeds were established in the 1970s. Virtually all of these have ceased operating owing to high feed costs, low returns, poor management and high labour requirements. More recently, the emphasis has moved to medium sized peri-urban piggeries which have had some success, with estimated pork output rising from less than 100 tonnes to around 900 tonnes between 1978 and 1983.

The degree to which traditional pig-raising competes with humans for food is variable but at some times and in some areas it is significant. It is important that information on pig numbers be part of the monitoring of areas of possible food deficiency.

Considerable administrative, financial and extension effort in the 1970s went into the development of smallholder and ranch cattle, which was seen by the Government as the major domestic marketed protein food source for the country. A herd of 300,000 cattle, two-thirds owned by Papua New Guineans, was proposed for the early 1980s, and around 4000 to 5000 smallholder projects were funded mostly under International Development Association credits through the Development Bank. The industry, which possibly absorbed more government extension effort than all other agricultural activities combined, has not performed as hoped. There are currently about 130,000 cattle and a marketed production of around 2000 tonnes of beef. Production has been static for the past 5 years, with an increasing proportion supplied by largeholders. The reasons for the failure of so many smallholder cattle projects are complex, but the fundamental one appears to be low returns to owners. Budgets on which incomes and loan repayments were predicted were too optimistic given the prevailing levels of management and experience. Mortality was high, fertility low, and net income low so that loan repayments absorbed much or all of the income. Projects were even established where there were no markets. Many owners neglected their cattle, which often became feral, and the smallholder industry is now in decline.

Papua New Guinea is now self-sufficient in higher quality, more expensive beef cuts. Imports, generally of cheaper beef, and total beef consumption, have declined by about 2000 tonnes over the past 6 years. Imports of cheaper mutton and lamb which are more economical for poorer households have grown considerably over the past few years.

A poultry industry has emerged, with smallholders centred around a few processing companies that supply feed, chicks, processing, extension and marketing. From 2000 tonnes in 1978, production reached almost 8000 tonnes in 1983 to make the country self-sufficient in chicken. Further expansion will now depend on the growth of demand, which in turn depends on short- and long-term changes in consumer incomes.

Other livestock - tropical breeds of sheep, buffalo and goats - are being investigated, and show some potential. In the longer term, these could be more important than cattle, but further experimentation is required to evolve suitable farming methods and disease control.

The livestock industry has several lessons for agricultural development policy. The first is that producers will not continue with projects that show returns that are no better than the alternatives available to them, including subsistence agriculture. It is vital that projects are planned from the viewpoint of the smallholder with realistic income projections. Second, "big pushes" such as that for cattle development can absorb an enormous amount of resources before it is realized that the expected results are not forthcoming. Third, the domestic poultry industry could become inefficient and non-competitive behind the ban against imports that it now enjoys; foreign investment in the industry should be permitted in order to increase competition.

The fourth lesson is where domestic produce is protected and high priced, consumers will shift rapidly to substitute products which are often imported. In sugar this has not been possible because there are no simple substitutes: but for meat and many other food products, the development of an inefficient industry can lead to shifts in consumer demand away from that product. This may well leave the industry producing at less than optimum capacity.

5. EXPORT TREE CROPS

Introduction

Tree crops account for just under one-third of the value of rural economy output in Papua New Guinea, being second in importance only to food production. Among the tree crops, coffee has for some years been the most important, accounting for about 43 per cent of the value of tree crop production in 1983. Coffee is normally followed in order of importance by cocoa and copra products, oil palm, tea and rubber (see Table 5.1).

Table 5.1

Exports of Tree Crops and Their Rate of Growth, 1975-77 to 1982-84

	Average annual volume of exports 1982-84 (thousand tonnes)	Increase in volume of exports 1975-77 to 1982-84 (per cent a year)	Value of exports 1983 (per cent of total)
Coffee[a]	56	+4.5	43
Cocoa	28	+0.5	19
Copra	81	-1.1	20
Copra oil	37	+4.1	
Palm oil	88	+19.5	12
Tea	7	+3.5	5
Rubber	3	-5.3	1
Total	n.a.	n.a.	100

[a]Figures for coffee are for volume of output and its rate of growth and are for coffee years FY1975/76-1976/77 and 1982/83-1983/84.

Source: National Statistical Office. Data on coffee were supplied by the Department of Primary Industry, Port Moresby.

Exports of tree crop products earned some K216 million in 1983, accounting for one-third of all of Papua New Guinea's export income and three-quarters of all non-mining export income. Another rural industry, forest products (K53 million) accounted for most of the rest of Papua New Guinea's exports.

There has been considerable variation in performance among the tree crops since Independence. If average output during 1982-84 is compared with average output during 1975-77 oil palm is the outstanding performer, the volume of production having increased by almost 20 per cent a year on average throughout the period. Coffee (4.5 per cent a year), copra oil (4.1 per cent) and tea (3.5 per cent) also had rates of increase of output that were significantly above the rate of population growth. By contrast, aggregate production of cocoa increased by only 0.5 per cent a year, copra declined by 1.1 per cent a year, and rubber production fell sharply at an average rate of 5.3 per cent a year.

Smallholder and Large-scale Production

These figures mask quite different trends in smallholder and estate output. Since Independence there have been significant increases in smallholder production of all tree crops except tea (where smallholdings are negligible) and rubber. By contrast, estate production declined during the same period, or at best remained constant, in all crops except tea (in which output increased significantly during 1975-78 but then stagnated) and oil palm. Smallholders are responsible for about three-quarters of Papua New Guinea's coffee production, two-thirds of cocoa output, and at least half of the production of copra and oil palm.

Of the 556,000 rural households that were enumerated in the census of 1980, 70 per cent were reported to be producing tree crops (Table 5.2). Forty-eight per cent of rural households grow coffee, 19 per cent produce copra, and 13 per cent grow cocoa, though there is probably a considerable amount of double counting regarding the last two crops as coconuts and cocoa are often intercropped on the same land. Oil palm and rubber are each produced by about 1 per cent of rural households.

There are no recent statistics on employment on large holdings in the different tree crop industries, and the data in Table 5.2 are estimates. But it appears that there has been a significant fall in tree crop industry employment from about 45,000 in 1979-80 to about 36,000 in 1983. The general stagnation or decline of estate production in several of the largest tree crop industries and the mechanization of tea plucking probably account for much of this fall.

Formal employment in rural industries, including livestock and commercial fisheries as well as tree crops, provides a direct source of cash income for only about one-tenth of the number of rural households that earn cash from smallholder production. Looked at another way, total formal employment in agriculture and fishing in 1983 was roughly equal to the total annual addition to the Papua New Guinea workforce. Even if estate production of tree crops were to grow strongly, it could provide work for only a fraction of those who will require it as the population increases. Most of the additions to the labour force will have to be employed in subsistence and cash crop production on customarily-held land.

Table 5.2

Smallholder and Large-Scale Production of Tree Crops, 1980 and 1983

	Smallholder		Large-Scale	
	Per cent of production 1983	Number of smallholders (thousands) 1980	Per cent of production 1983	Persons employed (thousands)[a] 1983
Coffee	75	267	25	7
Cocoa	69	71	31	8
Copra	58	108	42	10
Oil palm	48	5	52	5
Tea	0	0.3	100	3
Rubber	14	8	86	1

[a]Estimated.

Source: Ken Woodward, "Primary Industry Sector", Draft Discussion Paper prepared for the Medium Term Development Strategy, Port Moresby, 1984.

If the estate sector grows it can provide employment opportunities for some of those who, for reasons of location or resource endowment, are difficult to help in their home areas. However, it cannot be expected to generate even the 16,000 new jobs a year that will be required to absorb the total annual addition to the workforce in disadvantaged provinces. Some way will have to be found to help most of these people become more productive in their home areas.

Whereas most smallholders live and produce on their traditional land, some have been resettled on alienated land. Settlement schemes have played a major role in the development of the oil palm industry and are expected to contribute significantly to rubber production. However, only about 10,000 households are involved in settlement schemes. These households represent less than 3 per cent of all households growing tree crops. The cost of settlement schemes per family has been relatively high.

Incomes Earned

The average annual cash return to coffee growing households in 1983 has been estimated at K235, while those producing both copra and cocoa would have earned about K480. Oil palm producers, mostly on settlement schemes, had average gross incomes of about K1470, but these high gross incomes would generally have been reduced by debt service payments. Copra producers who were unable to intercrop with cocoa earned only about K155 per household, while rubber growing households had cash incomes of only about K65. The aggregate income of all estate tree crop producers in 1983 has been estimated at about 55 per cent of the level of aggregate smallholder incomes from the same industries.

Direct comparison of smallholder and rural wage incomes is difficult, particularly given the importance of the subsistence component of smallholder incomes. It appears that the average cash return per worker from wage employment in rural industries may marginally exceed the average total income of village households including the imputed value of subsistence production. There is a considerable degree of dispersion around these averages.

Distribution among Provinces

Data on the distribution of tree crops by province indicate that estate and smallholder developments have been complementary rather than competitive. With the exception of Simbu, where a large smallholder coffee industry has developed in the absence of any estate production, the top five estate provinces are the same as the top five smallholder provinces in terms of total tree crop income. The top six provinces in order of total provincial income from smallholder tree crops are Eastern Highlands, Western Highlands, North Solomons, Simbu, East New Britain and West New Britain. The three highlands provinces earn their income from coffee; the islands provinces produce cocoa, copra and, in West New Britain, oil palm. In the estate sector, the only qualitative change in the top six apart from the omission of Simbu is that the Western Highlands Province, in addition to being dominant in coffee, is the main centre of tea production. Provinces which are very low in both smallholder and estate tree crop income include Western (which is at the bottom of both lists), Gulf, West Sepik and Manus.

Average cash incomes per head from agricultural production are unevenly distributed among provinces. If aggregate tree crop income plus citizen rural wage income in each province is divided by the citizen rural population of the province, cash income per head averages over K100 a year in East New Britain, North Solomons and West New Britain and over K80 a year in Western Highlands, New Ireland and Eastern Highlands. By contrast, cash income per head averages less than K10 a year in Western, Southern Highlands, Gulf and West Sepik, and less than K20 a year in Milne Bay, Enga and Manus.

Where there is good access to markets (and therefore good farm-gate prices) as well as access to suitable land, cash cropping activity is high. Major provincial examples are North Solomons, New Britain, New Ireland and those highland provinces that have had good road access for some time.

On the other hand, poor access to markets appears to be a strong disincentive to devoting labour to cash cropping. The seven provinces that are estimated to have the lowest incomes from agriculture all have, or had until recently, poor transport systems. Enga and the Southern Highlands are the highlands provinces which are furthest from the port of Lae, and road access has only recently been provided for large parts of the population. Gulf, Western, Milne Bay, Manus and West Sepik Provinces all have limited road networks and poor or no direct overseas shipping services. These seven provinces were among those recorded in the 1980 census as having substantial out-migration (see Table 4.2).

It appears, therefore, that the desire to join the cash economy is strong. Where circumstances are favourable, Papua New Guineans often prefer to earn an income by growing cash crops on smallholdings. However, people are prepared to leave areas of limited opportunity in order to find employment. If the limitations on resources for Papua New Guinea's development during the rest of the 1980s preclude the extension of road and other transport networks in the provinces that are currently most isolated, differences among provinces in levels of cash crop development and per capita income are likely to widen.

Commodity Price Stabilization Schemes

The commodity price stabilization schemes that are operated for coffee, cocoa, copra and more recently, oil palm have been well managed and have proved to be very successful. These schemes combine a cushioning for producers against the large short-term price fluctuations that are typical of the tree crop products that Papua New Guinea exports with gradual adjustment to changing long-term price trends. The schemes have effectively stabilized grower prices, have been self-financing, and appear likely to remain viable for the foreseeable future. The balances of the oldest three schemes at the end of 1984 were all healthy: coffee K85 million, cocoa K47 million, and copra K27 million.

Coffee

Coffee is the most important export crop in Papua New Guinea. The industry has grown rapidly since commercial plantings began in 1950, and in 1983 a record 52,500 tonnes were exported, valued at K95 million. Coffee accounted for 14 per cent of Papua New Guinea's exports in 1983, or almost a third of non-mineral exports. Preliminary figures for 1984 suggest that, in response to an increase in prices, the volume of coffee exports rose by 12 per cent in the first nine months as compared with the same period a year earlier, and that the value of exports for the full year exceeded K100 million.

Between 1974-76 and 1982-84, coffee production grew at 4.5 per cent a year (Chart 5.1). During the same period, smallholder production increased by 5.3 per cent a year whereas estate output grew by only 1 per cent a year.

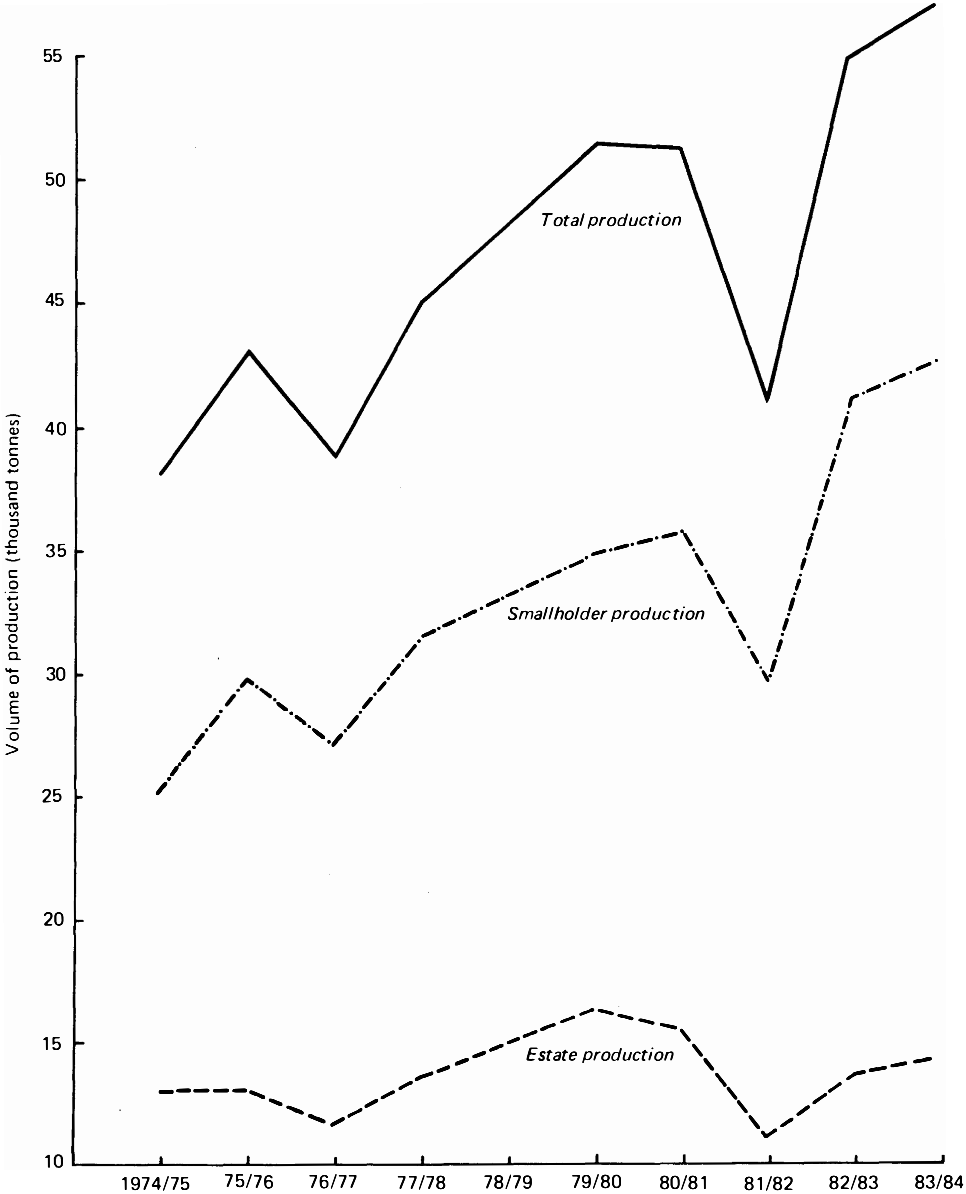
Arabica coffee comprises over 90 per cent of Papua New Guinea's crop, and is of good quality when well grown, harvested and processed. Arabica is grown mostly in the highlands and to a lesser extent in the elevated parts of Morobe Province. Robusta coffee is grown in the coastal provinces, the most important being East Sepik and Oro. In 1983, 83 per cent of all the coffee grown in Papua New Guinea came from three highlands provinces: Western Highlands (37 per cent), Eastern Highlands (31 per cent), and Simbu (16 per cent).

In the main producing provinces virtually all households that can grow coffee do so. Smallholder production has also increased strongly from a small base during the last five years in two less developed provinces that were the location of integrated rural development projects: Southern Highlands (19 per cent a year) and Enga (10 per cent).

An important recent development, which has grown rapidly since 1980, is the intermediate scale (20 hectare) coffee project based on alienated leased-back clan land, usually run by the clan. By the end of 1984, over 250 such projects had been started with a planted area of 3000 hectares out of a committed area of 5200 hectares. A major attraction of this form of organization is that bank loans and external management assistance are more readily available, and demand for such projects remains high. So far, intermediate scale coffee projects have been concentrated in the Eastern and Western Highlands.

Unlike cocoa and copra, estate coffee has maintained its level of production since the introduction of the Plantation Redistribution Scheme in 1975. Prices were high for the first five years after the Scheme was introduced, and most of the transfers of coffee estates to Papua New Guinean ownership were negotiated directly

Chart 5.1 Coffee Production, by Type of Producer, 1974/75 - 1983/84



Source: Data supplied by the Department of Primary Industry, Port Moresby.

between willing buyers and sellers without using the acquisition provisions of the Scheme. Most estates were sufficiently profitable to support the retention of capable management. However, it has been claimed recently that coffee estates lack innovation and lag behind their competitors abroad in many aspects of modern management.

Warning signs are also beginning to appear in smallholder coffee production. With low levels of management, a village coffee bush is thought to have an economic life of about 15 years. The period of most rapid expansion of plantings was 1960-70; the youngest of those trees will reach 15 years of age by 1985. Just as output rose quickly with rapid planting, so may it fall quickly in the absence of replacement planting and the careful management of inputs.

There is great scope for increasing smallholder production by improving yields on existing plots. Smallholder yields are little more than half average estate yields, and it would be possible with relatively simple changes in husbandry to narrow the yield gap considerably.

Coffee is the only export crop in Papua New Guinea that is subject to regulation of quantities sold. Presently, about one-third of Papua New Guinea's crop must be stored or sold to non-members of the International Coffee Organization at prices that are 40-50 per cent below those for sale to Organization members. Despite the low prices received at the margin, it seems to make sense for Papua New Guinea to continue to expand coffee output. Smallholder production appears to be profitable even at the low non-member prices. In the medium-term, International Coffee Agreement export quotas are based on past production performance. During 1980-84, Papua New Guinea was allocated 1.2 per cent of the total International Coffee Organization world quota; increased production now may well lead to Papua New Guinea being granted increased quotas in the future.

The most important government contribution to the coffee industry has been the promotion, through the Coffee Industry Board, of a generally efficient and equitable marketing system and an effective price stabilization scheme. Within this framework, the industry has grown without large or specific assistance programs. The main issues that need to be tackled at present appear to be as follows:

- Smallholders need improved extension services, which might be provided by the Coffee Industry Board or private management agencies. These might concentrate on simple yet important techniques such as pruning, drainage, fencing and the picking of coffee only when ripe. Picking of unripe coffee in an attempt to maximize income and poor smallholder processing of cherry to parchment have reportedly led to a decline in the quality of smallholders' coffee in recent years.

- Credit and other assistance is needed by smallholders who wish to replace ageing plants and institute improved management practices. This is necessary because replanting and the rehabilitation of stands would involve temporary loss of income and, in many cases, the use of hired labour.

- Smallholders require opportunities to sell coffee in cherry form. This might encourage more complete harvesting of existing stands, reduce household workloads and improve product quality. The Government would need to ensure the availability of finance (fixed and working capital) for the construction of group-owned pulperies or pulperies owned by existing parchment buyers.

- Research into higher-yielding and disease-resistant varieties should be stimulated. The introduction into Papua New Guinea of rust (which is present in Irian Jaya) or coffee berry disease could have devastating economic and social effects. The importance of coffee to the country necessitates an increased research and extension effort.

- The education and training of graduate coffee agronomists in Papua New Guinea should be improved.

Cocoa

Cocoa is the second most important agricultural export crop in Papua New Guinea, yielding export earnings of K60 to K86 million a year in the price boom years 1977-79 and K30 to K50 million a year during the early 1980s. Cocoa accounted for about 6 per cent of Papua New Guinea's exports in 1983, or about 14 per cent of non-mineral exports. The prospects for a significant increase in the output of cocoa during the rest of the 1980s are good.

The main cocoa producing areas in Papua New Guinea, especially the volcanic soils of the New Guinea islands, are ideal for cocoa growing. Papua New Guinea cocoa is generally of high quality, and the country has the status of a 75 per cent fine or flavour producer in the International Cocoa Organization.

Throughout the period since Independence, about 80 per cent of Papua New Guinea's cocoa production has come from two island provinces: North Solomons, whose share of total output averaged 52 per cent during FY1982-1984 and East New Britain (29 per cent). Most of the remaining production originated in East Sepik (6 per cent), Madang (5 per cent), New Ireland (4 per cent), West New

Britain (2 per cent) and Oro (1 per cent). The main two provinces accounted for 82 per cent of smallholder production and 80 per cent of estate production in FY1984.

Papua New Guinea's total cocoa production increased by only 0.5 per cent a year between 1975-77 and 1982-84. However, this very slow rise obscures two clear and opposing underlying trends: an increase of 6 per cent a year in smallholder production (1976/78-1982/84) and a decrease of 5.5 per cent a year in estate or plantation production (see Chart 5.2).

Within the smallholder sector, growth was uneven. North Solomons was the strongest performer, with output growing at 7.5 per cent a year. Some of the minor producing provinces (East Sepik and to a lesser extent West New Britain and Madang) registered high growth rates beginning from a low base. But the other dominant producer, East New Britain, registered almost no growth at all until 1984. Nationwide, smallholder production rose from about half of total production just after Independence to almost 70 per cent of the total in 1982-84.

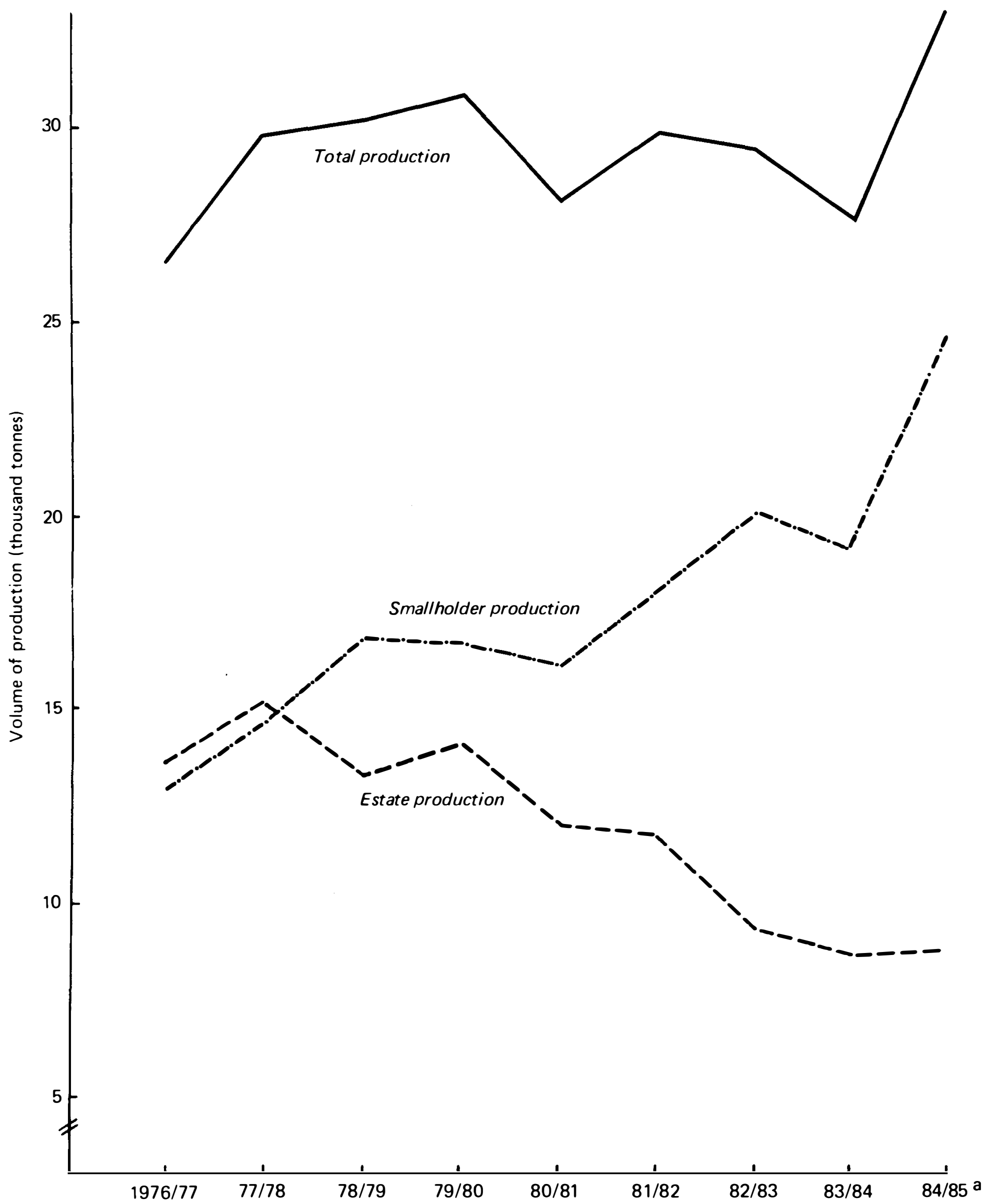
Large-scale plantation cocoa production is concentrated in the New Guinea islands and Madang provinces. There are wide differences in recent estate performance among the different provinces. The decline has been most rapid in New Ireland and slowest in North Solomons. The overall rate of decline of estate production was 12 per cent a year during 1979-83.

Until the introduction of the Plantation Redistribution Scheme in 1975, virtually all cocoa estates were owned by foreigners. Since 1975, local ownership has grown rapidly, with some acquisitions being made under the Scheme's powers and others by private treaty. More recently, new intermediate scale estates along the lines of the 5-20 hectare coffee blocks have been established; these are owned entirely by local landowning groups.

It is estimated that about 15,000 workers were employed on cocoa estates in 1974. Because of declining production and the introduction of labour-saving machinery and management methods in response to rising rural wages, it is estimated that cocoa estate employment is now only about 7000. Much estate cocoa is grown under coconuts, a practice which reduces costs as well as increasing and stabilizing incomes.

The senility of trees, which is aggravated by premature death and loss of vigour due to disease, is one of the main problems in the estate sector. The productive life of a cocoa tree is 15-25 years depending on the extent of disease and the general standard of maintenance. The industry was established during the 1950s and 1960s and estate production peaked at 22,000 tonnes in 1975. It is

Chart 5.2 Cocoa Production, by Type of Producer, 1976/77 - 1984/85



a Estimates

Sources: Hugh Coulter, "Preliminary Report on Cocoa Plantation Redevelopment and New Development Survey", Cocoa Industry Board of Papua New Guinea Report No.10, Rabaul, 1984; and Cocoa Industry Board Newsletter, 4(1), 1984.

known that there was little replanting during the 1970s. Most of the stands have therefore reached the end of their economic lives, a conclusion borne out by the recent rapid decline in production.

Returns to estate cocoa investment, especially redevelopment of existing estates, are attractive, but the size structure of the industry is a severe impediment to investment. Two-thirds of all cocoa estates have planted areas of less than 200 hectares, only one estate has a planted area of over 1000 hectares, and only six are in the size range 400-999 hectares. Policy and practice are to encourage transfer of ownership of estates to national groups which are often ill-equipped financially and managerially to redevelop and run them. Many of the foreign owners of estates are neither interested in nor capable of redevelopment, but their holdings are generally too small to be attractive to foreign investors. Other areas of unused alienated land would be suitable for larger scale cocoa development, but the complex procedures involved in allocation of land coupled with the weak land administration system cause long delays which are unacceptable to all but the most determined investors.

Despite these problems, both the estate and smallholder sectors of the cocoa industry appear set for a rapid expansion in output during the second half of the 1980s. The Cocoa Industry Board carried out a survey of redevelopment and new development in the estate sector in the latter half of 1983. The managers of 115 estates reported that they were carrying out, or were intending to carry out redevelopment and new development on a total of almost 20,000 hectares (38 per cent of the present estate area under cocoa) during the period 1981-90. In most cases the redevelopment was reported to have begun. The total investment foreseen by the 115 estates amounts to about K46 million. This is an important turnaround from the trend in the later 1970s, when little or no redevelopment took place. In addition, nine major projects involving large-scale resettlement, rehabilitation, or new development of cocoa are at the drawing board stage with government and quasi-government bodies. Several of these projects are expected to get under way in 1985.

A key indicator of the level of confidence in the cocoa industry is the amount of improved planting material being distributed. During 1983-84, almost 7 million new planting materials (hybrid seeds, hybrid seedlings and buddings) were distributed to estates and smallholders, the Cocoa Industry Board's nursery at Tavilo accounting for almost half of them. Allowing a conservative estimate of survival of 80 per cent, the total amount distributed from the six nurseries is equivalent to about 7500 hectares. The Cocoa Industry Board estimates very roughly that by 1990, as a result of this replanting activity the volume of output of the estate sector should be more than double its 1984 level, while overall cocoa production should have increased by about two-thirds.

As a result of major efforts by the Cocoa Industry Board and by private management-cum-research companies, research into hybrid varieties and cocoa cultivation techniques has been successful in significantly reducing disease (which has been a serious problem in the cocoa industry in Papua New Guinea) and more than doubling yields. It is this research, together with the establishment and maintenance of large nurseries for production and distribution of the improved seedlings, that has provided the stimulus for the cocoa industry to begin to turn itself around during the last couple of years.

The Government's main contribution to the cocoa industry in recent years has been through the revitalization of the Cocoa Industry Board. An important part of this revitalization occurred when a large private company was engaged to manage the Board's research plantation at Tavilo and improved planting materials operations. A number of other measures would further help the cocoa industry:

- The Plantation Redistribution Scheme should be repealed. Although the scheme is presently suspended, the fact that it is still on the books acts as a disincentive to reinvestment on estates.

- The repeal of the Plantation Redistribution Scheme notwithstanding, new measures should be introduced to ensure that a substantial proportion of all estates (say 80 per cent) is rehabilitated. If rehabilitation has not been carried out by a given date, the leaseholder should forfeit the lease. If the land is held freehold, the owner should be given a fair valuation and offered the option of selling the land at that price or having it compulsorily acquired. It should be publicly announced that leaseholders and owners who substantially rehabilitate their estates will not be affected by these measures. The administration of the Lands Department will need to be improved to enable such steps to be implemented, and private surveyors might also need to be employed.

- Finance is required for smaller plantations that wish to rehabilitate their crops but lack collateral for commercial borrowing.

- Improved planting materials are required by smallholders in provinces (other than North Solomons and East New Britain) that have a proven potential for increased cocoa growing. These include West New Britain and Oro.

- The private cocoa management agencies that have done so well in East New Britain and North Solomons should be encouraged to extend their activities into new areas. One private management company with a proven record of success in extension-type activities in the Gazelle peninsula has proposed to the East New Britain Provincial Government that it take over some of the Department of Primary Industry's cocoa extension work in a designated area. It would do this as a pilot project to encourage and assist smallholders to replant with improved planting materials. Given that management agencies specializing in particular crops have a much better record of assisting smallholders in the production of these crops than generalist extension workers employed by the Department of Primary Industry, this and similar initiatives should be exploited.

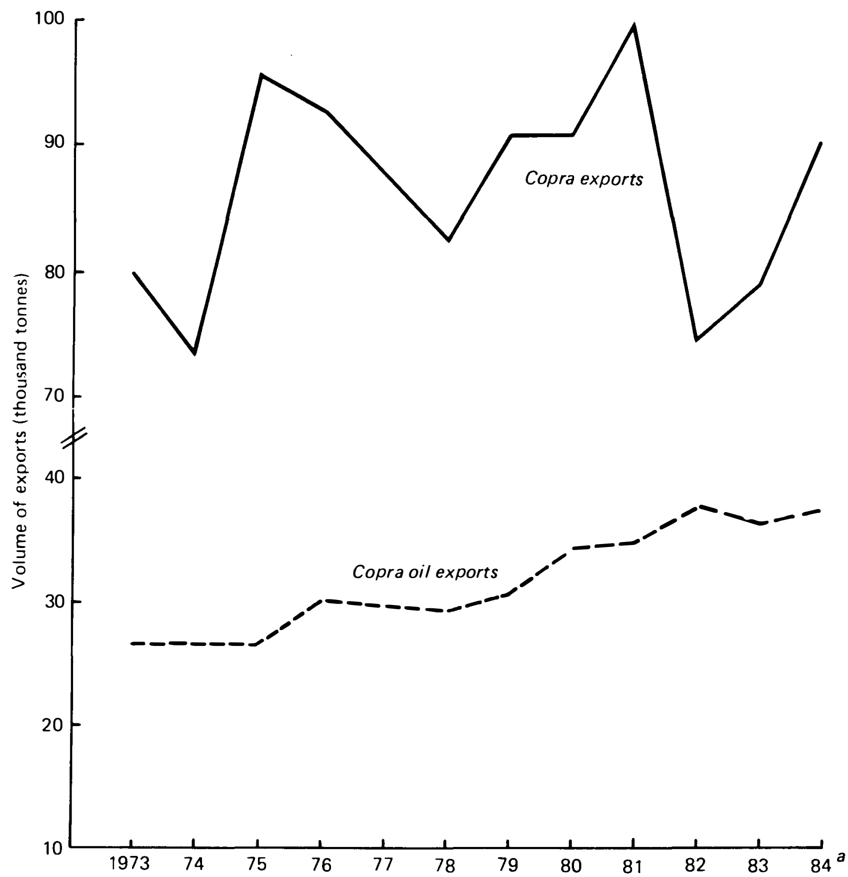
Coconuts

Copra, or dried coconut meat, is Papua New Guinea's longest-established export industry. In the early 1900s it comprised about 90 per cent of the total value of exports, and as late as 1950 it still accounted for nearly 70 per cent. More recently it has been overtaken by coffee as well as minerals. Nevertheless, copra remains Papua New Guinea's second or third most important agricultural export crop depending on the relative prices of copra and cocoa. In 1983, copra and copra oil together accounted for about 7 per cent of Papua New Guinea's total exports, or 15 per cent of non-mineral exports. During the first nine months of 1984, in response to a sharp increase in copra prices, the volume of exports of copra increased by 36 per cent as compared with the first nine months of 1983.

Though coconuts are grown in more or less the same areas as cocoa, the geographic spread is more even. Five provinces accounted for 88 per cent of total copra production in 1983: East New Britain (32 per cent), North Solomons (16 per cent), Madang (15 per cent), New Ireland (14 per cent), and West New Britain (11 per cent). The remainder was distributed mainly among Milne Bay (4 per cent), Central (2 per cent), East Sepik (2 per cent), Morobe, Manus, Gulf and West Sepik (1 per cent each). The five key provinces accounted for 85 per cent of smallholder production and 92 per cent of estate production. The future of the copra industry is particularly important to those lowland areas of the mainland where alternative economic opportunities are few. The high cost and irregularity of transport from these areas is a problem.

The volume of exports of copra has fluctuated widely between 74,000 and 102,000 tonnes since 1973 without showing any clear upward or downward trend. If 1982-84 is compared with 1975-77, however, there is a slight downward trend in production of about 1.1 per cent a year (see Chart 5.3). Underlying these overall figures, a decline in estate production has been not quite offset by an increase in smallholder production. The volume of exports of copra oil, by contrast, has increased steadily at an average annual rate of about 4.1 per cent.

Chart 5.3 Exports of Copra and Copra Oil, 1973-84



a Estimates

Source: Data supplied by the Department of Primary Industry, Port Moresby.

The value of exports of copra products recovered sharply during 1983-84 from extremely low values in 1982. The greater part of the recovery was due to high prices, though there was some increase in output as well. The main reason for high copra prices in 1983-84 appears to have been unfavourable weather conditions in the Philippines, Indonesia and India which have helped to reduce world copra production to a ten-year low. Once production in these countries recovers, prices seem likely to decline again.

Although most copra was produced on estates until the 1950s, smallholders now account for about 60 per cent of production, up from 42-45 per cent during 1973-77. Coconuts are grown in almost all villages in the coastal areas, and are an important item in the subsistence diet as well as being processed into copra for milling or direct export. It has been estimated that over 20 per cent of coconuts are consumed domestically. Coconuts are extensively interplanted with cocoa on both smallholdings and plantations, and cattle are run on some copra plantations.

Estate production declined at about 7 per cent a year during 1979-83, whereas smallholder production increased by about 1 per cent a year. There are significant differences among provinces in the trend of estate production. In West New Britain, Madang and East New Britain, production is holding up much better than the national average; in New Ireland, Milne Bay and North Solomons, it is declining considerably more quickly.

Employment on copra estates was estimated at 12,000 in 1976. Since then it has declined due to low returns which caused managers to economize on labour use, especially in maintenance. With the recent high prices for copra it is reported that employment has increased, although precise figures are not available. It is estimated that employment is presently around 10,000.

As with cocoa estates, until 1975 almost all copra estates were owned by foreigners, but since then many have been acquired by national interests. While details are not available, it seems that the acquisition powers of the Plantation Redistribution Scheme have been used more than negotiated sales in the case of copra plantations, largely because of the low earnings from copra and the consequent low ability of the purchasers to service debt. Generally speaking, acquisition by national interests has not led to redevelopment as it has on a number of cocoa estates. One problem is that most existing copra estate holdings are too small to be attractive for redevelopment on modern estate lines. Even more important, however, is the relatively poor earnings from copra and the consequent commercial unattractiveness of copra redevelopment.

The average yield on copra estates is about 0.6 tonnes per hectare. This is insufficient for plantations to be economically viable and to be able to generate the cash flow required to encourage and finance replanting or in some cases even maintenance. Better-managed estates yield twice or three times the national average, and their performance is more indicative of the likely productivity of the industry if redevelopment were to occur.

Senility of coconut trees is the factor most responsible for low estate yields. Yields of the varieties grown in Papua New Guinea start to decline after the palms are 30 years old; from age 50 the decline in yield accelerates. A 1978 survey reported that the first plantings of coconuts had occurred more than 50 years earlier on 70 per cent of plantations. On 50 per cent of plantations, first plantings had occurred more than 60 years previously. The survey also reported little replanting or intention to replant since 1970. This finding is supported by the most recent National Statistics Office statistics on planted areas. Clearly, recent replanting activity has not been sufficient to maintain production. Neither the recognition that ageing palms were a problem in the industry nor the lack of interest of planters in replanting is new; part of an International Development Association credit was allocated to coconut replanting in 1970 but was unused owing to planter lack of interest. Given that coconut products were the second biggest agricultural export earner in 1983 and 1984, the extremely low level of investment in the industry and the increasing senility of existing trees are of considerable concern.

Since most estate coconut trees were planted more than 50 years ago, the Papua New Guinea industry has obviously not taken advantage of recent advances in coconut breeding. However, the Government has established a hybrid coconut seed production unit at Omoru in Madang Province. Unfortunately, it appears that quality control on this operation has been unsatisfactory and that seednuts produced are mixed dwarf and hybrid material. Some planters who were using Omoru nuts for replanting have ceased using them for this reason. For areas outside Madang Province, transport is also a problem. Freight is expensive for the bulky unhusked nuts, but more importantly the difficulty in organizing direct shipment and the adverse effect of transport delays on seedling vigour depress the yield potential of nuts which are planted out.

Expansion of planting with traditional tall palms is unattractive, and the key to future expansion is the provision of hybrid or other superior seednuts. A privately-owned estate on West New Britain has the capacity to produce hybrid seednuts but the availability of Omoru nuts at subsidised prices has so far forestalled the development of commercial demand for them. Serious attempts at coconut replanting would require the development of hybrid seed production units in the areas in which replanting is to take place.

Even with the higher-yielding and earlier-maturing hybrid coconuts, the future of estate copra production is likely to be in combination with either cocoa or cattle. When combined with cocoa, copra will be very much the junior partner, since income from cocoa is normally several times that from copra. On suitable land, given that cocoa has a shorter immature period than copra and that cocoa cannot be interplanted until the coconut palms are one to three years old, it is also likely that sole cocoa will be more attractive to some planters than coconuts/cocoa. Since high quality cocoa planting materials are available currently in Papua New Guinea whereas high quality coconut planting materials are not, it is likely that sole cocoa will be planted on land which is suitable for interplanted coconuts and cocoa. If coconuts are to retain a major role in the main producing areas, it is important that seednut production capacity be developed quickly and that management systems which permit early interplanting of cocoa be adopted. Such systems have been developed in the Solomon Islands by Levers Solomons Limited.

Hybrid palms may prove inferior to traditional tall palms unless close attention is paid to plant nutrition and management. Thus, any smallholder development push would need to be accompanied by a considerable extension effort to ensure that sound establishment and management practices are followed.

Steps are currently being taken to begin collaborative research between the Copra and Cocoa Industry Boards and the Department of Primary Industry. As coconuts will generally need to be combined with cocoa or cattle to be attractive as a new planting proposition, this is a sensible step. It may be worth inviting the private company that has had much success in managing the Cocoa Board's research station at Tavilo (a company which has substantial interests in the coconut industry) to participate actively in on-going research on coconuts.

In coconut producing areas, it would be worth examining the potential for using coconut by-products as the basis of small-scale industries. In some countries, including the Philippines, coconut fibre is used for matting, the shell is used to make high quality charcoal, and the water is used in making vinegar.

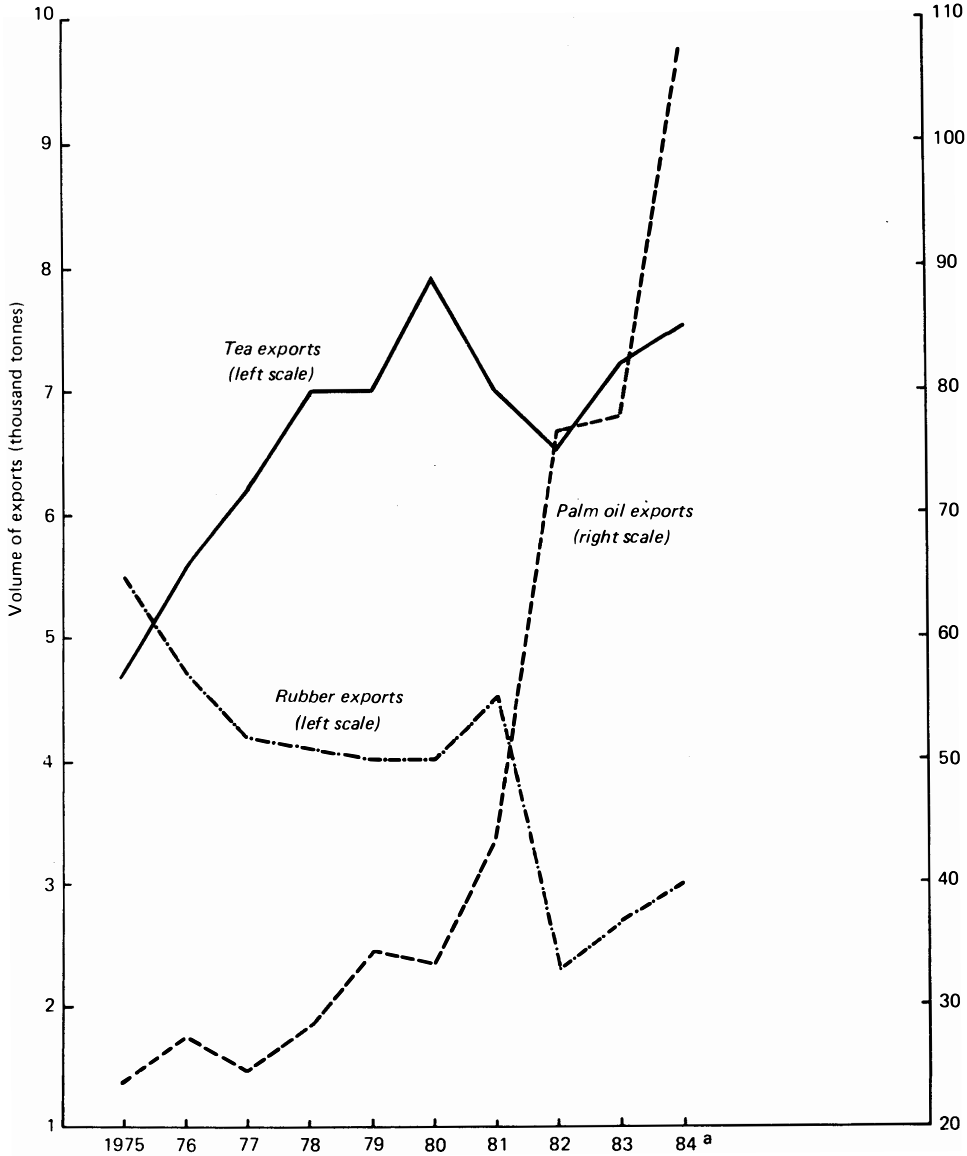
Oil Palm

Oil palm has been the fastest growing agricultural export crop in Papua New Guinea. The volume of exports of palm oil grew by 20 per cent a year on average between 1975-77 and 1982-84 (see Chart 5.4).

Exports of palm oil were valued at over K20 million a year in 1982-83. In 1984, as a result of sharply higher prices and an increase in the volume of production of close to 50 per cent, exports were expected to reach K70 million. The steep increase in output in 1984 was partly a response to higher prices and partly a result of previous investments coming to maturity.

Palm oil exports accounted for just under 4 per cent of the total value of Papua New Guinea's exports in 1983, or 10 per cent of the value of tree crop exports. In 1984, when the total value of tree crop exports was expected to increase by some 58 per cent, oil palm was expected to double its share to 20 per cent.

Chart 5.4 Exports of Palm Oil, Tea and Rubber, 1975-84



a Estimates

Source: National Statistical Office.

Commercial oil palm development in Papua New Guinea started in 1967. The industry currently consists of three nucleus estates each involving smallholder and estate plantings as well as processing facilities. Two are located in West New Britain and the third is in Oro. All estate companies are owned 50 per cent by the Government and 50 per cent by a foreign investor. Two of the foreign investors are British-based, one being the Commonwealth Development Corporation. The third partner is Belgian.

About half of the oil palm fresh fruit bunches are produced on estates. Smallholder fruit is processed in the mills attached to the estates, being priced according to a formula based on the prices of the end products, conversion ratios and milling costs. About 5000 people are employed on oil palm estates.

The areas in which oil palm is produced are very favourable for the crop, and productivity is high. Indeed, one of the few technical problems in the industry is caused by the environment being too favourable; the palms quite quickly grow too tall for easy harvesting, and they need to be replanted earlier than would otherwise be the case. This disadvantage is compensated for by earlier maturity and higher yields.

The late start of the industry has proved to be an advantage. All plantings are of high quality and milling facilities are modern and efficient. Perhaps of greater importance, estates are large enough to ensure efficient milling, and the "small farm problem", which is so serious in the copra and cocoa industries, has been avoided. Oil palm estates are also large enough to justify the acquisition of the scientific and other skills and services that are necessary for efficient estate operation. The quality of palm oil produced has been high.

Oil palm research is financed and controlled by the industry. The first estate company established its own research station and the other developing companies subsequently agreed to share the financial burden and benefits of its work through the oil palm producers' association. The research work is highly regarded and Papua New Guinea has earned significant income from exports of oil palm seed.

A technical improvement of considerable benefit to the Papua New Guinea industry has been the introduction of the pollenating weevil. This has resulted in lower labour costs due to the elimination of hand pollenation, higher fresh fruit yields and higher recovery rates, especially of kernel, from fresh fruit bunches. Similar benefits are being realized in other oil palm producing countries, and it is likely that downward pressure will be exerted on the prices of oil palm products as a result. However, the competitive position of the world-wide oil palm industry relative to other sources of oils and fats should be enhanced.

The commercial health of the oil palm industry matches its high standards of technical productivity. Returns to oil palm investments are attractive, and all three operating companies are seeking further investments in the industry and new areas of land on which to establish fresh projects. The first of the companies has now planted about four times the area provided for in the original agreement, and has built a second mill. As the existing oil palm companies may soon approach full commitment, there is a need to attract additional estate companies which are capable of developing and managing new schemes.

Tea

The value of Papua New Guinea's exports of tea was K10 million in 1983 and was expected to rise to a record K16 million in 1984 as a result of increased prices. Tea accounted for 2 per cent of Papua New Guinea's total exports in 1983, or 4 per cent of non-mineral exports.

Tea growing was promoted during the 1960s as an alternative to coffee in the densely populated highlands region. Although it was intended that the industry should develop along nucleus estate lines it never proved popular as a smallholder crop, and production is now almost entirely on estates. There are seven factory estates and a number of small estates without factories. Six of the seven factories are located in the Western Highlands Province and the other is in Southern Highlands.

The bearing area of tea peaked at almost 3000 hectares in 1975, but had declined to 2625 hectares by 1978. The average rate of growth of the volume of exports of tea from 1975-77 to 1982-84 was 3.5 per cent a year, but most of this growth had been registered by 1978 (see Chart 5.4). Exports of tea peaked at just under 8000 tonnes in 1980 and have ranged from 6500 to 7500 tonnes over the past few years. Employment on tea estates was over 5000 in 1970, but is now estimated to be about 3000.

The main tea growing area, the Wahgi Valley of Western Highlands Province, is ideal for tea. Yields are high by world standards, and so is the quality. Tea breeding work in Papua New Guinea has been very effective and high yielding clones producing a good quality leaf have been developed. Despite these advantages, tea estates made little progress after the initial development was completed in the early to mid 1970s. Prices were low and the high cost of labour in Papua New Guinea for such a labour-intensive crop made production unprofitable. In a number of cases, returns barely covered operating costs, but production continued in the hope of improved future returns.

Two developments have dramatically changed this situation over the past few years. Plucking has been mechanized, significantly reducing labour costs while improving quality. Employment statistics are unavailable, but one estate reports reductions of 25 per cent in total labour costs and 40 per cent in field labour costs following mechanization of plucking. Despite this development, tea production is still very intensive in labour use, providing about one job per hectare of tea planted.

The second major development was the rise in prices which occurred in 1983. This was initially triggered by a temporary ban on tea exports by India. This ban has subsequently been lifted, reimposed and lifted again, and the level at which prices will settle eventually remains unclear. However, the outlook for prices is much brighter than it was a few years ago since a number of exporters, like India, are experiencing strong growth in domestic consumption which is reducing their ability to export. World Bank price forecasts have been revised upwards significantly from their earlier pessimistic levels.

These developments mean that, for the first time for many years, investment in tea may again become profitable. The most attractive form for investment to take is likely to be expansion of plantings on existing estates.

Rubber

The value of Papua New Guinea exports of rubber was K2.2 million in 1983, and was expected to rise to K2.6 million in 1984. Rubber accounted for less than half of one per cent of Papua New Guinea's total exports in 1983, and less than one per cent of non-mineral exports.

Rubber is a long-established industry in Papua New Guinea, dating from early this century. However, the industry has had a chequered history and production has declined steeply from its peak of 6500 tonnes recorded in 1971-72. The volume of exports declined by fully 44 per cent between 1975-77 and 1982-84, or 5.3 per cent a year on average (see Chart 5.4). This decline was reversed in 1983 and 1984 when exports increased by a total of 28 per cent from their historic low point of 2337 tonnes in 1982. Export earnings have varied widely in recent years from K3.8 million in 1980 to K1.4 million in 1982.

Estates produce about 85 per cent of Papua New Guinea's rubber and in recent years some smallholder cup lump rubber has been processed at factories attached to estates. Employment on rubber plantations has fallen in line with production from over 6000 in 1972 to about 1300 recently. It now appears to be rising as redevelopment work gets under way.

The area of estates planted with rubber in 1981 was about 9500 hectares compared with the peak area in the early 1960s of about

14,000 hectares. About 95 per cent of the planted area is in the Papuan region, mainly in Central Province. However, significant plantings have also occurred in New Ireland. As with the other longer-established plantation industries, holdings are small. Overall, the average rubber holding has a planted area of about 200 hectares; in the Papuan region, the average area is about 250 hectares. Such areas are too small for estate development by foreign investors.

Rubber estates were established by foreign investors but, as with other industries, ownership has been substantially transferred to national interests since 1975. Given the run-down condition and low returns of many plantations, most of these transactions have been under the auspices of the Plantation Redistribution Scheme. A number of estates are still owned by government since earnings are insufficient to enable intending purchasers to repay the purchase price. However, one group of rubber estates has been bought by an international agricultural company which intends to redevelop them as a unit.

There has been little replanting on rubber estates and they are characterized by old seedling trees of low yield potential. Although growing areas are well suited to rubber production, yields are therefore poor. This, combined with rising labour costs and generally low rubber prices, has led to a lack of confidence in the future of the industry on the part of estate owners. The poor quality of planting material used is probably a direct consequence of the structure of the industry, typified by small owner-managed units that are largely isolated from the rubber industry in other countries.

Labour productivity has been low. Fixed weekly wages were paid (as was required by law until recently), labour-intensive tapping systems were used, and variable quality ribbed smoked sheet was produced, the process for which is also labour-intensive. High labour turnover reduced the potential for gradually improving labour skills which are especially important in tapping.

The output of smallholder rubber appears to have declined over time. Smallholder yields have tended to be low due to the use of poor planting materials, poor tapping techniques, and irregular tapping. Lack of transport and inadequate marketing facilities and services have also severely hampered smallholders, especially those in more isolated areas.

As in the tea industry, the recent adoption of improved labour-saving technology in Papua New Guinea has improved the outlook for rubber. Technically specified rubber is now being produced and, apart from the fact that this is a more acceptable product than ribbed smoked sheet, the process is much more efficient in the use of labour than the ribbed smoked sheet process. Tapping systems which are more labour efficient can also be adopted for technically specified rubber production, and the tapping workload is reduced since cup lump rather than latex has to be transported from the field. The technically specified rubber process has the disadvantage that it requires reasonably high throughput for efficient operation and it is therefore not economically feasible for individual smallholders or even small estates. Smallholder cup lump is already being processed in technically specified rubber factories on estates as well as in the two government-owned technically specified rubber factories. Although cup lump is not perishable, as is oil palm fresh fruit, the fairly high moisture content of cup lump makes it desirable to minimize the distance between the producing area and the factory. The adoption of the technically specified rubber process therefore creates conditions suitable for nucleus estate development along the lines of the oil palm industry.

Recent changes of ownership and management on a number of estates have resulted in increased attention being given to planting clonal material with high-yield potential. A number of estates are now in the process of slaughter-tapping old trees prior to replanting and it appears that the redevelopment of rubber estates along more efficient lines is about to begin. Hence, some growth in output from the present small base may be expected.

Assessments of the returns to rubber investment vary. It would probably be generally accepted that on suitable land cocoa would produce higher returns than rubber. However, cocoa is more demanding in terms of the growing environment and rubber will grow well in some areas where cocoa will not. This is especially the case in many parts of the Papuan region where rubber is already well established, and certainly many existing rubber estates are suitable for rubber but not for cocoa. It is in areas where there are few alternatives for earning cash incomes, like the lowland areas of Western, Gulf and West Sepik Provinces, and inner East Sepik, that rubber still has an important role to play in Papua New Guinea.

Minor Export Crops

As the Medium Term Development Strategy paper points out, the minor export crops cardamom, chillies and pyrethrum have existed for many years without significant expansion. They have relied to a large extent on Department of Primary Industry marketing services and this has been a serious constraint. Establishment of a more effective buying system alone might result in growth. There is also evidence of widespread plantings of cardamom without comparable effort in the provision of drying facilities and marketing services. Attention to these matters could result in strong growth of this industry and a welcome further diversification of the agricultural export base. Failure to provide processing and marketing facilities, on the other hand, may well result in the widespread disillusionment of growers, and long-term harm to the industry.

6. FOREST PRODUCTS AND FISHERIES

Forest Products

Forests cover 87 per cent of Papua New Guinea's land area and are a major natural resource even though much of the forest is unsuitable for commercial exploitation. The bulk of Papua New Guinea's forest industry production is in the form of round logs for export, but the industry also supplies processed timber products to both domestic and export markets. More than half of the value of processed products is sold domestically, mostly in the form of sawn timber and plywood.

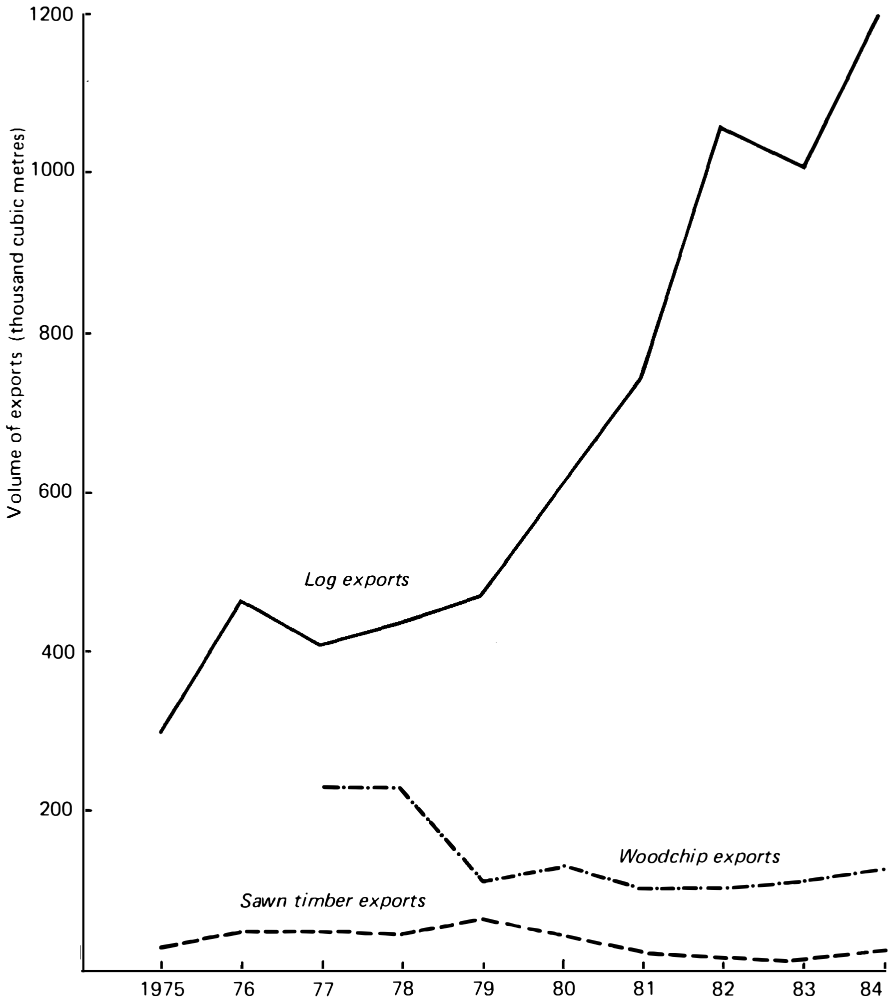
The value of forest product exports has more than trebled since Independence from about K17 million a year during 1975-77 to about K60 million a year during 1982-84. The latter figure represents close to 10 per cent of Papua New Guinea's total export revenues, or about 20 per cent of the value of non-mineral exports. This places forest products second only to coffee among non-mineral earners of foreign exchange.

The main growth item in forest industry exports has been logs, which increased its share of the sector's exports from about half in 1975-77 to about 80 per cent in 1982-84. The other main export items are woodchips (10 per cent), sawn timber (6 per cent) and plywood (4 per cent). The volume of exports of logs increased on average by 16 per cent a year between 1975-77 and 1982-84, a rate of growth in export output second only to that of palm oil. By contrast, exports of woodchips and sawn timber both fell by more than half over the same period (see Chart 6.1). During the first nine months of 1984, the volume of logs exported increased by 35 per cent. This rise was partly a response to higher prices and partly a result of previous investments coming on stream.

More than four-fifths of the total log harvest in 1981 came from five provinces: Madang, West New Britain, Morobe, East New Britain and New Ireland. However, many provinces possess forest resources that have been identified as having significant potential for future development. These include, in addition to the provinces mentioned above: Western, Gulf, Central, Milne Bay, Oro, Manus, East and West Sepik and Western Highlands. About 95 per cent of all log exports go to Japan and Korea, while sawn timber and woodchips are mainly exported to Australia, New Zealand and Japan.

The prospects for future growth in the volume of Papua New Guinea's exports of logs are good. World demand for tropical hardwoods is strong, especially in fast-developing wood-deficit countries such as Japan, Korea, Hong Kong, Taiwan and Singapore. At the same

Chart 6.1 Exports of Forest Products, 1975-84



a Estimates

Sources: National Statistical Office, Woodchips data are from Bank of Papua New Guinea Quarterly Economic Bulletin.

time, exports of logs from competing countries are stagnating as their timber resources become depleted and as they use more of their timber for processing. Because world demand seems likely to grow more rapidly than world supply, the medium-term outlook for the international price of logs is favourable, unlike, the medium-term prospects for the prices of a number of Papua New Guinea's agricultural exports.

The initial policy of the Papua New Guinea Government during the 1970s was to require forest industry investors to establish facilities for processing logs into sawn lumber, plywood, etc. There were two main difficulties with this policy. First, the costs of processing timber in Papua New Guinea are high. Papua New Guinea's natural forests contain a large number of species, and this limits severely the economies of scale that can be obtained in processing. Wages for timber processing workers in Papua New Guinea tend to be three to five times greater than those in Indonesia, the Philippines or Thailand. Shortages of skilled labour (and the consequent need to hire expensive expatriates), inadequacies in infrastructure and communications, and the small size of the domestic market all add to unit costs.

The second problem with the policy of the 1970s was that the international relative prices of logs and processed timber favoured logs. This was partly a reflection of the fact that the main consuming countries, including Japan and Korea, had excess capacity in their timber processing industries and thus strongly preferred importing logs to sawn timber.

As a result of the high cost of processing timber in Papua New Guinea and the low international price of processed timber, the companies that did agree to set up processing facilities in Papua New Guinea lost money. Therefore, despite the profitability of exporting logs they paid little or no corporate income tax, and the government's tax take from the industry was less than it would otherwise have been. Eventually, a number of the companies that had laid out a total of several million kina to establish sawmills, a woodchip mill, and the like, decided to leave these plants standing idle in order to minimize their losses.

In the light of the disappointing results of the local processing strategy, the Government undertook a major review of forest policy which resulted in the publication of the Revised National Forest Policy White Paper in 1979. The White Paper acknowledged the difficulties of establishing domestic processing industries on a sound commercial footing in existing market conditions, and agreed to permit increased log exports. It recognized that such exports could generate much-needed foreign exchange and employment, as well as increased tax revenues; about 25 per cent of the total revenues received by log exporters is paid out in export tax, corporate tax, remitted profits tax, and royalties disbursed to the national and provincial governments and to landowners. Further, the White Paper recognized that exports of logs could assist in the longer-term goal of establishing a market for lesser known Papua New Guinea timber species.

The results of this change in policy can be seen clearly in the data on the volume of exports of forest products that are presented in Chart 6.1. Exports of logs, which were no greater in 1979 than they had been three years earlier, immediately began their rapid and sustained rise, indicating just how powerful a force for growth the removal of government regulations that stifle private industry can sometimes be.

From 1979 onwards exports of processed timber products dropped sharply (woodchips) or began to decline (sawn timber) as firms that had been exporting small quantities of these items at a loss to earn favour with the Government ceased doing so.

Although the 1979 White Paper marked a significant improvement in forest industry policies, several problems remain.

First, given that the resource is sufficient to sustain a substantial expansion of the log harvest, the climate for foreign investment will need to be improved if continuing growth in output is to be maintained. Existing foreign investors complain that it takes far too long, often several years, for agreements regarding the development of forest resources to be completed. In addition, the requirement that foreign firms should have local equity participation is often a hindrance, since in many cases such participation cannot be found. In order to increase the rate at which the significant benefits of forest industry investments are obtained, it would be worth devoting additional resources to ensuring that new agreements are completed speedily and dropping the local equity requirement.

Second, the reforestation policy needs to be reviewed. Reforestation is central to the future development of the forest products industry. Reforested timber stands, in addition to being more homogeneous, tend to be up to ten times higher in yield per hectare than virgin forest. Thus, reforestation makes both logging and timber processing significantly more attractive economically. Furthermore, reforestation is a labour-intensive activity and could create much useful employment, especially in areas with few commercial alternatives. And of course, reforestation offers important environmental benefits as well. Despite these important attractions, little reforestation has taken place to date in Papua New Guinea.

The 1979 White Paper places the responsibility for the activities that follow logging (reforestation or agricultural development) with the Government. In the light of the severe constraints on increases in government activities and the problems that exist throughout the Government in implementing (as opposed to formulating) policies, consideration should be given to making reforestation or subsequent agricultural development the responsibility of the logging company. The Government could then concentrate its limited resources on ensuring that agreements are negotiated speedily, providing and maintaining the necessary infrastructure, and monitoring logging operations once they are under way.

Because of the long waiting period before a return can be gained on the investment, reforestation is not always attractive to timber companies. However, some firms have expressed an interest in reforestation schemes. Japanese companies, in particular, are often prepared to undertake reforestation because they have access to long-term, low interest loans from their government for this purpose. To overcome the land problems that are inherent in reforestation, long-term leases or revenue-sharing arrangements with the owners of the land could be used. Attention might usefully be paid to this issue during the initial negotiation concerning the purchase of timber rights.

Third, the Government should make it clear that it no longer requires investors to process a certain proportion of their timber. Where processing is profitable (particularly after reforested areas have matured) companies will undertake it anyway. Where processing is not profitable, as the pre-1979 experience clearly demonstrates, requiring companies to do it only hampers the growth of the industry.

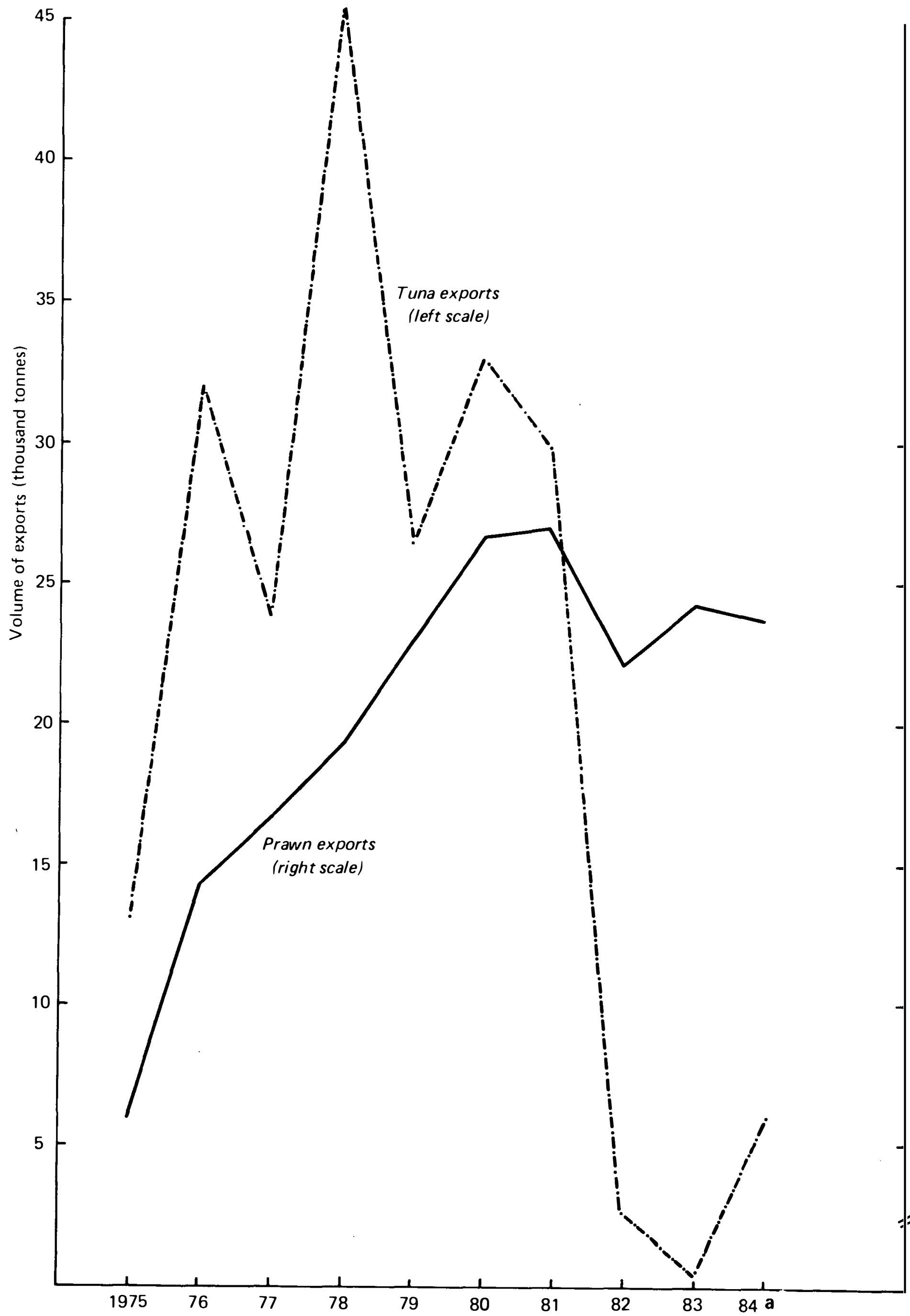
Fourth, the Government could try to encourage investment in the forest industry by international firms that specialize in the production and sale of logs rather than in the purchasing end of the business. Papua New Guinea has at times been in the grip of an informal buyers' cartel, and prices for its logs have suffered as a consequence. The Government's promotion of arm's length transactions helped to raise Papua New Guinea log prices significantly, albeit temporarily. More sustained actions in the future could result in better prices for Papua New Guinea logs.

Finally, the Government could consider increasing the scope of the policy-making and policy-implementing responsibilities of the Forest Industries Council. Like the Cocoa Industry Board this body (which consists of seven members drawn from the timber industry and three members from the Government and is funded entirely by the timber industry) has shown itself to be a well-informed, up-to-date, dynamic organization that has facilitated the growth of its industry in important ways. Given the limits on what the Government can do itself, the more it can make use of the energy and expertise of bodies like the Forest Industries Council, the better.

Fisheries Exports

Large-scale commercial fishing for export has been in the hands of foreigners. During the late 1970s tuna fishing flourished. At its peak in 1980-81 tuna contributed nearly 5 per cent to Papua New Guinea's total export revenues. (See Chart 6.2). However, the companies which ran the industry ceased operations when the world tuna market became depressed. The volume of exports of prawns has

Chart 6.2 Exports of Fisheries Products, 1975-84



[a] Estimates

Source: National Statistical Office.

declined marginally, but prawn fishing remains a modest source of employment of nationals and revenues to Government. Trawling for lobsters has been stopped in the last few years owing to a decline in stocks; the moratorium will be lifted when stocks recover. Diving for lobster, which is labour-intensive, is still permitted.

By 1983 exports of tuna, prawns and lobsters had fallen to a little over 1 per cent of total exports. However, interest in tuna fishing by foreign companies is now reviving. The export potential of the industry is considerable, around K30-50 million a year, and could be realized quickly if fishing operations were to resume on something like the scale of the late 1970s.

7. POLICIES AFFECTING AGRICULTURE

Two developments dating from the 1970s have had profound effects on small- and large-scale agriculture in Papua New Guinea. Decentralization of the extension services of the Department of Primary Industry and declining efficiency in this branch of the public service contributed to falling standards of field extension services and an inability to support smallholder development. In the large-scale sector, the Plantation Redistribution Scheme severely impeded the restructuring and rehabilitation of the estate sector, perpetuating existing structural problems and compounding the effects of years of low investment prior to Independence.

The same general principles that need to rule the overall approach to economic policy during the rest of the 1980s apply equally to policies affecting agriculture. Given the severe limits that are placed by overall resource availability on what government can do, the Government should devote its own resources to doing what only it can do. In areas where private firms or semi-private organizations can provide the services that are required, the Government should remove the barriers that restrict private sector growth.

Agricultural Extension and Research

Given that 85 per cent of Papua New Guinea's people live in villages and depend on agriculture for their livelihood, the availability of high quality agricultural extension services based on sound research is clearly central to the nation's present and future welfare. Unfortunately, extension services suffer from major problems. In particular, extension officers are expected to advise smallholders on a range of activities that is too broad, with the result that they have insufficient expertise in any individual activity. Extension officers generally lack effective supervision and clear direction in their work.

What might the Government do to tackle these problems? In crops and in areas in which private agencies (using the term loosely to include both private management agencies and industry bodies like the Cocoa Industry Board) have shown an ability and a willingness to provide high quality services to smallholders, the Government should encourage and stimulate the development of these agencies in every way possible. Organizations such as these have extension workers who are well supervised and who are specialized and up-to-date in one particular crop, which is essential in a rapidly-changing world. Furthermore, whereas government extension workers tend to have security of tenure, private agencies can fire extension workers who consistently fail to help smallholders to raise productivity, and indeed must do so if they are to maintain credibility and profitability.

The fact that smallholders find it worthwhile to pay for the services of private agencies even where parallel Department of Primary Industry or provincial government services are available free of charge is testimony to their value in increasing smallholder productivity. Given that the agencies have demonstrated that they can produce the needed research and extension services, the Government should now consult with them on ways of making their services available in respect of the major crops in all of the major regions of the country. This includes helping the agencies to find ways to recruit and train the larger number of personnel they would need.

The Government, meanwhile, should concentrate its own research and extension efforts on doing the jobs that the private sector is likely to be unable or unwilling to do. These include:

- Carrying out long-term research on improved methods of growing traditional food crops and on eradicating diseases, such as taro blight, that seriously threaten these crops.

- Stimulating or carrying out research on any of the tree crops that are not covered presently by private sector efforts.

- Providing specialized extension services that concentrate on traditional food crops, poultry, etc.

- Providing generalized extension services of all kinds to smallholders living in isolated areas.

- In general, upgrading the extension services that it provides by increasing the degree of training and specialization of extension workers and improving the supervision that they receive.

Several of these government functions would be good candidates for aid support. For example, overseas agricultural research organizations may be willing and able to collaborate with local bodies in setting up controlled long-term research efforts into traditional and cash crops in different parts of the country. Similarly, aid agencies may be willing to finance the hiring of a number of regional expatriate trainers and supervisors to help upgrade the Government's agricultural extension service.

In addition to improving agricultural research and extension and implementing the specific policy recommendations that were made in the chapters on food production and tree crops above, the other main ways in which government may help smallholders are by continuing to extend and improve Papua New Guinea's physical infrastructure especially by upgrading roads, and where justified extending the road network; by improving the coverage and reliability of buying and other marketing services; and by providing better security.

Land Policy and Administration

The development of the large-scale or estate sector of Papua New Guinea's agriculture has been severely affected by the existence of the Plantation Redistribution Scheme. The objectives of this scheme, a set of four Acts which became law in 1974, were to pave the way for greater participation by nationals in the estate sector as owners and to alleviate local land shortages where land had been alienated. Provision was made for the compulsory acquisition of plantations at a price equal to three to four times the average earnings on the land in question over the three years prior to the introduction of the legislation. To date, 84 of a total of 1181 plantations have been acquired under the Scheme, and many more have been transferred to nationals by private sale.

Objections to the Plantation Redistribution Scheme have centred on the principle of compulsory acquisition, on the price formula (in particular the low factor by which earnings were to be multiplied), and on the fact that no allowance was made for new plantings or other improvements which had not been reflected in production during the years in question. In addition, the years over which earnings were to be averaged were years of particularly low commodity prices.

The Plantation Redistribution Scheme was suspended in 1980, and no acquisitions have been made under it since then. Nevertheless, the fact that the Scheme is still on the books serves to raise significantly the risks and uncertainties involved in what is already a risky business, namely, the devotion of large amounts of resources to rehabilitating ageing and senile tree crop plantations.

Given that the Plantation Redistribution Scheme is in any case no longer being implemented, nothing is to be gained and much is to be lost by leaving it on the books. The Scheme should be repealed, and leaseholders or owners of plantations and estates should be permitted to dispose of their leases or titles to whomever they wish, without regard to nationality, at a price to be negotiated between the two parties.

Repeal of the Scheme would remove the government-induced uncertainties regarding the future of estates. At the same time, since many currently neglected estates occupy valuable land, the Government might introduce legislation to require estate landholders to rehabilitate a significant proportion (say 80 per cent) of their plantations. Non-compliance within a specified number of years might result in forfeiture of the lease; freeholders in the same situation might be subject to acquisition of their land by the Government at a government-determined fair price. Holders and owners of estates who are serious in wanting to rehabilitate their land would have nothing to fear under such legislation, while a large number of estates that are currently being allowed to run down by absentee landholders might be put to more productive use for the nation.

These legislative changes should do much to stimulate investment in estates. However, restructuring the existing estate sector is not the only way, in which the estate sector could further develop. Registration of customary land by the customary owners for development on estate lines is already occurring. This form of development has considerable potential, though the owning groups often lack the finance and management skills that are required for development, and depend heavily on government assistance. There is also great scope for more large projects to be developed by foreign investors whether on unused land that is already alienated or in areas where landowners are willing to make their land available for development. In either case the Department of Lands would play a key role; the role would be especially demanding in the case of land that is not already alienated.

It is unfortunate that the Department of Lands is administratively weak. Its weakness seems to be due at least in part to shortages of staff, inexperience, lack of training and the fact that the procedures which must be followed are in many cases cumbersome. The department has a large backlog of transactions waiting to be processed, and its inefficiency is further reflected in long delays in completing transactions or failure to complete them at all. The on-going effort to strengthen the Lands Department's administrative capabilities is therefore of great importance (see Chapter 15).

PART 3

INDUSTRY, MINING AND COMMERCE

8. MANUFACTURING

The manufacturing sector accounts for about 10 per cent of Papua New Guinea's GDP and a similar share of formal employment in the economy. The sector's main branches of activity include food processing, beverages, tobacco, timber and wood products, and fabricated metal products. Production is primarily to meet domestic demand; exports of manufactured products are insignificant. Lae and Port Moresby continue to be the two main centres of production.

Because of the change in statistical classification systems that occurred in the late 1970s, it is not possible to establish in any degree of detail, the trends that have occurred in manufacturing since Independence. Overall, the volume of manufacturing output appears to have grown from a small base by about 10 per cent a year from Independence to 1980, while employment in manufacturing grew by about 7 per cent a year during the same period. More recently, it appears that manufacturing output stagnated or declined during the recession in 1981 and 1982 and may have recovered a little since then.

Total employment in manufacturing was only 26,000 in 1983. This is significantly less than the number of people added each year to Papua New Guinea's labour force. Thus, even if manufacturing output and employment were to resume growing at the rapid rates of the late 1970s, fewer than 10 per cent of the persons coming into the labour force each year could expect to find jobs in the sector. Most of the other 90 per cent will necessarily have to be occupied in agriculture.

Constraints

Several fundamental constraints place severe limits on the short - to medium-term prospects for growth of Papua New Guinea's manufacturing sector. Some of these constraints, including the small and fragmented market and the lack of labour skills, stem from Papua New Guinea's natural and demographic characteristics and level of economic development. Others are policy-induced.

Small and fragmented market. The GDP of Papua New Guinea in 1984 was less than one-fiftieth of the GDP of Australia, which itself has a small economy by world standards. Those persons who do have purchasing power are spread widely over a large area, and transport and communication links are relatively poor.

Shortage of skills. There is a shortage of persons with the entrepreneurship, management, labour skills and experience that are needed to establish and run efficient manufacturing operations. These skills often have to be provided by expatriates whose services are expensive.

Land problems. Because 97 per cent of the land in Papua New Guinea is customarily held, the prospective industrialist in Papua New Guinea often finds it extremely difficult, time-consuming and costly to obtain a suitable piece of land on which to establish a manufacturing plant.

High wages. As was pointed out in Chapter 3, wages for workers in manufacturing in Papua New Guinea are much higher than those in competing countries. In addition, because of the lack of management and labour skills, productivity per worker tends to be low. Thus, wages per unit of output in Papua New Guinea are even more out of line with those of competing countries than wages per hour worked.

Prospects

If the present wages policy remains unchanged, the short- to medium-term prospects for the growth of manufacturing output are not good. Moreover, within any given activity high wages induce managers to find ways of substituting capital for labour, thus reducing the employment-generating effect of any growth that does occur. The only industries in which Papua New Guinea is likely to be competitive if real wages are not reduced are those in which a high proportion of the value of output is made up of inputs that are special to Papua New Guinea. Examples include the making of wooden furniture and, after some time has passed, timber processing.

As noted in Chapter 6, the setting up of sawmills, veneer mills and so on is not likely to become economical in Papua New Guinea until timber stands become more dense and more homogeneous following large-scale reforestation. Once this has occurred, given that Papua New Guinea's national timbers such as kwila, rosewood and oak are of high quality and value, timber processing may well grow significantly.

Several firms in Papua New Guinea are already producing top quality furniture made of national timbers. Because of the high cost both of labour and of local timbers, these firms have had to concentrate on the expensive end of the market, producing items such as desks for executives and made-to-order furniture. At least one such firm already exports three-quarters of its output to Australia. Reducing the costs of both labour and timber would help Papua New Guinea to become competitive in exporting lower-priced furniture as well, including furniture of the knocked-down variety.

The experience of these few Papua New Guinea furniture-making firms indicates that with first-class management and tight supervision of workers the problem of labour skills can be overcome. In a parallel example, a Papua New Guinea clothing firm that has hired four production experts from Hong Kong is exporting a significant proportion of its output to Australia. Although success stories like these are the exception rather than the rule, they illustrate that if the wages and land problems could be overcome and if foreign capital and management could be attracted to Papua New Guinea, the country might be able to make a modest start as an exporter of manufactures.

Papua New Guinea has privileged access for its manufactured exports to a number of developed country markets, thus giving it an advantage over many of its competitors. This means that, if the wages and land problems can be solved, foreign investors may be willing to set up plants in Papua New Guinea to export to these markets. Such privileged market access is not likely to last forever; to take advantage of it, Papua New Guinea would be well advised to do so sooner rather than later.

If Papua New Guinea does begin to increase its exports of manufactures, beyond the general statement that exports should be in line with the country's comparative advantage, it is not possible to predict in advance the items in which Papua New Guinea should specialize. These will be determined by the human and economic circumstances of the particular cases. Who would have predicted that Belgium would be the world's largest exporter of billiard balls, that Liechtenstein would be the world's largest exporter of false teeth... or that one of Papua New Guinea's first manufactured exports would be executive desks?

Policies

The main conditions that are essential to the establishment of an efficient manufacturing industry are:

- The market for manufactures must be large enough for production to be economic; in countries with small domestic markets, this means that part or all of manufacturing output must be exported.

- Labour, land, management, raw materials, capital equipment and public utilities must be available at internationally competitive prices.

- In its general economic policies, the Government must maintain competitive exchange rates, interest rates and wages, and must ensure reasonable stability of the domestic price level.

- Law and order must be maintained.

If all of these conditions are fulfilled, the manufacturing industry that develops will be based on the nation's resources and will contribute to its growth and development. If, by contrast, manufacturing develops in response to special incentives such as protection against foreign competition, the experience of many other developing countries indicates that it will be costly, inefficient, and a burden on consumers and exporters who are forced to purchase products at above world prices.

Import Substitution and Protection

For most of the period since Independence, Papua New Guinea has kept its tariff structure relatively low and uniform. In this way, it has been able to avoid the mistakes that have been made in many developing countries where inefficient manufacturing plants have been set up behind high tariff protection. Recently, however, there have been increasing pressures from outside and within the Government urging that Papua New Guinea adopt an import substitution strategy.

The main arguments usually advanced for import substitution are that foreign exchange will be saved and employment will be created. Protection against imports is claimed to be needed temporarily, and the effect on product prices is either ignored or discounted.

In practice, import substituting industrialization seldom leads to a net saving of foreign exchange. The industries that are set up behind protective barriers often need to import not only most of their capital equipment (since the machinery that is needed is not produced in the country) but also large quantities of their intermediate inputs. The proposed Papua New Guinea meat canning plant provides a typical example of this since the machinery, the tin cans and most of the meat would be imported, leaving little or no net saving of foreign exchange.

Most import substituting activities in countries with small domestic markets create few jobs relative to the economic damage that they cause. In many cases, the final consumers of the high cost product could pay the plant's workers their wages not to produce, buy cheaper imported goods, and still be better off.

The evidence from other countries suggests overwhelmingly that protection, once granted, is difficult to remove or reduce. Any industrialist with common sense will argue when his or her plant is being established that protection will only be needed temporarily. A few years later, the same industrialist will point out that, owing to unforeseen circumstances, the protection now needs to be continued indefinitely; if this is not done, the plant will have to be closed down and workers laid off (with obvious political implications).

Although governments sometimes undertake to ensure that goods produced by an import substituting enterprise will be available at import parity prices, once production has begun it is often difficult to establish precisely what the import-parity price would be, especially if the goods in question are not in fact imported. If after some time the firm claims that conditions have changed and that it can no longer supply the market at import-parity prices, the government faces the same politically difficult choices that were outlined in the previous paragraph. The example of Ramu sugar, which is currently sold in Papua New Guinea at well above world prices, is a case in point.

In short, countries with small domestic markets that attempt to industrialize by granting made-to-measure protection against imports to individual producers generally end up with an inefficient, high cost industrial sector, a structure of protection that grows more irrational (and hence more costly) as time goes by, very little saving in foreign exchange, and very little creation of employment.

Export Promotion

The small developing countries in which economic growth has been most rapid during the past couple of decades have been those which have recognized that if manufacturing is to develop on an economic basis a large part of output must be exported. These countries, notably several in East and South-East Asia, have accordingly implemented and maintained economic policies that have ensured that manufacturing enterprises have the chance to be competitive internationally. One policy innovation that, if implemented carefully, could help Papua New Guinea manufacturers to begin to export is the establishment of export processing zones.

Export Processing Zones

An export processing zone is a tract of land fully serviced with roads, electricity, water and the like which is made available at an economic rental to manufacturing firms that commit themselves to exporting all of their output. In return for this commitment, the firms are permitted to import free of duty any inputs they need for their production. Although they are by no means a panacea, export processing zones have been used successfully in some small countries as a way of expanding industrial production and exports, and they could help to overcome the four main constraints to the growth of manufacturing in Papua New Guinea.

First, firms locating in export processing zones would not be hampered by the small size and fragmented nature of the Papua New Guinea market. Being export-oriented, their market would be the world.

Second, firms in export processing zones would not have to face the land problem since the government would have solved this problem in advance by negotiating with landowners to establish such a zone. Investors would thus be free from the administrative delays, uncertainties and high costs that are often associated with land transactions.

Third, and most important, the wages problem could be solved if the Government were prepared to declare an export processing zone to be a special development-promoting institution; on this basis, it might exempt firms that locate there from existing wage legislation. Firms locating in an export processing zone would then be free to pay workers productivity-based wages, to offer whatever overall level and structure of wages they find necessary to attract the people they need, and to hire and fire people as necessary with a minimum of bureaucratic interference. Without a sweeping wages provision of this kind, setting up an export processing zone would be a waste of time and resources.

Finally, firms locating in an export processing zone would be likely to provide their own solutions to the shortage of skilled personnel. At least initially, most of the firms that would be attracted would be foreign-owned enterprises that have experience in operating in other developing countries. These firms would supply their own entrepreneurship and their own key managers, and would specialize in labour-intensive industries (like wooden furniture and clothing) in which a small number of good managers and supervisors can ensure that a relatively untrained workforce produces good quality products at acceptable levels of productivity.

Assuming that wages are competitive, and that other policies and general conditions are right, the main ingredients needed for success in establishing export processing zones are:

- The export processing zone must be efficiently managed and firms should be able to channel all of their contacts with the government through the zone manager.

- Firms must have access to all imported inputs at world prices without delays and without red tape. They must also have access to power and other public utility services without interruptions and at internationally competitive rates.

- An export processing zone should be located close to its workers and, if possible, close to an airport or seaport. If these conditions are not met, the high cost of transporting employees to and from work or goods to and from the port can cause the benefits of the export processing zone to be greatly diminished.

- Firms must be able to hire whomever they want regardless of nationality and without delays in obtaining visas, work permits etc. Because they must minimize costs in what is a highly competitive field, firms have an inbuilt incentive to hire as few expensive expatriates as possible.

The benefits that would accrue to Papua New Guinea from the successful establishment of an export processing zone are significant. First, there would be an increase in employment, with the size of the increase depending on how well the scheme was implemented and how attractive investing in Papua New Guinea was seen to be. Second, there would be an increase in foreign exchange receipts equal to the difference between the value of exports and the value of imported inputs; again, the size of the increase would depend on the way in which the scheme was implemented. Third, and perhaps as important as either of these two benefits, an efficient export processing zone tends to provide a training ground for workers and middle-level managers since most firms that specialize in setting up plants in such zones install training systems as part of the operation. This on-the-job training provided by foreign managers who are experienced in surviving in the international market-place is one of the best of all forms of training in labour and management skills; workers from export oriented firms often leave after a few years to set up their own enterprises using the skills they have learned. Finally, export processing zones can be established in several different geographical locations, thus helping to decentralize the provision of industrial jobs and training. It would be advisable, of course, to begin with a single zone in order to enable the inevitable teething problems to be resolved.

The only cost of export processing zones that needs to be incurred is that of the initial investment. Once the zone has been established, the cost of improvements to buildings, the provision of electricity etc. can be recovered from fees charged to resident firms.

If Papua New Guinea could make an export processing zone attractive to foreign firms by ensuring that wages were not too high, the currency were not overvalued, and law and order were under control, there should be no shortage of firms willing to take advantage of Papua New Guinea's privileged access to developed country markets.

In the Dominican Republic (a country in the Caribbean that is not much larger than Papua New Guinea) export processing zones provide direct and indirect employment for some 50,000 people and yield net exports worth US$50 million a year. Even if Papua New Guinea were to reach only half these figures, the number of persons employed would be equal to the number currently employed in all of manufacturing, and the net value of foreign exchange earned would be greater than the value of tea and rubber exports combined.

Exchange Rate Policy

Maintaining an appropriate exchange rate has been mentioned a number of times in this report as being important to industrial development. In the past, the adoption of the hard currency strategy helped to maintain a stable economic environment by helping to keep down the rate of domestic price inflation. However, it also meant that exporters received fewer kina per dollar of exports which discouraged the production of manufactures for export, while importers paid fewer kina per dollar for imports which discouraged the production of import substitutes. Now that the indexation of wages to prices is partial rather than total, it is important that the Government continue to allow the number of kina per unit of foreign exchange to rise, thus raising incentives in an across the board, non-discriminatory manner to producers of exports and import substitutes alike.

Conclusions

Inefficient high-cost manufacturing sectors already exist in many developing countries where it is politically difficult to change the situation. As a relative newcomer to industrial development, Papua New Guinea has the chance to learn from these countries' mistakes. In practical terms, learning from these mistakes would mean that the Government would need to:

- keep tariffs low and relatively uniform across the board;

- resist pressures from existing and would-be industrialists for made-to-measure protection for particular industries; and

- pay due attention to the provision of improved infrastructure, reliable and low-cost public utilities, high quality education and training, internationally competitive wages, an appropriate exchange rate, and the maintenance of law and order, all of which are essential to any long term strategy of industrial development.

If these core policies are followed, Papua New Guinea's industrial development will be based on the country's comparative advantage. Plants that are established will be able to export and will make maximum use of Papua New Guinea's natural and human resources. If, by contrast, a protection-based import substituting strategy is adopted, the firms that are set up will be high-cost islands that employ few people, save little foreign exchange, penalize consumers and exporters, and reduce the country's overall rate of economic growth. If, in addition, export processing zones are successfully established and a way is found to cut through the red tape that presently restricts foreign investment, the rate of growth of manufacturing, and of the economy overall, could be considerably increased.

9. MINERALS, PETROLEUM AND ENERGY

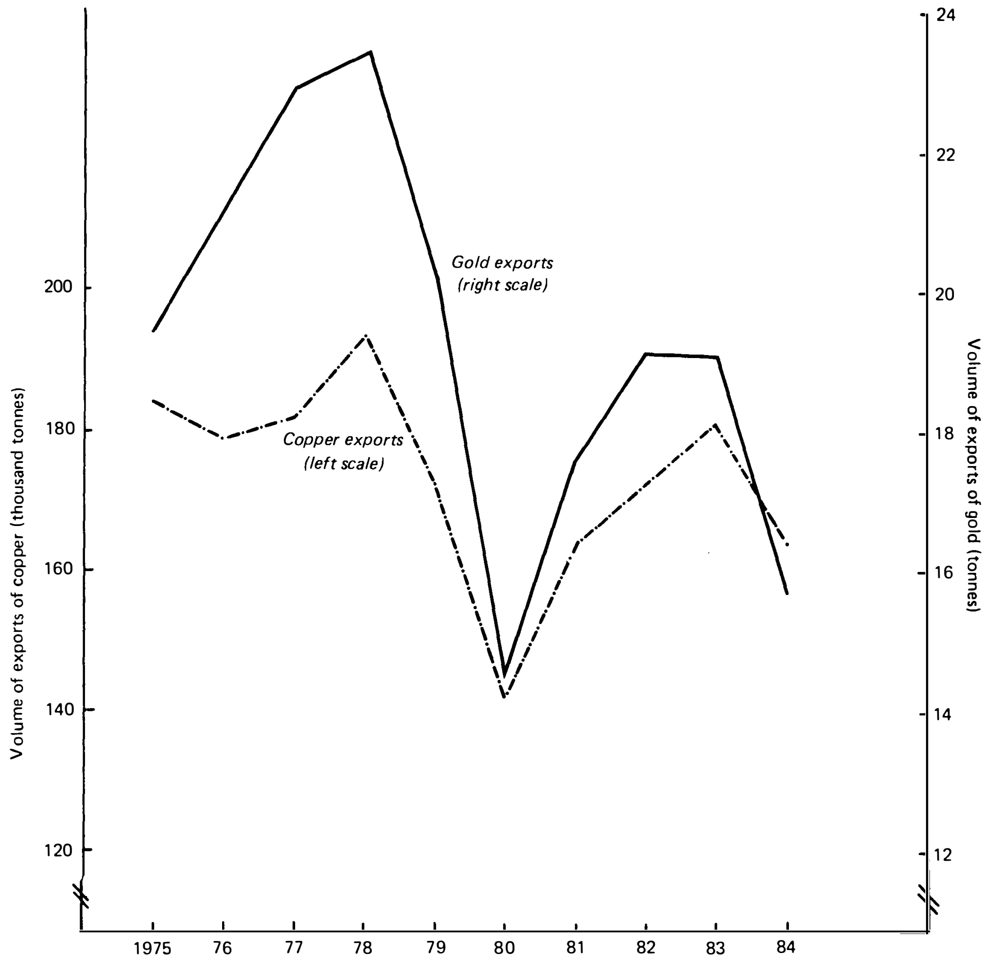
Minerals

Papua New Guinea has considerable potential for mineral production, but until the 1970s mining was confined to small and medium scale dredging of alluvial gold, and gold and copper mining. Large-scale modern operations began in 1972, just before self-government, when the Bougainville Copper Limited copper mine started producing both copper and gold. It has since been one of the main contributors to GDP and export earnings and the single most important source of domestic government revenues. Small-scale alluvial and medium-scale gold mining continue and have a combined output valued at about K10 million per annum. Chart 9.1 shows the trend of gold and copper exports during the period 1975-84. The sharp fall in 1980 reflects the reduction in the grade of ore mined that began in that year; the recovery since then reflects an increase in the quantity of ore mined to compensate for this.

Exploration of another large copper and gold deposit at Ok Tedi in the Star Mountains, close to the border with Irian Jaya, was carried out during the construction period of the Bougainville mine. However, the breakdown of negotiations with the original foreign investor and the problems arising from the development of a project of such magnitude in extremely difficult conditions delayed the start of commercial production until January 1985. Even now it is only the gold cap that is being exploited.

The project requires further large investments which the foreign partners in Ok Tedi Mining Limited (a consortium of Australian, American and German interests with minor government participation) have been reluctant to make at prevailing prices for copper and gold; prospects of a significant improvement by the time the second phase is completed are doubtful. The Government is insisting that the company honour its commitment to proceed to phase two, fearing that it will remove the easily accessible gold and delay indefinitely, if not abandon, the mining of copper. At the present rate of working, the gold cap will be exhausted some time between 1989 and 1991. After failing to reach agreement with the foreign partners early in 1985, the Government has given the company a temporary licence from 20 March 1985 to continue working for 120 days, by which time certain terms of agreement - including particularly the time when copper mining operations will start - are to be incorporated in a supplementary agreement governing phase 2 of the project. Work on a permanent tailings installation has begun, and if the supplementary agreement is concluded the first copper line will start operating in 1989. Revenues are not expected to begin to flow into the Mineral Resources Stabilization Fund until early in the 1990s.

Chart 9.1 Exports of Mineral Products, 1975-84



Sources: Bank of Papua New Guinea Quarterly Economic Bulletin. For 1975, copper concentrate data are divided into gold and copper using the Bougainville Copper Limited Annual Report.

Minerals Policy

Government policy for the minerals sector has evolved out of the Bougainville Copper Limited experience. The original terms were very generous to the foreign investor (Conzinc Riotinto of Australia) who argued that the project was high-risk and only marginally profitable. But once production had commenced, and in response to pressure both from Bougainville Island and nationally following self-government, it was recognized on both sides that the terms of the agreement would have to be modified. The new concept, although not applied in every respect to Bougainville Copper

Limited, requires that a portion of the value of the product extracted from a deposit, less all necessary costs, should accrue to the State. Costs include the minimum return on capital required to induce the investment, and take into account the estimation of probable risk by potential investors. It is therefore in the government's interest to minimize the risk for the investor by devising a tax regime that is fair, consistent and stable; and by conducting the country's affairs in a way that permits the project to operate efficiently; and by permitting the foreign investor to transfer funds abroad for debt service and dividend payments. The record of the Papua New Guinea Government in these respects has been consistently good, and relations with Bougainville Copper Limited since re-negotiation of the agreement have generally been excellent. The sharing of the earnings from Ok Tedi Mining Limited has similarly not been a subject of dispute between the foreign investors and the Government. The embodiment in legislation of a sophisticated fiscal regime for mining minimizes uncertainties, while standard agreements simplify negotiations with new investors.

Underlying the Government's policy for minerals is the knowledge that the mining sector's contribution to the economy is mainly financial, in the form of export earnings and government revenues. Mining provides few jobs in relation to the size of the investment required, and little stimulus to existing industries or to the creation of new ones. Capital equipment and supplies are largely imported, and all mineral products are shipped abroad. In framing its National Development Strategy in 1976, the newly independent Government looked to large mineral projects as a source of funds for the attainment of national goals rather than for any direct benefits they might bring; hence the importance of maximizing revenues and establishing a regime that would encourage new investment in mining.

The Government is aware of the environmental damage and local disturbance caused by mining. The resistance on Bougainville Island to Bougainville Copper Limited during the construction phase of that project is well known. Such feeling was evidenced more recently by the North Solomons Provincial Government request to the National Government to impose a ban (still in force) on exploration outside the existing lease area. The Ok Tedi project has caused less local disturbance because the area is thinly populated and less developed, but has had harmful effects on the Fly River. As a consequence, the Government has insisted on the installation of facilities to dispose of the tailings from the mine - hitherto dumped in the river - as well as proper treatment of chemical pollutants, which on a recent occasion, were accidentally spilled into the river.

Some of the reasons for the Government deciding to acquire a 20 per cent equity in Bougainville Copper Limited and Ok Tedi Mining Limited were: to keep itself informed about the performance of the companies in minimizing environmental damage; to prevent transfer pricing at other than arm's length prices; to make sure that the companies lived up to their commitment to train local workers; and to secure a direct share in the profits of the enterprises. It is doubtful whether an equity shareholding that required the use of scarce public funds was necessary for any of these purposes, although it was desired by the foreign investors. The Government has adequate powers to ensure compliance both with the terms of the agreement and with regulations relating to employment and the environment. Furthermore, taxation of earnings is a more effective means of securing revenue from the project than receipt of dividends. The Mining and Petroleum Sectoral Committee set up under the Medium Term Development Strategy has recommended that the Government not exercise its option to take equity shares in future mining ventures, and it is to be hoped that this recommendation will be accepted. Indeed, if and when the market for gold and copper improves, the Government might consider selling all or part of its shareholdings in Bougainville Copper Limited and Ok Tedi Mining Limited in order to release funds for more important purposes; this would require a change in the Principal Agreements and the consent of the majority shareholders.

Problems and Prospects for Minerals

Papua New Guinea's financial framework for the minerals sector, although based explicitly on national goals, is designed to be internationally competitive. Legal regulations are modern and workable, and permit a balance between the investor's need for increasing security of tenure as a project moves towards construction, and the government's obligation to see that resources are developed efficiently. Thus, Papua New Guinea is well placed to attract new investment when geological and market circumstances permit.

Another economy-wide problem that affects the mining sector's ability to offer more job opportunities is the minimum wages system. High penalty rates apply to overtime work, which increases the incentive to use machines for work that could be done by hand, making exploration in Papua New Guinea more capital-intensive than in neighbouring countries. The World Bank study quotes identical seismic crews in Papua New Guinea and Irian Jaya as costing K100,000 a month for 300-400 workers and K40,000 a month for 600-1000 workers respectively. Considering that exploration requires irregular hours, it is recommended that the mining industry be exempt from paying penalty wage rates.

Ok Tedi Mining Limited has encountered major technical problems during the construction phase, but the quality of its ore - both copper and gold - is higher than that at Bougainville. Assuming that agreement is reached between the Government and the company to proceed to the copper-mining stage, government revenues from the project will in due course overtake and outlast those from Bougainville Copper Limited. The mine is expected to continue producing until some time between 2005 and 2020, depending on the rate of exploitation.

A decreasing quality of ore at the Bougainville mine had been predicted for some time, but a re-evaluation in 1980 indicated a sharper than expected decline in quality. To compensate, the company increased the rate of production and the mine is now estimated to have only another 15 years of life at present rates of production. The ban on further exploration is a serious impediment to sustained production beyond the turn of the century. Bougainville Copper Limited's own applications, as well as a number of other exploration licence applications for areas of Bougainville remain outstanding, and the potential benefits of this activity are being lost. The Provincial Government has an incentive to agree that the ban be lifted, with appropriate assurances about environmental safeguards, since royalties from the projects (set at the rate of 1.25 per cent) would constitute an important share of provincial revenue.

The low level of mineral prices, particularly of copper is deterring investment in the industry. The latter has been depressed not only by the recession in industrial countries, but also by the general decline in the "metal-intensity" of these countries, and by the substitution of non-metallic substances for copper in the electrical and communications industries. World production of primary copper, generated in response to the high prices of the metal ten years ago, is in excess of likely demand. Some developing countries find it difficult for social reasons to reduce their output of copper even at current low prices. Bougainville Copper Limited's earnings dropped sharply in 1984, but the company can probably continue to operate at a profit provided prices do not drop further. It may be assumed that if agreement to proceed with the Ok Tedi mine is reached between the Government and the company, that mine also will be able to operate profitably. Other major copper deposits are available but their exploitation at prevailing prices is unlikely.

Gold and Silver Mining Projects

Three promising prospects for gold mining are likely to be developed within the next 5 years; the Porgera deposit in Enga Province; the Lihir Island deposit in New Ireland Province; and the Misima deposit in Milne Bay Province.

The Porgera deposit is held by a consortium of Placer, Mount Isa Mines Ltd (MIM), Renison Goldfields Consolidated Ltd (RGC), with

Placer managing exploration. The deposit is rich in gold and silver, with published reserves of 59 million tonnes of various grades and a probable daily output of between 4800 and 8000 tonnes. Because there has not yet been sufficient detailed drilling, the importance of the high grade zones cannot be fully assessed, and the optimum mining method cannot be determined. Options are open-pit mining, with throughput at a little over 500,000 tonnes of ore per annum, or a significantly less productive underground operation. Economic evaluations of both alternatives are still in progress. Moreover, the nature of a large proportion of the ore makes recovery by conventional metallurgical techniques impractical. An alternative and newer technique is available which will require extensive testing. Should testing yield positive results and should metal prices remain at or above the present level, Porgera may be an operating concern by mid-1989.

The second major project which may lead to gold mine development is the Ladolam prospect on Lihir Island, being explored jointly by Kennecott (88 per cent), and Niugini Mining (12 per cent). Exploratory and definition drilling need to be carried out for at least the next 12 months before a full feasibility study is possible. As in the Porgera case, part of the ore requires the use of new techniques and associated intensive testing. Geothermal problems contribute to the difficulties of mine planning. Should exploration proceed well and metal prices remain firm, the Ladolam prospect could also come on stream at the end of the decade.

The Misima deposit is being explored by a 50:50 joint venture of Placer and Conzinc Riotinto of Australia Ltd (CRA), with Placer taking the lead. The ore grades are relatively low and the tonnages modest. Likely infrastructure and operating costs indicate that the Misima prospect is highly sensitive to the price of gold and silver and is thus marginal. These and other major prospects in Papua New Guinea are essentially dependent on the price of gold. A significant rise in the price would make several of them economically viable provided the technical problems can be resolved. A fall in price below about US$300 an ounce would render even Porgera unprofitable.

Petroleum

Exploration for petroleum in Papua New Guinea has been in progress since the 1920s. The geology is considered promising, although more for gas than for oil. The number of petroleum prospecting licences issued increased sharply following the second international oil price increase in 1979, and the enactment of general tax legislation for minerals in the previous year. On the basis of present commitments alone, some 36 wells will have been drilled by 1990. However, only two wells have so far indicated any liquids, one offshore and the other at Juha in the Southern

Highlands Province. The latter is thought to have commercial potential, and further drilling will take place during the next twelve months to establish the nature of the reserve. The site is remote and difficult to access, requiring equipment to be delivered by helicopter.

The legal and fiscal arrangements for petroleum mining evolved at the same time as those for hard-rock minerals, and are based on similar principles with allowance for differences specific to the petroleum industry. A much greater proportion of the investor's total outlay is absorbed in prospecting and exploration, and a higher total return therefore tends to be required compared to mining. The investor therefore normally requires fiscal and other participation terms to be agreed before the issue of a petroleum prospecting licence. A standard agreement has been developed which materially assists these negotiations.

Until recently, however, the Department of Minerals and Energy lacked sufficient administrative capacity to handle a significant increase in prospecting activity. In 1981 the Department's inability to process the flood of applications led to a moratorium on the issue of new petroleum prospecting licences. The moratorium was sustained for two years and may have cost the economy US$1 million a year in lost exploration expenditure. Competent staff are also needed to evaluate proposals, appraise work programs, and conduct negotiations. Since 1981 the capacity of the Department has increased, and it now handles a much larger volume of applications. However, the importance of its work to the national economy warrants sustained efforts to increase the training of nationals in the skills required, and to make full use of expatriate and consultants' services to supplement and support the work of insufficiently skilled nationals. Expert help is particularly needed in devising and monitoring effective standards for reporting by prospecting companies. There are no such standards at present, and reporting practices vary greatly. A valuable source of information on mineral prospects is presently being lost to the Government.

A World Bank Petroleum Exploration Technical Assistance Project, co-financed by the OPEC Development Fund, is underway to strengthen monitoring and promotion capability in the petroleum sector. Although the studies have been carried out expeditiously, progress in strengthening institutional and staffing arrangements has been slow.

Energy

The consumption of energy in Papua New Guinea per head of population is about average for the group of developing countries to which it belongs. Although the large mass of the population has little or no access to commercial fuels or electricity, the consumption by the 15 per cent of the population in the modern sector is at the level of more developed economies and accounts for 60 per cent of total energy consumed. This is due both to the scattered and isolated location of urban and industrial centres (which prevents economies of scale) and to high transport costs. Almost nine-tenths of the energy used commercially is supplied directly or indirectly by petroleum products, all of them imported. There is considerable hydro-power potential, but at present it supplies only 10 per cent of commercial energy demand.

The petroleum import bill grew rapidly during the 1970s as the result of the increases in international oil prices, the growth of commercial activity and the start of operations by Bougainville Copper Limited, the largest single consumer of petroleum. In the period FY1976 to 1983 petroleum products increased their share of merchandise imports from 13.6 per cent to 20.5 per cent, and in 1983 were equal to 24 per cent of export earnings, constituting a heavy drain on foreign exchange.

Slower economic growth and the substitution for petroleum of indigenous sources of energy, mainly hydro-power, will mean a less rapid increase in imports of fuel during the 1980s. However, any increase from the present high level of imports is a matter for concern, and demands the constant pursuit of greater efficiency in energy use and the development of alternative energy sources.

Pricing energy at its real cost, including an adequate return on capital invested in production and distribution, is the most effective general means of encouraging its efficient use. Pricing electricity below its real cost does not induce development, and results in distortions that outweigh any economic benefits this may bring. Subsidising individual consumers also encourages wasteful use of energy. Unlike many developing countries, Papua New Guinea does not subsidise or underprice oil and electricity in the belief that this will stimulate industrial development and hold down the cost of living for consumers.

Although Papua New Guinea's energy policy has been generally sound, there are some anomalies that should be corrected. There does not appear to be any justification for taxing automotive diesel fuel at far lower rates than petrol. The Electricity Commission sets its tariffs at a level that recovers its costs over the system as a whole, and earns a satisfactory rate of return. However, its tariff structure is uniform throughout the country, although the costs of power supply in the various grids are very different. Thus, consumers in areas where the cost of generation is high are subsidised by others.

A study of the Electricity Commission's power tariffs carried out in 1984 by the World Bank recommended that a phased shift be made to a tariff structure based on marginal cost pricing(1). Tariffs would take into account the differential costs of supplying power to large and small consumers and to consumers in different areas. Optional tariffs would be offered to major consumers. Different rates would be charged during peak and off-peak hours. Consumers would then have an incentive to use their own power supply during peak hours and so reduce demand on the system. The move from average to marginal cost pricing would mean an initial drop in the Electricity Commission's revenue, and the recommendations of the study are still under consideration.

Conservation of energy can be promoted directly by relatively inexpensive energy management programs. They range from information and demonstration on ways to save energy, to energy audits of industrial, commercial and public buildings, and to testing of particular devices designed to conserve energy in industrial and household uses. Subsidies or tax concessions within sensible limits for the fitting of such devices are justified by their economic benefits. The Government is stressing the importance of energy conservation, and is trying to persuade private businesses to install energy-saving devices in their own financial interest.

The development of indigenous alternatives for commercial energy users is the third part of the campaign to reduce dependence on imported oil. So far Papua New Guinea has not produced any conventional fuels, but as noted in the previous section, the prospect of finding commercial supplies of petroleum are considered good. However commercial exploitation of an oil or gas reserve, once established, may take as long as ten years. Papua New Guinea therefore cannot count on having a domestic source of crude oil until well into the 1990s. Likely volumes of output, and the relatively small size of the market for petroleum in Papua New Guinea, would not warrant the building of a refinery for some time. Crude oil would therefore be exported and the foreign exchange earnings used to import refined products.

Papua New Guinea has large potential supplies of hydro-electric power. Two large schemes, Rouna Four (Port Moresby system) and the Yonki dam (Ramu system), are due for completion in 1986 and 1990 respectively, with the possibility of connecting the Port Moresby and Ramu grids in the 1990s. Bougainville Copper Limited is investigating the possibility of replacing part of its large demand for petroleum by expanding a captive hydro-electric scheme. The Ok Tedi project provides for the installation of a large hydro-electric plant, but the justification and timing of this investment

(1) Report No. 024/84 of the Joint UNDP/World Bank Energy Management Assistance Program, 'Power Tariff Study', 1984.

depends on its meeting the test of economic viability; this is at present uncertain.

There is also considerable potential for small hydro-electric schemes to serve some of the smaller towns and rural areas by replacing the costly and unreliable diesel-powered sets now in operation. The New Zealand Government has financed a recently completed survey of mini-hydro-electric potential in Papua New Guinea. The use of wood and crop residues in industry, ethanol fuel in transport and solar energy in more remote areas is also possible. The potential for these energy sources is also being investigated using technical assistance from the European Communities and bilateral donors. The Government forecasts that the contribution of indigenous sources of energy will increase from the present 45 per cent of the total energy supply (commercial and traditional) to 50 per cent by 1990. This is a modest estimate but it seems realistic.

The rural sector, where most of the population lives, is almost entirely dependent on wood for fuel. Compared with developing countries in Africa and elsewhere, which are rapidly depleting their supplies of wood, Papua New Guinea is fortunate in having plentiful supplies within easy reach of most settlements. However, shortages which oblige people to walk long distances to collect wood or to buy it in local markets are beginning to appear in some areas. Central or provincial government help may be needed to resolve supply problems in these areas, and to make commercial marketing self-sustaining. For the foreseeable future the bulk of the rural population will continue to be wholly or mainly dependent on wood for their energy supplies. Extension work designed to encourage forest conservation and reforestation of depleted areas are important elements of an energy policy.

The Government maintains more than 100 diesel power 'C' centres which supply electricity to their locality. Management and maintenance at these centres is poor, energy consumption is wasteful and charges are rarely collected. A diesel-power replacement program is being funded under the current National Public Expenditure Plan and the first small hydro-electric plant is to be installed at Taro. Additional funds may be made available by the European Communities, which may also finance extensions to the transmission system where these are economic.

In summary, since Papua New Guinea's overwhelming source of energy for the modern sector is imported petroleum, energy is not likely to be a severe constraint on development as long as export earnings continue to grow at a reasonable pace. Prudence would dictate however, that policies should be directed towards conservation of energy and the exploitation of domestic resources in order to release foreign exchange for other development purposes and reduce reliance on external aid. On the whole, present policies reinforced by the measures recommended by the Committee on Energy Strategy meet this test. However, progress in saving petroleum imports is likely to be slow until additional hydro-electric power can be installed on a substantial scale and an exploitable source of petroleum has been developed.

10. GOVERNMENT STATUTORY AUTHORITIES AND COMMERCIAL INVESTMENTS

The proliferation of statutory authorities (both commercial and non-commercial) and government-owned companies after Independence marked a period in Papua New Guinea's development when the formation of such bodies provided avenues for the Government and the people of Papua New Guinea to participate in the economy and in business.

There are three broad categories of public investments. The first category covers government equity participation in major projects such as Bougainville Copper Limited, Ok Tedi Mining Limited, forestry development projects, and the like. The second category consists of commercial statutory authorities and other government-owned commercial enterprises. The third category includes government financial institutions which in turn hold minority equity shares in other businesses.

Direct Government Participation in Major Projects

Government investments in large resource and agricultural projects include Bougainville Copper Limited (20 per cent), Ok Tedi Mining Limited (20 per cent), Hargy Oil Palm (50 per cent), Higaturu Oil Palm Pty Ltd (50 per cent), Ramu Sugar Holdings Limited (49 per cent), and the Stettin Bay Lumber Company (25 per cent). One reason for the Government's involvement is to maintain a presence in large projects, to acquire expertise in these industries and to monitor their performance. A financial commitment by the government was also felt to be needed in order to attract foreign investment.

Public equity and loan commitments to these projects have run into hundreds of millions of kina. With the exception of Bougainville Copper Limited, most of the investments have yet to return dividend payments to the government. The operations of the agricultural projects have met with mixed success, due mainly to fluctuating commodity prices and to disruptive land disputes with traditional landowners.

Public Statutory Authorities and Other Public Enterprises

Thirty-seven national and provincial government enterprises are engaged in commercial activities. They include four statutory corporations - the Post & Telecommunication Corporation, the Electricity Commission, the Papua New Guinea Harbours Board, and Air Niugini; the Papua New Guinea Banking Corporation; the Investment Corporation; the Agricultural Bank; 19 provincial government development corporations; and a number of commercial companies in which government has an equity share. Total government investment in these enterprises is very large, but only 12 of them operate at a profit and pay dividends.(1) It is questionable whether all such instrumentalities are either effective in implementing government policies for the commercial sector or in ensuring that essential supplies and services are available at economic cost. Furthermore, they tie up large amounts of public funds with little or no return.

Three of the commercial statutory corporations (the Post and Telecommunication Corporation, the Electricity Commission and the Papua New Guinea Harbours Board) have undergone major organizational, policy and staffing changes in recent years, and now operate profitably. The Post and Telecommunication Corporation, for instance, has an annual revenue of about K50 million and in 1983 contributed K7.7 million to the budget.

Government Owned Intermediaries for Investment

The Investment Corporation and the Agricultural Bank are two wholly owned government bodies that invest in companies and businesses either through minority shareholdings or by outright takeover of smaller foreign businesses for resale to Papua New Guineans. There have been some successes among such ventures, although some Investment Corporation purchases have been criticized for being "passive" and not "developmental",or for attempting to rescue ailing foreign businesses. Recently, criticisms have been levelled at both the Investment Corporation and the Agricultural Bank for competing with the private sector in production. This is more a problem of the enterprises selected for support than a reflection on the utility of government financial intermediaries as such.

Uncertain Objectives

The Government has not always been clear in its reasons for setting up commercial statutory authorities or for making other large investments in commercial enterprises. The objectives are either not explicit or conflicting so that it is difficult to assess performance. In July 1979 a Committee of Enquiry chaired by the Minister for Finance warned the Government "...against an unstructured approach to its involvement in commercial activities."

1. Department of Finance, ´National Executive Council Information Paper´, October 1984, p.1.

The Committee recommended that, "...the proposed parameters restrict the formation of government initiated companies to those comparatively few situations where the private sector is not taking up opportunities due to lack of confidence, too long a pay-back period, lack of skills, or government restrictions."(1)

This recommendation could lead to further government involvement in ventures that may not yield a satisfactory rate of return. It also assumes a clarity of foresight in estimating investment opportunities that governments do not usually possess.

The Department of Finance has recently attempted to define the objectives of government participation more narrowly. In 1984 the Department commented that the returns to government on its investments had been poor in the majority of cases, averaging 8.4 per cent of total equity, but only 3.9 per cent if dividends paid by Bougainville Copper Limited are excluded. The Department sought Cabinet endorsement of the recommendation that, "...public enterprises should in all cases operate on a normal commercial basis, earn a normal commercial rate of return (10 per cent), and input and output prices are to be set on a marginal product and marginal cost basis."(2)

This objective, if consistently applied, will obviate any further calls on public funds for uneconomic investments and should apply equally to loan guarantees, used increasingly to bail out sinking government corporations. Even when investments or loan guarantees meet the profit test, they should also reflect policy priorities and should not be undertaken if private funds are available on appropriate terms. As discussed in Chapter 3, there will be little to spare in the foreseeable future over and above the provision of essential government services and infrastructure.

In contrast to the previously noted lack of policy regarding the financial objectives of government commercial investments, the Government has now moved to tax commercial statutory authorities and similar organizations, although few of them make a profit. Effective financial monitoring of their activities has been lacking, notwithstanding that the Acts establishing the main authorities and corporations require the responsible ministers to lay audited reports before Parliament every year. With few exceptions, audited statements by these bodies are in arrears, in some cases by as much as five years.

(1) 'Report of the Committee of Enquiry on the Role of Government in Development', Waigani, 1979, p.6.

(2) 'National Executive Council Information Paper', Op. cit.,p.1.

Finance, Management and Staffing

Board representation and decision-making are also problems in some cases. Many of the board members of these organizations are public servants whose training and responsibilities are necessarily different from their counterparts in private companies striving for profit maximization. This, and the fact that their attendance is often irregular, results in inadequate communication between the organization and the department concerned, and the inconsistent application of government policy. Some of these problems can be effectively resolved by appropriate training for board members, but others have been found to be insoluble in many countries, resulting in high financial and social costs for public enterprises.

Conclusions

Recent moves by the Government to monitor more closely the performance of commercial statutory authorities are commendable. Where profit is the principal objective the Government should keep intervention in management decisions, including recruitment and staffing, to a minimum.

Given the constraints on government resources, and the current policy of allowing the private sector to assume greater responsibility for investment and growth, the Government's equity holdings in major resource and agricultural projects should not increase. Wherever possible the opportunity should be taken to dispose of the Government's holdings so as to release funds for purposes that only a government can undertake.

11. FINANCIAL INSTITUTIONS

A number of financial intermediaries carry out various financial transactions in Papua New Guinea. They include banks and associated finance companies; contributory funds and societies; and insurance companies. They were initially subsidiaries of Australian financial institutions, and most still are though the Papua New Guinea Banking Corporation was taken over from the Commonwealth Bank of Australia after Independence. But the development needs and directions of Papua New Guinea and the characteristics and structure of the economy are different from those of Australia. The financial institutions hence have to adapt their outlook and policies to meet Papua New Guinea's development needs.

Banking

Banks comprise the largest group of financial institutions. Commercial banks dominate with total combined assets valued at K676.70 million at the end of June 1984. The non-commercial banking institutions include the Bank of Papua New Guinea (the central bank), the Agricultural Bank (formerly the Development Bank) and Resources and Investment Finance Limited (a merchant bank).

The Bank of Papua New Guinea performs standard central bank functions. It is the banker to the commercial banks and the regulator of their activities; it controls foreign exchange flows; and it issues the legal currency of Papua New Guinea. The Mineral Resources Stabilization Fund, and 60 per cent of the commodity stabilization funds are deposited in the Bank.

The Bank of Papua New Guinea also administers monetary policy. In doing so it ensures that the level of borrowings, both domestic and offshore, is adequate to finance the growth of economic activity, while keeping balance of payments constraints in mind. There have been adjustments in central bank methods from time to time. In 1984, for example, money supply targeting was abandoned and replaced by a "target ceiling" on the increase in commercial bank lending.

In general the commercial banks and the Bank of Papua New Guinea have co-operated - for example in the relaxation of interest rates for loans and term deposits - to ensure that the Government's monetary objectives are achieved and banking business is carried out smoothly.

In 1983, the admission of two new banks (Indosuez Niugini Bank Limited and Niugini Lloyds International) brought the total number of commercial banks to six, resulting in greater competition, at least in the short run.

The Papua New Guinea Banking Corporation evolved from the Commonwealth Bank of Australia, becoming a wholly publicly owned commercial bank in 1973, with initial capital of K10 million. There is a general feeling in banking circles that the Papua New Guinea Banking Corporation is favoured by the Government, and it enjoys a large (about 50 per cent) share of the market, the nearest rival being Westpac Banking Corporation with 25 per cent of the market. Others argue that the Papua New Guinea Banking Corporation is a national bank with an extensive network of agencies and branches throughout the country which other banks have not been able (or wished) to match. These services, some with marginal returns subsidised by the Bank's more profitable operations, are seen as justifying the Government's greater involvement with the Corporation.

Comparative figures on average after-tax rates of return on shareholders' funds during the five years 1978-82 suggest that the Papua New Guinea Banking Corporation (12.6 per cent) does not profit unduly from its size or special link with government. The other three foreign banks had a greater average rate of return: Westpac - 15.3 per cent; Bank of the South Pacific - 13.9 per cent; Australia and New Zealand - 29.1 per cent(1). Profits have been dropping since the entry of the two new banks in 1983 and may not be sustainable without either an increase in bank charges or a reduction in the number of banks. Given the small size of Papua New Guinea's economy, the present number of banks may prove too large for efficient operations.

Finance companies are relatively new in Papua New Guinea but already command a growing share of the commercial and industrial equipment leasing business, leasing of vehicles for private and commercial use, and the provision of loan facilities; most are closely linked to banks.

The Agricultural Bank obtains its capital from equity injections by the Government, and domestic and overseas borrowings (the latter mostly from the Asian Development Bank and the World Bank on concessional terms) for on-lending. The Bank's activities have mainly centred on rural agricultural financing but it has also diversified into financing retail projects, public motor vehicles, and so forth. Urban commercial and industrial funding by the Bank

1. 'Final Report of the Medium Term Development Strategy Committee on Financial Institutions,' December 1984.

is intended to stimulate small and medium-scale citizen entrepreneurs. Rural lending has high administrative costs and loss rates. The Bank's shift to increased agricultural project financing (from 60 per cent to 80 per cent of total funds lent) will call for a larger injection of government funding since the possibilities of cross-subsidisation will diminish.

The Investment Corporation was established in 1971 as a government statutory body to ensure national participation in and ownership of an increasing share of the economy. The Corporation buys shares in existing businesses for eventual resale to eligible individuals or groups, it assists nationals in their businesses (new or ongoing), and it provides a facility for the investment of savings in the Investment Corporation Fund. The Corporation has been relatively successful in that it has built up its asset base from an initial grant of K5.5 million to K35 million at present. However, there have been some substantial write-offs (Port Moresby Bus Company and Ilimo Farm Products) in some of the Corporation's investments.

In recent years the Corporation has been criticized for making "passive" investments, leading it to invest or lend funds in such areas as forest development. The success of these ventures with provincial governments and landowners remains to be seen.

Contributory Funds and Societies

Savings and loan societies are formed when twenty or more members, having acquired the necessary savings to form the association's capital, register their association with the Registrar of Savings and Loan Societies (administered by the Bank of Papua New Guinea). While the savings and loan societies initially enjoyed popular support in rural and urban areas, there has been a marked decline in their activities due to delinquent loans and poor management, particularly in rural areas.

However, the Public Service Savings and Loan Societies and the Bougainville Copper Limited Employees Association have shown remarkable progress due mainly to the use of salary deductions that ensure a continuing flow of membership dues and loan repayments.

A voluntary Federation of Savings and Loan Societies has been formed to on-lend surplus society funds to other societies with capital requirements. It can also provide loan insurance for its member societies.

Superannuation funds and the National Provident Fund also provide finance for contributing members once the members have resigned or retired from their employment. These funds are administered by their respective boards with managers and staff. The Minister for Finance oversees the management of the funds. The total assets of the funds at the end of 1982 amounted to K56.8 million. The Fund's investment policies have been increasingly subjected to criticism because they tend to be concentrated on urban real estate.

Insurance Companies

Insurance companies operate under the Insurance Act of 1974, and are administered by the Insurance Commissioner who is in turn responsible to the Finance Minister. There are two main types of insurance company in Papua New Guinea: at the end of 1982, eleven companies offered non-life insurance policies and two others provided life insurance coverage. The insurance companies have recently launched a concerted campaign to have regulations governing their investment portfolios relaxed, and to have their "subsidy" of third party motor vehicle insurance cover, a cost burden on their operations, reviewed.

Government Finance Schemes

In areas where the Government has felt that the financial institutions have for various reasons not satisfactorily provided the required finance (such as housing and agriculture), it has itself entered the financing market with loan guarantees and interest subsidies. For instance, in 1976 the Government established the Credit Guarantee Scheme, initially with the Papua New Guinea Banking Corporation, to assist Papua New Guineans in borrowing for businesses and the building of houses. This scheme offers the banks loan guarantees of 80 per cent should there be defaults in repayments. The maximum for individual borrowings is K20,000 and for groups it is K100,000. The interest rates are set at the lending bank's prime rate. In 1979, other commercial banks were allowed to enter the scheme. It is considered to have been a useful experiment but the total amount of loans guaranteed (K8.23 million over 8.5 years) has been disappointingly small and the level of arrears high.

Issues

The issues confronting the financial institutions vary with the nature of their business activities. However, they face some common problems including their concern that the more restrictive government regulations be relaxed. The specific needs of major client groups - Papua New Guinea urban workers (for provision of long-term finance to meet urban housing demand) and rural smallholders (for agricultural credit) - have proved difficult to meet. Both the commercial banks and the Government have attempted to address these issues: the Government's interest subsidies, Credit Guarantee and Home Ownership schemes, undertaken jointly with the banks, assist nationals in meeting their financial needs for investments and housing. However, these problems, and the policy attempts to resolve them, cannot be tackled solely on the financial front.

Co-ordinated efforts by the Government and groups of institutions need to be made in the following areas:

- Agricultural development

  The problem is not so much the availability of credit as the capacity of smallholders to put up viable proposals for financing and to manage the ensuing investments so as to meet financial obligations. At present, commercial banks feel obliged to turn down many of the proposals they receive because they are incomplete or unrealistic. The Agricultural Bank, despite its concessional rates, has incurred a high level of defaults and arrears.

- Housing

  Viable financing is dependent on a concerted effort to evolve appropriate housing policies (discussed in Chapter 13).

- Other investments:

  Except for retail trade, the financing of small and medium-scale enterprises is fraught with the usual difficulties met in a developing economy.

Progess in all these areas requires training in project identification, preparation and management. It is not the lack of capital that is the major constraint, but the lack of skilled management to assist prospective borrowers. Financial institutions need to have a long perspective if they wish to participate in Papua New Guinea's development.

Conclusions

The banks have worked well with the Bank of Papua New Guinea in ensuring a sound and stable banking climate. A competitive rather than a regulated financial market being desirable, the Government's moves to deregulate the financial sector are encouraging.

However, the Government needs to decide what role it wishes the various financial institutions to play in agricultural, industrial and housing finance, etc., and must give a clear lead to the institutions concerned. The work of the Committee on Financial Institutions is an important step in this direction. The implementation of policies will, however, be equally important in stimulating investment.

Fostering national entrepreneurs must be an important objective of financial policies, but it is not capital that is the major constraint to nationals seeking business opportunities. Training is needed for financial staff so that they can assist national investors in planning and carrying out investment proposals.

The regulations governing the investment policies of government-regulated non-banking institutions such as the Superannuation Fund and the National Provident Fund, the Investment Corporation Fund and the Savings and Loan Societies need to be reviewed. This review should seek to evaluate past investments; the funds' success in meeting member financial needs; the returns to investments in equity holdings in existing foreign companies; and whether the funds and the savings and loan societies could contribute a greater share of housing and business investment.

PART 4

OTHER SECTORS AND ISSUES

12. TRANSPORT AND COMMUNICATIONS

Transport

Owing to the rugged terrain and the dispersion of a small population over a wide area, transport in Papua New Guinea is costly and, with the exception of air transport, relatively undeveloped. The country was largely opened up by air, and air transport still accounts for a large share of passenger travel. There is no railway and only one major highway, connecting the port of Lae with the southern highlands. There are some 3700 km of national roads, more than 80 per cent of them unsealed, and nearly 15,000 km of provincial roads, only 2 per cent being sealed. International shipping is adequate, but coastal trade is served by many unsuitable and inefficient vessels.

The country is not as poorly served as these facts suggest. The roads cover the more densely populated and developed areas, and about two-thirds of the population is within reach of a road. The sections carrying heavy traffic, including much of the Highlands Highway, are sealed. The air network, although costly, is widespread; indeed, Papua New Guinea may well have more airstrips per head of population than any other country. As the mass of the people meet their subsistence needs from their own farms and gardens, they are willing to spend substantial portions of their cash income on transport. Many farmers who have access to a road buy a small truck, either individually or in groups, to take their produce to market and their families to visit the town. There is also a growing number of small bus operators plying for hire. The crowds of people at most airports, many accompanied by children, indicate that the effective demand for transport is considerable.

Road Transport

The poorer provinces, where population is thin and the terrain especially rugged or swampy, are not well served by roads, although several are traversed by large rivers and their tributaries, which act as local highways. The extension of the road network into these areas would be socially desirable and would help to reduce developmental and income disparities among the provinces. This extension possibility presents the authorities with a dilemma: whether to devote resources mainly to the improvement and maintenance of the existing network or to extend it. There is no question that the former would yield better economic returns.

The problem is illustrated by cost benefit analyses executed by experienced consultants hired by the Department of Transport and the Papua New Guinea Harbours Board. Of 41 existing sections of main road that were studied, 17 were found to have an economic internal rate of return to investment greater than 10 per cent, and another 10 an internal rate of return between 5 per cent and 9 per cent. None of the proposed new roads or road sections had an internal rate of return close to 10 per cent. These included two major projects proposed: a road linking Port Moresby (which has no surface connection to any part of the country outside the Central Province) to Lae, where it would link up with the Highlands Highway; and a road from the highlands to Madang on the north coast. Even at normal minimal standards (a gravel road 6.5 metres wide in normal terrain and 4.5 metres elsewhere), these projects would not be economically justified on current assumptions because of the high cost of construction and the relative lack of economic activity expected to be generated in the thinly populated areas through which they would pass. A few of the proposed new roads, including the proposed Port Moresby-Lae road, might be feasible if constructed to logging track standards, and if the benefits from forestry are taken into account. Japanese finance has, however, been made available for further study of a Port Moresby-Lae road link to determine the feasibility of alternative approaches.

A study of rural roads in selected provinces carried out by consultants in 1981-82 came to similar conclusions. The population not now within easy walking distance of a road are so scattered, or so remote, that few extensions to the existing rural road network could be recommended. Construction and maintenance costs would be high and the agricultural and social benefits would be insufficient to justify the cost; in many cases the benefits would not cover even the maintenance costs. Improvements in agricultural extension and marketing services and in credit facilities would yield far better returns than investment in new rural roads. Meanwhile, any expenditures that are made on the latter in order to reduce the isolation of remote areas or to improve their access to social services must be regarded as welfare expenditure. However, investment in the upgrading of existing rural roads, many of which were built by hand and deteriorate quickly, would in suitable cases yield an adequate return. Improvements in the efficiency and regularity of transport services to the rural areas would also be worthwhile.

Economy versus Equity

The Committee on Transport Strategy has taken the attainment of maximum technical and economic efficiency as the long term objective for the transport sector, leaving it to those responsible for overall planning and direction to balance this objective against considerations of equity and social development. The efficient use of resources militates against building roads that would have low economic returns. But already some provinces have complained that road maintenance does not look like development.

It will take political courage to keep to the efficiency objective in the face of claims for a widening distribution of benefits.

To spread available resources as widely as possible, the Department of Transport favours construction at low initial cost, the upgrading of roads so constructed to be undertaken at a later stage. The Department considers that standards of engineering in the past have been derived from industrial country practice and are not relevant to Papua New Guinea conditions. Consultants have advised against this approach. Standards of road width and drainage, especially on truck roads, need if anything to be raised, while light paving, unless constantly maintained, can result in more damage and cost to vehicles than a well constructed gravel road. International experience confirms that, while the exacting standards of a first class road in industrial countries are not necessary, skimping on initial construction leads to higher costs in the long run.

Port Development

The analysis of prospective investments in ports yielded more favourable results. New ports are not proposed. Based on cargo projections for each of the 16 ports managed by the Papua New Guinea Harbours Board, a rehabilitation and development project was identified for 9 ports which would permit them to handle the expected traffic over a ten year period. The estimated internal rates of return ranged from 13 per cent (Kimbe) to 56 per cent (Madang), with Lae, Oro Bay, Alotau, Port Moresby, Vanimo, Wewak and Lorengau (in ascending order) lying between. Projects with such favourable cost benefit prospects will be attractive to aid donors and should proceed as soon as possible. In contrast, a large number of small ports with limited traffic raise the costs of shipping unnecessarily. Provincial governments should set up district centres where goods could be collected and transported by barge or, where a road exists, bv truck to main ports.

Coastal Shipping

Given Papua New Guinea's long coastlines and many islands, an efficient shipping service is of vital importance. Ships are a cheap means of moving freight and people, and smallholders are largely dependent on ships and barges to take their produce to market. Yet despite numerous studies, shipping has been a neglected mode of transport. The government-owned Papua New Guinea Shipping Company could not stay in business without access to government subsidies. Too many of the vessels in operation are unsuited to the nature of the traffic. Under the Medium Term Development Strategy for transport it is proposed to sell off the Papua New Guinea Shipping Company and to deregulate the industry to encourage competition. More efficient vessels could then be used and the present fleet substantially reduced, perhaps by half. Conference-type pooling arrangements among private ship owners would rationalize operations but safeguards would then be required to prevent monopolistic pricing.

Air Transport

Air services are extensive and of major economic importance. However, they are more costly than they need be. The government airline, Air Nuigini, has access to public subsidies and is favoured by the regulatory climate. Nevertheless, it loses money. The Government spends K16m annually on aviation facilities and services but recovers only 20 per cent from users. Air fares are high, in part because of the employment of large numbers of expatriate staff, and because of inappropriate regulations governing the type of aircraft which operators may fly. Domestic air fares are determined by the Price Controller in the Ministry of Finance, and not by the Department of Civil Aviation.

Deregulating the industry and allowing more competition would improve service and lower costs. The Committee on Transport Strategy proposes, in line with its approach to the transport sector as a whole, that the Government remove restrictions on the entry of new operators and allow operators to make their own decisions with regard to service routes, timetables and aircraft capacity. The Government should only control tariffs where there is a lack of real competition. Users' charges should be set at levels that would recover costs. However, such increased charges should be offset in time by reductions following from the greater efficiency of operations.

Conclusions

The strategy proposed for the transport sector is well thought out and, if followed consistently, promises to lead to greater efficiency of existing services and improved yields for future investment. The emphasis on the removal of restrictions and regulations on transport operators in all modes, and the encouragement of competition, is particularly welcome. The principal question is whether the increased investment envisaged by the strategy can be financed. Expenditure on roads alone, largely for the upgrading of the existing network rather than new construction, is expected to rise during the period 1986-1990 from K75m, as presently forecast, to K100m. The increased expenditure in the sector as a whole can be met in part from savings and increased user charges, but the possibility of securing foreign aid for high priority projects should be explored.

Communications

Relative to other developing countries, Papua New Guinea is well served with its media and postal and telecommunications networks. In telecommunications, Papua New Guinea had a wide-reaching network of radio, telegraph, and telephone services a decade or more before Independence.

In 1976, the Government's National Development Strategy called for communications policy to be directed towards the education, information and entertainment of the rural majority of Papua New Guineans. The Government's main objective was to ensure that an effective system of communications was established to relay information on government policies, programs and projects to the people and to obtain information on the wishes of the people relating to development.

National Broadcasting Commission

The Government's Office of Information and the Australian Broadcasting Commission were responsible for radio broadcasting until December 1973, when the National Broadcasting Commission was established (together with a network of provincial broadcasting stations) to provide radio broadcasting services nationwide. The functions of the Office of Information were decentralized to the provincial governments to provide information to the public on the work of national and provincial governments and departments.

The National Broadcasting Commission saw its priority as being to re-equip the provincial station facilities in order to improve the quality of broadcasting services. Provincial radio programs include news broadcasts in various provincial languages and the relaying of messages from friends and relatives throughout the country to villagers of the province.

In 1979 the National Broadcasting Commission introduced commercial broadcasting, but this was limited to urban areas as it was feared that commercials would raise the expectations of rural people by showing them the "bright lights" of the towns.

There is no Papua New Guinea television service yet but those families that can purchase sets receive Australian Broadcasting Corporation telecasts from Australia on a limited system.

After prolonged negotiations Papua New Guinea was expected to utilize the Australian AUSSAT Pty Ltd for national television and other telcommunications services, and AUSSAT planned its capacity accordingly. More recently, however, Papua New Guinea decided to provide a venue for an international company which would use Papua New Guinea's national capacity to register a satellite internationally in return for some satellite services.

Post and Telecommunication Corporation

The Post and Telecommunication Corporation was established in July 1982 and took over the functions of the Department of Post and Telegraphs. The Post and Telecommunication Corporation now has over 3000 employees with assets worth over K100 million and annual revenues of over K50 million. Ninety per cent of its business comes from telecommunications.

The Post and Telecommunication Corporation has built a microwave system linking the eight major centres of Papua New Guinea. Two of the 43 exchanges linking into the microwave system have international subscriber dialling. There are also two international cable links. South East Asia Commonwealth Cables (Seacom) cable links Papua New Guinea to Guam and to Cairns (Australia), offering 166 channels which were fully utilized by the mid-1970s. A telex network with 1200 subscribers has international and domestic subscriber dialling. Radio services for shipping and remote rural areas are also provided.

Plans are under way to improve the existing facilities and to install new trunk dialling facilities in other provinces. The postal network is being expanded by electronic mail and facsimile services.

Conclusion

The proposed introduction of television broadcasting and commercial broadcasting continues to attract controversy. Clear policy formulation and high level services will be needed to ensure that once television is introduced its social effects are predominantly positive. Rapid changes in telecommunications technology require constant training for Post and Telecommunication Corporation technicians.

13. SOCIAL SERVICES

Health Services

Papua New Guinea has extensive health services for a developing country at its income level. It spends substantially more per head on health than most developing Asian countries. The system was established in colonial times, partly by the Administration and partly by the churches which still provide about one-quarter of primary health care services, especially in the rural areas. Since Independence, national policy has concentrated on the provision of basic health services to the rural population. There has been a significant improvement in the ratio of health service staff to population in almost all categories, as can be seen from the following table:

Table 13.1

Health Service Indicators, 1973 and 1984

	1973	1984[a]
Population per		
Hospital/Health Centre bed	220	215
Health Centre	17,380	7,033
Aid post	1,540	1,466
Doctor	17,740	11,695
Health extension officer	16,090	9,356
Nurse	1,720	1,282
Aid post orderly	1,540	1,456
Health inspector	-	37,535
Population more than 2 hours from an aid post (per cent)	14.1	7.2

[a]Or latest data available.

Source: Department of Health.

There are now few places where the building of a new health centre or aid post would be economically justified. To provide for those places it should be possible to transfer an existing facility from an over-serviced district or province. This would be one way of correcting the considerable disparities that continue to exist among provinces in health expenditures and hence in the provision of health services. Small isolated pockets of the population without access to a health facility remain. Some provinces have used voluntary village health aides trained to render simple primary health care. Such aides are supplied with essential materials from the nearest aid post.

Extension of the health services has no doubt contributed materially to the improvement of the nation's health. Infant mortality dropped by 46 per cent between the 1971 and 1980 censuses and child mortality fell by 51 per cent, although the latter is still high. Life expectancy during the same period increased from 40 to 50 years. Some developing countries with comparable per capita incomes have lower mortality rates and longer life expectancy. This may be explained in part by the dual nature of the Papua New Guinea economy and by the fact that the bulk of the people have incomes more in line with those of the poorer developing countries.

Persistence of Certain Diseases

Although standards of health have undoubtedly improved, serious problems remain. Hospital admissions from various causes show that there has been little change in the pattern of illness over the past decade. Although the significance of these data is uncertain, since hospitals mainly serve their surrounding urban areas it is clear that some of the leading causes of illness are not declining. Pneumonia is prevalent mainly because of the lack of ventilation in rural houses. Village families shut themselves up for the night with smoky fires and, in some areas, with the family pigs. Malaria is hyper-endemic in coastal areas, and seasonal in the highlands. DDT spraying is not effective and has been discontinued in many areas. Gastro-intestinal diseases have been declining, but diarrhoea is prevalent among young children and is related to malnutrition and contaminated water. Tuberculosis and veneral diseases are on the increase. The maternal mortality rate is estimated to be well over 10 per thousand live births, and is a cause for concern. Cysticercosis (pig tape-worm) and rabies have been spreading in the areas bordering Irian Jaya owing to the infiltration of infected animals from that country, and could become a serious problem.

However, in general the epidemiology of most important causes of morbidity and mortality are well understood in Papua New Guinea. Primary health care facilities are within the reach of most people and could deliver the relatively simple therapies that are needed. However, most aid posts are staffed by one orderly, so that they are often unattended. Most of the orderlies are male, so that women hesitate to consult them or to accept their services during childbirth.

There is no clear distinction between the duties of orderlies and nursing aides, which has given rise to the proposal that the two skills be combined in a single profession. There is a strong case for more female orderlies, and for adding a female trained in midwifery at the larger posts. Responsibilities between the national and provincial governments in disease control overlap. There is a particular need for more reliable information gathering as a guide to policy and administration.

Reforms in these areas will have to be effected without adding to the total costs of the service. Expenditure on health accounted for 8.8 per cent of budget expenditures in 1984 against 5.2 per cent in FY1975, and health is the largest national budget item after education and general administration (see Appendix Table A17). Even if the present share is maintained, health expenditure per head of population will fall, at least in the short term, since the population is growing faster than the national budget. However, the Committee on Health Strategy suggests that significant savings could be made in manpower without a reduction of standards in programs such as malaria control. It has also been suggested that the Government should contract more of the primary health services and the training of orderlies to the churches, which provide good quality service at substantially lower cost than the public authorities. In the towns, more urban health centres would provide service at less cost than overcrowded out-patient departments of hospitals, and might also help to reduce the rising number of hospital inpatient cases. Hospitals already account for 41 per cent of the health care kina, and could take more if necessary improvements in their premises and equipment are to be made. All alternatives need to be actively investigated.

Water Supply

Only some 10 per cent of the rural population has access to reliable water supplies within easy reach of their homes. Drinking water in much of the rest of the countryside is often contaminated by pig and human faeces and other pollutants, and has to be fetched by village women over difficult terrain and long distances. Unsafe water is clearly a principal cause of intestinal diseases. Until the majority of the population can be provided with a regular supply of clean water within easy walking distance of their homes, the health services will be fighting an uphill battle to control disease.

The Committee on Health Strategy notes that a lot of time and money has been spent on improving water supply, but that many of the programs are not functioning. Reasons include poor design, construction and supervision; unsuitable equipment; insufficient training of those charged with implementing and managing the schemes; and lack of participation of the local community in construction, funding, maintenance and repair. Improved rural water supply schemes, alone or as part of wider schemes for the improvement of rural welfare and productivity, are suitable projects for external aid funding.

Nutrition

Malnutrition, especially of children and pregnant women, is believed to be a problem in some areas of the country. Although not in itself a killer, at least in the degree to which it is found in Papua New Guinea, malnutrition lowers resistance to disease, especially pneumonia and diarrhoea. Anaemia, also linked to under-nourishment, predisposes women to problems during pregnancy. Studies of particular areas and groups suggest that about a fifth of the children weigh less than 80 per cent of the "standard" for their age, and there are indications also of stunting (substandard height for age). However, such standards are often based on industrial country data, and it is not clear how strictly they may be applied to a developing country.

A national nutrition survey undertaken in 1982 covered the main ecologically distinct zones of the country. The results are still being analysed, and when published will give a much clearer picture of the extent and distribution of malnutrition. Meanwhile, since there does not appear to be a general shortage of food, malnutrition, in areas where it does occur, seems to be linked more to cultural and dietary habits.

Population and Population Control

Three censuses of population have been conducted in Papua New Guinea: in 1966, 1971 and 1980. The two earlier censuses covered only a 10 per cent sample of the rural population. The results were then adjusted to give totals for the whole population. The 1980 census attempted complete coverage, but only in urban, peri-urban and certain selected rural areas were households visited with a full questionnaire. In the remaining rural areas, enumerators called the villagers together and asked questions from a short form which omitted questions on fertility and mortality. Well-established techniques have been used to compensate for likely errors, but the census data must be used with caution. It is generally considered that the 1971 estimates were over-inflated, throwing doubt upon the slowing of the growth rate indicated between the 1971 and 1980 censuses. Some authorities have put the growth rate at 2.8 per cent between these years (see Appendix Table A36).

It is also questionable whether males in the total population outnumber females by 109.5:100. At this stage of Papua New Guinea's development a roughly equal balance of the sexes would be expected. If females have been under-reported, the future population will be larger than projections based on the presently assumed number of females would imply.

The average annual growth rate of 2.3 per cent between 1966 and 1980 (assuming it is not higher) is below that of many developing countries. In Papua New Guinea it derives from a high fertility rate and a still moderately high mortality rate, giving it the potential to increase faster if a further decline in mortality occurs before fertility falls. Improvements in health care and nutrition along the lines discussed in the previous section, if vigorously pursued, would certainly reduce mortality. How soon improvements in health and the general standard of life would persuade families to limit their children, particularly given multiple wives, is speculative. But experience elsewhere suggests that the initial effect of rising living standards is an increase in fertility (1). Modern influences are leading to a breakdown of taboos on post-natal intercourse and the long lactation periods that traditionally helped to space births. An improvement in village prosperity and more job opportunities would mean fewer absent husbands seeking work in the towns or other areas.

The net effect of these different influences on the population growth rate cannot be predicted with any confidence, but a range of possibilities is shown in the following table, prepared for the present review.

Table 13.2 indicates little divergence in population trends for the various assumptions to 1995, but from the turn of the century the divergencies become marked. This is because the age structure of the 1980 population was very young (40 per cent of the population under 15 years of age) and girls will not enter their reproductive period until the 1990s. Even if fertility is reduced, it will not

1. A recent study in developing countries concludes that while socio-economic development does, in the long run, contribute greatly to lower fertility, "... trusting to development to bring lower fertility is insufficient ... Substantial improvements in welfare are generally necessary for fertility reduction; minor improvements often raise fertility instead". R.A. Bulatao, 'Reducing Fertility in Developing Countries. A Review of Determinants and Policy Levers', World Bank Staff Working Paper, No. 680, Washington, 1984.

Table 13.2

Projections of Papua New Guinea Citizen Population 1980-2015
(thousands)

	1980 Census	1985	1995	2005	2015
A. Low variant					
Males	1,557	1,735	2,101	2,485	2,809
Females	1,421	1,602	1,973	2,358	2,694
Total	2,978	3,367	4,074	4,843	5,503
B. Medium variant					
Males	1,557	1,730	2,155	2,706	3,375
Females	1,421	1,599	2,028	2,582	3,253
Total	2,978	3,329	4,183	5,288	6,628
C. Constant rates					
Males	1,557	1,721	2,129	2,683	3,385
Females	1,421	1,591	2,006	2,562	3,263
Total	2,978	3,312	4,135	5,245	6,648
D. High variant					
Males	1,557	1,731	2,193	2,858	3,763
Females	1,421	1,599	2,065	2,728	3,630
Total	2,978	3,330	4,258	5,586	7,393
E. Very high variant					
Males	1,557	1,735	2,307	3,314	4,752
Females	1,421	1,603	2,171	3,157	4,574
Total	2,978	3,338	4,478	6,471	9,326

Key: A. Rapidly declining fertility, gradually declining mortality.
B. Gradually declining fertility and mortality.
C. No change in present rates.
D. Constant fertility, gradually declining mortality.
E. Increasing fertility, gradually declining mortality.

Source: Unpublished data supplied by National Statistical Office.

have much effect until females cease to have children earlier than their predecessors. Population growth rates could rise to the very high levels now prevalent in several African countries.

The National Statistical Office believes that Variant B (gradually declining fertility and mortality) is the most plausible. The results are similar to the present pattern (C-constant rates) because trends in fertility and mortality offset each other. These variants show an almost 60 per cent increase in the population 20 years from now (2005) and a virtual doubling by the year 2015. Decreasing mortality, without a corresponding drop in fertility, would push the figures still higher.

The policy implications of any or all of these projections are that there will be a growing demand for jobs and for social services, putting an increased burden on an economy that is already finding it difficult to meet present demands. The effect on land and food resources is less easy to predict, because it depends on where the increases in population occur, and to what extent they are relieved by internal migration.

Internal Migration

Migration has been better researched in Papua New Guinea than fertility and mortality. Considerable migration has taken place traditionally due to local warfare, changing clan and lineage ties, and settlement of new areas. More recently, labour has moved in large numbers to the plantations. Much contemporary migration is circular, in search of temporary urban employment, in order to participate in the cash economy. However, there has also been a flow of permanent settlers to the towns, which have grown from 5 per cent of the total population in 1966 to 13 per cent in 1980, although the rate of growth appears to have decreased in recent years with the slow down of employment opportunities. The growth of towns would have been larger but for the exodus, around the time of Independence, of expatriates who in the earlier censuses comprised 25 per cent of the urban population. Both the temporary and permanent influx of citizens to the towns is largely a male phenomenon, which in turn contributes to the growing civil disorder. If the influx can be stemmed by the improvement of conditions in the countryside, the normal balance of the sexes can be expected to be restored over time.

The provinces of Gulf, Simbu and Manus had a high rate of out-migration after the first census, while Southern Highlands, Enga, Milne Bay and the Sepiks have experienced significant out-migration in more recent years (See Table 4.2). There has also been substantial short-distance migration from Central Province to the National Capital Area. Apart from the latter, in-migration has been mainly to the New Guinea island provinces (except Manus) and the Western Highlands. These have the highest citizen cash incomes per head, indicating that economic opportunity is the main force driving migration. Migration helps to relieve poverty and the pressure on resources in the poorer provinces, but it is questionable how long the more favoured provinces can or will support this inflow.

Population Control

Convinced of the importance of slowing the growth of their populations, some seventy developing country governments covering all but 6 per cent of the people in developing countries have established official population policies. Papua New Guinea is part of the minority that has not done so.

The country's limited capacity to absorb population increases in urban areas or through rural settlement schemes was recognized in the first National Development Strategy (1976). So too, was the effect of population growth in slowing the expansion of services to new areas. Funds were provided in the 1978 budget for a population program concentrating on research and promotional activities, and there has also been substantial funding by the United Nations Family Planning Association, Family Planning International Assistance and the International Planned Parenthood Federation. Budgetary funds were reduced in successive budgets and eliminated in 1982. They have not been restored. The 1982 decision included the transfer of family planning functions from the central government to the provinces and the abolition of the population unit within the Ministry of Environment and Conservation. In 1978 the ministers of the two interested departments (Health and Environment and Conservation) presented a joint population policy to Cabinet, which rejected it on the ground that the problem needed more research.

A family planning program has nevertheless been conducted by the Ministry of Health since the early 1970s, although it is not intended to affect population growth rates but rather to improve family health and welfare. Services are offered through urban and rural health clinics as well as maternal and child health clinics, both of which are government and church-sponsored. Family planning education and advice are offered, and contraceptives issued free so long as supplies are available. However, since the withdrawal of government funds, the positions of provincial sister-in-charge of family planning and provincial family planning health educators have been abolished. Family planning activities are often in conjunction with the normal schedule of health centres and are only available once a week or month. Maternal and child health clinics reach only mothers and pregnant women. However, women are inhibited from consulting the predominantly male orderlies at aid posts and health centres.

Despite these drawbacks family planning apparently grew during the 1970s. The number of new contraceptive acceptors reached 16,000 in 1979. Since then it has levelled off. It is estimated that less than 10 per cent of married women in the reproductive age group, and less than 7 per cent of all women in the group, are using clinically supplied methods of birth control. Others are believed to be using herbal methods, abstinence or magic.

Given its widespread network of health facilities, Papua New Guinea is well placed to deliver an effective family planning program. What is needed is a clear lead from Government and a change of attitude on the part of those who in the past were not convinced that a country of 3 million people in an area the size of Thailand had a population problem. On the contrary, influential voices argued that a larger population was needed to fill the vast hinterland, as well as for defence and economic security in traditional areas. Religious and cultural opposition have also played their part. The climate for change should now be much brighter. The realities of unemployment, rising demands for public services, and the uncertainties of future trade and aid have already induced a new emphasis on economic growth. But growth that is taken up in providing for additional people will be of little benefit to the individual. Politicians and bureaucrats need to be made aware of the demographic characteristics of the country and the implications for social and economic development.

Enough research work has been done on reproductive attitudes and behaviour in rural areas, and on the coverage and quality of family planning under the maternal and child health program, to form the basis of a sound population policy. The information merely needs to be brought into focus, as do the many population related activities that go on under the direction of various official and voluntary agencies. A national population unit, which would also have the task of integrating population and development policies, and ensuring the importance of the former, is required for these purposes. The former interdepartmental committee, with university representation, should be revived to assist in the co-ordination and implementation of policy.

The preparation and dissemination of educational materials through schools, the health service and voluntary agencies, the training of personnel, the additional trained staff that would be needed in the field, and the supply of contraceptives, will all cost money. Savings can be made by a more efficient organization of the health services, as suggested in the previous section. A well-designed family planning program would also make an attractive project for aid financing.

Education

During the colonial period, formal schooling was left mainly to religious missions. They were interested mainly in teaching basic literacy so the Bible could be read, but they also trained teachers and pastors. Church schools are still very important at the primary (community school) level, and it was not until 1983 that enrolments at government community schools edged slightly ahead. Primary education in Papua New Guinea is neither compulsory nor free, although the contribution of parents for children at community schools is modest. At the secondary level, the majority of the pupils are boarders, owing to the limited number of schools and the long distances children have to go; charges are substantial.

After the Second World War, when the colonial Administration began to prepare the country for self-government, the intention had been to build the educational system gradually from the bottom up. But pressures in the 1960s for secondary and technical education, and in the 1970s for higher education, have resulted in a rather unbalanced structure. Secondary education is, if anything, underprovided, while there are more than 60 institutions of higher education, many of them with small enrolments, high unit costs, and overlapping courses and programs. There are also overlapping responsibilities for higher education; 14 government departments and instrumentalities control post-secondary institutions offering a variety of programs. At the primary and secondary levels responsibility is split between the national and provincial governments.

Despite the complexity and high cost of the system, significant progress has been made since Independence. The compound annual rate of increase in enrolments in community schools was 3.9 per cent between 1973 and 1983, compared with an increase of 2.8 per cent for the 7-12 age group. In 1983 60.3 per cent of the age group were enrolled, with an additional 3.2 per cent at international primary and "permitted" schools. However, the proportion of children in the age group actually attending school is put at 38 per cent. Furthermore, earlier disparities among provinces have lessened and the proportion of girls enrolled has risen from 35 to 43 per cent.

Provincial secondary school enrolments have increased only slightly, from 12.3 per cent of the 13-16 age group in 1975 to 13.6 per cent in 1983, and these figures overstate enrolment, as considerable numbers of the students are above the age range (and a few are below). Enrolments at provincial government high schools have increased more rapidly than at church schools, and now account for 70 per cent of the total. There are also four national government high schools. The enrolment of girls at high schools is lower than at the primary level, but has risen during the period from 31 per cent to 36 per cent. Some provinces make an effort to increase the proportion of girls going on to secondary school.

About 5 per cent of the relevant age group were at institutions of post-secondary education. Three-quarters of them were studying for certificates or diplomas in technical, secretarial and teachers' colleges, the balance of them at the two universities: the University of Papua New Guinea at Waigani (Port Moresby), Goroka and Taurama; and the University of Technology at Lae. The proportion of women at the universities is small, and they are mainly in certificate courses in social work, education and arts subjects. In particular, the lack of secure accommodation limits the numbers that can be enrolled. Overall, 70 per cent of the students at post-secondary institutions in 1983 were male; even at teachers' colleges women are in the minority.

In the early days of formal education teachers were almost entirely expatriate at both government and church schools. By 1976 all expatriates in the community schools had been replaced by nationals; there are now over 10,000 teachers in these schools. At the provincial secondary level, the proportion of nationals has risen from a little more than one-third in 1975 to more than three-quarters in 1983. Teachers at the four national high schools are still predominantly expatriate, but the numbers are small. The proportion of nationals at technical colleges has risen from about one-quarter in 1975 to about one-third in 1983; at community teachers' colleges from about 16 per cent to 37 per cent. At the University of Papua New Guinea and the University of Technology, nationals comprise 20 per cent and 5-10 per cent of the academic staff respectively.

Progress towards self-reliance in education has thus been considerable. But how has it affected educational standards? Measurement of educational standards is always difficult, particularly where, as in Papua New Guinea, they relate to performance within the group ("norm-based") rather than to external criteria. A considerable body of opinion maintains that standards have been falling and the consensus within the profession is that there is much room for improvement. There is also a good deal of wastage. Between a quarter and a third of children drop out of school before completing the sixth grade at community schools, although these proportions are believed to be somewhat lower than they once were. Studies suggest that the reasons for dropping out have to do in part with conditions in the schools and in part with external factors: the payment of fees; distance from school; under-nourishment; tribal fighting and clan rivalries; lack of security for girls; and the need for children of rural families to work. Wastage at the post secondary level, caused by the multiplicity of institutions, has already been noted.

Literacy

The long-term national goal is universal primary education while increasing the proportion of children going on to secondary and higher education. At the present rate of increase in enrolments at community schools, universal primary education would take 50 years. The Committee on Education Strategy would like to see the period reduced to 20 years by doubling the rate of increase in enrolments compared with the increase in the 7-12 age group. Their proposal is that educational expenditure should increase at least 0.5 per cent faster than the national budget, which is officially forecast to grow at 0.5 per cent a year, and that there should be a major redistribution of expenditures from tertiary to primary education, with expenditure on secondary education remaining more or less constant. The justification for the proposal is that the over-riding need of the society is to give as many citizens as possible access to basic literacy and numeracy, and that the social return from investment in primary education is greater than that in secondary, and vastly greater than in tertiary education. The benefits are not only economic, by preparing more citizens for the modern economy either in paid jobs or self-employment, but are also personal and social. "Educated mothers tend to be more conscious of health, hygiene and nutrition and to have fewer children. Educated people generally are more open to innovation and are more adaptable. The evidence is that in Papua New Guinea these benefits came with the completion of six years of primary schooling."(1) The Committee also recommends a modest increase in the provision for non-formal education in order to help both children unable to attend school and the two-thirds of adults who are illiterate.

There have been suggestions that the curricula of community and provincial high schools should be sharply re-oriented towards the teaching of vocational skills that would be relevant to the country's needs. The Committee rejected this approach, appealing to international experience to argue that general knowledge and general intellectual skills provide a better basis for employment than a vocational curriculum preparing for entry to specific jobs. They did note that the Papua New Guinea curriculum already has a less academic and more practical orientation than that of more developed countries. Secondary and tertiary education, however, should be closely geared to the manpower demands of the economy. Public funding should be basically restricted to these demands so that scarce resources will not be wasted and unrealistic expectations of employment will not be raised. The large majority of post-secondary, and especially university, students are on scholarships. Since it costs K4,000-8,000 a year each to educate them (against K154 at community schools and K359 at provincial high schools), the Committee proposes that students pay part of the costs with loans, and that the principle of bonding be introduced.

The proposed strategy for education, which seems eminently sensible, will not be popular, as the Committee fully recognizes. There is constant pressure from middle class parents, backed by politicans, to expand the provision of secondary and higher education so that more children can join the ranks of the privileged elite. In practice, these children swell the pool of semi-educated, unemployed youths who tend to engage in anti-social activities. It is hard to argue against the proposition that post-secondary education has grown faster than the country can afford, that it has sprouted too many institutions absorbing manpower and

(1) Ministry of Education, 'Education Strategy 1986-1990: Sector Report of the Education Sector Committee', 1984, p.114. This thorough and thoughtful report, and its preceding inception and interim reports, which were supported by a number of specially commissioned background papers and other studies have provided the basis for this analysis.

financial resources inefficiently, and that the system as a whole lacks a unifying thread that would link it more closely to society's needs. The recently appointed Commission for Higher Education has an important task before it in reshaping the system along trimmer and more socially efficient lines.

Budgetary Constraints in Education

In proposing that educational expenditure increase faster than the national budget, the Committee has considered the drastic and disrupting cuts that would otherwise have to be imposed on tertiary education if primary education is to expand. But education is already the largest item in the budget, taking 20.5 per cent in 1984 (against 13.6 per cent in 1975), putting Papua New Guinea near the top of education spenders among developing countries. These percentages do not include education expenditures, financed indirectly from the national budget by the financially autonomous provinces. If the budget cannot expand unless and until additional sources of revenue are found, the chances of increasing expenditure on education, or even of maintaining its share of the total, are slight. The solution is to find substantial savings within the system and to seek external assistance for what is, by any measure, a social service of high priority. Savings can be made even at the primary level. As an example, if the average class size could be raised from the present ratio of one teacher to 28 pupils to the nationally prescribed ratio of 1 to 35, some 25 per cent more pupils could be accommodated without increasing the number of schools or teachers. This could be done either by reducing the number of non-attenders or raising the nominal size of classes, or some combination of the two. There is no evidence that, within reasonable limits, larger classes result in lower standards.

Both the World Bank and the Asian Development Bank have made loans for education in Papua New Guinea and would no doubt be willing to do so again, especially in support of measures to streamline the system and make it more efficient. Education would also be a worthy object of support for non-budget Australian aid and that of other bilateral donors.

Housing

Urban housing has been a major policy concern of the Papua New Guinea Government. There has, however, been little success in finding solutions to the housing problem, which has its roots in the period before Independence. Before the 1960s, the administration assumed that there was to be no permanent urban settlement of Papua New Guineans. Most of the wage earning workforce were indentured and after their contracts expired they were repatriated to their home villages.

In the 1960s the Administration moved to construct additional low and medium income accommodation for public servants but this had little effect on the growing demand for urban housing. The censuses of 1966 and 1971 showed that, with the exception of Goroka and Rabaul, all urban centres were experiencing rapid population growth. The composition of the migrant population was also changing from single males to families.

Expatriates recruited to work either for the Government or the private sector were provided with houses at highly subsidized rentals as part of their conditions of employment. Rapid localization of the public service during the early 1970s meant that national public servants were promoted to higher positions with housing a condition of the promotion. The private sector began to recruit national staff on a permanent basis and sought also to house them, though its localization program was not as rapid as that of the public service.

Government Initiatives in Housing

A national housing authority, the National Housing Commission, was established in July 1968, with the task, inter alia, of improving housing thoughout Papua New Guinea. The Commission was to build houses aimed at attracting those who wished to buy their own homes, to charge economic rentals and not to rely on the Government for subsidies.

In practice, however, the bulk of government housing continued to be heavily subsidised. The gap between actual rentals charged and the economic rent, including the cost of administration, increased as rentals remained substantially the same over the years. The Committee of Review on Housing, set up in 1977, was asked by the Government to look into appropriate rentals and rates for housing and hostels and to assess the Government's responsibility for housing its employees. In its recommendations, the Committee urged the Government to sell its houses at very low prices relative to their current market values, advice the Government has attempted to implement over the last several years. There have been delays and deferrals, but in early 1985 a Cabinet decision was made to continue the sale of government houses after a six month "freeze" in the latter part of 1984. The number of house sales since the policy was adopted is not known, but there has been no building of new houses for the Government since then.

The Government's stock of housing was handed over to the National Housing Commission in 1978 and public servants were encouraged to buy their own homes. However, the continued recruitment of expatriate officers under contract meant that a limited stock of houses at subsidised rents had to be maintained. Apart from this special group, the National Government's responsibility for housing public servants was to be confined to institutions and remote stations. Responsibility for public servants performing provincial functions would in future belong to the provincial governments.

The Urban Housing Problem

The Government's National Development Strategy, released in 1976, called for government resources to be directed at rural areas of Papua New Guinea where the majority of the population lives. The Strategy "recognizes that there will be continued growth in towns and that the National Government will have to provide some funds for urban development. As far as possible, however, urban residents will be expected to pay the full costs of services provided, particularly in the larger centres such as Lae, Port Moresby and Rabaul."(1)

This approach inhibited any serious government attempt to deal with the growing problem of urban housing. Although the rate of urban population growth has moderated in recent years, it continues at a rate between 7 per cent a year in Port Moresby and 3 per cent in smaller centres. Unplanned settlements began to mushroom in and around urban areas throughout Papua New Guinea while the Government turned a blind eye to the problem. It did not attempt to demolish the settlements nor did it provide adequate services (water, sanitation, sewerage). By the early 1970s, however, the Government began to recognize the problems of settlement areas and its approach was to encourage self-help housing.

When the National Housing Commission built houses for prospective home owners it was found that the prices were beyond the reach of most settlers. However, the Government, through the Commission, has been relatively successful in extending loans to those in the self-help housing scheme. The scheme involves staged use of loan funds of K250 payable over three years. The houses in settlement areas must meet minimum health and building regulation standards.

In 1977, the Government approved an additional subsidy scheme wherein site development costs are paid for by the Government and a loan of K750 is made for the purchase of materials. The loan, which meets only part of the total building cost, is provided over a three-year period and the Commission charges an 8 per cent interest rate to cover administrative costs. According to a 1979 study only 30 per cent of the total target group of urban settlement residents had availed themselves of the scheme (2); the cost of a house, even with a low-interest loan, is out of reach of most settlers. Some reduction in cost should be possible by reducing the standards of site development.

1. National Public Expenditure Plan 1979-1982, Op. cit., p. 10.
2. A. Stretton, 'Urban Housing Policy in Papua New Guinea', Monograph 8, Waigani: Institute of Applied Social and Economic Research, 1979.

Recognizing the need for a more active policy, the Government stated in the 1982-85 National Public Expenditure Plan (p.45) that:

> "the lack of affordable housing is still a major problem for most urban Papua New Guineans, and the development of appropriate standard, low-cost housing solutions, free of heavy subsidy elements, remains a high priority. Such designs will have immediate application in the pilot home ownership scheme recently initiated by the government... In general, the government management of urbanization has been carried out in an uncoordinated manner ..."

By the 1984-87 National Public Expenditure Plan, the Government's position had become the reverse of the 1976 National Development Strategy. The need to redress the imbalance between services supplied in urban areas as opposed to rural areas became explicit. The Department of Physical Planning and Environment is engaged in producing a National Urbanization Plan which will develop a practical program to enable this policy to be implemented. The provision of serviced allotments for migrant settlements is "of singular importance" to the Government. This renewal of official policy does not imply that, in the period after the adoption of the 1976 strategy, much was done to improve rural housing. Apart from families moved to settlement schemes, rural families build and maintain their own houses using mainly traditional materials but with increasing use of modern materials for roofing, etc. This activity, together with subsistence food production and traditional tool-making, forms part of the "Non-Market Component" in the national accounts, and like them its extent and value are estimated. There has been little research or extension directed to improvements in rural housing. Simple materials such as nails and roofing are often hard to obtain.

The National Housing Commission with its institutional structure, and its financing and operational objectives, may need reviewing. The Government regards it as having a dual role in terms of being financially self-reliant while at the same time requiring it to fulfill other objectives such as continued maintenance of ex-government housing at non-economical rentals. These roles are in conflict.

Shortage of Finance and Land

The Government has from time to time expressed its concern, to other interested parties and government appointed committees, that finance is a major constraint in providing housing. In the process of divesting itself of the landlord image, the Government is encouraging existing financial institutions to cater for the financial needs of those involved in the housing market, that is both suppliers of housing and those who need housing. The focus of government attention has been on the banks, which are considered to have adopted excessively conservative policies toward financing housing. However, finance does not appear to be the main difficulty. A more basic problem is that urban dwellers expect a standard of housing that is well beyond their means.

Shortage of land for housing in particular, and for development in general, has also been a major problem. The Government has commissioned internal committees and external consultants to report on land administration, acquisition and distribution. Measures aimed at improving the administrative and organizational capacity of the Department of Lands are being studied by the recently appointed Program Management Unit as one of its first tasks (see Chapter 15). Also, the Government Regulations Advisory Committee is shortly to make recommendations on the deregulation of land administration. If adopted, the recommendations of these two bodies should greatly reduce procedural requirements associated with release of land for housing and other productive purposes.

The Building Industry

The building industry is under-developed and unevenly distributed throughout the country. The distribution of the industry, especially the larger and more efficient firms, is biased towards the coastal areas and larger towns. Costs of materials and wages are high. Management, access to capital and the supply of building materials favour the five or six large expatriate companies over the many small, nationally owned businesses. The latter typically handle contracts between K20,000 and K50,000, whereas the expatriate companies operate at K250,000 and upwards.

Costs in the building industry are difficult to assess owing to the lack of reliable data. Some commentators have observed that building costs are high because the productivity of labour in the industry is very low. However, a recent study comments that, "... the industry's costs are a mixture of guesswork, speculation, groping in the dark, and analysis... On the basis of information obtained, there is not sufficient evidence to support the widely-publicized belief that the construction costs of the house building industry in Papua New Guinea are excessively high. But if costs are not really all that high, but prices clearly are, then a high profit margin must account for the difference."(1)

Agenda for Housing

A number of initiatives or further steps need to be pursued to improve housing.

1. R. Higgins and V. Kamur, 'Urban Housing in Papua New Guinea', Port Moresby: Institute of National Affairs, 1983, pp.73-4.

- The administrative and regulatory reforms being considered by the Program Management Unit and the Government Regulations Advisory Committee should be implemented as soon as possible in order to speed up the release of land for housing.

- Greater competitiveness in the financial sector would assist the availability of housing finance.

- A building industry study into high prices is needed. A more even distribution of efficient firms throughout the country should be encouraged.

- A study of affordable (unsubsidised) types and standards of urban housing is also required.

Urban growth is an inevitable and positive consequence of development but government measures to improve conditions and job opportunities in the rural areas will help to keep migration to the towns within economic limits. As rural incomes rise, the standard of rural housing will improve. In the longer term, a coherent and actively administered population policy is also needed if the demand for services, including housing, is not to swamp resources. Housing policy must therefore be seen as part of the social and economic inter-relationships that have to be addressed in the course of furthering the nation's development.

14. ROLE OF WOMEN

Women are increasingly, if belatedly, gaining recognition for the importance of their economic contribution to society, and hence to development. Policy makers have begun to acknowledge this explicitly, and are beginning to take account of the fact that women in most social and occupational groups are disadvantaged in relation to men. Programs are being devised that address women's needs directly, although for the most part they are intended to improve their health and welfare rather than to enhance their economic status.

The Eight Aims recognized that women were disadvantaged by stressing "A rapid increase in the equal and active participation of women in all forms of economic and social activity". In persuance of this aim the Government has financed women's associations and conferences, and nominated a female representative in each provincial government. The intention was to promote awareness of women's rights and encourage women's solidarity; to create a permanent organizational base for women; and to provide them with information about and access to services.

The Department of Commerce has been active in assisting and formalizing women's business groups throughout Papua New Guinea. In Western Highlands Province, seven such groups with a total membership of 600 are supported. The activities range from trade stores, chicken and vegetable projects, to bus services. A joint project of the Commerce Department and the International Labour Organization was started in 1975 with the aim of increasing women's participation in business. The Goroka Women's Investment Corporation, for example, has a total of 147 members.

In 1975 the National Council of Women was formed in response to the United Nations Declaration of an International Women's Year. The Council was incorporated in 1979 by an Act of Parliament and has the right to criticize and question the Government on matters that discriminate against women. In the following year the National Development Strategy, which was based on the Eight Aims, provided a mechanism through the triennial National Public Expenditure Plan to increase women's participation in political bodies and the economy. It recognized that most development efforts had hitherto benefited men disproportionately, and that women were severely under-represented in local, provincial and national politics. The first National Planning and Expenditure Plan with provision for women outside health and family planning was that for 1979; the allocations for that year and the following three years, and their share in the total, are shown in Table 14.1.

Table 14.1

National Public Expenditure Plan Allocations for Women, 1979-82

	Total NPEP	General welfare objective		Women's projects		
	K million	K million	Share of total NPEP (per cent)	K thousand	Share of total NPEP (per cent)	Share of general welfare (per cent)
1979	58.8	4.1	7.0	863	1.5	21.0
1980	117.8	11.2	9.5	709	0.6	6.3
1981	147.1	14.5	10.0	454	0.3	3.1
1982	175.4	13.6	7.8	350	0.2	2.6

Source: National Planning Office, National Public Expenditure Plan, various years.

As can be seen, there has been a decline both in the amounts appropriated for women's projects and the share of such amounts in the total National Public Expenditure Plan expenditure each year since 1979. The figures are slightly misleading in that a number of projects funded in the earlier years have been transferred to the recurrent budget. Nonetheless, the picture is discouraging. Only 59 per cent of the amount set aside for women's projects since 1978 has been utilized. Moreover, "women's projects" were welfare based, and did not aim to promote women's participation in political or economic affairs.

Women in Agriculture

Following a pattern that is familiar in traditional societies, women in Papua New Guinea are mainly responsible for the growing and harvesting of food. It is possible that in the past the division of labour between the sexes in a system of shifting cultivation was more even, but the substitution of steel implements (axes, machetes, etc.) for stone, the introduction of wire for fencing, and modern materials for building has made men's work (clearing ground, making and maintaining tools, building and repairing houses) more efficient and thus less time-consuming. Women's work in food gardens has been less affected by such improvements, but it has nevertheless been estimated that in most areas of Papua New Guinea a family can feed itself with a mere 16-22 hours of work a week. However, the production of traditional food for sale and work on commercial crops comes on top of this, and routine tasks of gathering wood, fetching water, cooking, other household tasks and caring for children also have to be carried out.

Little has been done to improve subsistence food crops or the methods of subsistence cultivation which occupy almost all rural women. Agricultural research and extension has concentrated on cash crops, cattle raising and other commercial activities that are largely a male preserve. Only 2 per cent of agricultural extension workers are female.

There are two exceptions to the generalization that rural women are absorbed in subsistence agriculture. First, a limited number of women are now hired to work in coffee and tea plantations, which gives those concerned a cash income(1). Tea plucking by hand is a woman's occupation in all tea-growing countries. It is tedious, low-paid work that is being increasingly replaced by hand-held machines. Machine plucking is more efficient and therefore pays better, but of course reduces the numbers employed in a given area. Second, as noted in Chapter 4 there is an increasing output of root crops and other foods for sale at local markets. Since women are the main food producers, this development means that many of them now have cash incomes, although they may not always control that income. As also noted in that chapter, the extent and trend of market sales - and therefore of the income they generate - are not known. But the spread of the cash economy into the traditional rural sector, for men (through cash cropping) and for women (through food production for the market) is unmistakable.

It follows, therefore, that in providing better facilities for food marketing, as proposed in this report, provincial governments, backed and encouraged by the National Government, will help promote the entry of rural women into the modern economy. Subsistence food production will nevertheless remain the principal source of food for the bulk of the population in the foreseeable future. Its importance and hence the important role of women, deserve greater official recognition than they have had in the past, and better support in the form of research, training and extension services.

Women and the Social Services

To recapitulate briefly on the Chapter 13 discussion of social indicators and services in their application to women:

i) There is little reliable evidence on health and nutrition standards, although this will be clearer when the results of the National Nutrition Survey are known. There are indications that anaemia is a problem among women, made worse by the high incidence of malaria in many areas. Nutritional deficiencies have been noted among women on settlement

(1) Four per cent of those working for wages in agriculture are women.

schemes, either because they were not gardeners, or because food gardens are sometimes a long distance from the settlement.

ii) Although mortality rates have declined and longevity has increased, the rate of maternal mortality is still high, well over 10 per thousand. In 1979 it was estimated that 5-7 per cent of women in Papua New Guinea die from causes directly related to child-bearing(1). More than 70 per cent of births are unassisted by health workers.

iii) In education, girls and women are still at a disadvantage compared to boys and men, especially at the secondary and tertiary levels. Enrolment of girls in community (primary) schools reached 42 per cent in 1983, and their attendance record is rather better than that of boys. The enrolment of girls in secondary schools has been stable at about one-third during the last ten years, and secondary education as a whole has expanded very little. Post-secondary education is still restricted mainly to men; even at teachers' colleges women are in the minority, and at universities, the few women undergraduates take mainly certificate courses in nursing and social work. Agricultural training institutions were entirely male until 1974, and now enroll about 12 per cent females.

iv) There is no official population policy or population control program, although family planning services are available to a limited proportion of women through Maternity and Child Health clinics and voluntary bodies.

Women themselves are becoming more aware of their subordinate role and are beginning to join together for a fuller share in the benefits of their work. The most notable example of a collective effort to improve their lot consists of rural exchange groups known as "wok meri" (women's work). They are essentially savings societies formed by the wives of a clan or lineage group who combine their labour and the cash earned from the sale of produce. They exchange goods with other groups, make loans to members, and purchase trucks and buses for use by the group or for hire. These small co-operatives serve to demonstrate women's capacity to do business and to keep "meris mani" (women's money) away from men who they fear might otherwise spend it on beer and gambling.

Women's organizations advocating women's rights have also sprung up in urban areas. In recent years there have been demonstrations calling for government action to stop rape and other crimes of

(1) T. McDevitt, "Mortality Trends, Patterns and Causes" in R.S. Skeldon ed., The Demography of Papua New Guinea, Port Moresby: Institute of Applied Social and Economic Research, 1979.

violence. However, such protests are still rare in Papua New Guinea.

Women in Public Life

The limited representation of women in public life is both a cause and an effect of their relatively slow advancement. Participation by women in elected bodies of government is low. When Local Government Councils were introduced to Papua New Guinea women were not considered as needing special representation. A pattern of all-male Councils largely persists today. Only 7 Councillors out of 4313 in 1978 were female. Local government is closest to village life, and has therefore the most immediate effect on women's lives. Greater representation of rural women on Local Government Councils would enhance government response to women's needs.

Provincial governments have provided new opportunities for women to enter politics, and their representation is highest at this level. No women have yet been elected to a provincial government, but most provinces have shown an awareness of the need for women to be represented, and have nominated women to both interim and elected provincial governments.

Representation of women in politics at the national level is very low. At the 1979 elections the number of female Members increased from one to three. In 1982, however, only one woman was elected.

The 1980 census recorded that women constituted nearly 23 per cent of total employees in the public sector. Five per cent of them were in managerial positions (Clerk Class Eight and above). There are female officers in the Department of National Planning, although most of them are in the Social Planning Section and very few are in the economic and financial sections. There are no data on female employment in the private sector.

Considerations of equity apart, the pace of social and economic development in Papua New Guinea will in part depend on effective measures to improve the status and productivity of women. Healthier and better educated women will be more efficient cultivators and so raise the standards of the rural economy. They will also be better able to control their own fertility and thus ease the pressure on resources. These ideas are not new but echo official statements that reach back to the formulation of the Eight Aims on the eve of Independence. Translating these statements into practical measures has been very slow. This is doubly to be regretted because many of the measures that would enhance the role and welfare of women are also important for other reasons. They are mentioned elsewhere in this report in the discussion on the need for:

- Greatly improved research and extension services for food production (largely a woman's task) and more female extension officers.

- Better facilities for the marketing of produce (also largely a female business).

- Greater provision for girls in secondary and post-secondary education; and at the latter stage, the inclusion of more women in university degree courses, and in professional courses in subjects other then teaching and social work.

- Formulation and adoption of an official family planning policy, with provision for training of qualified staff.

Finally, in light of the above recommendations, an explicit policy paper on women should be formulated. This proposal was put forward in 1978 but not implemented (1). Such a document would provide guidance for individual women and women's organizations as well as allowing co-ordination of women's programs within the public and private sectors. Until such a policy charter exists, planning for women continues to run the risk of being *ad hoc* and unco-ordinated.

(1) Referred to by M. Nakikus in an unpublished paper presented at a conference on "Women's Advancement in Planning in Papua New Guinea", organised by the National Planning Office, Waigani, 1982.

15. GOVERNMENT AND THE PUBLIC SERVICE

National-Provincial Government Relationships

At Independence the Government of Papua New Guinea inherited a large, centralized bureaucracy. As noted in Chapter 1, secessionist pressures from some of the provinces led to the decision to transfer - not just devolve - certain important government powers and functions to the provinces, together with the financial resources needed to carry these out. These arrangements were embodied in the Organic Law of 1977, and were put into effect over the following three years.

Implementation of the agreement to decentralize involved three processes. First, the transfer of political decision-making in the agreed areas led to the creation of 19 provincial assemblies, each with elected representatives and a Provincial Executive Council. Second, the policy required the transfer to the provinces of administrative institutions and personnel. This process eventually resulted in the decentralization of the "development" functions of most key national departments, as well as of other activities such as the maintenance of government assets. Third, there was to be an orderly transfer of financial powers. So far, eight of the 19 provincial governments have been given financial autonomy, that is, they have become responsible for current (non-capital) expenditures relating to the transferred functions. Except for local sales taxes and royalties, which cover a small proportion of provincial government outgoings (except for the substantial royalties from Bougainville Copper Limited in North Solomons Province), their expenditures are financed by the National Government in the form of unconditional, conditional and "derivation" grants.

Sources of Provincial Government Funds

By far the largest source of funding for provincial governments takes the form of Minimum Unconditional Grants. The provincial governments are becoming increasingly dissatisfied with the declining real value of these grants relative to the increasing costs of maintaining the transferred activities.

Two basic issues are contended. First, the base level of calculation for the Minimum Unconditional Grant set in 1976 has not been adjusted to account for consumer price index related adjustments to salaries of staff in the transferred activities. The Specialist Committee on Fiscal Relations has suggested that increased salary costs resulting from such adjustments should be compensated for by the National Government in Minimum Unconditional Grants. Salary cost increases initiated by provincial

Table 15.1

Variations in Funding of Activities Transferred to the Provinces, 1978-84[a]

Province	1978	1979	1980	1981	1982	1983	1984	Total 1978-84
Western	-364,485	-191,820	-117,966	50,741	604,920	1,118,291	2,417,267	3,516,947
Gulf	-244,066	-86,446	-62,142	91,800	596,931	1,020,966	1,175,688	2,492,732
Central	-231,886	-36,267	142,980	9,688	438,523	1,007,379	1,376,726	2,707,142
Milne Bay	-395,168	80,911	431,387	441,326	542,166	838,623	1,531,860	3,471,106
Oro	-498,375	-46,953	-109,299	2,251	137,932	385,144	806,460	677,160
S. Highlands	-365,073	311,771	201,839	570,983	996,068	1,730,970	1,991,281	5,437,837
Enga	-109,841	550,337	799,982	905,481	996,326	1,317,032	1,821,395	6,280,710
W. Highlands	-126,883	399,650	208,579	386,686	601,484	986,355	1,539,858	3,995,728
Simbu	-492,459	9,411	88,681	194,930	205,108	415,148	1,128,675	1,549,493
E. Highlands	-297,196	-32,024	-	-	-	-	-	-329,219
Morobe	-634,618	200,586	44,477	563,414	575,328	-	-	729,188
Madang	-631,840	-225,847	-122,877	-11,845	-86,981	329,020	-	-750,371
E. Sepik	-180,185	488,297	590,737	648,951	845,903	-	-	2,393,704
Sandaun	-194,852	350,635	474,224	712,856	1,319,218	1,917,528	2,222,828	6,802,437
Manus	-115,402	22,606	-8,430	-16,289	-9,783	380,571	435,028	688,294
New Ireland	-331,559	-	-	-	-	-	-	-331,558
E. New Britain	-327,297	-	-	-	-	-	-	-327,297
W. New Britain	-179,827	67,357	-28,778	71,465	50,593	-	-	-19,190
N. Solomons	-	-	-	-	-	-	-	-
TOTAL	-5,721,011	1,862,201	2,533,387	4,622,437	7,813,735	11,447,029	16,447,067	39,004,844

[a]Difference between amounts prescribed by formula for the minimum unconditional grant and amounts actually budgeted.

Source: Report on Intergovernmental Fiscal Relations, Table 10.

governments, or resulting from reclassifying positions and recruiting new staff (of their own volition) should be borne by the provincial governments themselves.(1) Salary costs are a substantial portion of provincial and national government budgets and their management is critical to the overall management of fiscal policy.

Second, transferred activities virtually predetermined recurrent cost levels at the time they were transferred to the provincial governments. This factor needs to be taken into account in future considerations of adjustments to the Minimum Unconditional Grant. Finance Department officials have adjusted such cost discrepancies for most of the provincial allocations (see Table 15.1). Except in the case of the financially autonomous provinces, the additional allocations have risen since 1978.

Conditional Grants are allocated to the provincial governments for projects in the National Public Expenditure Plan. Access to this source of funding depends largely on the ability of each of the provincial governments to submit well-prepared project proposals to the National Government. Lack of skills in project preparation in most of the provincial governments has meant that fewer grants have been available than the provincial governments would wish. National Planning Office training programs in this field have lapsed in recent years.

Derivation Grants are allocated to the provinces as rewards for greater production effort, while royalties are also paid to the provinces after deductions are made from the Derivation Grant.

The National Fiscal Commission allocations are meant to even out the imbalances in resource distribution between the more prosperous and the less developed provinces. On the whole, these allocations have not had the desired equalizing effect. Conditional Grants based on National Fiscal Commission allocations seem to achieve greater equalization in funding. Statistical data used for the calculation of Derivation Grants are either inadequate or out of date, thus leading to distortions in the allocation of the grants. Transferred taxes, like Derivation Grants, benefit the more prosperous provinces more than the less developed ones.

Duplication of Personnel and Costs

At the inception of the provincial governments a commitment was made to concurrently reduce both national public service staff levels and costs in those departments whose "development" or

1. Committee of Specialist Experts, 'Report on Inter-governmental Fiscal Relations', Port Moresby, 1984.

Table 15.2

Personal Emoluments, Expatriate and National Officers, Annual Budget Appropriation, 1979-85 (kina)

	1979	1980	1981	1982	1983	1984	1985
Selected national departments							
Health	14,805,300	18,141,222	22,855,600	18,913,800	7,256,400	9,307,000	9,438,300
Primary Industry	8,854,212	7,318,100	7,492,500	6,108,500	7,294,800	9,295,100	8,557,100
Education	14,445,829	12,191,500	15,645,800	21,485,100	18,073,900	16,668,300	16,178,700
Commerce	1,283,359	1,090,700	1,522,900	1,088,900	[a]	[a]	[a]
Sub-total	39,388,700	38,741,572	47,516,800	47,597,800	32,625,100	35,270,400	34,174,100
Selected provincial departments							
Health	3,740,500	4,036,727	6,005,200	6,751,600	19,043,700	23,053,300	24,733,600
Primary Industry	4,758,000	4,477,040	6,125,600	7,205,500	7,672,900	8,764,400	9,781,700
Education	28,204,000	26,257,000	29,033,300	31,421,800	29,570,700	34,415,200	33,280,200
Commerce	802,000	793,197	1,210,600	1,363,400	1,329,900	1,564,000	1,684,300
Sub-total	37,504,500	35,563,964	42,374,700	46,742,300	57,617,200	67,796,900	69,479,800
TOTAL	76,893,200	74,305,536	89,981,500	94,340,100	90,242,300	103,067,300	103,653,900

[a] These accounts were decentralized after 1982.

Source: Department of Finance, National Estimates of Revenue and Expenditure, various years.

extension functions were to be decentralized. This did not happen for some years. As Table 15.2 shows, expenditure of the four main "decentralized" national departments continued to rise until 1983. In that year the field business development personnel of the Commerce Department were taken over by the provinces, as were many of the functions and staff of the National Health Department. The National Education and Primary Industry Departments, however, have continued at much the same level. Provincial government expenditures on staff salaries have risen steadily from 1979 to the present.

Financial Performance and Control

The National Government suspended three provincial governments during 1984 on the ground of financial mismanagement. Most of the provincial development corporations are in receivership or are under investigation. Glaring examples of arbitrary funding decisions can be found in the distribution of sectoral funds and the National Development Fund. Lack of co-ordination and consultation with the provinces has led to the funding of fixed capital costs for many projects without due regard to operating and maintenance costs. Such projects have been short-lived but while in operation they resulted in a serious drain on the limited resources available for development. On the other hand, three or four of the provincial governments manage their financial affairs competently, and could well be given more flexibility in capital as well as current expenditures than they now have.

Most provincial governments have attempted to formulate provincial development plans and objectives, which reflect national development objectives. Recent trends indicate that the more prosperous provinces are as eager to direct their resources towards policies for growth and employment creation as the National Government. This inevitably leads to debates between the National and provincial governments over policies for overseas borrowing and development assistance, and could result in further conflict in securing capital to finance growth policies.

Discussions with provincial leaders and public servants suggest that those provincial governments that prove their ability to manage development programs and to service their debts should have some direct access to external sources of capital for their development projects. However, such access must be nationally planned and controlled if Papua New Guinea is not to run into the debt and economic difficulties that plague so many developing countries.

Sound financial management also requires improved control over expenditures not included within authorized budgets of the national or provincial governments. In order to compete with provincial representatives who have more influence over provincial expenditures than the National Members of Parliament, the latter put pressure on ministers to provide finance for projects in their constituencies. Special funds such as the Village Economic Development Fund, sectoral funds for agriculture and transport, have been diverted from their intended purposes, to the family businesses of the politicians concerned. Several cases of the abuse of public funds have been successfully prosecuted. Another problem is that local projects are often funded at the request of national Members of Parliament without consulting the provincial government concerned, which then has to meet the recurrent costs. Unplanned expenditures resulting from these practices distort the budgets of both the National and provincial governments, and put additional strain on scarce resources.

The Public Service

Close working relationships between politicians and public servants are needed for effective planning and implementation of public programs. Public sector management in Papua New Guinea has had a number of strengths in the period since Independence. The National budget has carefully controlled the allocation of expenditure. There have been few ill-conceived or obviously wasteful projects in the National Public Expenditure Plan. Public service appointments at the national level have been largely free of nepotism and inappropriate political influence. Economic policy has been soundly based on economic theory and practice, and has lead to remarkable stability in a period of world-wide economic fluctuations. All of these strengths have, at least in part, been dependent on the maintenance of strong central institutions linking national ministers and senior officials.

At the same time, public sector management has not been without problems that indicate some fragility in Papua New Guinea's central administrative structures. Tightly centralized manpower and financial controls have weakened the planning capacities of functional line departments, while Public Service Commission inefficiencies create long delays in staff recruitment at all levels. As already noted, some departments and provinces adhere well to financial and planning guidelines, but many others do not. Economic stability has not been matched by the implementation of development projects so as to raise the rate of economic growth. Most importantly, the rising tide of political expectations has overwhelmed public service capacities and produced ministerial frustration with tightly controlled budget review procedures.

The strengths of public sector management in Papua New Guinea have been closely associated with institutions established after the Government's success in late 1973 in renegotiating the contract with Bougainville Copper Limited.

During the following years the system of budget and planning controls was elaborated in the National Public Expenditure Plan and all major expenditure proposals were cleared through the Budget Priorities Committee. This was associated with strict procedures for ensuring prior consultation on all Cabinet submissions.
Starting in 1978, with the collapse of the Somare-Chan coalition, a period of relative political instability created strong pressures for politicians to by-pass controls by allocating funds for political support or prestige. Special funds, such as the Village Economic Development Fund, became increasingly exempt from the Budget Priorities Committee's inspection and were used to purchase political support. Under the Chan coalition government of 1980-82, the Deputy Prime Minister, Iambakey Okuk, sought to break the priorities system by removing certain sectoral funds from the National Public Expenditure Plan for allocation by Members of Parliament and by committing the Government to major projects without prior consultation with the Budget Priorities Committee. With the return of the Somare Government in 1982, the chief architects of the system restored strict budget controls. Ministers concerned primarily with economic growth have, however, chafed against the Budget Priorities Committee's watchdog role and its emphasis on economic stability.

Since 1978 there has been an increasing tendency for some ministers in central departments to act without consultation with their senior officials. This has affected morale in the public service.

Planning and Management

Capacity for planning and management has varied widely among individual departments. The Department of Finance has developed strong traditions in this regard and has pursued a successful program of localization and training. The National Planning Office (now the Department of Planning) has had serious problems of continuity in staffing and the Public Services Commission has until recently been allowed to stagnate and become an obstacle to progress. Among the line departments only Education has maintained a strong capacity for innovation and has been able to respond imaginatively to the challenges of provincial government.

Progress in Localization of the Public Service

At the time of Independence most senior and middle level positions in the public service were held by expatriates. Expatriates still form a significant proportion, even in the lower ranks of the service. In FY1976, 6730 expatriates accounted for 13.5 per cent of the combined national and provincial public service, excluding staffs of statutory institutions and authorities. As expatriates with line responsibilities were replaced, their numbers dropped to

5000 in 1978 (10 per cent of the total) and to 3000 in 1985 (5.7 per cent), an annual average rate of decline of 6 per cent. Most of the decline had taken place by 1983, and there has been little change since then, because most of those remaining have technical skills not yet widely available in Papua New Guinea.

In the early years almost all expatriates were Australians. More recently the sources of recruitment have broadened, mainly to New Zealand and the United Kingdom. Expatriates normally serve under three year contracts and are paid internationally competitive salaries with a gratuity in lieu of pension. There are also "volunteer" expatriates in the public service who are paid much less than the contract officers.

It is claimed by some that the contract system, introduced in 1978, has led to a deterioration in the quality of expatriates, or at least in the value of their work, because it takes a year or more for foreign administrators and specialists, unfamiliar with Papua New Guinea conditions, to become fully effective. By this time they have less than two years to serve and must begin to think about their next appointment. A well-thought out induction course for all new expatriate officers, to include advice and help on settling in, would make them effective more quickly. Provision is made in most contracts to extend the term subject to satisfactory performance. Contract-officers who have gained valuable experience could be encouraged to stay longer.

The continuing service and recruitment of expatriate officers while Papua New Guinea was building up its own cadre of national public servants contrasts favourably with the policy of many other developing countries which "localized" their public service at or shortly after Independence. But it has not been without cost. The salaries and terms of service of the expatriates, and the pattern they have set for national officers, make heavy demands on the budget. At the same time, the total emoluments received by expatriate officers compared to their national counterparts create resentment and lead to pressure by the latter for higher salaries. The salary bill for the public service does not fully reflect the expected savings from the decline in expatriates. Increases in the numbers and remuneration of nationals have offset a large part of the savings. Although a further decline in the number of expatriates may occur as more qualified nationals become available, it is unlikely that Papua New Guinea's public service could dispense with a major proportion of expatriate technical staff for some years to come without loss of efficiency.

A retrenchment exercise was carried out in 1983. It did not result in a significant reduction in the numbers of public servants, but it abolished many unfilled positions. The Government consequently no longer has to reserve funds during the year in case these positions are filled, and has more flexibility in allocating funds to important areas, especially those concerned with development.

Proposals for Reform

The need for administrative reforms and for improved systems of financial management at both the national and provincial levels have been recognized in Papua New Guinea for years. In spite of seven official committees on administrative reform since Independence much remains to be done. At the request of the Government the World Bank reviewed the public sector and in 1983 presented its recommendations for a program of improvements in public sector management. These were accepted by the Government as the basis of reforms needed to strengthen planning and the management of financial and manpower resources to achieve the policy objective of faster economic growth. The reforms emphasize:

- Improved fiscal practices and control, more effective use of recurrent expenditures and, in the longer term, the financing of more productive investments;

- The selective devolution of management responsibilities from the Departments of Finance and Planning, and the Public Service Commission, to national line and provincial departments, together with greater accountability of the latter for the efficiency of their operations;

- Greater clarity of functions among the agencies of government, and better co-ordination among central, line and provincial departments;

- Improved capacity of the core departments (Finance, Planning and the Public Service Commission) to guide, support and monitor the activities of the line departments.

A Program Management Unit has recently been formed, comprising ten senior public servants headed by a former Secretary of Finance. The Unit has begun work on three line departments - Minerals and Energy, Primary Industry, and Lands - and two provinces - East Sepik and North Solomons. After completion of this stage, which although scheduled for six months, will probably take longer, the Unit will shift to the Departments of Civil Aviation, Transport, and Works and Supply, together with three or four more provinces. Work is also planned on the central departments and agencies of Finance, Planning, and the Public Service Commission. Activities to be undertaken include, as necessary, the revision of enabling legislation and the streamlining of organizational structures, procedures and systems, and staff development patterns. Necessary support for staff development and training will be identified.

A Bill entitled 'Public Finances (Management) Bill 1985' is before Parliament; it embodies the principles underlying the reform program and brings together pieces of legislation affecting public bodies. A companion Bill entitled 'Public Services (Management) Bill 1985' is also before Parliament. The Bill lays out more clearly the responsibilities of heads of departments, gives them more responsibility for the recruitment, training and discipline of staff, and provides for the offer of contracts to highly qualified nationals. There is to be an annual report on the management of each department, and an annual assessment of all officers.

General Orders for the public service, which have not been used for some years, are to be revised and re-issued. The emphasis will be on a general tightening up of standards, stress on performance and on the importance of training.

The World Bank seconded an adviser to the Government to help prepare the program of administrative reforms. Elements of the program are being considered for financing under a Bank project that would be implemented during the next ten years.

The program constitutes the first serious attempt at comprehensive reform of public administration in Papua New Guinea. If it is to be carried out successfully, it will require the sustained commitment of ministers and public servants over many years.

16. FOREIGN AID AND FOREIGN INVESTMENT

The gloomy outlook for the prices of several of Papua New Guinea's chief exports suggests that it will be increasingly difficult to raise domestic resources for development. Every attempt will thus need to be made to increase the productive use of foreign aid and to attract more foreign investment.

Foreign Aid

Because of the special nature of the relationship between Papua New Guinea and Australia, Papua New Guinea has been unique among developing countries in receiving over 95 per cent of its aid in the form of budget support. Some use has been made of non-budget-support aid as well, but such assistance has been much less utilized in Papua New Guinea than in most other countries at comparable levels of development. The main argument in favour of Papua New Guinea's making more use of non-budget-support forms of foreign assistance is that this would increase the financial and human resources that are available for development.

Budget Support Assistance

By mutual agreement between the Australian and Papua New Guinea Governments, Australian budget support assistance to Papua New Guinea has declined significantly in real terms since Independence. Assuming that this form of assistance continues to decline in the future, steps should be taken to secure and utilize effectively foreign assistance in other forms and from other sources.

Other Forms of Foreign Assistance

It is common in Papua New Guinea for any foreign assistance that is not in the form of budget support to be called "tied aid". This is out of line with terminology used in the rest of the world. In accepted world usage "tied aid" (or "procurement-tied aid") is assistance in which any goods and services purchased with the aid money must be procured from designated sources, usually the donor country but sometimes a group of countries such as the European Communities. Similarly, assistance which is earmarked for particular purposes but is not procurement-tied is called "project aid", "technical assistance", etc. depending on its nature. This clarification is important. "Tied aid" tends to be used in Papua New Guinea as a pejorative term. If the sources of funds for development are to be expanded, it is important that project aid, technical assistance and the like, should not have this negative connotation.

One of the main reasons for not making more use of such assistance in the past has been the fear that it could lead Australia to reduce more rapidly its budget-support aid. Discussions that the review team had with Australian government representatives indicated that this fear was groundless.

A second argument that has been used in Papua New Guinea to oppose increased use of non-budget-support aid is that the country lacks the capacity to absorb it. There is a shortage of skilled persons able to identify, prepare, and implement aid projects. Also, most forms of non-budget-support aid involve local costs both in the establishment and the operating phases of projects. In the light of the Government's extreme fiscal constraints, it is important that these local costs be taken into account when such forms of assistance are evaluated.

It is true that Papua New Guinea has limited absorptive capacity, particularly in terms of human resources, and that the local currency costs of aid must be taken into account in evaluating aid projects. This does not mean that Papua New Guinea should not increase its use of non-budget-support forms of aid. What it does mean is that Papua New Guinea should:

- continue to ensure that the aid that it requests and receives is for purposes high on the national list of priorities; if this principle is strictly followed, aid can be regarded as meeting a large part of the costs that the Government would have incurred even without aid;

- request from aid donors those forms of aid that involve minimal use of scarce skilled local personnel and funds; and

- continue the sound practice of including the present and projected local costs of aid projects in the normal budget process. (Papua New Guinea is more advanced than many other developing countries in this practice.)

Some of the main forms of non-budget-support aid that Papua New Guinea might be able to use productively are assistance for education and training, staffing, research support and capital and import intensive projects.

Education and Training Assistance

The single most important constraint on Papua New Guinea's development is the shortage of educated and trained people. Throughout the public sector, the shortage of such people causes policy implementation problems. In the private sector, the shortage of entrepreneurs, upper and middle level managers and skilled workers reduces productivity, raises costs, and limits the range of activities that can be undertaken. Professionals in short supply include accountants, engineers, agricultural specialists and persons with management training.

One of the most important ways in which foreign assistance could therefore be used to further Papua New Guinea's long-term development is by sending a steady flow of persons abroad for post-graduate studies. Aid in this form helps Papua New Guinea to tackle the most important constraint on its development. At the same time it is virtually costless to Papua New Guinea and places minimal demands on local skilled persons and local currency funding. It is particularly timely in view of the likelihood that funds for tertiary education in Papua New Guinea will have to be severely cut. Persons who study abroad not only learn much that is useful in their chosen areas of specialization, but are also exposed to different points of view, different sets of values and different ways of doing things. That growing numbers of its citizens have such exposure is important if Papua New Guinea is to increasingly take part in the world economy.

Several factors have restricted the number of Papua New Guinea students sent abroad in the past. First, private and public employers have been reluctant to release their few trained national staff members for further studies abroad, although increasing numbers of public servants do go abroad for short courses. Second, it has been feared that public servants who study abroad may join the private sector when they return to capitalize on their training. Third, the standard of graduates from local educational institutions has in some cases not been high enough to enable them to continue studies at leading institutions abroad.

Solutions can be found for these problems. First, given that most worthwhile post-graduate training programs require a minimum of three years' full time study, and given that employers are naturally reluctant to release employees for such a long period of time, it makes sense for students to be sent abroad before they have begun their working careers. Second, it is not unreasonable to require that the privileged persons who study abroad on scholarships should repay the nation by agreeing to work for the Government for a specified period after they return. For example, one year's work for each year of study is regarded as reasonable in many developing countries. If they decide to transfer to the private sector after that time, their education and training will still benefit the Papua New Guinea economy and society. Third, as will be discussed below, ways can be found of raising standards in Papua New Guinea educational institutions so that their graduates can study at leading institutions abroad.

In sum, Papua New Guinea has previously made insufficient use of aid to send students abroad for post-graduate studies. Papua New Guinea's future rests on the skills of its people. There is no reason why the number of students that Papua New Guinea sends abroad should not be substantially increased in coming years.

Staffing Assistance

A second form of non-budget-support aid that could usefully be expanded in Papua New Guinea is staffing assistance. In particular, it would be useful if an improved and expanded program of secondments were to be implemented. Australian government bodies such as the Taxation Office, Telecom Australia, the Commonwealth Scientific and Industrial Research Organization, the Australian Bureau of Statistics, and various electricity authorities or their New Zealand or United Kingdom equivalents could be actively encouraged to allow staff to take three year secondments to Papua New Guinea. Appropriate incentives would need to be devised both for these bodies and for the individuals seconded to make such a program effective. Other donor countries might also be willing to co-operate in a program of staff secondment.

A similar scheme of secondments should be applied in the higher education sector as well. Under such a scheme, Papua New Guinea institutions of higher education would be closely linked with institutions (or networks of institutions) of higher education in Australia and other countries. The employers of graduates in Papua New Guinea should be consulted in the reorganizations that might take place to ensure that the institutions' programs are relevant to user needs. For example, the Public Service Board might be consulted on ways in which the Administrative College could be upgraded and made more useful.

Staffing assistance forms of aid might also be sought in the private sector where key specific skills are needed. One of the most promising potential export industries in Papua New Guinea is the manufacture of wooden furniture and other wood processing. The furniture-making industry is presently hampered by a shortage of persons trained in cabinet-making and joinery. It may be worthwhile for the Papua New Guinea Government to ask a country with centuries of tradition in this field (The German Federal Republic or a Scandinavian country for instance) to undertake to establish and staff a school for cabinet-making and joinery. This school would need to be set up in consultation with the managers of Papua New Guinea's existing wood processing firms to ensure that the training was relevant to local needs.

A rather different area in which specific skills are urgently needed is agricultural extension. Aid funds for staffing assistance might be used to employ a number of expatriate supervisors and trainers of agricultural extension workers. If such assistance were to succeed in significantly improving the rural extension service, it is hard to imagine a more useful way, from the viewpoint of the majority of Papua New Guineans, for aid moneys to be spent.

Finally, staffing assistance might be sought to help to establish and operate a unit specialized in identifying and preparing projects and proposals for aid funding. Such a unit, which might be located in the Department of National Planning, could help to remedy the problem that much of the concessional aid offered to Papua New Guinea is either not taken up because of a lack of concrete proposals on how it should be spent, or if accepted is slow to be disbursed.

Research Support

As was pointed out in detail in the chapters on the rural economy, the assistance of foreign agricultural research institutions could usefully be sought to help with long-term research on traditional food crops and some tree crops. It might also be useful to enlist the support of Filipino, Korean, or Taiwanese experts in investigating the possibility of introducing rice paddy cultivation in Papua New Guinea.

Project Aid

There is considerable scope for Papua New Guinea to increase the use of aid funds for specific investment projects. Papua New Guinea has had some successful experience with such projects, including important elements of integrated rural development schemes in several less developed regions of the country. An especially useful form of project assistance is the co-financing of a project by an international aid agency, which undertakes project appraisal and supervision in association with one or more bilateral agencies. Once a project identification and preparation unit has been established, Papua New Guinea should be able to make much more use of project assistance. Worthwhile projects that aid agencies may be willing to fund include improvement of roads, ports and water supplies.

Other Government Aid

Forms of government to government aid other than those discussed above that might be useful to Papua New Guinea include:

- Development bank support: the provision of aid funds to strengthen the lending and investment capacity of development banking institutions.

- Joint venture assistance: the provision of aid funds to purchase equity in joint ventures with firms from the donor country.

- Export marketing assistance: the provision of training and assistance in the marketing of export products in the donor country.

- Support for non-government organization activities: the provision of donor government financial support to small-scale projects that are identified and carried out by non-government aid agencies.

An Aid Group for Papua New Guinea?

The possibility of forming an aid group for Papua New Guinea has been raised from time to time. Aid groups, in most cases called Consultative Groups, are forums, usually organized by the World Bank, in which a developing country informs interested donor countries and agencies about its plans, and discusses with them its need for financial and technical assistance. The Bank prepares an economic report on the developing country and reports on economic sectors or special issues are sometimes added. The preparation of the Medium Term Development Strategies and their consolidation later in 1985 into a Medium Term Development Program would be an appropriate occasion to reconsider this possibility.

Aid from Non-government Agencies Supplying Volunteers

A number of agencies that supply volunteers to developing countries have already provided useful personnel to Papua New Guinea. In future, the help of such agencies might be enlisted to attempt to reverse the apparent decline in the standards of Papua New Guinea primary education by providing teachers who could retrain, supervise and support groups of teachers in community schools.

Aid for Grass Roots Projects

In addition to making use of existing forms of non-budget-support aid, Papua New Guinea may try to design aid forms of its own that tie in closely with local requirements. Many aid donors are flexible in accommodating such locally-designed schemes. An example of an innovative home-grown grass roots idea that could form the basis of a worthwhile aid-funded project is the "kina for kina" arrangement of the North Solomons Provincial Government. Under this scheme, the Provincial Government matches kina for kina (up to a maximum of K10,000) moneys raised by village communities for small projects such as the construction of schools, aid posts and footbridges, improvements in water supply, the establishment of womens' and youth groups, etc. Under such a scheme, aid agencies could be asked to supply the Provincial Government with matching funds. They might also provide funds to employ the small-projects engineers (local or expatriate) who are needed to co-ordinate and supervise construction works.

Kina for kina schemes like these have several significant attractions. First of all, villagers are encouraged to realize that they have an important role to play in their own development: they decide which projects they want, they raise money for them and they work on them. This provides a useful antidote to the commonly held view that development is the responsibility of the Government and is out of villagers' control. Second, the scheme causes an increase to be made in the funds that are available for small, valuable rural development projects because villagers tax themselves and these funds are then matched from outside. Third, and by no means least important from a political point of view, to judge from the North Solomons experience such schemes appear to be extremely popular among villagers.

Conclusion

Representatives of government and multilateral aid agencies in Port Moresby typically say that they have been unable to disburse all of the grants and concessional loans that they offer because the Papua New Guinea Government has not put forward enough concrete proposals for the use of the funds. It is understandable that in the past the Government has had other priorities. Now, however, in an era of great financial stringency, it may be worth looking again at ways of maximizing the benefits that can be obtained from the financial, technical, and other forms of assistance that are available.

Foreign Investment

If Papua New Guinea is to increase significantly its rate of economic growth and employment creation, a large increase in foreign investment will be needed. This is true in minerals and petroleum, the regeneration of agricultural estates, the processing of agricultural goods, fisheries, and timber production and processing.

The main contribution of foreign investment in an economy such as Papua New Guinea's lies in the investing firm's 'package': capital, management, technology, product design and often market access abroad. Looked at from the macro-economic point of view, foreign investment contributes to gross domestic investment, the creation of employment, the training of labour, government revenue, and the net earning or saving of foreign exchange.

The main complaint heard from foreign investors in Papua New Guinea is that a long and tortuous process is required to negotiate an agreement with the Papua New Guinea government on any specific foreign investment proposal. The bureaucracy may not be deliberately obstructive, but it is indecisive and slow to respond. Companies that are already established in Papua New Guinea can overcome these delays by regularly following up unresponsive agencies. However, it is both expensive and difficult for new investors to obtain the necessary approvals to establish a project. That this is so may be seen in the estate sector of agriculture where existing companies are re-investing in the tree crop export industries whereas Papua New Guinea has had little recent success in attracting new investors to these same industries.

The National Investment and Development Authority was initially conceived to solve this problem. It was seen as a one-stop-shop where investors would be able to negotiate an agreement and obtain all the necessary clearances quickly and with a minimum of bureaucratic red tape. In practice, other agencies have maintained control over their areas of responsibility so that the Authority has added to the bureaucratic procedures involved in investing in Papua New Guinea. Thus, investors still have to negotiate with a number of agencies to obtain approval for personnel and training schedules, immigration of foreign staff, access to land, and the like.

A further problem is that the National Investment and Development Authority has two conflicting sets of objectives: to stimulate foreign investment and to regulate it. On the regulation side, the Authority carries out detailed negotiations with foreign investors with regard to local equity participation, local employment, training, utilization of local inputs and environmental impact. This may have been a reasonable agenda when the Eight Aims were the basis of the Government's development policy; however, if growth and employment are now to be the central aims, most of these items should be dropped. As noted earlier, foreign investors have strong economic reasons for wanting to train and employ locals instead of hiring expensive expatriates and for using more easily available local materials rather than imports. If a foreign firm chooses not to use local personnel or local materials, there are frequently good reasons for doing so. Any attempt to force the foreign investor into particular actions, for example by not permitting certain jobs to be filled by expatriates or not permitting 100 per cent foreign owned investments, may lead to the country's losing an investment and the benefits that it could bring. It is every country's right to decide the terms on which it wants foreign investment. Some areas can be reserved for nationals but, the more restrictive the terms with which a country faces foreign investors, the more likely are they to go elsewhere.

Unlike many other developing countries, Papua New Guinea has not fallen into the trap of offering excessive fiscal and other incentives to foreign investors. This policy should be maintained. Apart from a reduction in real wages, what is needed now if foreign investment is to be encouraged is for some way to be found through the bureaucratic tangle. Whatever agency takes on this all-important job, two things need to be clear. First, the aims of the agency should be to promote foreign investment rather than to regulate it. Combining the two sets of contradictory aims in a single agency has not worked in the past and is not likely to work in the future. Second, the agency needs to be given more power than the National Investment and Development Authority has had to date so that it can cut through the mass of bureaucratic red tape on the investor's behalf. In essence, what is needed is a policy which announces a welcome to foreign investors and then implements that welcome expeditiously.

APPENDIX A

PERSONS CONSULTED

During the course of the review, members of the team had discussions with a number of individuals and representatives of provincial, national, international and private sector organizations. The following is a list of persons consulted in Papua New Guinea and in Canberra and Melbourne.

Papua New Guinea

Ai, Mr Kila, Department of National Planning, Port Moresby.

Allan, Mr Rory, Department of Finance, Port Moresby.

Beamish, Mr Kevin, Manager, Imperial Chemical Industries, Papua New Guinea Pty Ltd, Lae.

Beangke, Mr Noreo, Secretary, Department of Finance, Port Moresby.

Bell, Mr Simon, Department of Finance, Port Moresby.

Boehm, Mr Matthew, Manager, Kumul Coffee Ltd, Mt Hagen.

Brogan, Mr Brian, Director, Institute of National Affairs, Port Moresby.

Carrad, Mr Bruce, Department of Primary Industry, Port Moresby.

Chan, Sir Julius, Leader, People's Progress Party, Port Moresby.

Cochrane, Mr Glynn, World Bank Secondee to the Public Services Commission, Port Moresby.

Collins, H. E. Arthur, U.K. High Commissioner, Port Moresby.

Coulter, Mr Hugh, Economist, Cocoa Industry Board of Papua New Guinea, Rabaul.

Croft, Mr W., First Assistant Secretary, Department of Transport, Papua New Guinea, Port Moresby.

Cruickshank, Mr John, President, National Chamber of Commerce, Lae.

Culverhouse, Mr David, Department of Industrial Development, Port Moresby.

Denahy, Mr Jeff, Australian High Commission, Port Moresby.

Dihm, Mr Bill, Deputy Secretary, Department of Foreign Affairs and Trade, Port Moresby.

Director, Coconut Products Ltd, Rabaul.

Dobunaba, Ms Felicia, Department of National Planning, Port Moresby.

Farapo, Hon. Tony, Minister for Provincial Affairs, Port Moresby.

Fitzer, Mr Des, Acting Secretary, Department of Provincial Affairs, Port Moresby.

Goldsmith, Mr R., Delegate, European Communities, Port Moresby.

Goldstein, Mr Henry, Bank of Papua New Guinea, Port Moresby.

Gresham, Mr Gordon, Executive Director, Forest Industries Council, Port Moresby.

Hekwa, Mr Leva, Bank of Papua New Guinea, Port Moresby.

Holloway, Hon. Sir Barry, Minister for National Planning, Port Moresby.

Hulo, Mr Larry, Acting Branch Head, Development Assistance Area, Department of Foreign Affairs and Trade, Port Moresby.

Kanawi, Mr Wep, Secretary, Department of Industrial Development, Port Moresby.

Koppel, Mr Bruce, Consultant to Department of National Planning, Port Moresby.

Lichtwark, Mr Philip, National Statistical Office, Port Moresby.

McCann, Mr Bill, Department of Minerals and Energy, Port Moresby.

McConachie, Mr David, Director, Westpac Bank (PNG) Ltd, Port Moresby.

McLellan, Mr Bill, Managing Director, Steamships Trading Company Ltd, Port Moresby.

McLellan, Mr David, Managing Director, Burns Philp (PNG) Ltd, Port Moresby.

McVinish, Mr John, Manager, Titan New Guinea Ltd, Lae.

Makis, Mr Ephraim, Director, Institute of Applied Social and Economic Research, Port Moresby.

Mamalai, Mr Oscar, Secretary, Department of Forestry, Port Moresby.

Mamugoba, Mr Gabriel, Agricultural Extension Officer, Popondetta, Oro Province.

Manager and technicians, Pawanda Mini Hydro Plant, Western and Southern Highlands.

Manager, Tavilo cocoa plantation, nursery, and research station, Cocoa Industry Board of Papua New Guinea, East New Britain.

Manager, Timberline Products Furniture Manufacturing Co., Mt Hagen.

Managers of local business houses, Mendi, Southern Highlands.

Manning, Mr Mike, Managing Director, New Guinea Islands Produce Co. Ltd, Rabaul.

Matane, Mr Paulius, Secretary, Department of Foreign Affairs and Trade, Port Moresby.

Members of the Economics Division, Department of Primary Industry, Port Moresby.

Members of the National Chamber of Commerce, Lae.

Members of the West New Britain Chamber of Commerce, Hoskins, West New Britain.

Mohanty, Mr Neil, Department of Industrial Development, Port Moresby.

Morauta, Ms Louise, Independent Consultant, Port Moresby.

Morauta, Mr Mekere, Managing Director, Papua New Guinea Banking Corporation, Port Moresby.

Mori, Mr S., Managing Director, Stettin Bay Lumber Co. Pty Ltd, Kimbe, West New Britain.

Morris, Mr Ian, Department of Finance, Port Moresby.

Morrow, Mr Alan, Company Secretary, Stettin Bay Lumber Co. Pty Ltd, Kimbe, West New Britain.

Nakikus, Ms Margaret, Consultant, Port Moresby.

Noel, Mr John, Secretary, Department of National Planning, Port Moresby.

Norona, Mr Raymond, World Bank Consultant on customary land tenure, Port Moresby.

Officers, Cocoa Industry Board of Papua New Guinea, Rabaul.

People of Ombisusu village, Oro Province.

Pilbeam, Mr John, Australian High Commission, Port Moresby.

Premier, Deputy Premier, Provincial Secretary and Members of the Provincial Management Team, Southern Highlands Provincial Government, Mendi.

Premier, Ministers, Provincial Secretary, and Members of the Provincial Management Team, East New Britain Provincial Government, Rabaul.

Premier, Ministers, Provincial Secretary and Members of the Provincial Management Team, West New Britain Provincial Government, Hoskins.

Production Manager, Longreach Clothing Co., Port Moresby.

Provincial Secretary and Members of the Provincial Management Team, Western Highlands Provincial Government, Mt Hagen.

Quodling, Mr Paul, Managing Director, Bougainville Copper Ltd, Kieta, North Solomons.

Ragi, Mr Ereman, Department of Finance, Port Moresby.

Reid, Mr Tony, Papua New Guinea Development Bank, Port Moresby.

Reiner, Ms Helen, Managing Director, The Dress Factory, Port Moresby.

Reva, Mr Vai, Managing Director, Papua New Guinea Development Bank, Port Moresby.

Ruiz, Mr Reinaldo, Department of National Planning, Port Moresby.

Sai, Mr Paul, Acting Secretary, Department of Primary Industry, Port Moresby.

Sampson, Mr Bill, National Statistical Office, Port Moresby.

Scott, Mr Richard, General Manager, Kaupena Tea Plantation and Southern Highlands Management Agency, Mendi.

Shadlow, Mr John, National Statistician, Port Moresby.

Sibree, Mr Phillip, Senior Trade Commissioner, Australian High Commission, Port Moresby.

Somare, Rt. Hon. Michael, Prime Minister, Port Moresby.

So-omba, Mr Hakiso, Office of Forests, Port Moresby.

Sparreboom, Mr Len, Department of Finance, Port Moresby.

Stebbing, Mr Peter, Bank of Papua New Guinea, Port Moresby.

Students at Sogeri National High School, Sogeri, Central Province.

Supervisor of agricultural extension, Hoskins Oil Palm Project, West New Britain.

Taniguchi, H. E. Makoto, Japanese Ambassador, Port Moresby.

Tarata, Mr Koiari, First Assistant Secretary, Ministry of Finance.

Togolo, Mr Mel, Provincial Secretary, North Solomons Province, Kieta.

To Robert, Sir Henry, Governor, Bank of Papua New Guinea, Port Moresby.

Von Musschenbroek, Mr Bert, National Statistical Office, Port Moresby.

Von Schweinfurth, Mr Goetz, Provincial Secretary, Morobe Province, Lae.

Vulupindi, Mr John, Chairman, Program Management Unit, Port Moresby.

West, Mr Geoff, Department of National Planning, Port Moresby.

Wilhelm, Mr Irwin, Managing Director, Golden Square Furniture Manufacturing Company, Port Moresby.

Wilson, H. E. Michael, Australian High Commissioner, Port Moresby.

Wingti, Hon. Paias, Deputy Prime Minister and Minister for Education, Port Moresby.

Wyborn, Mr Barry, Australian High Commission, Port Moresby.

Young, Hon. Dennis, Minister for the Public Service, Port Moresby.

Allen, Dr Bryant, Department of Human Geography, Research School of Pacific Studies, The Australian National University, Canberra.

Baxter, Dr Paul, Price Waterhouse Associates Pty Ltd, Canberra.

Cole, Mr Rodney, Development Studies Centre, Research School of Pacific Studies, The Australian National University, Canberra.

Corkery, Mr L., First Assistant Secretary, Bilateral Programs Division, Australian Development Assistance Bureau, Canberra.

Dun, Dr Bob, Australian Development Assistance Bureau, Canberra.

Fingleton, Mr Jim, Department of Law, Research School of Pacific Studies, The Australian National University, Canberra.

Fitzgerald, Mr Dennis, Australian Development Assistance Bureau, Canberra.

Garnaut, Dr Ross, Prime Minister's Department, Canberra.

Harris, Dr Stuart, Department of Foreign Affairs, Canberra.

Hughes, Professor Helen, Development Studies Centre, Research School of Pacific Studies, The Australian National University, Canberra.

Kennaly, Mr Trevor, Department of Finance, Canberra.

Lawless, Mr Graeme, Australian Development Assistance Bureau, Canberra.

Lindenmayer, Mr Ian, Department of Finance, Canberra.

McMurray, Ms Christine, Development Studies Centre, Research School of Pacific Studies, The Australian National University, Canberra.

Parry, Dr Thomas, Development Studies Centre, Research School of Pacific Studies, The Australian National University, Canberra.

Shaw, Dr Barry, Development Studies Centre, Research School of Pacific Studies, The Australian National University, Canberra.

Terrell, Mr Tim, Australian Development Assistance Bureau, Canberra.

Tololo, Sir Alkan, High Commissioner, Papua New Guinea High Commission, Canberra.

Vernon, Mr Don, Chairman, Bougainville Copper Ltd, Melbourne.

Woodward, Mr Ken, Consultant, Armidale, N.S.W.

Appendix B

BACKGROUND PAPERS

Bryant Allen, ´Notes on Village Agricultural Production and Marketing´.

Philip Daniel, ´Minerals in Independent Papua New Guinea: Policy and Performance in the Large-scale Mining Sector´.

James Guest, ´Condition of the Public Service´.

´Enlarging the Financial Resources for Development´.

Ephraim Makis and P.A.S. Dahanayake, ´Foreign Aid in Papua New Guinea´.

Christine McMurray, ´Recent Demography of Papua New Guinea´.

Margaret Nakikus, ´Women in Development Activities´.

´The Social Services´.

Thomas Parry, ´Foreign Direct Investment in Papua New Guinea´.

Barry Shaw, ´Review of the Agricultural Sector of Papua New Guinea´.

Ken Woodward, ´Estate Scale Tree Crop Production in Papua New Guinea´.

APPENDIX C

LIST OF APPENDIX TABLES

PUBLIC FINANCE

PRICES AND EXCHANGE RATES

MONEY AND BANKING

KEY

ASEAN	Association of South East Asian Nations
B.C.L.	Bougainville Copper Limited
BPNG	Bank of Papua New Guinea
D.M.	Deutsch Mark
GNP	Gross national product
L.M.E.	London Metal Exchange
n.e.c.	Not elsewhere classified
S.I.T.C.	Standard International Trade Classification

Table A1 Estimates of Expenditure on the Gross Domestic Product, Current Purchasers' Values, FY1976-1984 (K million)

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983P	1984P
Government final consumption	367.2	345.4	337.7	353.3	371.4	411.2	454.4	468.1	483.7	516.3
Private final consumption	415.7	454.2	508.3	578.9	666.9	791.9	821.2	820.1	925.2	1028.5
Fixed capital formation	161.4	225.1	236.8	265.9	323.5	391.3	437.8	581.6	622.8	656.4
Change in stocks	29.9	34.0	41.2	27.8	57.1	36.4	8.6	-14.4	-22.1	3.0
Exports of goods and services	400.4	542.9	584.0	579.1	742.5	737.6	642.9	644.3	772.4	919.7
Imports of goods and services	-470.9	-528.8	-600.8	-627.5	-744.3	-910.8	-987.6	-1058.2	-1135.1	-1230.6
Statistical discrepancy	-13.0	-6.3	4.0	23.5	-11.0	-11.8	33.4	22.7	-3.1	..
MARKET GDP	890.7	1066.5	1111.2	1201.0	1406.1	1445.8	1410.7	1464.2	1643.8	1893.3
Non-market GDP	177.7	184.8	187.3	212.3	226.4	262.3	286.2	300.5	323.4	346.0
GROSS DOMESTIC PRODUCT	1068.4	1251.3	1298.5	1413.3	1632.5	1708.1	1696.9	1764.7	1967.2	2239.3

Sources: National Statistical Office National Accounts Statistics (various issues) to 1983.
Estimates for 1984 from National Planning Office National Public Expenditure Plan 1985-1988.

Table A2 Percentage Shares of Expenditure on the Gross Domestic Product, FY1976-1984

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983P	1984P
Government final consumption	34.4	27.6	26.0	25.0	22.8	24.1	26.8	26.5	24.6	23.1
Private final consumption	38.9	36.3	39.1	41.0	40.8	46.4	48.4	46.5	47.0	45.9
Fixed capital formation	15.1	18.0	18.2	18.8	19.8	22.9	25.8	33.0	31.7	29.3
Change in stocks	2.8	2.7	3.2	2.0	3.5	2.1	0.5	-0.8	-1.1	0.1
Exports of goods and services	37.5	43.4	45.0	41.0	45.5	43.2	37.9	36.5	39.3	41.1
Imports of goods and services	-44.1	-42.3	-46.3	-44.4	-45.6	-53.3	-58.2	-60.0	-57.7	-55.0
Statistical discrepancy	-1.2	-0.5	0.3	1.7	-0.7	-0.7	2.0	1.3	-0.2	..
Non-market GDP	16.6	14.8	14.4	15.0	13.9	15.3	16.9	17.0	16.4	15.5
GROSS DOMESTIC PRODUCT	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Table A1.

Table A3 Estimates of National Income and National Disposable Income, Current Values, FY1976-1984 (K million)

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983p	1984p
Compensation of employees	505.8	531.8	518.0	552.0	594.7	676.1	747.7	763.4	792.9	843.2
Operating surplus (market)	249.3	380.9	428.8	462.4	605.8	534.8	410.9	416.4	539.0	681.1
Operating surplus (non-market)	177.7	184.8	187.3	212.3	226.4	262.3	286.2	300.5	323.4	346.0
DOMESTIC FACTOR INCOMES	932.8	1097.5	1134.1	1226.7	1426.9	1473.2	1444.8	1480.3	1655.3	1870.3
Net factor income from abroad	-38.9	-38.0	-26.7	-19.4	-39.6	-58.7	-58.7	-69.3	-85.1	-100.3
Indirect taxes	60.4	74.6	83.2	87.6	102.2	114.6	119.2	138.5	153.4	175.5
less subsidies	-2.5	-3.4	-3.5	-4.7	-3.9	-4.6	-4.6	-4.1	-4.1	-4.1
NATIONAL INCOME AT MARKET PRICES	951.8	1130.7	1187.1	1290.2	1485.6	1524.5	1500.7	1545.4	1719.5	1941.4
Other current net transfers from abroad	164.0	153.5	142.0	137.4	124.2	130.7	157.5	175.5	207.0	223.7
NATIONAL DISPOSABLE INCOME	1115.8	1284.2	1329.1	1427.6	1609.8	1655.2	1658.2	1720.9	1926.5	2165.1

Sources: National Statistical Office National Accounts Statistics (various issues) to 1983.
Estimates for 1984 based on National Planning Office's economic projection model.

Table A4 Percentage Shares in National Disposable Income, FY1976-1984

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983p	1984p
Compensation of employees	45.3	41.4	39.0	38.7	36.9	40.8	45.1	44.4	41.2	38.9
Operating surplus (market)	22.3	29.7	32.2	32.4	37.6	32.3	24.8	24.2	28.0	31.5
Operating surplus (non-market)	15.9	14.4	14.1	14.9	14.1	15.8	17.3	17.4	16.8	16.0
Net factor income from abroad	-3.5	-3.0	-2.0	-1.4	-2.5	-3.5	-3.5	-4.0	-4.4	-4.6
Indirect taxes less subsidies	5.2	5.5	6.0	5.8	6.1	6.6	6.9	7.8	7.7	7.9
Other current net transfers from abroad	14.7	12.0	10.7	9.6	7.7	7.9	9.5	10.2	10.7	10.3
NATIONAL DISPOSABLE INCOME	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Table A3.

Table A5 Investment and Savings, Current Values, FY1976-1984 (K million)

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983p	1984p
Gross fixed capital formation	161.4	225.1	236.8	265.9	323.5	391.3	437.8	581.6	622.8	656.4
Change in stocks	29.9	34.0	41.2	27.8	57.1	36.4	8.6	-14.4	-22.1	3.0
GROSS DOMESTIC INVESTMENT (I)	191.3	259.1	278.0	293.7	380.6	427.7	446.4	567.2	600.7	659.4
Imports of goods and services (M)	470.9	528.8	600.8	627.5	744.3	910.8	987.6	1058.2	1135.1	1230.6
Exports of goods and services (X)	400.4	542.9	584.0	579.1	742.5	737.6	642.9	644.3	772.4	919.7
RESOURCE GAP (M-X)	70.5	-14.1	16.8	48.4	1.8	173.2	344.7	413.9	362.7	310.9
GROSS DOMESTIC SAVINGS (DS=I-(M-X))	120.8	273.2	261.2	245.3	378.8	254.5	101.7	153.3	238.0	348.5
Net factor income from abroad (FI)	-38.9	-38.0	-26.7	-19.4	-39.6	-58.7	-58.7	-69.3	-85.1	-100.3
Net current transfers from abroad (CT)	164.0	153.5	142.0	137.4	124.2	130.7	157.5	175.5	207.0	223.7
GROSS NATIONAL SAVINGS (NS = DS + FI + CT)	245.9	388.7	376.5	363.3	463.4	326.5	200.5	259.5	359.9	471.9
Implicit financing gap (NS-I)	54.6	129.6	98.5	69.6	82.8	-101.2	-245.9	-307.7	-240.8	-187.5
As per cent of GDP:										
Gross domestic investment (I)	17.9	20.7	21.4	20.8	23.3	25.0	26.3	32.1	30.5	29.4
Gross domestic savings (DS)	11.3	21.8	20.1	17.4	23.2	14.9	6.0	8.7	12.1	15.6
Gross national savings (NS)	23.0	31.1	29.0	25.7	28.4	19.1	11.9	14.7	18.3	21.1

Sources: National Statistical Office National Accounts Statistics (various issues) to 1983. Estimates for 1984 based on National Planning Office National Public Expenditure Plan 1985-1988 and also National Planning Office's economic projection model.

Table A6 Estimates of Expenditure on the Gross Domestic Product, Constant Purchasers' Values of 1977, FY1976-1984 (K million)

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983p	1984p
Government final consumption	403.3	347.2	337.7	343.4	349.6	337.8	324.8	313.7	308.2	308.6
Private final consumption	445.0	465.1	508.3	542.7	580.9	617.3	597.0	569.5	605.1	605.7
Fixed capital formation	205.5	232.5	236.8	257.9	298.5	337.0	338.0	404.2	408.6	403.7
Change in stocks	33.8	35.2	41.2	27.8	52.6	29.2	6.1	-10.4	-14.6	2.0
Exports of goods and services	653.7	626.1	584.0	639.1	637.4	635.3	669.6	670.5	683.7	719.6
Imports of goods and services	-498.7	-543.6	-600.8	-613.3	-660.6	-723.5	-724.7	-732.1	-744.1	-733.4
Statistical discrepancy	-11.7	-6.9	4.0	23.8	-9.2	-10.0	29.6	19.0	-2.3	..
MARKET GDP	1230.9	1155.6	1111.2	1221.4	1249.2	1223.1	1240.4	1234.4	1244.6	1306.2
Non-market GDP	200.2	193.4	187.3	188.3	186.0	179.2	182.4	185.8	189.3	192.0
GROSS DOMESTIC PRODUCT	1431.1	1349.0	1298.5	1409.7	1435.2	1402.3	1422.8	1420.2	1433.9	1498.2

Sources: National Statistical Office *National Accounts Statistics* (various issues) to 1983.
Estimates for 1984 from National Planning Office *National Public Expenditure Plan 1985-1988*.

Table A7 Index of Expenditure on the Gross Domestic Product, Constant Purchasers' Values, FY1976-1984 (1977=100)

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983p	1984p
Government final consumption	119.4	102.8	100.0	101.7	103.5	100.0	96.2	92.9	91.3	91.4
Private final consumption	87.5	91.5	100.0	106.8	114.3	121.4	117.5	112.0	119.0	119.2
Fixed capital formation	86.8	98.2	100.0	108.9	126.1	142.3	142.7	170.7	172.6	170.5
Change in stocks	82.0	85.4	100.0	67.5	127.7	70.8	14.8	-25.2	-35.4	4.9
Exports of goods and services	111.9	107.2	100.0	109.4	109.1	108.8	114.6	114.8	117.1	123.2
Imports of goods and services	83.0	90.5	100.0	102.1	110.0	120.4	120.6	121.9	123.9	122.1
MARKET GDP	110.8	104.0	100.0	109.9	112.4	110.1	111.6	111.1	112.0	117.5
Non-market GDP	106.9	103.2	100.0	100.5	99.3	95.7	97.4	99.2	101.1	102.5
TOTAL GROSS DOMESTIC PRODUCT	110.2	103.9	100.0	108.6	110.5	108.0	109.6	109.4	110.4	115.4

Source: Table A6.

Table A8 Terms of Trade Adjustment to Reflect Real Purchasing Power of the Gross Domestic Product, FY1976-1984 (implicit price index numbers, 1977 = 100)

	Y/E June		Y/E December							
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983p	1984p
Import price index (MPI)[a]	.9442	.9728	1.0000	1.0231	1.1267	1.2589	1.3628	1.4454	1.5255	1.6779
Export price index (XPI)[a]	.6125	.8671	1.0000	.9061	1.1649	1.1610	.9601	.9609	1.1297	1.2781
Terms of trade index (XPI÷MPI)	.6487	.8913	1.0000	.8856	1.0339	.9222	.7045	.6648	.7405	.7617
Terms of trade factor[b]	-.5735	-.1253	0.0000	-.1262	+.0291	-.0670	-.3078	-.3488	-.2297	-.1864
Value of exports in current prices (K million)	400.4	542.9	584.0	579.1	742.5	737.6	642.9	644.3	772.4	919.7
Terms of trade adjustment (K million)	-229.6	-68.0	0.0	-73.1	+21.6	-49.4	-197.9	-224.7	-177.4	-171.4
Market GDP in 1977 prices after terms of trade adjustment (K million)	1001.3	1087.6	1111.2	1148.3	1270.8	1173.7	1042.5	1009.7	1067.2	1134.8

[a]Goods and services.

[b]Terms of trade factor is given by $TTF = \left(\frac{1}{MPI} - \frac{1}{XPI}\right)$.

When this factor is multiplied by the value of exports in current prices the result is the "terms of trade adjustment" which is a measure of the real gain (+) or loss (-) in purchasing power of GDP in constant 1977 prices. (This calculation corresponds with the method used by Papua New Guinea National Planning Office in its National Public Expenditure Plan document.) Thus, after the terms of trade adjustment, the real purchasing power of GDP grew by an average of 1.5 per cent per annum over the 8.5 years to 1984. (+ 7.7% p.a. FY1976-1979; -6.8% p.a. 1979-1982; + 6.2% p.a. 1982-1984).

Sources: National Statistical Office National Accounts Statistics (various issues) to 1983. Estimates for 1984 from National Planning Office, National Public Expenditure Plan 1985-1988. Also calculations by research staff.

Table A9 Balance of Payments Flows, 1976-1984 (K million)

	1976	1977	1978	1979	1980	1981	1982	1983	1984p
Merchandise exports	428	535	535	720	661	566	568	691	813
Merchandise imports	-344	-442	-475	-558	-684	-738	-752	-815	-770
Balance of trade	84	93	60	162	-23	-172	-184	-124	43
Invisibles credits	69	51	52	65	70	89	114	111	103
Invisibles debits	-200	-208	-221	-285	-342	-372	-388	-430	-480
Net invisibles	-131	-157	-169	-220	-272	-283	-274	-318	-377
Net private transfers	-36	-32	-62	-68	-80	-85	-91	-81	-94
Net official transfers	114	181	180	180	179	189	192	215	233
BALANCE ON CURRENT ACCOUNT	31	84	8	55	-197	-352	-356	-308	-195
Net private capital	20	31	-20	11	30	189	283	261	231
Net official capital	10	20	-5	27	44	78	75	127	16
Non-official monetary	-5	-37	37	-11	-5	17	-1	5	3
BALANCE ON CAPITAL ACCOUNT	24	15	12	27	69	284	357	393	250
Net errors and omissions	-20	11	-21	-4	81	29	-23	7	-6
BALANCE OF PAYMENTS	35	110	-2	78	-47	-39	-22	83	49
Bank of Papua New Guinea holdings of gold and foreign exchange (end year)	209	328	297	371	290	290	270	390	423
Net foreign assets of the banking system (end year)[a]	175	312	265	354	282	222	205	321	370

[a]K115 million at end of 1975.

Source: Bank of Papua New Guinea Quarterly Economic Bulletin (various issues).

Table A10 Exports by Country of Destination, Values (K million) and Percentage Shares, FY1976-1983

	FY1976	1977	1978	1979	1980	1981	1982	1983
VALUES (K million)[a]								
Australia	54.2	75.5	48.8	55.9	59.1	53.2	45.9	50.5
China	3.6	5.2	12.5	12.9	11.9	5.2	15.4	28.7
Hong Kong	1.3	0.5	0.9	2.2	2.6	1.3	3.4	2.8
Japan	105.5	144.4	157.1	252.5	241.1	211.8	186.7	235.9
Netherlands	2.1	10.5	10.4	24.8	21.5	9.9	15.3	20.8
New Zealand	2.3	2.6	3.9	4.3	3.0	2.8	3.5	4.8
Singapore	2.4	2.4	6.2	2.2	3.4	7.9	4.4	12.4
Spain	23.2	24.4	23.3	34.5	25.1	30.9	27.5	27.8
United Kingdom	19.3	32.4	29.1	46.3	27.6	27.6	31.9	38.5
United States	30.7	58.2	34.3	34.2	21.3	18.6	10.1	14.4
West Germany	90.8	122.6	135.3	187.6	173.6	121.8	148.0	171.8
Other countries	28.4	58.7	56.0	46.8	51.5	54.6	57.4	60.0
TOTAL	363.8	537.1	517.9	704.2	641.6	545.6	549.4	668.4
PERCENTAGE SHARES								
Australia	14.9	14.0	9.4	7.9	9.2	9.8	8.4	7.6
China	1.0	1.0	2.4	1.8	1.9	1.0	2.8	4.3
Hong Kong	0.3	0.1	0.2	0.3	0.4	0.2	0.6	0.4
Japan	29.0	26.9	30.3	35.9	37.6	38.8	34.0	35.3
Netherlands	0.6	2.0	2.0	3.5	3.3	1.8	2.8	3.1
New Zealand	0.6	0.5	0.8	0.6	0.5	0.5	0.6	0.7
Singapore	0.6	0.4	1.2	0.3	0.5	1.4	0.8	1.9
Spain	6.4	4.5	4.5	4.9	3.9	5.7	5.0	4.2
United Kingdom	5.3	6.0	5.6	6.6	4.3	5.1	5.8	5.8
United States	8.4	10.8	6.6	4.9	3.3	3.4	1.8	2.1
West Germany	25.0	22.8	26.1	26.6	27.1	22.3	26.9	25.7
Other countries	7.8	10.9	10.8	6.6	8.0	10.0	10.4	9.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Excludes re-exports. Totals do not agree with those for the Balance of Payments.

Sources: Bank of Papua New Guinea *Quarterly Economic Bulletin* (various issues) except for FY1976 when data are from National Statistical Office *International Trade*.

Table All Agricultural Commodity Exports, Value, Quantity and Average Prices, 1975-1984

		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984p
COFFEE:	Value f.o.b. (K million)	34.9	100.2	143.4	107.3	125.0	118.6	74.2	77.8	94.6	110.7
	Quantity (tonnes)	36885	48151	36965	46125	49585	51007	47053	41104	52518	49400
	Avg.unit value (K/tonne)	946	2080	3880	2325	2521	2326	1577	1892	1802	2241
COCOA:	Value f.o.b. (K million)	28.1	39.1	86.3	63.0	60.8	46.5	34.1	31.8	41.4	67.0
	Quantity (tonnes)	30568	31321	29392	27129	28084	28792	27834	28589	26342	34100
	Avg. unit value (K/tonne)	919	1250	2938	2321	2164	1615	1226	1113	1571	1965
COPRA:	Value f.o.b. (K million)	15.9	12.1	23.0	23.0	38.2	24.6	19.5	12.9	24.0	49.1
	Quantity (tonnes)	91665	85741	87733	92164	90880	90820	102048	74357	78711	93500
	Avg. unit value (K/tonne)	173	142	262	250	420	271	191	173	305	525
COPRA OIL:	Value f.o.b. (K million)	9.1	8.2	12.6	12.4	20.6	16.6	12.5	12.1	20.0	39.4
	Quantity (tonnes)	28227	25482	29743	29088	27822	34142	34772	37593	36179	40000
	Avg. unit value (K/tonne)	323	322	423	428	740	486	360	322	554	985
PALM OIL:	Value f.o.b. (K million)	6.4	6.8	8.6	10.5	14.4	11.9	14.2	21.7	23.7	75.6
	Quantity (tonnes)	23806	27262	24532	28413	34528	33347	44031	76715	77940	129900
	Avg. unit value (K/tonne)	269	248	350	369	418	359	323	282	305	582
RUBBER:	Value f.o.b. (K million)	2.6	3.0	2.9	2.6	3.5	3.8	3.4	1.4	2.2	2.4
	Quantity (tonnes)	5521	4662	4152	4135	4025	4027	4536	2337	2719	3460
	Avg. unit value (K tonne)	473	645	697	636	869	931	751	602	792	694
TEA:	Value f.o.b. (K million)	4.1	5.1	9.8	7.8	8.0	8.5	7.1	6.7	10.4	14.9
	Quantity (tonnes)	4717	5633	6192	6980	6978	7915	6959	6475	7234	6500
	Avg. unit value (K/tonne)	874	908	1577	1122	1144	1075	1025	1032	1436	2292

Source: National Statistical Office.

Table A12 Fisheries and Forest Products Exports, Value, Quantity and Average Prices, 1975-1984

		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984p
TUNA:	Value f.o.b. (K million)	3.5	12.7	14.4	20.5	14.3	24.6	20.0	1.4	0.3	3.9
	Quantity (tonnes)	12998	32072	23760	45542	26387	33058	29788	2725	541	6000
	Avg. unit value (K/tonne)	268	396	608	449	543	746	671	528	534	650
PRAWNS:	Value f.o.b. (K million)	1.6	3.8	4.6	4.1	6.2	6.6	6.9	6.5	8.8	7.8
	Quantity (tonnes)	438	774	871	972	1116	1267	1281	1086	1171	1150
	Avg. unit value (K/tonne)	3548	4973	5318	4249	5564	5178	5348	5951	7505	6760
LOGS:	Value f.o.b. (K million)	5.6	9.7	11.0	11.8	20.9	30.0	31.5	49.3	43.6	69.9
	Quantity (thousand cu. metres)	298.8	466.2	410.2	440.2	476.0	617.6	749.1	1057.1	1003.7	1278
	Avg. unit value (K/m^3)	18.6	20.9	26.7	26.9	43.9	48.5	42.1	46.6	43.4	54.7
LUMBER:	Value f.o.b. (K million)	2.6	5.4	5.9	4.2	7.5	6.2	3.9	3.5	2.5	3.3
	Quantity (thousand cu. metres)	26.7	53.7	53.4	42.1	62.9	43.7	25.0	19.9	14.1	17.8
	Avg. unit value (K/m^3)	98	100	110	99	119	141	156	176	177	185
WOODCHIPS:	Value f.o.b. (K million)	3.1	4.0	4.7	5.8	4.2	7.1	5.4	5.7	6.4	7.5
	Quantity (thousand bone dry tonnes)	..	..	233	230	119	133	102	103	117	129
	Avg. unit value (K/tonne)	..	..	20.1	25.2	35.5	53.3	53.5	55.1	54.6	58

Sources: National Statistical Office (except "Woodchips" taken from Bank of Papua New Guinea *Quarterly Economic Bulletin*).

Table A13 Copper and Gold Exports, Value, Quantity and Average Prices, 1975-1984

		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984p
COPPER:	Value f.o.b. (K million)	144.6	140.8	111.0	122.5	184.0	139.3	134.6	122.5	161.0	134.2
	Quantity (tonnes)	184000	179080	182030	193050	172000	142240	163995	173240	181058	149500
	Avg. unit value (K/tonne)	786	786.3	609.9	634.8	1069.7	979.3	820.7	707.2	889.4	897.6
GOLD:	Value f.o.b. (K million)	60.8	68.8	70.7	103.8	163.0	172.9	158.9	171.8	200.9	185.2
	Quantity (Kilograms)	19415	21207	22928	23357	20253	14532	17641	19071	19053	17900
	Avg. unit value (K/kg)	3132	3245.5	3085.1	4443.0	8050.2	11895.3	9010.0	9011.0	10545.9	10346.3
		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984p
COPPER CONCENTRATE:											
	Value f.o.b. (K million)	209.5	213.8	201.0	217.2	288.1	313.3	306.1	298.6	364.9	322.6
	Quantity (tonnes)	636564	639753	595860	655638	567317	494420	575347	608810	636051	550800
	Avg. unit value (K/tonne)	329.1	334.2	337.4	331.3	507.8	633.6	531.9	490.5	573.6	585.7
		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984p
AVERAGE METAL PRICES:											
	L.M.E. Copper (US cents/pound)	55.9	63.6	59.3	61.9	89.8	99.2	79.0	67.1	71.9	62.6
	London Gold (US$/ounce)	160.9	124.8	147.8	193.5	304.7	614.7	459.9	375.6	423.5	360.4

Sources: Copper and Gold: Bank of Papua New Guinea Quarterly Economic Bulletin (various issues). 1975 data are available for copper concentrate only; the division into gold and copper is implicit in Bougainville Copper Limited Annual Report.

Copper Concentrate: National Statistical Office.

Average Metal Prices: Bougainville Copper Limited Annual Report 1983, Statistical Summary (to 1983); Bank of Papua New Guinea for 1984.

Table A14 Imports by Country of Origin, Values (K million) and Percentage Shares, FY1976-1983

	FY1976	1977	1978	1979	1980	1981	1982	1983
VALUES (K million)								
Australia	161.4	219.6	238.5	275.5	279.2	278.0	309.5	322.5
China	3.9	1.9	2.4	3.1	8.0	9.0	10.4	13.0
Hong Kong	9.0	16.3	18.0	20.2	15.3	15.0	15.3	16.2
Japan	50.0	85.4	82.1	92.5	123.5	119.2	107.9	125.3
Netherlands	2.5	2.2	2.4	1.8	9.1	1.9	2.3	2.0
New Zealand	4.8	12.7	14.4	20.2	27.6	38.0	40.7	40.6
Singapore	40.6	50.3	51.5	71.9	104.4	136.1	110.3	109.2
Spain	0.2	0.1	0.1	0.5	-	0.1	0.3	0.7
United Kingdom	18.3	15.2	15.0	17.0	28.7	31.6	34.0	31.5
United States	24.4	16.8	24.7	25.9	44.1	56.4	64.2	80.8
West Germany	5.0	5.3	5.1	8.4	9.3	11.8	9.4	16.1
Other countries	26.3	22.4	24.0	24.5	34.9	40.8	47.4	57.0
TOTAL	346.4	448.3	478.3	561.6	684.2	738.1	751.7	814.9
PERCENTAGE SHARES								
Australia	46.6	49.0	49.9	49.1	40.8	37.7	41.2	39.6
China	1.1	0.4	0.5	0.6	1.2	1.2	1.4	1.6
Hong Kong	2.6	3.6	3.8	3.6	2.2	2.0	2.0	2.0
Japan	14.4	19.0	17.2	16.5	18.0	16.1	14.4	15.4
Netherlands	0.7	0.5	0.5	0.3	1.3	0.3	0.3	0.2
New Zealand	1.4	2.8	3.0	3.6	4.0	5.1	5.4	5.0
Singapore	11.7	11.2	10.8	12.8	15.3	18.4	14.7	13.4
Spain	0.1	-	-	0.1	-	0.1	-	0.1
United Kingdom	5.3	3.4	3.1	3.0	4.2	4.3	4.5	3.9
United States	7.0	3.7	5.2	4.6	6.4	7.6	8.5	9.9
West Germany	1.4	1.2	1.1	1.5	1.4	1.6	1.2	2.0
Other countries	7.6	5.0	5.0	4.4	5.1	5.5	6.3	7.0

Source: Bank of Papua New Guinea Quarterly Economic Bulletin (various issues); except that for FY1976 data are from National Statistical Office International Trade.

Table A15 Value of Imports, FY1976 and 1980-1983 (K million)[a]

SITC		Y/E June FY1976	Y/E December 1980p	1981p	1982p	1983p
0	Food, live animals	73.1	133.2	136.4	138.7	134.8
1	Beverages, tobacco	5.8	8.7	8.4	8.4	8.3
2	Crude materials inedible except fuel	1.1	2.1	3.6	3.6	4.9
3	Mineral fuels, lubricants	47.2	117.9	158.0	146.1	167.4
4	Animal, vegetable oils, fats	0.8	1.9	1.9	2.2	2.5
5	Chemicals	18.9	36.6	45.0	39.3	64.1
6	Manufactured goods by material	48.1	91.6	105.1	118.9	130.6
7	Machinery, transport equipment	109.2	206.3	215.2	230.4	232.8
8	Miscellaneous manufactures	28.0	52.9	54.5	53.9	60.3
9	Miscellaneous transactions	14.1	33.0	10.2	10.2	9.3
	Total all groups	346.4	684.2	738.1	751.7	814.9

SELECTED COMMODITIES IMPORTED FY1976 AND PRELIMINARY ESTIMATES FOR 1980 TO 1983 (K million)

SITC		Y/E June FY1976	Y/E December 1980p	1981p	1982p	1983p
011	Meat: fresh, chilled, frozen	7.8	18.3	15.7	13.8	15.2
012	Meat: salted, dried	4.2	10.6	10.3	13.5	11.5
014	Meat: preserved, canned	6.7	8.1	7.6	7.5	12.8
037	Fish: canned	7.9	17.6	21.8	19.7	22.0
042	Rice	13.3	24.1	23.4	24.8	19.4
054-058	Fruit, vegetables	4.2	7.1	9.0	9.6	10.6
071	Coffee	1.1	1.7	2.1	2.0	2.3
112	Alcoholic beverages	1.9	2.7	2.6	2.4	2.5
334	Petroleum products	46.8	111.0	156.4	143.4	166.2
541	Medicinals, pharmaceuticals	2.7	5.3	12.9	8.9	26.3
625	Rubber tyres, tubes	4.1	9.0	8.5	10.7	11.4
781-786	Motor vehicles, parts	24.2	51.8	44.3	39.2	47.1
842-851	Clothing, footwear	11.1	19.8	18.7	19.5	21.1
821	Furniture	2.3	4.0	4.7	4.1	3.7

[a]Owing to difficulties in establishing a computer system for international trade statistics no data on imports are available between FY1977 and 1979. The data from 1980 onwards are preliminary and subject to revision.

Source: National Statistical Office.

Table A16 Foreign Direct Investment in Papua New Guinea by Country of Origin, 1976-1982[a] (K thousand)

	1976	1977	1978	1979	1980	1981	1982	Total	Per cent
Australia	2,547	729	2,296	2,812	4,419	8,010	16,439	37,852	38.6
United States	6	79	652	1,397	2,929	5,218	15,523	25,804	26.7
United Kingdom	502	882	1,589	287	3,135	114	1,657	8,066	8.3
Japan	1,026	738	877	155	577	7	914	4,294	4.4
Hong Kong	404	78	-	2,150	2,771	818	337	6,558	6.8
New Zealand	-	337	27	-	104	101	-	569	0.6
West Germany	-	135	-	512	189	2,469	6,527	9,832	10.2
Singapore	-	-	-	99	249	908	1,616	2,872	3.0
Korea	-	-	-	56	49	-	-	105	0.1
Other	2	200	4	188	619	44	201	1,258	1.3
TOTAL	4,487	3,178	5,445	7,656	15,041	17,589	43,214	96,610	100.0

[a]Includes equity in Ok Tedi Mining Ltd of 9,112 in 1981, and 25,248 in 1982 from Australia, the United States and West Germany.

Source: Economic Commission for Asia and the Pacific/United Nations Centre on Transnational Corporations, Proceedings of the Ministerial Roundtable on Transnational Corporations and Developing Pacific Island Countries, Bangkok, April 1984, p.345.

Table A17 National Government Budget Expenditure by Functional Groups, FY1975-1984 (K million)

	Y/E June			Y/E December						
	FY1975	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984
Transferred functions	70.3	11.0	..	0.5	..	..	..	..	..	..
Policy & administration	52.3	70.9	67.3	72.0	79.0	97.1	103.0	105.8	111.9	120.8
Defence	6.0	17.3	17.2	18.7	20.4	24.8	23.3	24.0	27.0	32.1
Civilian law & order	17.8	24.0	25.8	28.7	31.8	35.9	41.1	45.7	45.7	51.5
Education	51.5	60.3	73.4	74.6	75.2	80.2	94.3	113.1	124.6	137.7
Health	19.8	14.4	28.2	32.2	35.4	40.9	45.4	49.1	52.6	59.1
Other community services	11.4	13.0	15.6	15.5	13.2	12.9	18.9	16.1	14.2	15.0
Primary industry	16.4	17.3	21.1	24.9	26.2	24.8	27.2	25.6	25.4	30.2
Lands, minerals, energy	8.4	9.1	7.5	9.0	9.1	11.0	10.8	10.4	11.2	14.6
Other economic opportunities	6.0	8.6	9.0	14.4	14.6	20.2	32.8	23.2	28.2	24.9
Transport, infrastructure, communication	32.1	33.8	37.3	35.9	36.2	33.3	37.2	37.0	26.3	28.4
Loans, capital contributions to statutory authorities	19.8	17.1	19.2	15.3	23.6	18.5	22.2	22.1	10.7	8.4
Capital works	32.0	38.4	50.2	44.5	37.8	63.3	64.1	56.5	49.0	52.3
Maintenance works	30.0	28.8	31.5	30.5	30.0	34.4	29.2	29.6	34.7	32.8
Provincial grants, financing	4.0	3.9	4.2	32.8	61.1	67.4	63.0	61.0	61.1	63.2
SUB-TOTAL GOODS & SERVICES	377.7	368.0	407.6	449.6	493.8	564.6	612.4	619.3	622.7	671.1
Commercial projects	1.0	3.0	-	-	-	-	9.6	14.0	23.8	27.8
Debt service	21.6	58.0	29.8	44.7	43.8	67.9	70.9	99.0	133.9	131.8
EXPENDITURE TO BE FINANCED	400.3	429.0	437.4	494.3	537.6	632.5	692 9	732.3	780.4	830.7
MEMO: PAYMENTS TO OR FOR THE PROVINCES										
Grants & financing	4.0	3.9	4.2	32.8	61.1	67.4	63.0	61.0	61.1	63.2
Policy & administration	1.8	2.1	13.5	11.8	17.3	16.9	18.4	23.2	24.9	32.1
Education	n.a.	n.a.	n.a.	33.9	29.8	29.0	32.7	50.2	56.4	67.4
Health	n.a.	n.a.	n.a.	4.4	9.3	9.4	12.5	12.9	39.5	44.7
Primary industry	n.a.	n.a.	n.a.	10.4	10.8	10.2	12.2	12.2	12.7	13.6
Commerce, business development	n.a.	n.a.	n.a.	1.2	1.2	1.2	1.7	1.9	2.0	2.1
SUB-TOTAL PROVINCES	5.8	6.0	17.7	94.5	129.5	134.1	140.5	161.4	196.6	223.1

Source and method: see Notes on Table A17.

Notes on Table A17 National Government Budget Expenditure by Functional Groups, FY1975-1984 (K million)

The table was compiled from Department of Finance Estimates of Revenue and Expenditure (annual), expenditure estimates for the year about to close based upon third-quarter review data. The reports of the Auditor General would be a more accurate source but the differences would not be large. All figures have been taken net of appropriations-in-aid.

The functional classification of expenditure adopted here differs from that contained in the supplement to the budget estimates, the main difference being in the treatment of policy and administration. The following notes describe the method adopted. (Budget division classification numbers are in brackets).

"Transferred functions": expenditure associated with the purchase of assets from Australian Government departments.

"Policy and administration": all expenditures for the National Parliament (201), Auditor General (202), Departments of Finance (213) (excluding National Development Projects 213-3), Foreign Affairs and Trade (217), Prime Minister (245) (excluding Youth, Women, Recreation 245-6), Public Services Commission (249); General Overheads (265), Special Appropriations General (298-1-1), Abolished Functions (266). It also includes the policy and administration functions (budget function) of the Departments of Education (209-1), Health (221-1), Justice (225-1), Labour (229-1), Industry (223-1), Police (237-1), Primary Industry (241-1), Transport and Civil Aviation (261-1), Urban Development, and Works and Supply Secretariat (263-1); also administration functions of provincial governments given by Provincial Departments (271 to 290) and Provincial Affairs (246) excluding allocations for health, primary industry, education, and business development which have been included in appropriate functional groups elsewhere in the table (functions 2, 3, 4, 5 under each Provincial Department).

"Defence": all expenditure of the Department of Defence (205).

"Civilian Law and Order": legal services and corrective institutions (i.e. Justice Department excluding policy and administration), police services (i.e. Police Department excluding policy and administration), National Court.

"Education": general education, pre-employment education, community education, education services, international schools (i.e. Education Department excluding policy and administration); training functions of the Departments of Health and Primary Industry; allocations to the Universities and Administrative College; allocations to provinces for National Capital District and Kiunga-Lake Murray, for education under Provincial Departments and Department of Provincial Affairs, and the Teaching Services Commission.

"Health": expenditures for urban, rural, and other health care and health improvement (i.e. Department of Health excluding policy, administration and training); allocations to provinces National Capital District and Kiunga-Lake Murray for health under Provincial Departments and Department of Provincial Affairs.

"Other Community Services": environment and conservation, community and family services, youth, women, religion and recreation, grants to statutory institutions (excluding universities, Development Bank, Air Niugini, Harbours Board, Electricity Commission (291-5 to 291-15).

"Primary Industry": expenditures on primary industry research and development, forest management, services to primary industry, fisheries (i.e. Department of Primary Industry excluding policy and administration and training); allocations to provinces for primary industry under Provincial Departments and Department of Provincial Affairs.

"Lands, Minerals and Energy": Department of Lands (231) (excluding Office of Environment); Department of Minerals and Energy (233) (excluding the National Weather Services 233-1-6).

"Other Economic Opportunities": Department of Commerce/Business Development (until 1984), National Development Projects (213-3), Industrial Development (223), Office of Tourism, loans and capital contributions to the Papua New Guinea Development Bank (291-17), grants and financial transactions for missions, local government and private sector (293-1-6).

"Transport, Infrastructure, Communications": Department of Public Utilities (until 1984), Department of Transport and Civil Aviation (excluding policy and administration function), Department of Urban Management/Physical Planning (excluding Environment), Department of Works and Supply (excluding Secretariat 263-1), National Weather Service (233-1-6).

"Loans, Capital Contributions to Statutory Authorities": allocations for commercial statutory authorities - Electricity Commission (291-18), Air Niugini (291-19), Harbours Board (291-20).

"Capital Works": Capital Works Program (269).

"Maintenance Works": maintenance works (267), minor power houses (268).

"Provincial Grants and Financing": special appropriations for derivation grant, minimum unconditional grant, mining and timber royalties, motor registrations (298-1-2), provincial and local government grants (292-1).

"Commercial projects": appropriations for commercial investments (e.g. Ramu Sugar, Ok Tedi) (294).

"Debt Service": service payments on kina loans and foreign currency loans (299).

Table A18 Percentage Shares in Budget Expenditure on Goods and Services, FY1975-1984

	Y/E June			Y/E December						
	FY1975	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984
Transferred functions	18.6	3.0	-	0.1	-	-	-	-	-	-
Policy & administration	13.8	19.3	16.5	16.0	16.0	17.2	16.8	17.1	18.0	18.0
Defence	1.6	4.7	4.2	4.2	4.1	4.4	3.8	3.9	4.3	4.8
Civilian law and order	4.7	6.5	6.3	6.4	6.4	6.4	6.7	7.4	7.3	7.7
Education	13.6	16.4	18.0	16.6	15.2	14.2	15.4	18.3	20.0	20.5
Health	5.2	3.9	6.9	7.2	7.2	7.2	7.4	7.9	8.4	8.8
Other community services	3.0	3.5	3.8	3.4	2.7	2.3	3.1	2.6	2.3	2.2
Primary industry	4.3	4.7	5.2	5.5	5.3	4.4	4.4	4.1	4.1	4.5
Lands, minerals, energy	2.2	2.5	1.8	2.0	1.8	1.9	1.8	1.7	1.8	2.2
Other economic opportunities	1.6	2.3	2.2	3.2	3.0	3.6	5.4	3.7	4.5	3.7
Transport, infrastructure, communication	8.5	9.2	9.2	8.0	7.3	5.9	6.1	6.0	4.2	4.2
Loans, capital contributions to statutory authorities	5.2	4.6	4.7	3.4	4.8	3.3	3.6	3.6	1.7	1.3
Capital works	8.5	10.4	12.3	9.9	7.7	11.2	10.5	9.1	7.9	7.8
Maintenance works	7.9	7.8	7.7	6.8	6.1	6.1	4.8	4.8	5.6	4.9
Provincial grants & financing	1.1	1.1	1.0	7.3	12.4	11.9	10.3	9.8	9.8	9.4
EXPENDITURE ON GOODS & SERVICES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Provincial functions	1.5	1.6	4.3	21.0	26.2	23.8	22.9	26.1	31.6	33.2
National functions	98.5	98.4	95.7	79.0	73.8	76.2	77.1	73.9	68.4	66.8

Source: Table A17.

Table A19 National Government Revenue, FY1975-1984 (K million)[a]

	Y/E June			Y/E December						
	FY1975	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984p
Direct taxation:										
. individuals	42.4	55.0	52.1	67.1[b]	61.6	75.9	91.4	109.4	122.4	130.0
. companies	28.5	24.4	28.1	49.2[b]	40.8	47.5	43.6	42.2	44.3	46.0
. dividend withholding	10.1	1.7	1.4	3.5	3.8	5.1	4.8	4.6	3.7	4.6
Excise duties	20.3	25.7	32.6	36.3	41.0	44.7	45.4	49.8	51.5	57.5
Import duties	29.7	29.6	35.3	41.7	48.0	54.5	63.7	77.6	88.4	103.0
Export tax	1.1	2.1	6.5	6.1	8.3	9.6	4.5	4.5	4.9	13.5
Other indirect tax[c]	10.4	11.2	12.2	14.5	17.6	15.9	18.2	18.1	26.3	33.5
M.R.S.F. drawdown	..	45.0	35.0	31.0	38.5	56.6	81.4	40.0	21.0	29.7
Revenue from investments	14.8	1.9	2.2	2.6	7.5	15.4	2.6	8.8	15.4	17.0
Other non-tax revenue[d]	20.3	24.6	21.6	25.8	17.6	16.5	26.0	29.1	27.2	32.4
TOTAL	177.6	221.2	227.0	277.8	284.7	341.7	381.6	384.1	405.1	467.2

[a]Figures refer to actual collections except in 1984 where they are revised estimates.

[b]Income tax collections for individuals and companies relate to 18 months because of the change to calendar year fiscal year in 1978.

[c]Includes motor registrations, business and other licence fees, land/timber/mining leases, royalties, fines, stamp duties etc.

[d]Includes sales of goods and services, sundry receipts, rental income, etc.

Source: Department of Finance *Estimates on Revenue and Expenditure* (annual).

Table A20 Mineral Resources Stabilization Fund Operations, FY1976-1984 (K million)

	Y/E June		Jul-Dec	Y/E December						
	FY1976	FY1977	1977	1978	1979	1980	1981	1982	1983	1984p
RECEIPTS										
Company tax	54.1	15.6	20.5	13.5	23.1	73.4	51.7	19.5	13.0	39.4
Dividend withholding tax	3.1	3.0	1.1	2.7	6.0	12.7	6.4	2.4	3.8	5.2
Dividends on govt equity	5.0	5.1	2.0	4.6	10.2	21.4	10.7	2.3	5.7	7.6
Other receipts	0.7	0.8	0.2	0.3	0.1	1.2	2.4	2.5	2.5	3.3
Total receipts	62.9	24.6	23.8	21.1	39.4	108.7	71.2	25.4	25.0	55.5
PAYMENTS										
Payment to public account	-45.0	-35.0	-17.0	-31.0	-38.5	-56.6	-81.4	-40.0	-21.0	-29.7
END YEAR FUND BALANCE	17.9	7.5	14.3	3.4	4.3	56.3	46.1	31.8	35.8	61.6
Royalty paid to North Solomons Provincial government by B.C.L.	2.3	2.5	0.8	2.1	2.8	4.2	3.7	3.4	4.7	5.4

Source: Department of Finance.

Table A21 International Agency Concessional Loan Drawdowns, FY1975-1984 (K million)

	Y/E JUNE			Y/E DECEMBER						
	FY1975	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984p[a]
World Bank	{14.5	6.3	5.0	1.0	5.4	1.3	1.1	2.0	8.2	16.9
International Development Association		2.4	2.0	4.2	4.6	7.5	6.3	6.8	13.2	3.0
Asian Development Bank	0.2	1.1	4.3	5.0	4.3	8.8	10.9	14.3	12.5	7.0
Other: European Development Fund	-	-	-	-	-	-	-	-	0.4	1.9
European Communities	-	-	-	-	-	-	-	-	-	0.5
European Investment Bank	-	-	-	-	1.6	-	-	2.8	-	-
International Fund for Agricultural Development	-	-	-	-	-	-	-	-	-	0.5
Kuwait Fund for Arab Economic Development	-	-	-	-	-	0.3	-	0.2	-	-
Kreditanstalt für Wiederausbau	-	-	-	-	-	0.6	2.2	0.4	0.1	1.2
Overseas Economic Credit Fund	-	-	-	-	0.3	0.3	-	-	-	4.5
Total concessional loan drawdown	14.7	9.9	11.3	10.2	16.2	18.7	20.5	26.5	34.5	35.5
Budget estimated drawdown	20.6	13.6	12.7	20.9	33.3	32.9	34.8	39.7	41.0	42.0
"Slippage"	5.9	3.7	1.4	10.7	17.1	14.2	14.3	13.2	6.5	6.5

[a]Estimates for 1984 exclude K2.0 million from European Investment Bank and K6.1 million from Kreditanstalt für Wiederausbau for Ok Tedi financing.

Source: Department of Finance Estimates on Revenue and Expenditure (annual).

Table A22 Budget Financing Summary, FY1975-1984 (K million)[a]

	Y/E June			Y/E December						
	FY1975	FY1976	FY1977	1978	1979	1980	1981	1982	1983	1984
Goods and services	377.7	368.0	407.6	449.6	493.8	564.6	612.4	619.3	622.7	671.1
Commercial projects	1.0	3.0	–	–	–	–	9.6	14.0	23.8	27.8
Debt service	21.6	58.0	29.8	44.7	43.8	7.9	70.9	99.0	133.9	131.8
EXPENDITURE TO BE FINANCED	400.3	429.0	437.4	494.3	537.6	632.5	692.9	732.3	780.4	830.7
less internal revenue	177.6	221.2	227.0	277.8	284.7	341.7	381.6	384.1	405.1	467.2
less budget support grants	156.3	119.4	174.9	171.9	174.8	174.6	184.3	186.7	210.1	232.9
GROSS BORROWING REQUIREMENTS	66.4	88.4	35.5	44.6	78.1	116.2	127.0	161.5	165.2	130.6
Commercial Project loan drawdowns	1.0	3.0	–	–	–	–	–	2.8	16.4	23.8
International agency concessional loan drawdowns	14.7	9.9	11.3	10.2	16.2	18.7	20.5	26.5	34.5	35.5
General borrowing	50.7	75.5	24.2	34.4	61.9	97.5	106.5	132.2	114.3	71.3
MEMO ITEMS: PERCENTAGE OF EXPENDITURE FINANCED FROM:										
Internal revenue (%)	44.4	51.6	51.9	56.2	53.0	54.0	55.1	52.5	51.9	56.2
Budget support grants (%)	39.0	27.8	40.0	34.8	32.5	27.6	26.6	25.5	26.9	28.0
Gross borrowing requirements (%)	16.6	20.6	8.1	9.0	14.5	18.4	18.3	22.0	21.2	15.7

[a]Expenditure figures are from "revised estimates" as in Table A17, receipts figures are actuals as in Tables A19 and A21, and "general borrowing" is derived as residual.

Source: Department of Finance *Estimates of Revenue and Expenditure* (annual).

Table A23 Balances of Public Debt Outstanding at End of Year, 1976-1984 (K million)

	1976	1977	1978	1979	1980	1981	1982	1983	1984
OVERSEAS BORROWINGS:									
International agencies	62.8	69.4	77.4	88.4	100.7	124.4	151.9	216.2	268.7
Commercial loans	74.9	96.3	96.1	111.3	137.5	201.8	238.4	390.0	404.3
Australian government	30.1	18.0	14.4	11.6	9.2	6.9	4.3	3.2	{50.4
Private treaty loans	67.1	71.4	65.1	58.9	56.8	56.8	48.9	51.0	
Sub-total overseas	234.9	255.1	253.1	270.2	304.2	389.9	485.4	660.5	723.3
DOMESTIC BORROWINGS:									
Private treaty loans	55.8	53.5	62.2	85.9	94.1	78.3	74.8	89.0	121.7
Treasury bills	16.3	27.4	19.9	26.6	63.6	59.0	70.0	57.0	60.0
Special Bank of Papua New Guinea loans	5.1	5.1	15.1	29.0	18.5	17.0	15.5	-	-
Sub-total domestic	77.3	86.0	97.2	141.5	176.2	154.3	160.3	146.0	181.7
TOTAL PUBLIC DEBT OUTSTANDING	312.1	341.1	350.2	411.8	480.4	544.2	645.7	806.5	905.0

Source: Bank of Papua New Guinea *Quarterly Economic Bulletin* (various issues).

Table A24 Term Structure of Outstanding Overseas Public Debt, 1976 and 1983

	As at 30.6.1976		As at 5.12.1983	
	Principal	Interest	Principal	Interest
Percentage of total outstanding commitments payable overseas in:				
less than 1 year	2.4	9.6	3.4	12.0
less than 2 years	5.0	19.1	8.8	24.9
less than 3 years	9.7	28.2	13.5	36.5
less than 4 years	16.1	37.0	19.8	48.3
less than 5 years	22.5	45.2	31.3	58.8
less than 6 years	27.9	52.7	42.2	67.1
less than 7 years	38.7	59.7	51.0	73.5
8 years and over	61.3	40.3	49.0	26.5

Source: calculated from Public Debt Tables (Department of Finance).

Table A25 Consumer Price Index, All Groups Weighted Urban Average, 1972-1984 (1972=100)

	Y/E December												
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984p
Consumer price index (1977=100)[a]	60.4	65.4	80.5	89.0	95.8	100.0	105.8	111.9	125.4	135.5	143.0	154.3	165.8
Change over previous year %		8.3	23.1	10.6	7.6	4.4	5.8	5.8	12.1	8.1	5.5	7.9	7.5

	Y/E June											
	FY1973	FY1974	FY1975	FY1976	FY1977	FY1978	FY1979	FY1980	FY1981	FY1982	FY1983	FY1984
Consumer price index (1977=100)[a]	62.0	73.1	85.2	93.1	97.7	102.8	108.3	118.5	131.5	138.7	148.3	161.2
Change over previous year %		17.9	16.6	9.3	4.9	5.2	5.4	9.4	11.0	5.5	6.9	8.7

[a]Index values before 1976 (calendar year series) and before FY1977 (year ending June series) are obtained by splicing the series published formerly with base 1971=100 into currently published series with base 1977=100. The regimen and weighting scheme was changed in 1977.

Source: National Statistical Office *Consumer Price Indexes* (quarterly).

Table A26 Urban and Rural Minimum Wages, 1972-1984

	Y/E December												
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Minimum urban wage (kina per week)	8.88	12.07	15.23	24.15	27.18	28.06	29.50	30.68	33.39	36.72	39.13	41.51	43.59
Change over previous year %		35.0	26.2	58.5	12.5	3.2	5.1	4.0	8.8	9.9	6.6	6.0	5.0
Minimum rural wage (kina per week)	5.90	5.90	6.68	8.51	9.17	9.93	10.73	11.47	12.49	13.70	14.60	15.48	16.25
Change over previous year %		0.0	13.2	27.4	7.7	8.3	8.0	6.9	8.9	9.7	6.6	6.0	5.0

	Y/E June											
	FY1973	FY1974	FY1975	FY1976	FY1977	FY1978	FY1979	FY1980	FY1981	FY1982	FY1983	FY1984
Minimum urban wage (kina per week)	10.62	13.32	19.58	26.49	27.48	28.81	30.08	31.70	35.22	37.85	40.49	42.55
Change over previous year %		25.4	47.0	35.3	3.7	4.8	4.4	5.4	11.1	7.5	7.0	5.1
Minimum rural wage (kina per week)	5.90	5.90	7.92	8.83	9.59	10.34	11.10	11.91	13.14	14.12	15.10	15.87
Change over previous year %		0.0	34.2	11.5	8.6	7.8	7.3	7.3	10.3	7.5	7.0	5.1

Source: Calculated from series in C. Colclough and P. Daniel (1982) Wage Incomes and Wage Costs in Papua New Guinea: challenges for adjustment distribution and growth, National Planning Office, p.39 (for 1972 to 1982); Bank of Papua New Guinea Quarterly Economic Bulletin December 1984 Issue, Table 10.2 (for 1983 and 1984). Wage figures in each year were calculated by averaging the figures for each month covered by the relevant Minimum Wages Board determination.

Table A27 Unit Value Index of Major Export Commodities, 1975-1984 (average for 1975-1984=100)[a]

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Coffee	43.8	96.3	179.7	107.6	116.8	107.8	72.9	87.7	83.4	103.8
Cocoa	53.8	73.1	172.0	135.9	126.6	94.6	71.7	65.2	92.0	115.1
Copra	63.8	52.4	96.6	92.2	154.9	99.9	70.4	63.8	112.5	193.6
Copra oil	65.3	65.1	85.6	86.6	149.7	98.3	72.8	65.1	112.1	199.2
Palm oil	76.7	70.7	99.9	105.3	119.2	102.5	92.2	80.5	87.0	166.1
Rubber	66.7	90.9	98.3	89.7	122.6	131.3	105.9	84.9	111.7	97.9
Tea	70.0	72.8	126.3	89.8	91.6	86.2	82.1	82.6	115.0	183.6
Tuna	49.7	73.4	112.8	83.2	100.7	138.3	124.5	97.9	99.0	120.5
Prawns	65.2	91.4	97.8	78.1	102.3	95.2	98.4	109.4	138.0	124.2
Logs	50.0	56.2	71.7	72.2	117.9	130.2	113.1	125.2	116.6	146.9
Lumber	72.0	73.4	80.8	72.7	87.4	103.6	114.6	129.3	130.0	136.1
Woodchips	n.a.	n.a.	45.2	56.8	79.9	120.0	120.5	124.0	122.9	130.6
Copper	96.1	96.1	74.5	77.6	130.7	119.7	100.3	86.5	108.7	109.7
Gold	43.0	44.6	42.4	61.1	110.6	163.5	123.8	123.8	144.9	142.2
London Metal Exchange (Index 1975 to 1984 average = 100):										
Copper	78.7	89.5	83.5	87.1	126.4	139.7	111.2	94.5	101.2	88.1
Gold	50.8	39.4	46.7	61.1	96.2	194.2	145.3	118.6	133.8	113.8

[a]The base of each index (100) is the average of the yearly average unit value f.o.b. taken over the whole decade 1975 to 1984. Thus for each commodity an index greater than 100 indicates that the price is above (below) the average for the decade. For woodchips the base is 1977-1984=100.

Sources: Tables A11, A12 and A13.

Table A28 Exchange Rates, End Year Mid-Rates, 1975-1984 (foreign currency units per kina)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
A$	1.0000	1.1335	1.1565	1.2629	1.3105	1.3154	1.3029	1.3636	1.2734	1.2716
US$	1.2571	1.2314	1.3200	1.4530	1.4488	1.5531	1.4695	1.3371	1.1422	1.0703
Yen	383.38	360.54	316.70	281.40	348.36	315.09	322.70	312.95	264.82	265.16
D.M.	3.2921	2.9027	2.7700	2.6506	2.5046	3.0495	3.3078	3.1836	3.1016	3.3190

Sources: Bank of Papua New Guinea Quarterly Economic Bulletin (various issues).

Table A29 Determinants of the Money Supply (M3), End Year Values, 1976-1984 (K million)

	1976	1977	1978	1979	1980	1981	1982	1983	1984p
Private sector domestic credit	112.4	137.7	194.5	229.0	303.9	342.6	373.2	412.5	501.1
Net domestic credit to government	17.6	3.5	13.3	35.0	15.0	43.5	71.1	4.9	-19.2
Sub-total domestic	130.0	141.2	207.8	264.0	318.9	386.1	444.3	417.4	481.9
Net foreign assets of banking system	174.8	312.3	265.0	353.9	274.9	221.8	205.0	320.6	369.5
Other items (net)[a]	-26.8	-25.1	-23.8	-46.2	-40.7	-50.0	-81.5	-88.4	-107.9
MONEY SUPPLY M3	278.0	428.4	449.0	571.7	553.1	557.9	567.8	649.6	743.5
Stabilization fund deposits:									
- Commercial banks	3.0	21.4	37.2	51.5	53.7	47.2	39.7	42.2	72.6[b]
- Bank of Papua New Guinea	0.3	49.4	68.4	96.3	102.4	91.0	90.7	83.3	80.3[b]
B.C.L. deposits	48.5	65.5	35.6	61.0	14.3	4.6	2.9	25.2	4.9[b]
ADJUSTED MONEY SUPPLY M3	226.2	292.1	307.8	362.9	382.7	415.1	434.5	498.8	585.7

[a]"Other items" is a balancing item in the monetary survey table comprising mainly shareholders' funds (liability) and bank premises (asset) from commercial banks and BPNG balance sheets. After 1978 the *Quarterly Economic Bulletin* includes it as an offset to domestic credit, but here it is treated as a residual.

[b]As at end of November 1984.

Source: Bank of Papua New Guinea *Quarterly Economic Bulletin* (various issues).

Table A30 Commodity Industry Boards and Stabilization Funds, End Year Balances and Investments, 1976-1984 (K million)

	1976	1977	1978	1979	1980	1981	1982	1983	1984p
FUND BALANCES END YEAR									
Coffee	6.8	46.4	63.6	83.8	94.9	90.3	92.1	85.3	82.8
Cocoa	4.4	32.3	48.9	60.2	61.9	53.7	44.6	44.9	45.9
Copra (board and fund)	2.5	4.1	3.4	13.8	7.5	1.7	0.1	0.7	28.5
Palm oil	-	-	-	-	-	-	-	-	7.9
TOTAL	13.7	82.9	115.9	157.8	164.3	145.7	136.8	130.9	164.5
INVESTMENTS END YEAR									
Commercial bank deposits	3.0	21.4	37.2	51.5	53.7	46.2	39.7	42.2	72.6
Bank of Papua New Guinea deposits	0.3	49.5	68.4	96.3	102.3	91.0	90.7	83.3	80.3
PNG government securities	10.3	11.6	10.0	9.7	7.9	8.2	6.1	5.4	5.3
Other	-	0.4	0.3	0.3	0.3	0.3	0.3	-	-

Source: Bank of Papua New Guinea Quarterly Economic Bulletin (various issues).

Table A31 Commercial Bank Advances Outstanding by Industry as of November, 1976-1983 (K million)

	1976	1977	1978	1979	1980	1981	1982	1983
Agriculture, fisheries	11.1	13.9	22.8	30.4	35.7	42.3	51.0	61.5
Forestrv	3.3	2.9	3.0	2.6	4.7	2.5	4.8	8.0
Copper mining	a	a	-	-	-	-	-	-
Other mining, quarrying	-	3.6	10.2	15.1	9.2	7.4	9.5	15.6
Engineering, metal processing	2.3	1.9	2.0	5.1	7.0	8.6	7.9	5.9
Food, drink, tobacco	4.9	4.0	4.9	5.6	8.9	9.3	13.2	17.0
Timber processing	8.0	8.1	8.5	6.1	3.3	5.2	3.9	5.5
Other manufacturing	3.0	2.5	3.9	4.8	6.7	7.0	7.0	13.2
Transport, storage, communication	7.1	18.4	16.5	21.3	24.7	25.7	25.2	28.3
Finance	7.4	5.6	5.8	7.7	9.3	3.4	2.5	8.5
Wholesale trade	6.5	14.1	24.7	20.2	25.7	{83.6	29.3	22.1
Retail trade	13.1	17.6	27.6	29.9	36.8		62.7	61.1
Building & construction	8.8	4.7	9.8	10.5	15.4	19.0	24.6	23.8
Other business	8.9	11.8	19.5	24.8	41.0	47.5	52.4	69.3
Sub-total business	84.5	109.1	159.3	184.1	228.4	261.5	293.9	339.8
National government	-	4.5	3.7	3.9	1.8	1.7	2.2	1.8
Provincial government	0.2	0.1	0.3	0.5	0.4	0.5	0.5	1.6
Local government	1.6	1.1	0.7	1.4	1.4	1.4	1.9	1.5
Sub-total government	1.8	5.8	4.7	5.8	3.6	3.6	4.6	4.9
Advances for housing:								
- citizens	0.5	0.5	0.9	1.6	2.2	{5.4	{5.6	{8.4
- non-citizens	2.0	1.5	2.0	2.2	2.0			
Other personal loans	9.6	10.0	11.0	12.6	15.8	16.6	18.4	23.0
Sub-total persons	12.1	12.0	13.9	16.3	20.0	22.0	24.0	31.4
Non-profit organizations	2.1	1.1	1.4	1.9	2.8	4.0	7.9	6.9
TOTAL RESIDENT BORROWERS	100.5	128.0	1[illegible].3	208.1	254.8	291.1	330.4	383.0

[a]Table excludes loans of K60 million to Bougainville Copper Limited that were repaid in 1978.

Source: Bank of Papua New Guinea *Quarterly Economic Bulletin* (various issues).

Table A32 Gross New and Increased Lending Commitments by Industry[a], Papua New Guinea Development Bank and Commercial Banks, 1976-1983 (K million)

	1976	1977	1978	1979	1980	1981	1982	1983
PNG DEVELOPMENT BANK								
Agriculture, fishing, forestry	2.1	2.6	6.7	6.9	11.0	14.9	5.3	11.2
Manufacturing	1.0	0.8	0.3	0.5	0.6	0.5	0.8	0.1
Transport, storage, communication	3.7	4.2	6.3	3.8	4.3	3.7	1.1	2.1
Commerce, finance	1.8	1.8	2.1	2.1	2.2	2.7	0.6	3.3
Building, construction	0.2	0.6	0.4	0.7	0.3	0.2	-	0.1
Other business	1.9	3.6	1.8	2.2	2.9	2.5	1.0	1.8
TOTAL DEVELOPMENT BANK	10.8	13.5	17.6	16.2	21.4	24.5	8.9	18.8
COMMERCIAL BANKS								
Agriculture, fishing, forestry	..	..	19.2	15.7	25.4	14.7	27.1	18.8
Manufacturing	..	..	7.0	11.3	11.8	11.6	19.8	20.5
Transport, storage, communication	..	..	5.0	16.8	9.4	4.8	5.8	14.7
Commerce[b], finance	..	..	27.8	53.9	58.2	37.6	35.1	74.9
Building, construction	..	..	4.4	8.3	12.0	4.8	7.2	11.5
Other business[c]	..	..	31.4	22.2	29.5	25.1	34.9	61.5
Local, provincial, national govt	..	..	1.0	2.1	2.5	1.8	1.6	1.9
Housing loans to persons	..	..	1.7	2.5	4.0	2.5	2.0	6.0
Other personal loans	..	..	10.5	9.6	14.4	9.2	8.5	13.6
All other loans	..	..	1.9	3.1	5.0	4.2	7.2	8.3
TOTAL COMMERCIAL BANKS	..	..	109.9	145.5	172.2	116.3	149.3	231.7

[a]Cancelled or reduced commitments are not included in this Table.

[b]Includes cocoa and coffee exporters.

[c]Includes mining and quarrying.

Source: Bank of Papua New Guinea *Quarterly Economic Bulletin* (various issues).

Table A33 Population by Age, Sex and Citizenship, Census Data, 1980

Age group (years)	Citizens						Non-citizens					
	Persons		Males		Females		Persons		Males		Females	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
All ages	2,978,057	100.0	1,557,077	100.0	1,420,980	100.0	32,670	100.0	18,595	100.0	14,075	100.0
0-4	468,931	15.7	244,107	15.7	224,824	15.8	3,691	11.3	1,882	10.1	1,809	12.9
5-9	429,998	14.4	223,775	14.4	206,223	14.5	3,979	12.2	2,058	11.1	1,921	13.6
10-14	384,613	12.9	203,308	13.1	181,305	12.8	2,322	7.1	1,154	6.2	1,168	8.3
15-19	302,729	10.2	167,046	10.7	135,683	9.5	951	2.9	533	2.9	418	3.0
20-24	256,003	8.6	134,944	8.7	121,059	8.5	1,821	5.6	1,024	5.5	797	5.7
25-29	215,669	7.2	110,959	7.1	104,710	7.4	3,923	12.0	2,079	11.2	1,844	13.1
30-34	208,166	7.0	103,874	6.7	104,292	7.3	5,167	15.8	3,022	16.3	2,145	15.2
35-39	146,699	4.9	75,576	4.9	71,123	5.0	3,791	11.6	2,307	12.4	1,484	10.5
40-44	145,265	4.9	74,544	4.8	70,721	5.0	2,625	8.0	1,730	9.3	895	6.4
45-49	113,504	3.8	58,567	3.8	54,937	3.9	1,534	4.7	994	5.3	540	3.8
50-54	113,181	3.8	58,253	3.7	54,928	3.9	1,251	3.8	830	4.5	421	3.0
55-59	84,005	2.8	43,112	2.8	40,893	2.9	765	2.3	483	2.6	282	2.0
60-64	63,016	2.1	33,816	2.2	29,200	2.1	429	1.3	257	1.4	172	1.2
65-69	26,949	0.9	14,448	0.9	12,501	0.9	222	0.7	141	0.8	81	0.6
70-74	13,249	0.4	7,505	0.5	5,744	0.4	111	0.3	60	0.3	51	0.4
75 & over	6,080	0.2	3,243	0.2	2,837	0.2	88	0.3	41	0.2	47	0.3

Source: National Statistical Office.

Table A34 Employment by Industry Group, 1976-1983[a] (number of persons)

	1976	1977	1978	1979	1980	1981	1982	1983
Primary industry	47592	50764	51305	51909	53294	55106	47165	43541
Mining & quarrying	4527	4652	4831	4915	5043	5426	7706	8018
Manufacturing	18032	18719	19881	22341	24170	25209	23590	22841
Building and construction	10963	12695	14930	16876	18802	23503	16696	12936
Transport and storage	6285	6800	8745	9520	9880	9317	7697	7845
Communication	2192	2205	2330	2384	2400	2534	3667	2311
Finance and property	2715	3267	3406	3485	3550	3873	3909	4056
Commerce	14281	14882	18044	18894	20367	21569	20713	20571
Public authorities n.e.c.[b]	29241	28076	29501	30085	30286	31982	30165	29165
Community social and business services	28608	26793	31952	32484	32750	38645	40643	39857
Amusements, hotels, etc.	4211	4147	4415	4516	4680	4942	4661	4507
Domestic helpers	1200	10600	9452	11047	12667	13376	12616	12198
Total all sectors	180647	183600	198592	208456	217894	235482	219228	207846

[a]For 1976-1982, figures are for June. For 1983 figures are for March. Figures include citizen and non-citizen employment.

[b]Public authorities not elsewhere classified (n.e.c.) includes all government departments except Education, Health, Primary Industry, the Administrative College, Teacher Education Scholarship Holders and the Teaching Service Commission.

Sources: C. Colclough and P. Daniel, Wage Incomes and Wage Costs in Papua New Guinea, National Planning Office, 1982. Table 4.8, p.94 for the years 1976-1980. National Planning Office computation for the years 1981-1983.

Table A35 Localization in the Public Service, FY1976-1985[a] (number of persons)

	FY1976	1978	1979	1980	1981	1982	1983	1984	1985p
National staff:									
National departments/functions	..	..	30922	31710	30786	29505	24836	25219	25790
Provincial departments/functions	..	..	15266	16565	19712	19804	21548	23192	23909
Total national staff	43028	44748	46188	48275	50498	49309	46384	48411	49499
Expatriate staff:									
National departments/functions	..	..	3865	3940	3676	2941	2421	2442	2370
Provincial departments/functions	..	..	883	647	554	608	688	607	627
Total expatriate staff	6731	4994	4748	4587	4230	3549	3109	3049	2997
All staff:									
National departments/functions	..	..	34787	35650	34462	32446	27257	27661	28160
Provincial departments/functions	..	..	16149	17212	20266	20412	22236	23799	24536
Total public service staff	49759	49742	50936	52862	54728	52858	49493	51460	52696
National staff as % of total	86.5	90.0	90.7	91.3	92.3	93.3	93.7	94.1	94.3

[a] The table refers to estimated staff at the beginning of the budget year indicated. It excludes approximately 10,000 day labourers and all commercial and non-commercial statutory authorities and institutions.

Source: Department of Finance Estimates on Revenue and Expenditure (annual).

Table A36 Papua New Guinea, Comparisons with Other Countries, c1980-1982

	Population	Average Annual Growth		Percentage of workforce in agriculture	Primary school enrolment rate	Secondary school enrolment rate	Area in thousands of square kilometres	Life expectancy at birth
		From World Bank estimates	From U.S. Dept. of Commerce					
	Mid-1982 millions	1980-2000 per cent	1980-1985 per cent	1980 per cent	1981 per cent	1981 per cent		
Papua New Guinea	3.1	2.2	2.8	82	65	13	462	53
Fiji	0.7	2.0[a]	2.0	44[b]	85[c]	70[c]	18	61[b]
Low Income Countries	2266.5	1.7	..	72	94	34	29,097	59
- excluding India & China	541.3	2.9	..	73	72	19	16,248	51
Middle Income Countries	1158.3	2.2	..	46	102	41	43,031	60
- Lower	669.6	2.4	..	56	101	34	20,952	56
- Upper	488.7	2.1	..	30	104	51	22,079	65
ASEAN:								
Indonesia	152.6	1.9	2.1	58	100	40	1,919	53
Thailand	48.5	1.9	2.0	76	96	29	514	63
Philippines	50.7	2.1	2.5	46	110	63	300	64
Malaysia	14.5	2.0	2.2	50	92	53	330	67
Singapore	2.5	1.0	1.2	2	104	65	1	72
Low Income Countries								
- Benin	3.7	3.3	3.0	46	65	18	113	48
- Togo	2.8	3.3	3.0	67	111	31	57	47
- Sierra Leone	3.2	2.4	2.6	65	39	12	72	38
Lower Middle Income Countries								
Liberia	2.0	3.5	3.2	70	66	20	111	54
Zambia	6.0	3.6	n.a.	67	96	16	753	51
Honduras	4.0	3.1	3.6	63	95	30	112	60
Zimbabwe	7.5	4.4	3.4	60	126	15	391	56
Cameroon	9.3	3.5	2.6	83	107	19	475	53
Nicaragua	2.9	3.0	3.8	39	104	41	130	58
Guatemala	7.7	2.6	2.8	55	69	16	109	60
Paraguay	3.1	2.3	2.7	49	102	26	407	65
Upper Middle Income Countries								
Uruguay	2.9	0.7	0.3	11	122	70	176	73
Israel	4.0	1.6	1.7	7	95	74	21	74
Hong Kong	5.2	1.4	1.7	3	106	65	1	72

[a] Last five years.

[b] 1976.

[c] From age groups, 1976.

Table A36 Papua New Guines, Comparisons with Other Countries, c.1980-1982 (contd)

	GNP per capita	Average annual per capita growth	Average annual rate of inflation	Public External Debt Outstanding			Balance of payments - current account balance	Debt service payments as a percentage of exports
					As a Percentage of			
					GNP	Exports		
	1982	1960-1982	1970-1982	1982	1982	1982	1982	1982
	US$	per cent	per cent	US$ million	per cent	per cent	US$ million	per cent
Papua New Guinea	820	2.1	8.5	748	33.1	85.4	-487	10
Fiji	1,950	3.2	9.1	225.8	25.4	28.7	-186	..
Low Income Countries	280	3.0	11.5	..	18.9	..	..	9
- excluding India & China	250	1.1	11.7	..	28.7	..	..	10
Middle Income Countries	1,520	3.6	12.8	..	24.5	..	..	17
- Lower	840	3.2	11.7	..	27.2	..	..	17
- Upper	2,490	4.1	16.4	..	23.2	..	..	17
ASEAN:								
Indonesia	580	4.2	19.9	18,421	21.1	82.6	-737	8
Thailand	790	4.5	9.7	6,206	17.4	89.4	-1,144	8
Philippines	820	2.8	12.8	8,836	22.5	176.4	-3,356	13
Malaysia	1,860	4.3	7.2	7,671	30.5	65.1	-3,445	5
Singapore	5,910	7.4	5.4	1,423	10.0	6.8	-1,278	1
Low Income Countries								
- Benin	310	0.6	9.6	556	57.5	62.5	-71[a]	..
- Togo	340	2.3	8.8	819	104.5	155.7	-152	..
- Sierra Leone	390	0.9	12.2	370	29.8	124.2	-158	21
Lower Middle Income Countries								
Liberia	490	0.9	8.5	641	68.1	120.7	-79	5
Zambia	640	-0.1	8.7	2,381	66.3	n.a.	-252	17
Honduras	660	1.0	8.7	1,385	53.2	211.8	-228	19
Zimbabwe	850	1.5	8.4	1,221	19.1	184.2	-706	9
Cameroon	890	2.6	10.7	1,912	26.8	191.6	-525	16
Nicaragua	920	0.2	14.3	2,810	100.1	692.1	180[b]	..
Guatemala	1,130	2.4	10.1	1,119	13.0	99.9	-379	7
Paraguay	1,610	3.7	12.7	940	16.1	284.8	-388	10
Upper Middle Income Countries								
Uruguay	2,650	1.7	59.3	1,829	20.2	178.8	-235	13
Israel	5,090	3.2	52.3	14,900	64.6	297.0	-2,103	21
Hong Kong	5,340	7.0	8.6	267	1.0	1.3	..	0

[a] 1978.

[b] 1979.

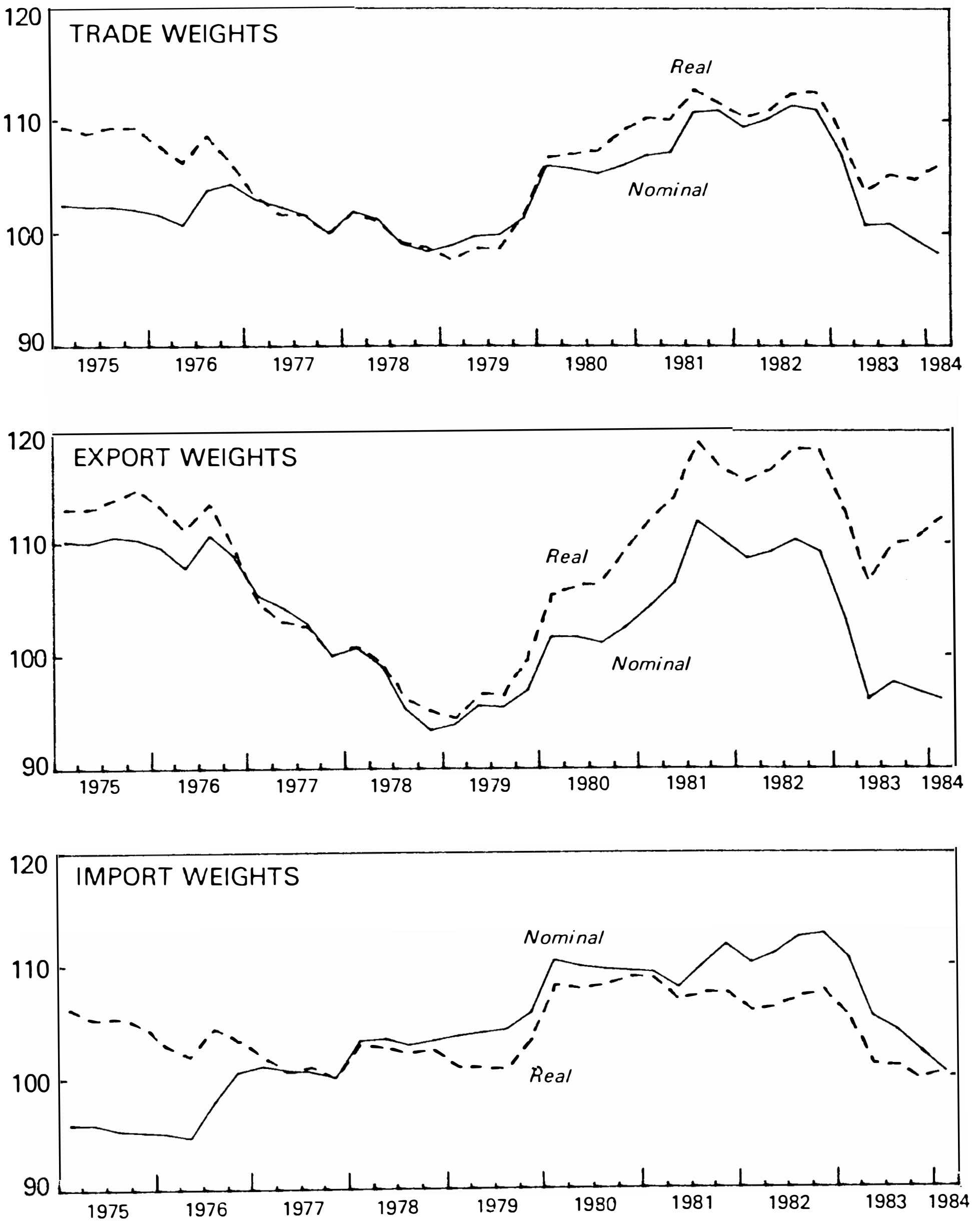
Table A36 Papua New Guinea, Comparisons with Other Countries, c1980-1982 (contd)

	Government current expenditure as a percentage of GNP 1981	Goods and non-factor exports as a percentage of GDP 1982	Gross domestic investment as a percentage of GDP 1982	As a percentage of Budget Expenditure of the Consolidated Central Government - 1981				
				Capital expenditure	Education	Health	Economic services	General administration regulation n.e.c. and research
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Papua New Guinea	39.8	36	29	11.8	17.7	9.1	46.5	2.3
Fiji	31.3	25.5	33.6	28.3	19.4	7.5	38.7	2.3
Low Income Countries	15.4	9	24	..	..	..	..	..
- excluding India & China	17.6	13	11	..	..	..	..	..
Middle Income Countries	24.5	23	24	..	..	..	..	..
- Lower	20.8	20	23	..	..	..	..	..
- Upper	20.6	24	24	..	..	..	..	..
ASEAN:								
Indonesia	27.3	22	23	51.6	7.9	2.5	29.4	3.1
Thailand	18.5	25	21	23.6	20.6	4.9	22.4	0.1
Philippines	12.8	16	29	32.6	14.1	5.0	55.3	5.4
Malaysia	40.8	51	34	..	15.9	4.4	28.9	1.7
Singapore	25.2	196	46	21.1	10.7	7.1	15.2	5.5
Low Income Countries								
- Benin	n.a.	30	37	..	20.4	5.6	20.8	4.4
- Togo	35.3	28	26	..	12.6	5.6	43.5	..
- Sierra Leone	27.2	14	12	24.6[d]	11.9[a]	4.1[a]	25.5[a]	..
Lower Middle Income Countries								
Liberia	33.7	46	22	20.4	15.2	7.2	29.9	..
Zambia	n.a.	27	17	..	11.9	6.1	59.6	..
Honduras	n.a.	27	16	35.7[a]	15.3[a]	8.5[a]	31.8[a]	1.5
Zimbabwe	31.3	-	27	5.2	19.4	6.9	19.4	..
Cameroon	21.6	31	25	41.4	7.4	4.0	10.0	2.2
Nicaragua	30.2	15	19	..	11.6	14.6	20.6	..
Guatemala	16.2	15	14	37.0[d]	12.6[a]	7.6[a]	35.8[a]	1.8[a]
Paraguay	10.7	8	26	..	11.8	4.5	19.0	2.6
Upper Middle Income Countries								
Uruguay	24.4	15	15	12.0	7.3	3.1	13.9	0.3
Israel	78.4	37	21	..	32.2	1.8	..	0.0
Hong Kong	n.a.	100	29	..	..	..	..	..

[a]1978.

Sources: Parliament of Fiji, Report on the Census of Population 1976, Volume III Social and Economic Characteristics, Parliamentary Paper No.44 of 1979. US Bureau of the Census, World Population 1983 - Recent Demographic Estimates for the Countries and Regions of the World, Washington, D.C. 1983. World Bank, World Development Report 1984, Oxford University Press, Washington, D.C. 1984. International Monetary Fund Government Finance Statistics Yearbook, Volume VII, 1983, Washington, D.C. 1983. World Bank World Tables Third Edition, Johns Hopkins University Press, Baltimore, 1983.

Chart A1 Indices of Nominal and Real Effective Kina Exchange Rates Based on Various Weights, 1975-March Quarter 1984 (Dec. quarter 1977=100)



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