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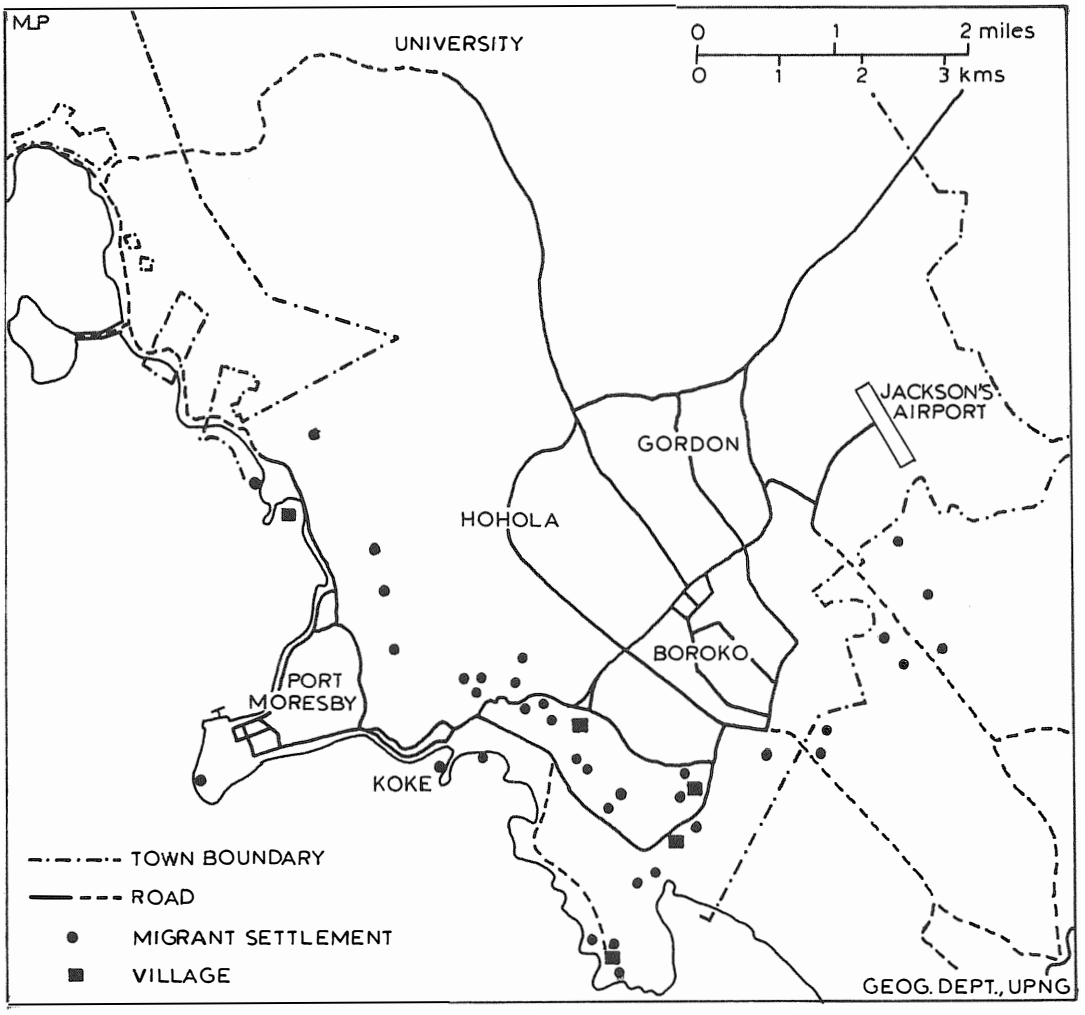

Map 1. Indigenous villages and settlements, Port Moresby, 1970

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PORT MORESBY URBAN DEVELOPMENT

Economic and demographic forecasts by J.V. Langmore

Indigenous housing in Port Moresby by N.D. Oram

September 1970

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Preface

Early in 1969 the Administration of Papua-New Guinea commissioned two consultants, Maunsell & Partners and Alan M. Voorhees & Associates, to prepare a development plan for the capital, Port Moresby, which would broadly examine, and suggest ways to meet, the needs of the population for the period up to 1990, with more detailed proposals for the years 1970-80. As part of the plan, the two papers in this Bulletin were prepared for the consultants by September 1969. As only a few copies of the plan were printed it seemed desirable that these two papers should be made available to a wider public. Some amendments have been made to both papers, and the presentation has been altered considerably.

The aim of the first paper, 'Economic and demographic forecasts', was to estimate the indigenous and non-indigenous population and workforce for Port Moresby in 1980 and 1990 (with separate totals for each industry), and to stratify the workforce by income. The most important of the severe limitations to this task was the lack of reliable and relevant demographic, economic and social data. The various sources and assessments of their reliability are discussed in the paper. The forecasts could not have been attempted without the results of the 1966 Census which give a fairly accurate picture of the Port Moresby population in 1966. At the time of the 1961 Census on non-indigenes the Department of Native Affairs and the New Guinea Research Unit conducted a count of the indigenous population of Port Moresby, and this made it possible to calculate trends of certain population characteristics during 1961-66. Frequently in exercises of this type several alternative calculations are made, and the directors of the project are given the responsibility of choosing the assumptions and growth rates they consider to be the most appropriate. They generally choose the middle estimate. Since these forecasts are required for a traffic prediction model and to estimate future housing needs, for which only one set of figures will be used, it seemed most appropriate to concentrate on most likely future trends rather than on fabricating alternatives.

The aim of the second paper was to describe the present housing conditions of the indigenous population and to forecast future housing needs. It is based on enquiries into different aspects of the development of Port Moresby carried out since 1962. Major social and developmental problems arising in Port Moresby, including the problem of housing, cannot be solved by studying them in isolation, and an examination of the interrelationships between social, economic and

administrative factors is therefore required. The provision of low-cost housing is essentially an administrative problem, and it appears both that the administrative organisation is inadequate and that the activities of all government agencies should be more closely co-ordinated.

The consultants presented their final report, the Port Moresby Urban Development Study, in January 1970. Information on this can be obtained from the Director, Department of Lands Surveys and Mines, Konedobu.

We are particularly grateful to Professor R.G. Ward, Professor A.I. Clunies-Ross, G.E. Stoltz, Dr D.J. van de Kaa and C.L. Beltz who made comments or suggestions at various stages during the preparation of the papers. Dr R. Kent Wilson and Dr D.J. van de Kaa permitted the inclusion of previously unpublished data derived from their own research. We also appreciated the co-operation of the Project Staff, J.E. Womble, D.G. Leslie and R.A. Cochrane. Acknowledgment is also made of approval to publish this material given by Maunsell & Partners, Alan M. Voorhees & Associates and the Administration of Papua-New Guinea.

N.D. Oram and J.V. Langmore

Part I

Economic and demographic forecasts

J.V. Langmore

Chapter 1

Introduction

Port Moresby, as a national capital in a comparatively sparsely populated region, depends on government policy for its existence and growth. For example, 40 per cent of an employed workforce of 19,769 in Port Moresby in 1966 were in direct government employment.[1] A considerable part of the commercial and industrial activity in the private sector, which employs the other 60 per cent, consists of the supply of goods and services to public servants and contractors working on government projects. The development of Port Moresby is therefore an outstanding example of one of the main characteristics of the Papua-New Guinea economy, the influence of the government. Total expenditure by the public sector accounted for 41 per cent of Gross Territory (Monetary Sector) Expenditure and 59 per cent of Gross Domestic Capital Formation in 1965-66. Therefore, government policy and the size of the national budget will be primary determinants of the future of Port Moresby.

Port Moresby is also significant as the urban centre for an area with a substantial level of agricultural activity. Papuan farmers in the Central District had a total of 28,100 acres planted with cash crops in 1968. Non-indigenous farmers in the District had 124 holdings, totalling 172,000 acres in 1968. In the year ending June 1968, indigenous growers produced about 12,000 tons of truck crops, 1,120 tons of copra and small quantities of other crops. Most of the rubber produced in Papua-New Guinea is grown in the Central District. In the year ending March 1967, rubber production on non-indigenous rural holdings was 4,400 tons and copra production 4,560 tons. Forestry activity is also significant and in 1967-68 14.6 million super feet of logs were cut. In June 1968 there were 7,250 cattle on non-indigenous holdings in the Central District.

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[1] The main sources of statistics on Papua-New Guinea used in this paper are the publications of the Bureau of Statistics on the 1966 Census, primary and secondary industry, and building and construction. The Labour Information Bulletins and the report on higher level manpower, produced by the Department of Labour, are also used. The sources of all data on overseas countries are indicated in the text.

Port activity has expanded rapidly in recent years, almost doubling in the three years 1964-65 to 1967-68. In 1967-68 the value of trade passing through the port was $69 million, $59 million in imports and $10 million in exports. Recently two Australian mining entrepreneurs announced their intention of mining a small body of high grade copper ore near Port Moresby. The value of secondary industry production is higher in the Central District than in any other.

Given the importance of government policy to the growth of Port Moresby, the following assumptions are made.

(i) Growth in the national income affects Port Moresby indirectly through a parallel expansion of the budget, achieved by government taxation and tariff policy.

(ii) The annual Australian contribution to government expenditure will remain in the region of $100 million to $200 million. Table 1.1 shows the Australian grant to the Administration and direct expenditure in Papua-New Guinea by Commonwealth Departments since 1960-61. This rate of growth up to 1967-68 of over 20 per cent per annum is unlikely to continue, in view of the increasing frequency with which resentment is expressed in Australia about the size of the grant, Australia's other responsibilities for overseas aid, and the completion of defence capital works in Papua-New Guinea which account for a substantial proportion of the expenditure by Commonwealth Departments in the last five

Table 1.1

Australian aid to Papua-New Guinea, 1960-61 to 1969-70*
($m)

Year	Australian grant	Other Commonwealth expenditure	Total
1960-61	29.6	7.9	37.5
1961-62	34.6	9.4	44.0
1962-63	40.0	10.2	50.2
1963-64	50.5	13.4	63.9
1964-65	56.0	15.4	71.4
1965-66	62.0	27.8	89.8
1966-67	69.8	36.6	106.4
1967-68	77.6	44.0	121.6
1968-69	87.3	23.0	110.3
1969-70	96.0	22.6	118.6

* Budget estimates.

Source. House of Assembly, Budget Papers 1969-70; Department of Territories, National Income Estimates for Papua and New Guinea 1960-61 to 1965-66; Budget speeches of the Treasurer in the House of Assembly.

years. In fact, total Australian government aid to Papua-New Guinea was less in 1968-69 than in 1967-68. Nevertheless, the forecasts for the next five years (Territory of Papua and New Guinea 1968b:113) indicate that the Australian grant to the Administration will average over $100 million between 1968-69 and 1972-73, perhaps reaching $120 million in 1972-73. Some further increase until 1980 can be assumed, given the rate of growth of Australia's national income and Papua-New Guinea's increased capacity to spend. Australia is thus likely to maintain its grant at present levels or higher for many years.

(iii) Some form of independent status will be achieved by Papua-New Guinea during the period 1976-80. This assumption is important for this study mainly through the effect of independence on expatriate employment, particularly on the employment conditions of expatriate public servants, and on the level of economic activity in certain politically sensitive industries, notably building and construction. It is assumed that there will be no nationally organised violence during the period preceding independence. With the level of violence limited to occasional random riots, and relatively steady growth of the various aspects of the economy, business confidence among managers and entrepreneurs should not change significantly. Independence brought an influx of businessmen, diplomats and international agency personnel to many African countries, and given the close proximity to Australia and the likelihood of Australia's substantial continued interest in an independent Papua-New Guinea, this tendency may be even more marked.

(iv) The economic system will remain mixed capitalist. Important reasons for this are that agricultural production must remain an important aspect of Papua-New Guinea's output, and collectivisation of agriculture in socialist command economies has not been a success; Australia is the only source from which aid at the current level could be forthcoming and Papua-New Guinea is therefore likely to retain a similar economic system; institutional barriers to economic development, such as a feudal land-holding system, warranting a social revolution, do not exist; traditional social structures favour economic enterprise on a small group or village basis rather than on a system based on state ownership; effective national economic planning is possible in a mixed enterprise system without the complexities and bureaucracy of nationalisation of industry. This last assumption does not preclude the possibility of the resumption of some expatriate land holdings, or increased direct government involvement in business activity.

(v) Bougainville Copper Pty Ltd commences mining early in the 1970s. One or more of the other exploration programmes will probably result in commercial mining operations of copper, nickel, oil or gas. Extractive industries will therefore be an important source of revenue for the government. Copper mined near Port Moresby may be a significant addition to exports through the port.

(vi) The current rate of growth of indigenous agricultural production will be maintained. The rate of growth of agricultural production by expatriates will decline.

(vii) The terms of trade will not move against tropical agricultural products. Neither available data nor time have permitted this assumption to be studied in depth. Some economists have argued that the terms of trade have been moving against agricultural commodities for many years, but this has not been conclusively demonstrated by empirical studies. Some of the commodities produced in Papua-New Guinea may be luxury goods and therefore income elastic, that is, a rise in income in importing countries might lead to a more than proportional increase in consumption of the commodity. Cocoa at least may be in this class. The qualities of natural rubber and of coconut oil have not been exactly reproduced in synthetics. The terms of trade for Papua-New Guinea have tended to fluctuate rather than to decline secularly during the last two decades. It is assumed that this will continue.

(viii) Business expectations should remain positive and sustained economic growth occur, given the above conditions and the gradual improvement of the economic infrastructure and government services, a large increase in the number of skilled Papuans and New Guineans, and some of the inducements to new industries normally offered by developing countries. A crucial factor in economic growth will be the effectiveness of localisation programmes at all levels of business and government.

(ix) Port Moresby remains the national capital.[1] Most large enterprices, including government departments, statutory authorities, the Pacific Islands Regiment, trading companies, banks, insurance firms and many manufacturing and agricultural companies, are expected to maintain their head offices in Port Moresby. However, the airlines and some other transport companies have their headquarters in Lae and many manufacturing firms are located at Lae. In 1966, 507 companies out of 1,119 companies registered in Papua-New Guinea had their headquarters in Port Moresby.

Lae will probably divert some enterprise from Port Moresby. If the government encouraged decentralisation, the rate of growth of Lae might increase. Efforts to make the rural sector more attractive through agricultural extension, dispersion of schools, roads and power might have some effect. However, the dominant influences are likely to be administrative lassitude, market forces, and the Australian model, which will reinforce Port Moresby's ascendancy. Direct air and sea links between Port Moresby and other towns in Papua-New Guinea and the development of mining in the Gulf or Western Districts would increase Port Moresby's significance as an entrepôt port. A road link with the Southern Highlands District would have a similar effect.

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[1] The Urban Development Study was made on this assumption.

Chapter 2

Industrial development

National income

The growth of monetary sector product by industrial origin in recent years is shown in Table 2.1. (This includes non-marketed primary production.) The average annual growth rate during the period 1960-61 to 1965-66 was 12.5 per cent. Excluding non-marketed primary production, actual monetary sector product grew at the average rate of 17.7 per cent p.a. during the period 1963-64 to 1966-67, and the growth rate increased during these years. Average annual increase in national income for the period 1966-67 to 1975-76 is likely to be about 12 per cent, assuming that the rate of increase declines towards the end of the period after the acceleration from the commencement of copper concentrate production on Bougainville.

Table 2.1

Gross Territory product: by industrial origin, 1960-61 to 1965-66
($m)

Industry	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	Annual average growth %
Primary production	43.1	42.8	46.3	50.9	58.0	64.2	8.3
Mining and quarrying	1.3	0.9	1.0	1.3	1.6	1.8	6.7
Manufacturing	5.6	6.3	7.5	9.2	10.4	12.0	16.5
Building and construction	6.2	7.1	8.0	9.3	11.2	13.7	17.5
Transport and communications	6.3	7.6	8.3	9.7	11.3	13.9	17.3
Commerce	11.2	13.5	14.9	17.1	19.2	22.9	13.0
Finance and property	1.2	1.5	1.7	2.0	2.4	-	-
Professional	11.9	14.7	16.8	18.6	23.1	23.7	14.8
Public authority (n.e.i.)	6.8	7.3	9.4	8.8	14.1	16.9	20.0
Gross income from dwelling rent	2.8	3.0	3.1	3.9	4.5	4.9	11.9
Other industries	3.1	2.5	3.0	4.1	4.3	5.3	11.3
Gross Territory product at factor cost (monetary sector)	99.5	107.3	120.1	134.9	160.1	179.4	12.5
Subsistence production	160.1	164.3	168.1	169.8	168.7	172.4	1.5
Gross Territory product at factor cost (including subsistence production)	259.6	271.6	288.2	304.7	328.8	351.8	6.2

Source. Territory of Papua and New Guinea 1968b.

It is unlikely that a rate of growth of more than 12 per cent will be maintained, particularly during the period immediately before and after independence. The most important factor in a deceleration would be gradual stabilisation of the Australian grant. The rates of growth during the two years 1974-75 and 1975-76 are estimated to be substantially lower, 4 per cent and 6 per cent respectively. If independence occurs between 1976-80, the growth rate might remain at about this level, say 6 per cent. During the 1980s, if a national emphasis on economic development is sustained, and if, as is likely, additional mineral extraction enterprises are established, the rate might be somewhat higher, say 8 per cent. With increases at these rates, national monetary sector income would be $704m in 1979-80 and $1,519m in 1989-90, compared with $196.6m in 1966-67 and an estimated $558m in 1975-76. No attempt has been made to analyse the various industries at the national level though these are considered separately for the Port Moresby urban area.

Port Moresby industrial structure

The industrial structure is relevant to this study because of its influence on employment. The breakup of employment by industry in 1966 is shown in Table 2.2. The high proportion, 23 per cent of the total, employed in building and construction is the most notable feature. Public authorities (n.e.i.) and defence, domestic service and entertainment, commerce, and community and business services were the other industries employing over 2,000 workers. Only 7 per cent were employed in manufacturing.

Table 2.2

Employment by industry, Port Moresby, June 1966

Industry	Indigenous			Non-indigenous			Total			Employment in each industry
	M	F	T	M	F	T	M	F	T	%
Primary production	148	22	170	25	12	37	173	34	207	1.0
Mining and quarrying	102	1	103	26	3	29	128	4	132	0.7
Manufacturing	1,121	34	1,155	250	66	316	1,371	100	1,471	7.4
Electricity, gas, water and sanitary services	309	4	313	100	45	145	409	49	458	2.3
Building and construction	3,492	8	3,500	942	64	1,006	4,434	72	4,506	22.8
Transport and storage	1,330	5	1,335	481	69	550	1,811	74	1,885	9.5
Communications	189	9	198	149	66	215	338	75	413	2.1
Finance and property	41	8	49	115	54	169	156	62	218	1.1
Commerce	1,395	163	1,558	486	344	830	1,881	507	2,388	12.1
Public authority (n.e.i) and defence services	1,605	86	1,691	1,078	561	1,639	2,683	647	3,330	16.8
Community and business services (including professional)	1,006	205	1,211	400	425	825	1,406	630	2,036	10.3
Amusements, hotels, personal service, etc.	2,010	284	2,294	94	126	220	2,104	410	2,514	12.7
Inadequately described	155	16	171	24	16	40	179	32	211	1.1
Total	12,903	845	13,748	4,170	1,851	6,021	17,073	2,696	19,769	100.0

Source. Bureau of Statistics 1966.

A survey of manufacturing enterprises in Port Moresby has been made by Dr R. Kent Wilson (1968), an enterprise being defined as 'a processing and/or fabricating assembly or similar operation producing a material good for sale; services such as garages are not included'.

Table 2.3

Structure of secondary industry, 1968

Manufacturing type*	Number of enterprises
Engineering	5
Boiler making, electrical, welding	1
Truck assembly	1
Battery manufacture	1
Sheet metal, nails, foundry	6
Bakery	2
Aerated waters	2
Brewery	1
Tobacco	1
Sawmill	1
Joinery	10
Cement goods	3
Paints	1
Other chemicals, industrial gasses	1
Rope cordage, canvas	1
Furniture	2
Printing	2
Tyre re-treading	2
Paper products	1

* Many enterprises make two or more products and they have been classified under the predominant activity.

Source. Wilson 1968.

Figures describing the employment structure in Port Moresby are available for 1966, but in the absence of comparable figures for 1961 or later years it is not possible to calculate valid growth rates to use for projections of employment. Also there are no figures on the value of output of various industries in Port Moresby from which employment trends may be deduced.

Therefore four far from adequate sources for the employment estimates have been used: a comparison of the 1966 Census employment figures with those of the Department of Labour 1968; a series of national monetary sector workforce projections; the United Nations Development Programme Transport Survey; and projections of Papua-New Guinea's monetary sector

product. The employment figures of the Census and of the Department of Labour are obtained in two different ways: those of the Census by a household to household collection by trained enumerators, and those of the Department of Labour by requiring each employer (other than employers of domestic servants and the defence services) to complete forms setting out details of employment and return these to the Department. The major error is likely to result from the failure of some employers to submit employment returns, so that the Department of Labour's figures understate the number of people in employment. As well, differences in the precise definition of the town area, and inconsistencies in the classification of various enterprises probably cause differences in the returns which are undetectable. The Department's figures include only employees and exclude the self-employed, employers and unpaid helpers. This is no doubt an important factor in explaining the apparently slower rate of growth of non-indigenous employment.

The result of this comparison is shown in Table 2.4. The number of domestic servants in June 1966 has been added to the 1968 figures to make the comparison more reliable. Growth rates for particular industries should be regarded very sceptically, but the over-all annual growth rate in employment of 9.5 per cent (12 per cent for indigenes and 3.9 per cent for non-indigenes) is surprisingly large, given that this may be underestimated. It can be safely assumed that employment was growing faster than 10 per cent p.a. between 1966 and 1968.

Table 2.4

Employment in Port Moresby, June 1966 and 1968

Industry	1966*			1968**			Annual rate of growth %***		
	Indi-genous	Non-indigenous	Persons	Indi-genous	Non-indigenous	Persons	Indi-genous	Non-indigenous	Persons
Primary production	170	37	207	253	100	353			30.1
Mining and quarrying	103	29	132	128	40	168			12.7
Manufacturing	1,155	316	1,471	1,458	309	1,767			9.5
Public utilities	313	145	458	314	211	525			7.7
Building and construction	3,500	1,006	4,506	3,990	465	4,455			-0.5
Transport and storage	1,335	550	1,885	1,741	553	2,294			10.4
Communications	198	215	413	335	247	582			18.7
Finance and property	49	169	218	261	241	502			52.0
Commerce	1,558	830	2,388	1,756	1,006	2,762			7.7
Public authority	1,691	1,639	3,330	2,406	1,915	4,321			14.0
Community services	1,211	825	2,036	1,985	1,070	3,055			22.5
Amusements	2,294	220	2,514	2,404	311	2,715			3.9
Total	13,577	5,981	19,558	17,031	6,468	23,499	12.0	3.9	9.5

* Bureau of Statistics 1966.

** Department of Labour Employment Returns, plus the number of domestic servants and enlisted members of the defence forces shown in the 1966 Census.

*** Growth rates have not been calculated for indigenous and non-indigenous persons in each industry because the comparison is too imprecise.

A series of national monetary sector workforce projections up to the year 1976-77 was prepared by the Manpower Planning Unit of the Department of Labour in 1968. These are subdivided by industry, sector and manpower class and are therefore very useful. But they relate only to the national level, do not subdivide by race, and are, like everything else, only

estimates. These projections were based on the assumption that past growth rates would be substantially maintained. However, the evidence for the last two or three years for Port Moresby suggests that the rate of increase of employment is accelerating. Therefore these figures have been used to suggest minimum growth rates only.

The UNDP Transport Survey report includes estimates of the rate of growth of all urban employment in Papua-New Guinea between 1967 and 1973 (Table 2.5). These estimates are based on informed guess work about national economic growth, and assessments of the prospects of each industry in urban areas; they are a useful guide to discussion about each industry in Port Moresby.

Table 2.5

Forecast of urban employment, Papua-New Guinea, 1973

Industry	1967	Suggested annual rate of growth %	1973
Indigenes			
Primary production	200	10	350
Mining and quarrying	100	-	100
Manufacturing	4,000	20	11,900
Building and construction	8,700	6	12,300
Transport and storage	3,700	12	7,300
Communications	500	10	880
Commerce	4,200	5	5,600
Hotels, cafes, etc.	1,300	20	3,900
Religion, social welfare	200	-	200
Health and hospitals	2,100	10	3,700
Education	1,400	15	3,200
Police	1,500	3	1,800
Domestic employees	5,800	7	8,700
Armed forces, etc.	3,000	-	3,000
Others	3,900	3	4,600
Total indigenes	40,600	9	67,530
Total non-indigenes	14,700	7	22,000
Total urban employment	55,300	8	89,530

Source. UNDP Transport Survey 1969.

These sources have been used as the basis for the following industry by industry discussion of employment trends in Port Moresby during the 1970s and 1980s. It is assumed that those industries which serve the nation, such as public authorities, defence forces, sections of transport and storage, and communication, are strongly influenced by the growth rates of national income and population, while those industries

which cater generally for the town and its hinterland, such as building and construction, community and business service industries, commerce, public utilities, and personal services, are influenced more by urban than national income levels.

Primary production. Only 207 persons were engaged in primary production in 1966. But the demand for truck crops is already greatly in excess of supply, and assuming expansion of the gazetted town area, there may be an increase in primary production. Increases in the number of urban residents involved in fishing seem certain. The increase in employment in primary production of 30 per cent p.a. shown in Table 2.4 must be due to differences in classification in 1966 and 1968. An increase at the rate of 10 per cent p.a., which the Transport Study team proposes for the years up to 1973, is assumed for the whole period.

Mining and quarrying. Within the town boundary this is limited by available material. It is not likely that urban quarries will develop further. Therefore employment is expected to remain stationary.

Manufacturing. Most of the enterprises listed by Wilson produce primarily for the Port Moresby domestic market and therefore will grow with the town. The Import Replacement Study Group (T.P.N.G. 1968a: Annexure A) recommended that the following manufacturing enterprises could be established in Papua-New Guinea:

> Industries, capable of being established almost immediately, or in the course of being established: pumps, spades and shovels, metal furniture, clothing and knitted goods, soap, flour, cement, matches, sweet biscuits, stationery, envelopes, and school exercise books, plastic moulding and piping, glass containers, fibreboard containers, chemicals and fertilizers (repacking), shoes, ice-cream, ship building, household chemicals, household utensils, hand tools (spanners and screwdrivers), dry cell batteries, electrical equipment, pencils, crown seals, crop dryers, brooms, electroplating, water heaters, galvanised products, fibre-glass, floor covering, fibro-plaster, bags and sacks, flexible packaging, flashlights, educational aids, kerosene lamps, paper towels and napkins, automobile radiators, seat covers, wheelbarrows, wood screws, stoves, wall and ceiling boards and panels, venetian blinds.
>
> Industries which could be established in 5 year period to 1971-72: meat canning, tanning and leather, vegetable and fruit cannery and quick freeze plant, fish canning, sugar, rice, salt, rope and cordage, pumps, umbrellas, flat glass, detergents, fish canning, textiles, footwear, bicycles, starches, motor vehicle assembly, blood and bone meal, pharmaceuticals, bitumen, re-constituted milk, radio receiver assembly, mirrors, fishing nets, copper wire, drawing and insulation, sewing machine assembly, sport goods, electrical equipment, printing ink, industrial acids and salts, surgical cotton, adhesive tape,

spectacle frames, fountain pens, glue, gelatine, foundation garments, bedding and mattresses, toys, gramophone records.

Of course, only a proportion of these should be located in Port Moresby, though several could well operate in two or more towns.

The value of output of light engineering industries in the Central District (almost all of which are located in Port Moresby) increased by 23 per cent p.a. in the three years prior to 1966-67. Projected rate of growth until 1972-73 is 18.2 per cent p.a. Expected new industries include the assembly of motor vehicles and of transistor radios, manufacture of metal furniture, and many other small engineering enterprises. The projected average annual growth rate until 1972-73 of the value of production of food, beverages and tobacco is 12.8 per cent. Other enterprises which might be established include those producing cement, fibre glass, industrial gas, stockfeed, asbestos cement, and bags and sacks. This gives a projected growth rate of 18 per cent for the Other Industries segment during the five year period to 1972-73. Excluding sawmills and joineries, total industrial output is expected to grow from $15.9m in 1966-67 to $33.3m in 1972-73, giving a growth rate of 12.6 per cent p.a. over the six years. The national rate of increase is expected to be 15 per cent p.a. until 1975-76. The UNDP Transport Survey estimates that employment in all urban areas in manufacturing will expand by 20 per cent p.a. until 1973, and the Manpower Planning Unit estimates a national increase of 14.3 per cent p.a. until 1976-77.

Manufacturing, comprising at first very few enterprises, has expanded particularly rapidly during the last three or four years, and therefore fast growth rates can only be maintained if considerable new developments occur, such as the establishment of new types of enterprises. Lae rather than Port Moresby seems to be attracting many new industries. However, with the Port Moresby population expanding faster than anticipated, employed in existing enterprises may increase significantly.

There is a tendency in many developing countries to use capital-intensive techniques of production in manufacturing. In Zambia this led to virtual stagnation of African employment in manufacturing throughout the country between 1954 and 1964, and only slow increases in non-African employment (Republic of Zambia 1965-66:66). Employment in Uganda's manufacturing industry increased by only 0.8 per cent p.a. between 1957 and 1965, while during the same period annual increases in average earnings and in productivity in this industry were 6.8 and 1.8 per cent respectively (Knight 1968:270). The majority of new manufacturing enterprises in Port Moresby are likely to be started by local or Australian firms using techniques common in Australia. Therefore employment in manufacturing will probably grow more slowly than the rate of increase in the value of output. Output might grow at about 13 per cent p.a. until 1972-73, 12 per cent in 1973-74, 11 per cent in 1974-75, and 10 per cent in 1975-76, remain at this level for the rest of the 1970s and increase to say 12 per cent p.a. in the 1980s, assuming a

high rate of urban population growth and a definite tariff policy. Employment might grow by 10 per cent p.a. until 1972-73 (9.5 per cent between 1966 and 1968, Table 2.4), 9 per cent in 1973-74 and so on, and remain at 7 per cent between 1975-76 and 1979-80, after allowing for improvements in productivity. During the 1980s manufacturing employment might grow by 8 per cent p.a., given a rate of growth of national income of 8 per cent p.a. and expansion of manufacturing industry at a higher rate.

Public utilities. Electricity, water and sanitary services employed only 458 people in 1966. Demand for public utilities can be expected to grow at least as fast as total Port Moresby income (i.e. including both population growth and personal income increases). Water consumption has been increasing at the rate of 12 per cent p.a. The Electricity Commission projects the annual growth rate of electricity units sold throughout Papua-New Guinea during the 1970s at 15 per cent plus, and the annual increase in their number of personnel at 11.5 per cent. The growth rate of headquarters staff may be higher than this. The number of sewerage and garbage disposal workers should increase at the same rate as the population. It will be assumed that employment in public utilities increases at the same rate as total public sector employment plus the rate of increase of real wages, approximately 3 per cent until 1980, and 2 per cent after that.

Building and construction. Employment in these industries fluctuates widely. Between March 1967 and December 1968 total employment in Papua-New Guinea fell from 9,761 to 6,728. Probably about half of this decline occurred in Port Moresby, leaving about 1,500 people unemployed; the slight decline in building and construction employment in Port Moresby between June 1966 and June 1968, shown in Table 2.4, suggests this also. Some workers probably returned to their villages, or to Australia in the case of expatriates. This decline indicates the sensitivity of building and construction to national economic activity, and in particular to the government's capital works programme. For example, employment in construction in Zambia declined sharply from a peak of 70,000 in 1957 to 25,000 in 1963 (Republic of Zambia 1965-66:66). In Uganda also, employment in construction fell rapidly between 1957 and 1965, at the rate of 7.4 per cent p.a. (Knight 1968:270). In a study of employment prospects in Nigeria it was found that government expenditure was the most important determinant of the growth of national employment because of the high proportion of public sector employment in the total; and that 'the ratio of investment to total expenditure was an important determinant of the rate of growth of employment because of the indirect effect on the growth of construction, a relatively labour-intensive industry' (Frank 1968:266n).

As the major determinant of building and construction activity is government expenditure, its rate of growth is used as a basis for this projection. However, the level of private enterprise economic activity in the town is increasing faster than that of the government, and

therefore building and construction employment should expand faster than government expenditure. The growth of tourism should be a significant influence through the building of hotels and improvements to the airport in the next few years.

It is assumed that in mid-1969 building and construction employment in Port Moresby is at the same level as in mid-1966. On this base a growth rate of 9 per cent p.a. is assumed until 1972-73 (government expenditure increasing by 8 per cent, and a further 1 per cent allowing for a higher growth rate of building by private enterprise). The rate of increase might decline to 4 per cent in 1973-74, nil in 1974-75 and decrease by 5 per cent p.a. during the rest of the 1970s. Assuming government expenditure increasing at the rate of 8 per cent p.a. during the 1980s, employment in building and construction might increase at the same rate or even faster.

Transport and storage. The number of people employed in this industry depends both on town population growth and the extent of Port Moresby's entrepôt role. It is likely that the latter will expand, particularly with the increase in international air traffic, so that employment will increase faster than population. The number of tourists and business men visiting Papua-New Guinea during the next few years is expected to increase by more than 20 per cent p.a. Extension of the road network around Port Moresby should lead to the continued growth of road transport. The number of motor vehicle registrations in Port Moresby increased by 24 per cent p.a. in 1967 and 1968. It is likely that the value of the national transport and storage product will increase by over 10 per cent p.a. during the next few years. The rate of growth for Port Moresby should be no less. Employment in this industry may well increase by growth rates averaging 10 per cent p.a. during the 1970s and 1980s.

Communications. The same factors apply to this industry as to transport and storage, though communications is a rather more capital-intensive industry. However, the growth rate of employment may be much the same, say 10 per cent p.a. There are plans for rapid improvements in Port Moresby's telephone and postal services, and the town should become increasingly important in the national and overseas communications network.

Finance and property. Port Moresby is the financial centre of Papua-New Guinea and with sustained economic growth the number and complexity of financial institutions will increase. The rate of growth of 52 per cent p.a. for the two years 1966-68 may not be very distorted given the establishment of the Development Bank and the expansion of trading banks, insurance offices and related activities. Port Moresby's role as national capital could cause employment in finance and property to grow by 14 per cent p.a. until the mid-1970s and 12 per cent p.a. after that.

Commerce. Wholesaling and primary produce dealing should be influenced considerably by economic expansion in Papua, as well as by the growth of

the town. Employment in retailing should increase at a slightly lower rate than the increase in population plus real income, due to productivity increases.

Public authorities. The number of enlisted personnel in Port Moresby will probably remain at about existing levels, in the absence of international conflict. Employment in the public sector is discussed later.[1] Rates of localisation will be a significant determining factor of employment in the armed services and public authorities.

Community and business services include law, order and public safety, religion and social welfare, health, hospitals and education. Employment in these fields is generally related to government expenditure, and will be assumed to grow at the same rate. Localisation is calculated at the same rate as in the public sector.

Amusements, hotels and personal services. Employment in domestic service declined between 1961 and 1966 from an estimated 3,740 to about 1,600. There may be a slow increase in this type of employment while the expatriate population continues to increase. The number of domestic servants may increase to about 2,500 by 1973 and then decline to about 2,000 by 1980. The number may increase slowly during the 1980s to about 2,500 in 1990.

As the tourist industry is growing at more than 20 per cent p.a., employment should increase as fast until 1971, and then increase at a rate falling by 3 per cent p.a. until it is 11 per cent in 1974. It should remain at about that level during the rest of the decade. The rate of increase during the 1980s might be about 12 per cent p.a., though trends in international tourism suggest the possibility of even faster growth.

The forecasts of employment levels in each industry calculated on the basis of the above rates of growth are shown in Table 2.6.

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[1] See Chapter 3.

Table 2.6

Estimated employment by industry and race, Port Moresby, 1980 and 1990

Industry	1980			1990		
	Indigenous	Non-indigenous	Persons	Indigenous	Non-indigenous	Persons
Primary production	666	120	786	1,893	146	2,039
Mining and quarrying	130	20	150	150	-	150
Manufacturing	3,888	845	4,733	9,179	1,031	10,210
Public utilities	1,725	208	1,933	4,525	121	4,646
Building and construction	4,381	1,008	5,389	10,390	1,230	11,620
Transport and storage	5,387	1,776	7,163	16,434	2,166	18,600
Communications	1,091	308	1,399	2,862	180	3,042
Finance and property	421	828	1,249	2,868	1,010	3,878
Commerce	4,894	2,072	6,966	15,099	2,528	17,627
Public authority n.e.i.:						
defence	450	50	500	740	10	750
other	5,628	1,344	6,972	12,100	645	12,745
Community services	4,420	784	5,204	9,503	376	9,879
Amusements, hotels, etc.	4,904	1,256	6,160	17,598	1,532	19,130
Personal service	2,000	-	2,000	2,500	-	2,500
Total	39,985	10,619	50,604	105,841	10,975	116,816

Chapter 3

Population and employment

Three factors determine changes in the population: mortality, fertility and migration. The mathematical method of making demographic projections combined with forecasts of changes in rates of migration has been used rather than the component method because of the overwhelming importance of migration to both indigenous and expatriate population change.[1] Only 46 per cent of the people living in Port Moresby in 1966 were born in the Central District and presumably a substantially smaller number were born in the urban area. Age and sex specific mortality and fertility rates can only be estimated, for only one national census has been held and there are significant deficiencies in the results from it, for example in the recording of ages. Therefore there is uncertainty not only about the number of people born in Port Moresby, but also about their rate of natural increase.[2] However, the levels of immigration and emigration have been more important than natural changes in determining population increase in Port Moresby since World War II, and will continue to be.

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[1] The widely recommended component method involves separate analysis of the changes affecting each population cohort and each sex (see U.N. Methods for Population Projections by Sex and Age, Manual 3, New York, 1956). The number of survivors from one date to another is calculated separately for each age group by survival ratios, derived in turn from specific mortality rates established for this purpose. Future births are calculated by use of selected age-specific fertility rates, with an appropriate survival ratio adjustment. The effects of migration are calculated on the assumption of a certain volume of future migration, divided according to sex and age, with appropriate adjustments for mortality and fertility.

[2] It is worth noting, however, that van de Kaa (1970:12) estimates natural increase in the population of Papua-New Guinea between 1961 and 1966 to be 2.2 per cent each year, and he considers this rate is increasing. Urban fertility rates are usually lower than the national average.

This has occurred also in African countries. For example, the annual rates of growth (mostly during the 1950s) of major African cities south of the Sahara varied between 1.7 per cent in Addis Ababa, to more than 20 per cent in Kumasi, and included a growth rate of 7.2 per cent in Dar-es-Salaam, 11.3 per cent in Accra, 7.2 per cent in Nairobi and 11.7 per cent in Lusaka. 'While the data on which these figures are based are very inadequate, the mean annual growth (weighted by initial size) of 6.8 per cent can be regarded as fairly typical. These differ considerably from the estimated growth of total population in the African countries which usually range between 2 and 3 per cent per annum.' (Frank 1968:252) This means of course that migration into the towns is the major factor in their expansion.

Different factors will influence migration rates for non-indigenes and indigenes in the public and private sectors. Therefore projections have been made differentiating between race and sector of employment of the income earner.

Non-indigenes

The results of the 1966 Census indicate that the non-indigenous population is mostly transient, since very few have ties of nationality, birth or long residence with Port Moresby. The most common birthplaces were:

Australia		5,958
T.P.N.G.: Central District	1,270	
Other districts	441	1,711
United Kingdom and Republic of Ireland		996
Germany		188
Other		1,012
Total		9,865

Only 17 per cent of the non-indigenous population were born in Papua-New Guinea and the great majority of these were probably children. Ninety-five per cent of non-indigenes were British by nationality. The periods of residence were as follows:

Less than one year	2,501
One to four years	2,714
Five to nine years	1,297
Ten to nineteen years	1,257
Twenty to twenty-nine years	182
Thirty years and above	66
Not applicable (because born in Papua-New Guinea)	1,711
Not stated	137
Total	9,865

The level of non-indigenous immigration and emigration will be particularly sensitive to economic and political factors. The number of non-indigenes in the town depends almost entirely on job opportunities in the government, established companies and missions, and on the openings for entrepreneurial activity. The national workforce participation rate of non-indigenous males in the economically active age group (15-64 years) is 100 per cent: there is no unemployment. The national workforce participation rate for non-indigenous females aged between 15 and 64 years was 62 per cent in 1966, which is higher than the rate for Australia. (This was about 20 per cent in 1961, and any increase since then has been slight.)

The non-indigenous population of Port Moresby at various census dates has been: 300 in 1935, 3,688 in 1954, 6,396 in 1961, and 9,865 in 1966. This gives a growth rate of about 8.2 per cent p.a. between 1954 and 1961 and 9 per cent p.a. between 1961 and 1966. Of the non-indigenous workforce in 1966, 3,328 or 53.6 per cent were government employees (i.e. including the Administration, Commonwealth Departments and other government authorities). A slightly higher proportion of non-indigenous women were employed by the government than men. In the absence of relevant data it is assumed that the whole non-indigenous population is divided in the same ratio as the non-indigenous workforce. Thus in 1966 5,288 persons were employed or dependent on an income earner in the public sector and 4,577 were employed or dependent on an income earner in private enterprise.

1. Government-related population. The major factors influencing non-indigenous government employment will be the rate of expansion of the public service, the rate of localisation (including whether this proceeds more rapidly at headquarters or in the districts), and the extent to which public servants are concentrated in Port Moresby.

Gross monetary sector product at factor cost increased by 12.5 per cent p.a. between 1960-61 and 1965-66; Administration receipts plus expenditure by Commonwealth Departments increased by 16.1 per cent p.a. during these years. On the basis that it is Administration policy to encourage private enterprise, and that a dramatic change in the value of private sector product will result from the Bougainville copper project, it is assumed that government sector expenditure usually increases at a slightly lower rate than the growth of national income. One factor causing a lower rate of growth of government expenditure will be the absence of the rapid build-up of defence expenditure by the Commonwealth which commenced in 1965-66 and continued for the next few years.

The Five Year Plan for economic development projects Administration expenditure at an average annual rate of growth of 11.6 per cent, though with a declining rate of increase in 1971-72 and 1972-73. Net Administration expenditure is estimated to be $224.9m in 1972-73 (Territory of Papua and New Guinea 1968b:113). Assuming the rate of

increase of Administration expenditure to remain at about 8 per cent p.a. until the mid-1970s and then to decline to about the level of national income growth (estimated earlier at 6 per cent until 1979-80),[1] the Administration's budget would be $283m in 1975-76 and $358m in 1979-80. The role of government has frequently expanded in newly independent countries, even in the absence of wholesale nationalisation. Therefore expenditure by a national public service in Papua-New Guinea might grow at the same rate as national income, 8 per cent during the 1980s, giving a government budget of $773m in 1989-90. This rate of increase will be assumed to permit the taking over by the public service in an independent Papua-New Guinea of those functions currently performed by Commonwealth Departments, notably defence, civil aviation and public works.

The greatest proportion of government expenditure is directly or indirectly on wages. Therefore wage increases reduce the level of possible employment in the public sector. Thus assuming that direct and indirect wage payments are a constant proportion of government expenditure, the growth rate of real wages must be deducted from that of government expenditure to obtain the rate of increase in funds available for expanding public sector employment. But if the proportion of public service employees at the lower end of the earnings scale increases, the size of the government workforce can increase faster than the rate of growth of expenditure available for employing new workers. This will occur in Papua-New Guinea when indigenes start to replace expatriates.

African experience of localisation was of slow but significant increases in the numbers of Africans in white collar jobs until a few years before independence, with a sharp increase in the proportion of Africans in these jobs for several years just before and after independence followed by a further steady increase. In Zambia (which became independent in 1964, though it was previously part of the Central African Federation), the proportion of Africans in public service administrative, professional, executive, technical and similar positions was 1 per cent in 1958, 2 per cent in 1960, 26 per cent in 1963 and 55 per cent in 1966 (Republic of Zambia 1965-66:6). Just before the breakup of the Federation, Zambianisation was obviously proceeding rapidly, though mainly at the lower and middle levels. The European population of Zambia was 76,000 in 1963, 74,400 in 1964, 70,000 in 1965 and was expected to decline by about 1,000 in each year between 1965 and 1970 and thereafter to remain constant (Republic of Zambia 1965-66:60). This implies a net emigration rate of about 2,300 p.a. up to 1970 (at constant rates of natural increase), and about 1,000 p.a. after 1970. The current actual emigration rate may be above this estimate.

In Kenya, which became independent in December 1963, it was noted that:

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[1] See p.8.

> The Africanisation of the Civil Service had been proceeding steadily, if unspectacularly, for a number of years before Independence.... Yet the political pressures immediately before and following Independence have been such that promotions and appointments of Africans have had to be made at all levels. The voluntary departure of many expatriate Europeans in the service helped to clear the way for Africanisation of some higher posts. The enforced retirement of others under compensation arrangements has provided a way to immediate Africanisation of key positions.
>
> (International Labour Office 1967:70-1)

In 1954 in Kenya 90.5 per cent of all persons in paid civil employment were Africans, 3.5 per cent were Europeans and 6 per cent were Asians and other non-Africans. In 1965 91.4 per cent of the civilian wage earning workforce were Africans, 2.6 per cent were Europeans and 6 per cent were Asians or others. Africans had replaced Europeans in many jobs. The European population fell over the same period 1954-65 from 52,000 to 41,000 and as indicated by the above quotation, the decline was greatest just before and after independence. In 1961 in Kenya, 57 per cent of professional and managerial jobs in all sectors were held by Europeans, 37 per cent by Asians and 5.6 per cent by Africans (Republic of Kenya 1965:28). By 1964 Europeans held 50 per cent of these occupations, Asians 27 per cent and Africans 23 per cent. Thus both Europeans and Asians had been replaced by Africans in many jobs. There were 3,200 Europeans at higher levels of the public service in 1965, and in the Manpower Plan for Kenya for the six years 1964-70 it was estimated that 30 per cent of the Europeans in higher level positions would be replaced under the Africanisation policy, in addition to replacements due to deaths and retirements (at the rate of 3 per cent p.a.). After 1970 Europeans were expected to withdraw at an accelerated rate.

Finally it is noteworthy that Europeans in all African countries are concentrated in the towns, and that this tendency has become more pronounced over time. For example, the proportion of the total European population which was resident in four main towns in Southern Rhodesia was 52 per cent in 1946, 61.6 per cent in 1951, 65.5 per cent in 1956 and 68.6 per cent in 1961. In Northern Rhodesia, for the same years, the proportion of the European population resident in nine main towns was 72 per cent, 77.9 per cent, 81 per cent and 82.8 per cent (Barber 1967:94). The same trend is probably occurring in Papua-New Guinea. In 1961 25 per cent of the non-indigenous population of Papua-New Guinea lived in Port Moresby and this had increased to 28 per cent by 1966.

This eclectic collection of statistics provides useful precedents for the forecasts of the rate of localisation. Despite the economic advantages of localisation, trained Papuans and New Guineans are still commonly not promoted to the highest levels at which they can work

efficiently. The African pattern is therefore being repeated, and localisation in the public sector is not likely to reach a maximum rate until self-government. If the real average wage of indigenes and Australians increases at the average rate of about 3 per cent p.a. during the 1970s and about 2 per cent p.a. for indigenes in the 1980s, this will reduce the rate of increase of government expenditure available for wages to 5 per cent between 1972-73 and 1974-75, 3 per cent between 1975-76 and 1979-80, and 6 per cent during the 1980s. However, the continued expansion of the service and the retirement and resignation of expatriate officers should enable accelerated localisation during the next ten years, especially at lower and middle levels.

Changes in non-indigenous employment in the public sector are expressed as percentage changes based on the number of public sector employees and dependents in 1966. Both non-indigenous and indigenous public sector employment are anticipated to grow at the rate of 10 per cent p.a. until June 1969. This assumes that public sector employment in Port Moresby grows at the same rate as the total for Papua-New Guinea. If anything, it seems probable that the rate in Port Moresby could be higher, particularly with the establishment and rapid expansion of several government authorities, for example the Development Bank, Reserve Bank, Electricity Commission, Housing Commission and Pacific Islands Regiment. If the growth rate of the public sector related population was 10 per cent p.a., there would be 7,038 persons in this category in 1969; if the growth rate was 11 per cent, allowing for possibly greater concentration in Port Moresby, the public sector-related non-indigenous population would be 7,232 in the same year.

The rate of increase is expected to decline fairly sharply after 1969 through greater recruitment of indigenes and some difficulty in recruiting all the required expatriates. Assuming a growth rate declining by 2 per cent p.a. (so that the rate of growth would be 8 per cent in 1969-70, 6 per cent in 1970-71 and so on), the non-indigenous public sector-related population would be 8,548 in June 1973. (This is consistent with the estimates of increase in public sector expenditure.) This population might be maintained for a couple of years.

Rapid localisation should occur between 1976-80, assuming that Papua-New Guinea becomes independent during this time. If the wastage rate of non-indigenous personnel increased from the current level of 10 to 15 per cent and only one-third of these expatriates were replaced, the net decrease in non-indigenous public sector employment would be 10 per cent p.a. If this rate of decline occurs over the five years June 1975 to June 1980, the population in June 1980 will be 5,047. A rate of decline of this order would mean a decrease in the proportion of Europeans in the public service of 6 to 8 per cent p.a. which is about the rate which occurred in the African countries described earlier. After 1980 the rate of decline might well be lower since New Guineans and Australians would have adjusted to independence. Assuming growth

in public expenditure during the 1980s to be 8 per cent p.a.[1] and the growth in real wages to be about 2 per cent p.a., the absolute number of non-indigenes might decline more slowly, at the rate of about 7 per cent p.a., giving a 50 per cent decline for the decade to about 2,500 in 1990. It is possible the rate of decline might be lower, due to the inflow of experts and consultants.

2. Private enterprise-related population. African and Asian experience is that localisation proceeds more slowly in the private sector, both absolutely and proportionately. Therefore non-indigenous private enterprise related population will be more heavily influenced by the level of employment and this is determined by the rates of growth of the various industries.

In making the calculations for the private sector the following assumptions were made. First, private sector related population grows at the same rate as private sector employment. Secondly, the proportion of non-indigenes to indigenes in employment in 1980 will differ from that in 1966 only to the extent of a decrease of 15 per cent in non-indigenous employment from the level it might have been if employment increased at the rate of growth for the industry. (This amounts to approximately a 1 per cent p.a. rate of localisation, which probably errs by being too low for the period 1976-80. But a higher rate in the private sector during these years would tend to cancel out a lower rate in the public sector between 1980 and 1990.) Thirdly, non-indigenous private sector employment will grow by a net rate of 2 per cent p.a. after 1980. This net increase is assumed on the grounds that the pace of private sector localisation will probably be much faster some years after independence, but that many overseas entrepreneurs will be attracted by the opportunities in a rapidly developing independent country. Such an inflow occurred in newly independent countries in both Africa and Asia, and it should more than offset the anticipated decline in non-indigenous private sector employment. Fourthly, indigenous private sector employment is calculated by subtracting the number of non-indigenous workers from the estimated level of total employment, calculated above from the estimated growth rates of industry. This assumes a 1:1 ratio of localisation in the private sector. Finally, the present workforce participation rates of 42 per cent for indigenes and 61 per cent for expatriates are assumed also for 1980 and 1990. These calculations result in an estimate of non-indigenous private sector-related population of 12,500 in 1980 and 15,500 in 1990 (see Table 3.5).

The indigenous population

The annual growth rate of the indigenous population in Port Moresby has tended to increase. The population was 2,500 in 1935, 12,000 in

[1] See p.19.

1954, 19,961 in 1961, and 31,511 in 1966. The figures for 1961 and 1966 were calculated by van de Kaa using standardised town boundaries.[1] They give a growth rate during this period of 9.8 per cent p.a. A population count was made in April 1970 over a larger urban area than that used for the 1966 Census, and the number of indigenes was 42,616. It was estimated that about 2,000 persons were not counted. If it is assumed that 1,400 of these 2,000 were indigenes, the annual rate of growth of the indigenous population from June 1966 to April 1970 was over 8 per cent (T.P.N.G. 1970).

Three factors are particularly important in determining indigenous population growth: natural increase in the urban population, the rate of migration to the town, and the length of stay of migrants. Urban villages are located within the town boundary and their inhabitants are permanent residents of the town; in 1966 there were 5,198 residents in urban villages, only 16 per cent of the indigenous population. Thus the factors influencing migration are the most significant.[2]

The birthplaces of the indigenous urban population in 1966 are shown in Table 3.1. Fifty-six per cent of the population were born in the Central District, and a further 25 per cent came from the Western, Gulf and Milne Bay Districts of Papua. However, the structure of migration has been changing, particularly the proportion of people from New Guinea. Though New Guineans in 1966 formed only 14 per cent of the total indigenous urban population, the proportion of them in the urban wage-earning indigenous workforce had grown from 11 per cent in 1957 to 26 per cent in 1966 (Department of Labour figures 1967; Groves 1960).

Table 3.1 shows also the high proportion of men in the indigenous population. Oram[3] notes that the ratio of men to women increases with the distance of the district of birth from Port Moresby. The sex ratio is an indication of the degree of permanence of migrants. The improvement in the sex ratio between 1961 and 1966 indicated a tendency amongst Papuan migrants to Port Moresby to increase their period of residence. The highlanders currently coming to Port Moresby will eventually tend to increase the length of their stay, and also to bring their wives and children. In general, migrants are tending to stay longer in Port Moresby.[4]

Important influences on indigenous population growth other than natural increase are likely to be the rate of growth of employment, changes in the ratio of dependents per wage earner, and the increasing area from which Port Moresby is attracting migrants. The proportion of women and children in the indigenous population will probably increase.

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[1] Personal communication, July 1969.

[2] See Chapter 6.

[3] See p.60.

[4] See Chapter 6.

There may be some tendency for an increasing proportion of both single and married women to enter the wage earning workforce, as is happening throughout the world.

Table 3.1

Birthplaces of indigenous residents, 1966

Birthplace	Males	Females	Persons
Papua			
Western District	689	397	1,086
Gulf District	3,490	2,027	5,517
Central District	10,509	7,514	18,023
Milne Bay District	1,119	388	1,507
Northern District	713	169	882
Southern Highlands District	209	26	235
Papua (undefined)	8	9	17
Total born in Papua	16,737	10,530	27,267
New Guinea			
Eastern Highlands District	462	40	502
Chimbu District	490	27	517
Western Highlands District	173	8	181
West Sepik District	70	6	76
East Sepik District	173	31	204
Madang District	284	59	343
Morobe District	1,643	332	1,975
West New Britain District	79	11	90
East New Britain District	230	83	313
New Ireland District	86	19	105
Bougainville District	79	14	93
Manus District	121	42	163
New Guinea (undefined)	23	8	31
Total born in New Guinea	3,913	680	4,593
Territory of Papua and New Guinea (undefined) and other	93	30	123
Total	20,743	11,240	31,983

Source. Bureau of Statistics 1966.

Port Moresby would be very unusual if the number of unemployed persons did not increase. The 1966 Census, which lists 250 as unemployed, probably does not adequately indicate the level of unemployment. Daw and Doko in a study of recreational facilities estimated that there might be 2,000 unemployed persons (T.P.N.G. 1968c:20). The definition of unemployment in a developing country is difficult but it seems highly likely that the number of people living in the town and more or less

actively looking for work will increase substantially during the next two decades.

In 1966 34 per cent of the indigenous workforce were employed in the public sector (compared with 53.6 per cent of the non-indigenous workforce). Between 1961 and 1966 indigenous employment in the private sector increased much faster than in the public sector, 9.3 per cent p.a. as against 3.5 per cent p.a. Employment in private enterprise is likely to continue to expand faster than in the public sector, though the difference is unlikely to be as great as during the first half of the 1960s. Judging from African experience, localisation is likely to proceed faster in the government than within private firms.

On the bases of the calculations above of the rate of growth of government expenditure, real wages, and localisation, and assuming that for each expatriate who is replaced, 1.5 indigenes are appointed, indigenous employment in the public sector should be 17,000 in 1980 and 36,000 in 1990. The replacement ratio of 1:1.5 was selected because though expatriates certainly cost more than twice as much as indigenes to recruit and employ, it is assumed that some of the savings from localising in Port Moresby will be used for expanding the public sector in other parts of Papua-New Guinea, and for increasing expenditure on public works. (Note also the very rapid increase in expenditure on education in many developing countries.)

Table 3.2 shows the calculation of the number of additional positions available to Papuans and New Guineans in Port Moresby through localisation. The method used was to estimate the number of new positions which would have been available for non-indigenes on the basis of the rate of growth of government expenditure less the rate of increase of real wages (column A). The expected actual rate of growth or decline of non-indigenous employment was used to calculate the likely actual number of non-indigenous government officers (column B). The number of positions available for localisation is then A less B, multiplied by the replacement ratio of 1.5.

Government employment of Papuans and New Guineans, Table 3.3, was calculated using the net growth rate of government expenditure and adding the additional number of localised positions each year.

In 1961 the indigenous participation rate was approximately 43 per cent and this has remained almost constant, being 42.3 per cent in 1966 (Table 3.4). The Australian workforce participation rate was 40 per cent in 1961. Given the lower level of monetisation in Port Moresby than in Australia, the very much lower participation rate of indigenous females, and the anticipated higher level of unemployment, the over-all participation rate would be expected to be considerably lower than in Australia. The only reason this is not so, of course, is the high proportion of males unaccompanied by dependents. Other factors, including the growth of the female workforce, and a decline in the proportion of adult males who are employed in non-money earning activity, will tend

Table 3.2

Number of additional positions available to indigenes in the public sector due to localisation, 1966-90

Year ending June	No. expatriates at beginning of year	Expected net rate of increase of government expenditure %	No. expatriates in June without localisation A	Expected actual rate of growth of expatriate employment %	Expected actual no. of expatriates in June B	A-B	Newly localised positions 1.5 x (A-B)
1966-67	3,228	10	3,551	10	3,551	-	-
1967-68	3,551	10	3,906	10	3,906	-	-
1968-69	3,906	10	4,296	10	4,296	-	-
1969-70	4,296	8	4,640	8	4,640	-	-
1970-71	4,640	8	5,011	6	4,918	93	140
1971-72	4,918	8	5,311	4	5,115	196	294
1972-73	5,115	5	5,371	2	5,217	154	231
1973-74	5,217	5	5,478	0	5,217	261	392
1974-75	5,217	5	5,478	0	5,217	261	392
1975-76	5,217	3	5,374	-10	4,695	679	1,019
1976-77	4,695	3	4,835	-10	4,226	609	914
1977-78	4,226	3	4,353	-10	3,803	550	825
1978-79	3,803	3	3,917	-10	3,423	494	741
1979-80	3,423	3	3,526	-10	3,081	445	668
1980-81	3,081	6	3,266	-7	2,865	401	602
1981-82	2,865	6	3,037	-7	2,664	373	560
1982-83	2,664	6	2,823	-7	2,478	345	518
1983-84	2,478	6	2,627	-7	2,305	322	483
1984-85	2,305	6	2,443	-7	2,144	299	449
1985-86	2,144	6	2,273	-7	1,994	279	419
1986-87	1,994	6	2,114	-7	1,854	260	390
1987-88	1,854	6	1,965	-7	1,724	241	362
1988-89	1,724	6	1,827	-7	1,603	224	336
1989-90	1,603	6	1,699	-7	1,491	208	312

Table 3.3

Government employment of indigenes, Port Moresby, 1966-90

Year ending June	Number at beginning of year	Rate of growth %	Number	Add increase due to localisation	Total in June
1966-67	4,643	10	5,107	Nil	5,107
1967-68	5,107	10	5,618	-	5,618
1968-69	5,618	10	6,180	-	6,180
1969-70	6,180	8	6,674	-	6,674
1970-71	6,674	8	7,208	140	7,340
1971-72	7,340	8	7,927	294	8,221
1972-73	8,221	5	8,632	231	8,863
1973-74	8,863	5	9,306	392	9,698
1974-75	9,698	5	10,182	392	10,574
1975-76	10,574	5	11,103	1,019	12,122
1976-77	12,122	3	12,486	914	13,400
1977-78	13,400	3	13,802	825	14,627
1978-79	14,627	3	15,066	741	15,807
1979-80	15,807	3	16,281	668	16,949
1980-81	16,949	6	17,966	602	18,568
1981-82	18,568	6	19,682	560	20,240
1982-83	20,240	6	21,454	518	21,972
1983-84	21,972	6	23,290	483	23,773
1984-85	23,773	6	25,199	449	25,648
1985-86	25,648	6	27,187	419	27,606
1986-87	27,606	6	29,262	390	29,652
1987-88	29,652	6	31,431	362	31,793
1988-89	31,793	6	33,701	336	34,037
1989-90	34,037	6	36,079	312	36,391

to cause higher participation rates. In the light of conflicting influences on the participation rate it seems safest to assume it will remain unchanged at about 42 per cent. Thus the public sector-related indigenous population in Port Moresby would be about 40,000 in 1980 and about 87,000 in 1990.

Table 3.4

Wholly or mainly cash income group participation rates, 30 June 1966
Port Moresby

	Indigenous			Non-indigenous			Total		
	M	F	T	M	F	T	M	F	T
Percentage of total population per group:									
Employed	61.2	7.4	42.3	72.6	44.4	60.8	63.6	17.3	46.6
Unemployed	1.0	.2	.7	.2	.3	.3	.9	.2	.6
Total	62.2	7.6	43.0	72.8	44.7	61.1	64.5	17.5	47.2
Percentage of population in age group 10-64 per group:									
Employed	78.9	12.0	58.9	93.2	60.4	79.9	82.0	26.9	64.0
Unemployed	1.3	.2	1.0	.3	.4	.3	1.1	.3	.8
Total	80.2	12.2	59.9	93.5	60.8	80.2	83.1	27.2	64.8

Indigenous private sector employment is calculated as the residual after deducting estimated expatriate employment from total employment in each industry. Population is estimated by using the present workforce participation rate. The results of these calculations are given in Table 3.5.

Table 3.5

Estimated population by race, 1980 and 1990

	1980	1990
Non-indigenous		
Public sector-related	5,000	2,500
Private enterprise-related	12,500	15,500
Total	17,500	18,000
Indigenous		
Public sector-related	40,000	87,000
Private enterprise-related	55,000	165,000
Total	95,000	252,000
Total		
Public sector-related	45,000	89,500
Private enterprise-related	67,500	180,500
Total	112,500	270,000

Chapter 4

Income

Earnings from wage employment are the most important, though not the only, source of income for indigenes living in Port Moresby. As only forecasts of wage levels have been made and many people in the town are employed irregularly, it must be remembered that these forecasts give a limited indication of income. Urban residents are involved in an exchange network with kinsmen and other members of their ethnic groups; incomes are redistributed between employed and unemployed workers in town, and between people living in urban and rural areas. Urban workers generally need to retain these links as a form of social security. Therefore the value of gardening and fishing by town residents and of gifts made to and from relatives and friends in rural areas must be considered when estimating income. Oeser (1969:72) found that 28 per cent of the incomes of the ten Hohola households investigated was from gifts of both cash and kind. However, reciprocal gift giving and accommodation of visitors probably led to the consumption of these gifts and other income as well. An income and expenditure survey of 45 local officers receiving less than $760 p.a. in Port Moresby in 1966 showed that 6 per cent of average income comprised $1.50 per fortnight received from gifts and 7 cents per fortnight from gardening and fishing (Department of Labour 1967:13). $5.73 or 21 per cent of the average fortnightly expenditure of these officers was in gift giving. Gambling is another source of income for some individuals but gambling losses and wins nearly cancel out as a net source of income for townspeople (though there may be a slight redistribution from rural areas - town dwellers being more sophisticated gamblers).

Until recently, income levels of Papuans and New Guineans were uniformly low since they were employed only in unskilled, semi-skilled and occasionally skilled occupations. The number of self-employed people in the workforce is small, 128 at the time of the 1966 Census. More significant are the non-employed adults, but the number of these is not known; many do not seek work and therefore cannot be classified as unemployed. With the expansion of secondary and tertiary education during the 1960s and 1970s, economic stratification is becoming more pronounced. Although the more highly educated people aspire to Australian standards of living they will continue to accept traditional social responsibilities.

The following brief references to experience elsewhere are included to indicate factors which should be considered in forecasting changes in real wage levels. Turner (1965:12-14) estimates that the average annual rate of increase in African wages during the 1950s was about 7-8 per cent; price rises were about 3 per cent p.a., making the annual rate of increase in real wages about 4 per cent. The estimated rate of growth of Africa's 'real product per capita' was only slightly more than 1 per cent annually. Therefore the share of wage earners in national income increased.

In Uganda, which became independent in 1962, average cash earnings of Africans between 1957 and 1964 rose by 11 per cent p.a., or 10 per cent p.a. in real terms. This rate of growth was due partly to more rapid increases in wages at the lower end of the scale and to the increase in the proportion of well paid Africans (under the Africanisation policy); average wages in the public sector increased faster than in the private sector (Knight 1967:237). If market forces were operating freely, the real wage of unskilled labour would be determined by the level of income in the subsistence sector. But by 1964 in Uganda this wage was nearly three times the value of income of a worker on the land. Knight found that the government determined the wages of the majority of the unskilled workers directly, and influenced the wages of the others. Trade unions had only a limited effect on wages in specific cases; the political influence of urban workers was more significant. A few large employers paid higher rates to attract and retain competent employees. The salary of higher level manpower, particularly in the public service, was closely correlated with education, and of course related also to age levels; it was found to be strongly influenced by international salary levels, by the pressure of demand on limited supplies of trained manpower, and by the political influence of this group. In the 1966-71 Uganda Five Year Plan, the government stated an incomes policy of preventing any increase in incomes of over £600 p.a., and permitting 1 per cent, 2.5 per cent and 3.5 per cent p.a. increases in the £210-£600, £90-£120 and less than £90 p.a. earning groups respectively (Knight 1967:264). Of course, firm political determination would be needed to implement these objectives.

In Ghana there was a 5.7 per cent p.a. increase in average cash payments received by male workers between 1956 and 1961. In the post-independence years the rate was only slightly higher at 6.1 per cent p.a. The cash value of the minimum wage in Accra increased at the rate of 3.4 per cent p.a. between 1957 and 1962 compared with 4.1 per cent p.a. between 1952 and 1957. The real value of the Accra minimum wage increased negligibly in the five years after independence compared with a 2.5 per cent rate of increase in the previous five years (Isaac 1962:34, 42).

In Fiji during 1956-67 average wage increases were just above 3 per cent p.a. The cost of living increased at about 1.5 per cent p.a., so that the annual increase in real wages was about 1.5 per cent

(Turner, H.A. 1967:6). Most of this growth was due to increases of about 3.4 per cent in the wages of less skilled workers. By 1966 the average wage differential of 'skilled' workers was only 20 per cent above the unskilled rate.

This data indicates that the factors influencing wages in different sections of the workforce vary. Therefore the following sections discuss possible wage changes separately for indigenous unskilled (manpower Class E), semi-skilled (manpower Class D), skilled (manpower Class C) and professional, managerial, sub-professional, higher technical and related workers (manpower Classes A and B).[1]

Unskilled workers

Minimum wages for all employees, other than those engaged in primary production and domestic service, are prescribed by a Common Rule extending the Port Moresby Urban Cash Wage Award No.2 of 1965 and Determinations made under that award.[2] (There are separate stevedoring and shipping awards for workers in those industries.) Weekly rates are $6 for unmarried juniors, $6.50 for unskilled adults and married male juniors, $6.75-$7.25 for Grade B, and $8-$10 for Grade A occupations. An award prescribing two weeks annual leave and six days sick leave each year is also in force. Domestic workers are covered by the Native Employment Ordinance and must be paid a minimum of $4 a month in their first year of employment and provided with accommodation, food, clothing and other issues. Table 4.1 shows that 47.5 per cent of indigenous employees in Port Moresby received less than $8 a week in 1966. Thus about half the town's indigenous wage earners were paid at, or about, minimum wage levels. These must be unskilled and lower semi-skilled workers.

The most significant change in the minimum wage in Port Moresby to occur during the post-war period was the introduction of the all-cash wage in January 1961. Previously all workers in Papua-New Guinea had been covered by a statutory minimum wage valued at $1.70 per week in 1945 and increased to $3.04 per week in 1956. In March 1965 the minimum weekly wage in Port Moresby was raised to $6.50, and there was a further increase to $7 early in 1970.[3] Between 1961 and 1970 the minimum money wage in Port Moresby grew by 1.7 per cent p.a. The principle of separate rural and urban minimum wages now seems to be firmly established, and it is assumed that this will continue until 1990.

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[1] See Appendix.

[2] A new award was negotiated early in 1970 and registered in May, prescribing a minimum wage for unskilled adults of $7 per week. This may be declared a Common Rule later in the year.

[3] As yet this applies only to employees working for members of the Employers' Federation of Papua-New Guinea.

Table 4.1

Weekly wages paid to indigenous employees in Port Moresby, March 1966

	Private	Government	Total	Proportion of total %
$ under 3.50	191	3	194	1.4
$ 3.50 to under 4.00	34	-	34	.2
$ 4.00 to under 4.50	63	7	70	.5
$ 4.50 to under 5.00	41	55	96	.7
$ 5.00 to under 5.50	29	142	171	1.2
$ 5.50 to under 6.00	39	26	65	.5
$ 6.00 to under 6.50	641	638	1,279	9.1
$ 6.50 to under 7.00	1,264	1,086	2,350	16.7
$ 7.00 to under 7.50	1,414	412	1,826	13.0
$ 7.50 to under 8.00	554	30	584	4.2
$ 8.00 to under 8.50	713	761	1,474	10.5
$ 8.50 to under 9.00	492	59	551	3.9
$ 9.00 to under 9.50	224	163	387	2.8
$ 9.50 to under 10.00	218	97	315	2.2
$10.00 to under 10.50	317	79	396	2.8
$10.50 to under 11.00	217	78	295	2.1
$11.00 to under 11.50	121	92	213	1.5
$11.50 to under 13.50	465	370	835	5.9
$13.50 to under 15.50	559	286	845	6.0
$15.50 to under 17.50	254	248	502	3.6
$17.50 to under 19.50	146	238	384	2.7
$19.50 to under 21.50	149	278	427	3.0
$21.50 to under 23.50	41	161	202	1.4
$23.50 to under 25.50	51	132	183	1.3
$25.50 to under 27.50	18	104	122	.9
$27.50 to under 29.50	19	46	65	.5
$29.50 to under 31.50	20	36	56	.4
$31.50 to under 33.50	9	16	25	.2
$33.50 and over	16	85	101	.7
Total	8,319	5,728	14,047	99.9

Source. Department of Labour, Annual Employment Returns, unpublished.

The most important influences on the minimum wage in Port Moresby are the extent of government control over wage policy, changes in the rural wage, and the degree of inflation. Until 1960 the Administration was able to determine the minimum wage and since then it has had considerable influence on wage negotiations between the Papua-New Guinea Employers' Federation and the workers' associations. This influence may be institutionalised through the establishment of a tripartite

minimum wages board during the next few years. In any case, workers' associations are weak and are unlikely to become much stronger through increasing membership and financial resources or leadership ability. Events in Africa indicate that an independent government is unlikely to encourage an organisation which might oppose government economic policy. The political influence of the urban proletariat will probably therefore be greater than its direct power through workers' associations, especially before rather than after independence, as the Administration will be extremely sensitive to demands from Papuans and New Guineans in the next few years.

The real value of the rural minimum wage has changed very little since World War II, and is currently valued at about $4 per week. Even though real increases must occur in the 1970s to maintain the supply of unskilled plantation labour from the subsistence sector, the growth rate is bound to be moderate. The key determinant of rural wages for the unskilled will continue to be the value of family subsistence and cash crop production. As income from cash cropping increases, plantation labour becomes less attractive. The value of indigenous farm output per head may be growing by 1 per cent p.a.[1] Real minimum rural wages may therefore increase by as much as 2 per cent each year during the next two decades, though this would be a sharp change of trend.

The degree of inflation will be largely determined by import prices provided that Papua-New Guinea's economy introduces relatively few trade restrictions. The proportion of imports from Australia will continue to decline, but Australian retail prices will probably continue to be the main influence on the Papua-New Guinea retail price index. Local production of goods formerly imported, and the increasing proportion of imports from lower-cost Asian countries, will to some extent offset the Australian influence. However, the establishment of a more discriminating tariff structure would lead to internally generated price rises. Despite the tendency for inflation to be a problem for developing countries, on balance, price increases will probably be modest during the 1970s. Between 1961-62 and 1968-69 the Papua-New Guinea retail price index increased at the annual average rate of 1.9 per cent. The index might increase faster during the next decade, perhaps at a rate of 2-3 per cent p.a., due to Australian inflation and local tariffs. Increasing retail competition should offset any tendencies for faster price rises. Estimates of what will happen in the 1980s are complete fantasy; however, the rate of inflation is

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[1] A rough estimate of the value of the increase in indigenous cash crop production during the period of the Five Year Development Programme, added to the value of subsistence production (which was assumed to grow at the same rate as the population, and allowing for population increase), indicates an annual increase in the value of indigenous farm output of about 0.9 per cent for the next few years.

unlikely to be so fast that real wages remain stationary. But it is possible that the tendency for prices in developing countries to rise faster than in industrialised nations will retard the real growth of wages.

In sum, market forces should keep the rate of increase of real minimum wages in Port Moresby to only slightly above the rate of increase in the value of indigenous farming. (Note that equal rates of increase of different income levels will lead to different absolute increases, whose size depends on the initial difference.) This rate may be higher in the 1970s than in the 1980s but it is likely to be between 2 and 2.5 per cent p.a. throughout the period. Thus in 1969 prices this would lead to real minimum wages in 1980 of about $10 ($9.75 at a rate of increase of 2 per cent p.a. and $10.24 at 2.5 per cent) and to real minimum wages in 1990 of $12 or $13 ($11.88 at a rate of increase of 2 per cent p.a., and $13.11 at 2.5 per cent p.a.).

Semi-skilled workers

Award wages for semi-skilled workers were first introduced in Rabaul in 1964; later awards there in 1967 and 1969 have also initiated changes in the pattern for the country. Thus in 1965 the following changes were introduced in Port Moresby: separate rates of pay for semi-skilled occupations classified as Grade A or B, and increments for workers in each grade after completion of the first and second year of employment with the same employer. It is surprising that the rate of growth of the minimum wage for a semi-skilled worker in Rabaul has been slower than that for an unskilled worker. For example, in 1964 a Grade A worker such as a driver of a 5 ton truck, or a sales, clerical or carpenter's assistant was awarded $8 a week. These employees became Class 2 workers in the 1967 award and in their first year of employment were to receive $8.50 weekly; this became $8.75 in the 1969 award. These wages decline slightly in real terms over the period 1964-69 when the money rates are deflated by the Papua-New Guinea retail price index. The only improvements in this time have been through the increments for service with the same employer, and through the development of a more complex wage structure, which has permitted some semi-skilled workers to be upgraded. The useful limits of this more complex structure have probably been reached.

In May 1970 the minimum weekly wage for semi-skilled (Class 1) workers in Port Moresby was increased to $7.75, and for Class 2 workers to $9.25. Employers, of course, often pay above-award rates for seniority and efficiency, so that minimum wages alone are an inadequate guide to the average wage for semi-skilled workers. Assuming all workers paid between $8 and $19.50 in 1966 to be semi-skilled, their average wage was $11.51: $11.31 for private enterprise and $11.82 for government, calculated from Table 4.1.

The market conditions for semi-skilled labour are roughly the same as for unskilled workers; there is a good supply (indeed, many semi-skilled building and construction workers were unemployed in 1969) and often any need is met by on-the-job training of unskilled workers already employed. Award rates for the semi-skilled might increase at about the same rate as wages for the unskilled, but to allow for seniority and efficiency loadings a growth rate of 3 per cent is assumed. This would give an average wage for semi-skilled workers of $13 in 1970, $17.50 in 1980 and $23.50 in 1990 (at 1969 prices). This does not include the family needs allowance paid by the government to married officers with families, which guarantees minimum earnings (wage plus allowance) of $17.88 to a married officer with three children living in Port Moresby. This allowance is paid only to officers in this semi-skilled category (employees receiving wages of between $8 and $19.50) because no adult officer receives less than $9.25 per week, and the allowance is not paid to those with wages of more than $17.88. Continued payment of the allowance at the present or a different level is a matter of government policy and the attitude of the Public Service Arbitrator. It seems likely that there will be resistance to increasing the allowance, but that having been introduced it will be maintained at about its current money value so that its real value gradually decreases. On this basis, the average wages for semi-skilled workers would be slightly higher than those estimated above.

Skilled workers

The rapidly increasing demand for higher clerical and supervisory workers, technicians and tradesmen may cause wages of skilled workers to rise faster than for the less skilled. Minimum wages for tradesmen are $18 to $20 weekly depending on seniority. Market rates are higher; the Department of Public Works pays between $20.60 and $23 to qualified tradesmen. It is assumed that skilled workers receive between $19.50 and $33.50 (see Table 4.1). The average wage for the 1,080 employees in this group in 1966 in Port Moresby was $23.51. At a growth rate of 2 per cent for the rest of the 1960s, 4 per cent in the 1970s and 3 per cent in the 1980s (the last reduction being made on the basis that an independent government may have an egalitarian wage philosophy, and in any case want to keep the general wage level low), the real average weekly wage of skilled workers in Port Moresby would be about $38 in 1980 and $50 in 1990 (at 1969 prices).

Managerial, professional and technical workers

Political pressures and market forces will be strongest on the wages of these manpower Class A and B employees. Indigenes in this category will be working with Australian colleagues and will therefore tend to desire the same standard of living as expatriates. The demand for their services will be high and cannot possibly be satisfied during the

next two decades because as supply increases, expatriates will be replaced. As well, personnel in this category generally have internationally marketable skills and therefore their wages will be influenced by overseas rates.

The average wage for employees in this category (i.e. with wages of over $33.50) in 1967 was $41.01. As localisation proceeds the number of managerial, professional and technical workers will increase and their wage levels will also rise, which may cause annual growth rates of 4 per cent from 1967 to 1980. Some time after independence egalitarian and low wage policies may be asserted, bringing the rate of increase down to 2 per cent p.a. during the 1980s. The real average weekly wage of managerial, professional and technical workers would then be about $70 in 1980 and $85 in 1990. But it is possible that market shortages of higher level manpower, and international market influences may force a faster rate of increase during the 1980s.

Table 4.2

Estimated indigenous and non-indigenous income, Port Moresby, 1980 and 1990

	1980		1990	
	Number	Average weekly wage	Number	Average weekly wage
Indigenous		$		$
Class A and B	1,766	70.00	6,774	85.00
Class C	5,314	38.00	20,800	50.00
Class D	12,663	18.00	31,540	24.00
Class E	20,242	10.00	46,727	13.00
	Number	Average annual income	Number	Average annual income
Non-indigenous	10,600	6,250	11,000	8,500

These estimates for all levels of skill do not include income from overtime or from other allowances paid by the government or private enterprise. Some Administration officers (mainly in Class D) receive non-reduction allowances to keep their incomes at the same level as they received before the 1964 salary reductions. But presumably these will have been largely eliminated through promotions and wage increases by 1980. It is possible that the Administration may introduce a rent allowance for local officers, or charge sub-economic rentals. Other subsidies in the form of very low charges for medical and educational services will probably continue. Certain social service benefits might be introduced. Income tax rates will probably remain lower than in Australia. These are all issues of government policy and cannot be

reliably predicted. Therefore they are disregarded. Since some of these policies would have the effect of increasing income and others of reducing it, they might cancel each other out to some extent.

Proportion of the workforce in each manpower class

Table 4.3 gives an approximate breakdown of the 1966 Port Moresby workforce by manpower class. In forecasting numbers in each class it is assumed that the proportion in each class remains the same. Trends in industrialised countries tend to indicate increasing proportions in the workforce in occupations requiring greater education and training. However, this trend should be partly offset by increased numbers of unskilled and semi-skilled workers. There tends also to be a larger proportion of higher level manpower in Port Moresby than throughout the country generally.

Table 4.3

Workforce divided by manpower class, 1966*

	A and B	C	D	E	Total
Indigenous					
Male	149	1,339	3,771	7,223	12,482
Female	53	85	167	464	769
Sub-total	202	1,424	3,938	7,687	13,251
Non-indigenous					
Male	1,275	2,121	532	82	4,010
Female	353	430	842	56	1,681
Sub-total	1,628	2,551	1,374	138	5,691
Total					
Male	1,424	3,460	4,303	7,305	16,492
Female	406	515	1,009	520	2,450
Total	1,830	3,975	5,312	7,825	18,882
% proportion of total	10	21	28	41	100

* Figures are approximate.

The rate of localisation has also to be estimated before arriving at the proportion of the workforce in each manpower class. It can be assumed that almost all male and most female occupations in Class D and E, excepting perhaps a few typists or specialist office equipment operators, will be localised by 1980. The extent of localisation in manpower Classes A, B and C, is more difficult to estimate; the rate of localisation by sector cannot be applied to manpower classes. Table 4.3

shows that the proportion of indigenes in 1966 in Classes A and B, 11 per cent, is very much lower than the proportion of Class C, 36 per cent. This suggests that localisation will proceed faster in Classes A and B than in C; newly independent countries have tended to place their nationals in policy making positions at the top, while retaining expatriates as advisers in middle level jobs. This implies that a faster rate of localisation for Class A than for Class B is likely. However, the proportion of New Guineans in Class A and B occupations in 1980 will probably still be lower than the proportion in Class C.

The following estimates of the proportion of indigenes and non-indigenes in Classes A and B, and C, are based on African experience, particularly that represented in the Zambia and Kenya Manpower Reports. It is possible that by 1980 50 per cent or more of the Class C workforce will be indigenous; this is a fairly slow rate of increase from the 36 per cent of Class C positions held by indigenes in 1966, but the rate of growth of employment during the period will be high, and the supply especially in the early years will increase slowly. As well, Europeans tend increasingly to live in urban areas in both Africa and Papua-New Guinea. On these assumptions the situation in 1980 would be as shown in Table 4.4. By 1990 all Class D and most Class C positions should be localised, and almost half of Class A and B positions. It is assumed that two-thirds of non-indigenes will be in Classes A and B, and one-third in Class C.

Table 4.4

Estimated workforce by manpower class and race, 1980 and 1990

	1980			1990		
	Indigenous	Non-indigenous	Persons	Indigenous	Non-indigenous	Persons
Classes A and B	1,766	4,306	6,072	6,774	7,244	14,018
Class C	5,314	5,313	10,627	20,800	3,731	24,531
Class D	12,663	1,000	13,663	31,540	-	31,540
Class E	20,242	-	20,242	46,727	-	46,727
Total	39,985	10,619	50,604	105,841	10,975	116,816

Non-indigenous incomes

Non-indigenous incomes will be closely tied to Australian levels. Wages of expatriates are set at Australian rates plus allowances (for expatriation, rent, children's education and so on). Income taxation and other forms of taxation are lower than in Australia permitting higher levels of net income. Successful enterprises make larger profits than in Australia. According to Mr K.G. Crellin, Managing Director of the Papua-New Guinea Development Bank, profits for commercial and

industrial undertakings in Papua-New Guinea of more than 20 per cent a year would not be regarded as high.[1]

Real incomes of income taxpayers in Papua-New Guinea increased by 3.6 per cent p.a. between 1963-64 and 1967-68 (Table 4.5). Most income taxpayers are non-indigenes. Therefore the average actual income (i.e. gross income before any deductions are made) of $4,380 in 1967-68 can be safely assumed to represent the income levels of all non-indigenes in wage employment or who are self-employed, managers or receive property income.

Table 4.5

Average actual incomes of taxpayers, 1964-68

Year	Number of taxpayers	Actual income $'000	Average actual income $	Retail price index 1961-62 = 100	Real average income $
1963-64	14,751	49,048	3,325	99.5	3,341
1964-65	16,052	56,291	3,507	102.7	3,415
1965-66	18,355	64,984	3,541	108.1	3,276
1966-67	18,483	75,657	4,093	111.7	3,664
1967-68	18,694	81,877	4,380	114.0	3,842

Source. Bureau of Statistics, Taxation and Retail Price Index Bulletins.

The Vernon Committee attempted to make projections of living standards in Australia. It was assumed that the terms of trade would stabilise at the 1962-63 level. Assuming that past rates of increase of productivity in each industry are maintained, G.N.P. at constant prices would increase by 5 per cent p.a.:

> This rate would imply that G.N.P. adjusted for the terms of trade, expressed per person employed, would rise from the figure of 1.9 per cent a year estimated for the nine years ended 1962-63, to 2.3 per cent a year for the period 1962-63 to 1974-75. Expressed per head of population, the difference would be even greater, as population, which rose faster than the workforce in the nine years to 1962-63, is expected to rise more slowly than the workforce in the period to 1974-75. The rate would rise from 1.4 per cent a year in the earlier period to 2.6 per cent a year in the period 1974-75.
>
> (Commonwealth of Australia 1965:118)

In fact, the Commonwealth Treasury White Paper, The Australian Economy 1969, shows that G.N.P. at constant prices increased by 5.2 per cent

[1] Australian Financial Review, 13 June 1969.

p.a. between 1963-64 and 1968-69 and the immediate prospect is for further increases. The growth rate of G.N.P. of 5 per cent p.a. will be assumed to continue, with the related increase in G.N.P. per person employed of 2.3 per cent.

Average real earnings of Australians in Papua-New Guinea are likely to increase at a somewhat faster rate than in Australia due mainly to the higher proportion who are at the upper end of the manpower scale. Also average urban incomes are likely to be higher than the national average, but there is no obvious method of estimating the extent of this difference. Therefore real incomes of non-indigenes may increase at the rate of 3 per cent p.a. throughout the 1970s and 1980s. The rate of increase may well be higher for the next few years and decline later, but a uniform growth rate will be assumed. At this rate the real average annual income of non-indigenes would be $6,242 in 1979-80, and $8,389 in 1989-90 (see Table 4.2). It was earlier estimated that there would be about 10,600 non-indigenes in the Port Moresby workforce in 1980 and about 11,000 in 1990.

Part II

Indigenous housing in Port Moresby

N.D. Oram

Chapter 5

The pattern of settlement in Port Moresby

Port Moresby can be divided into five main regions. The first is Konedobu and the area to the northwest which includes the predominantly indigenous housing area at Kaevaga and the village complex of Hanuabada. The second, the old town of Port Moresby, is mainly European in character and is situated on the peninsula, including Newtown and Lawes Road. The third is the area from Koke-Badili extending to the eastern boundary of the town; this is the Papuan centre and also includes a small industrial area bordering Scratchley Road in Badili. The fourth is the Papuan suburb of Hohola and the fifth the higher ground from Boroko to Gordon, including the six-mile industrial area. This area is largely European in character but has a large indigenous population including a number of people living in houses built by the Housing Commission.

The populations[1] of these regions are set out in Table 5.1.

Table 5.1

Indigenous and non-indigenous population according to urban region, Port Moresby, 1966

Region	Indigenous	%	Non-indigenous	%	Total	%
(i) Konedobu-Hanuabada	6,535	20.3	607	6.1	7,142	17
(ii) Peninsula-Lawes Road	2,664	8.3	2,169	21.9	4,833	11.5
(iii) Koke-Badili-Vabukori-Kila Kila	12,217	37.9	899	9.1	13,116	31.1
(iv) Hohola	3,260	10.1	210	2.1	3,470	8.2
(v) Boroko-6 mile-Gordon	7,546	23.4	6,026	60.8	13,572	32.2
Total	32,222	100.0	9,911	100.0	42,133	100.0

[1] All information in this paper relating to 1966 is obtained from the Preliminary Bulletins and unpublished tabulations of the 1966 Census carried out by the Bureau of Statistics.

The Bureau of Statistics has analysed the 1966 Census for Port Moresby in terms of four main types of residential areas. These areas and their populations are set out in Table 5.2.

Table 5.2

Indigenous population by main type of residential area, 1966

Type of area	Number of residents	% of indigenous population
(i) Urban villages	5,198	16
(ii) Urban settlements	5,230	16
(iii) Other predominantly indigenous areas	14,945	46
(iv) Predominantly non-indigenous areas	6,849	22
Total	32,222	100

There are five urban villages, if the three villages at Hanuabada are counted as one village. Hanuabada is situated to the northwest of the town. (There are two villages, Tatana and Baruni, situated to the northwest which are outside the town boundary.) The Motu village of Vabukori, and three Koita villages, Kila Kila, Mahuru (Kila Kila No.2) and Korobosea, are situated to the southeast of the town. These villages are situated in regions (i) and (iii) of Table 5.1. Nearly all the inhabitants of the villages are Koita and Motu rightholders but there are a few people incorporated into village groups who were born elsewhere in the Port Moresby region, which is defined in this paper as the Central, Gulf and Western Districts. It is the area in which the majority of indigenous people migrating to Port Moresby are born and the area which Port Moresby serves as a port of entry. The coastal peoples were traditionally linked through trading activities.

In 1966 there were over twenty village-type settlements formed by migrants in Port Moresby. Most settlements lay to the southeast of the town and with the exception of the large settlement of Vanama near Konedobu and two canoe settlements at Koke and Badili, all settlements were situated on native land. They are usually inhabited by a core of people from a particular village or language group, although a few are composed of members of two or three groups and all are to some extent heterogeneous. In 1966, 97 per cent of people living in urban settlements were born in the Port Moresby region; 48 per cent were born in the Gulf District, 39 per cent in the Central District and 10 per cent in the Western District.

Since 1966, a large number of migrants from the inland areas of the Central District, the four highland districts and other parts of New Guinea have built single houses or groups of three or four houses on native and Administration land throughout the town area. These settlements have grown partly because servants' quarters are no longer built attached to official housing in the new residential areas to the north

of the town. The majority of settlements, however, are situated in regions (i) and (iii) of Table 5.1. The District Office has estimated that there were 9,027 people living in urban settlements in July 1969, an increase of 72.6 per cent since 1966.

The other areas classified by the Census as predominantly indigenous areas are found mainly in regions (iii) and (iv) of Table 5.1. They consist of the primarily indigenous suburb of Hohola which, however, is now becoming increasingly multi-racial; government housing-settlements such as Kaugere and Konedobu, a number of compounds owned by private employers, the Koke area, and various training institutions such as the Papuan Medical College and Idubada Technical Training College. Seventy-two per cent of the population of these areas were born in the Port Moresby region and over half of these were born in the Central District; 11 per cent were born in the Milne Bay and Northern Districts of Papua and the remaining 17 per cent in different parts of New Guinea.

Indigenous people living in predominantly non-indigenous areas are mainly housed in servants' quarters in the Boroko area, the old town area, and the residential area near Konedobu. They live in regions (ii), (v), and part of region (i) of Table 5.1. Probably not more than fifty senior indigenous public servants and commercial employees live in European-type houses. Only 59 per cent of the inhabitants of these areas were born in the Port Moresby region. Twelve per cent were born elsewhere in Papua, nearly 9 per cent were born in the four highland districts and 20 per cent in the rest of mainland New Guinea.

Land tenure

Land tenure is one of the major determinants of the pattern of urban development and a complex system of indigenous land rights exists in the Port Moresby urban area. Traditionally the people of each Motu and Koita village claimed rights to a specific area of land. The majority of patrilineal descent groups into which village populations were divided also held rights to defined areas of village land, and lineages within descent groups might also hold exclusive rights to a particular area. While major rights to land were held by primary members of descent groups (males who were members by descent or accretion and who were living in the descent groups' residential section in the village), all male and female descendants of the first settlers were regarded as holding land rights, although they could exercise them only if they lived near at hand. Land could also be alienated by a descent group to women members and their descendants. A large number of people may claim rights to any area of land.

Since Papua was declared a Protectorate in 1884, it has been the policy of the Administration to qcquire land required for urban development and to allow alienation of native land only through lease or purchase to itself. Under the Land Ordinance 1962 (No.6 of 1963) the Administration is empowered to acquire land compulsorily for a wide

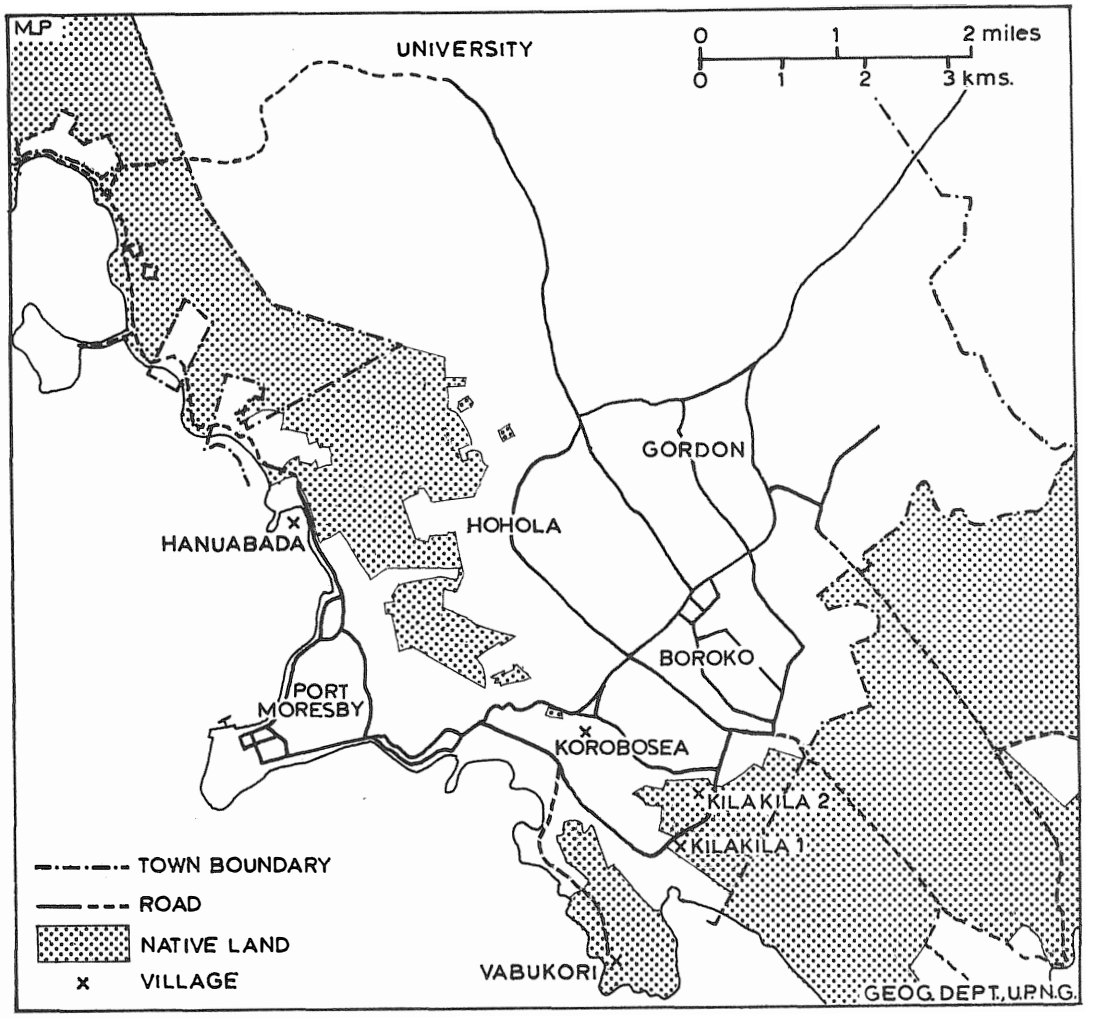
range of public purposes, including industrial purposes, but it has been reluctant to exercise its powers. Nearly all land in Port Moresby has been acquired from willing sellers, and Administration land now constitutes probably more than nine-tenths of the land within the Port Moresby boundary. The Administration has surveyed the land which it has acquired and has developed it according to a planned layout. Its policy is to promote urban development only on alienated land and is also not to include any further native land inside town boundaries.

There are two main areas of native land remaining inside the Port Moresby boundary. The first comprises the small area of land still held by the people of Hanuabada village, and there is native land beyond the town boundary to the northwest belonging to Tatana and Baruni villages. The second area is situated in the southeastern part of the town and contains the village of Vabukori and the three Koita villages. Since 1966 the land on which a number of settlements are situated has been acquired from village rightholders by the Administration.

Village rightholders enjoy complete security of tenure, defined as a 'communal usufructuary occupation with a perpetual right of possession in the community' (Commonwealth Law Reports 1943:547). Their tenure is subject to the restricted powers of compulsory acquisition held by the Administration. They suffer two main disadvantages under the present system of tenure. First, they cannot offer their land as security for building loans. This is probably not a significant problem; only a very small proportion of the population can afford to take up housing loans, and experience elsewhere suggests that land held under customary tenure is an unsatisfactory form of security. (Forced sales of such land are very unpopular, and may lead to disturbances and boycotting of sales.) Secondly, they are unable to obtain an economic return for their land as a result of the legal restrictions on the transfer of land imposed by Section 81 of the Land Ordinance 1962, unless they are prepared to convert it under the Land (Tenure Conversion) Ordinance 1963 (No.15 of 1964). This is a more serious disadvantage.

Under Sections 16 and 81 of the Land Ordinance 1962, Papuans and New Guineans may transfer land only by sale or lease to the Administration or according to native custom to other natives. Whether modern custom could be held to include sale or lease has not yet been tested in the courts. Land is rarely leased to the Administration. If the Administration buys land outright the purchase price is often soon dissipated by the vendors and retrospectively they see the price as small. They may feel that they have been cheated, especially if non-indigenous people appear to be making large profits from their occupation of the land. If land is transferred according to native custom, the new occupiers of the land are not expected by the rightholders to make significant payments for the use of the land and they frequently cannot afford to do so.

Under Section 7 of the Land (Tenure Conversion) Ordinance 1963 a Papuan or New Guinean can apply to the Land Titles Commission for



Map 2. Native land areas in Port Moresby

'registration in his name of any native land or of an interest in any native land' and the land ceases to be native land and is held in fee-simple. All rightholders must agree to the conversion and the names of not more than six people may be registered as owners of the land. As a result of this process, others holding an interest in the land lose their rights to it. Until the end of 1967 no landrights were converted to freehold in Port Moresby, but in 1968 and 1969 there were more than one hundred conversions and applications to convert. The majority of conversions are concerned with house-sites, and as effective rights to such sites are now held by the houseowners, this appears to be a desirable development. If, however, land is undeveloped and therefore liable to be transferred to non-indigenous people, conversion may have undesirable consequences. In 1969 holders of rights to an area of native land in Port Moresby allowed the land to be converted and registered in the name of one man, thereby losing their rights. If, as is proposed, part of the land is transferred to a European company for development, they will become dependent on the goodwill of their kinsman, the owner, to distribute any profits according to native custom. Even if he does so, his heirs may not. The Administration is aware of the problem and may consider an amendment to the Ordinance. Registration is restricted to six names because it is impossible to keep a record of the names of all rightholders up to date. The solution may lie in registering land in the name of an individual as trustee for a descent group without registering the names of the individuals. The trustee would then be responsible for sharing any profits from the land in accordance with native custom.

Migrants settled on native land are in legal occupation of the land unless the rightholders expressly revoke permission to settle. This is unlikely because the rightholders admit an obligation towards the settlers and also fear retaliation. It is doubtful whether they could obtain an order for eviction in a court of law, partly because they would have difficulty in proving their own title to the land. While relations between village rightholders and different groups of migrants vary in cordiality there is little evidence that the majority of migrants feel insecure. A considerable number have built good houses, many with the permission of the rightholders. However, until recently officers concerned with native affairs maintained that migrants occupy land illegally, and this attitude may have made migrants feel insecure.

The legal basis of the occupation of land by migrants should be clarified, and rightholders should be encouraged to obtain a regular return for the use of their land by others. The present situation, however, in spite of unsatisfactory features, enables a significant percentage of the indigenous population to house themselves.

The Administration suffers two disadvantages from the existence of native land within the town boundary. The first is the problem of ensuring that development on native land takes place according to a planned layout under administrative control. The second is that under the

rating provisions of the Local Government Ordinance 1963, rates may only be levied on the undeveloped capital value of land, and rates must be levied on all land within the jurisdiction of a local government council. Thus, though it seems virtually impossible to levy rates on the undeveloped capital value of land where the rights are held by a large number of people whose names are not recorded, all native land must be rated because it is within the council's area. Under present legislation it would be very difficult for an urban authority to levy rates. This is not primarily a matter of land tenure and the solution lies in amendment of the Local Government Ordinance.

Much of the remaining area of native land inside the town boundary is very steep and unsuitable for development, but considerable areas of native land outside the present boundary may be required for urban development in the future. In the past the Administration has been able to buy most of the land it has required from willing sellers, and provided it offers high enough prices, it is likely to be able to continue to do so in the future. By acquiring rights to the land the Administration can plan its development without difficulty. The Administration can also, although this is not the present practice, charge premiums for blocks of land as well as rent to recoup the cost of providing services.

There are also problems arising from the policy of acquiring land. In 1966 approximately one-third of the indigenous population was living on native land and in spite of land purchases by the Administration, the proportion is not likely to have changed greatly since then. The economic cost of acquiring land and resettling a large proportion of the indigenous population is likely to be very great, as the Rabia Camp experiment indicates.[1] The social cost of removing large numbers of people would also be considerable. The residential complexes developed at Hanuabada, Vabukori and Kila Kila are not merely housing settlements; they are areas in which heterogeneous populations are forming communities and learning to become town-dwellers.

Port Moresby is still essentially a European town in character. Europeans are politically and economically dominant and the emergence of a number of middling-senior indigenous employees will do little to redress the balance. At present probably less than half-a-down indigenous entrepreneurs are operating businesses on anything approaching a European scale. Indigenous people are becoming aware and resentful of Port Moresby's domination by Europeans. As long as some indigenous people hold land rights, however, they still have an important social and economic stake in the town. If these rights are taken away, as a result of the acquisition of their land, the whole indigenous population will become a landless proletariat. The Housing Commission is wisely

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[1] See pp.57 and 77.

concentrating on tenant purchase schemes, but many tenant purchasers do not or cannot distinguish the payments which they make from rent. Such schemes do not give the individual the security he has through holding traditional rights to land. The treatment by independent governments of economically dominant migrant communities, for example Indians in East Africa, indicates the supreme importance of ensuring that the indigenous population participates in and benefits directly from urban development.

Whatever policy the Administration adopts towards native land rights in the urban area, areas of native land are likely to exist within it for many years to come. It is therefore essential that a positive attitude be adopted towards development on native land.

Urban villages

Before 1942, the indigenous population consisted of inhabitants of urban villages which were then outside the town boundary, and of migrant workers who lived in accommodation provided by employers. There were also two small settlements of Gulf District people near the present golf course. The total indigenous population was not more than 6,000 people and migrants were not encouraged to settle for long periods in the town.

The people of the urban villages were evacuated when the Japanese attacked Papua-New Guinea in 1942. The villages, built of traditional materials, were destroyed. After 1945 the Administration planned to rebuild Hanuabada as a model village and in 1949 it began to build wooden houses in the sea for those who had owned houses in 1942. Some Hanuabadans who were not entitled to houses under the scheme began to build houses on land. In 1966 approximately one-third of the villagers were living on land. The people of other villages received small sums in compensation and built their houses with military materials, mainly corrugated-iron sheeting, left behind after the war. The people of all villages have gradually rebuilt their houses in modern materials and the majority of village houses are of good standard. Few village houses are really poor.

The villages were first built according to customary layouts but as they grew bigger the original plan was lost. Some villages, especially Vabukori and the land section of Hanuabada, have lost nearly all semblance of order. Even in Kila Kila, which is attractively built along a wartime aircraft parking bay, there are signs that order is breaking down. Except in small areas of Hanuabada, the Administration has not promoted planned development in the villages.

Migrants

After 1945 the Administration recognised the need for migrant labour in Port Moresby, but it considered that the long-term absences of

migrants from their home areas disrupted village life and it assumed that migrants would return to their villages after working for a few years in the town. It did not realise until the late 1950s that migrants were settling with their families for long periods in the town. Until then the Administration provided housing only for its own employees and in 1954, for example, it built a settlement at Kaugere for higher paid Administration servants. Private employers also provided housing, some of it of low standard. Most domestic servants who formed 10 per cent of the workforce in 1967 lived in quarters adjacent to their employers' houses.[1]

In 1960 the first houses were occupied in the predominantly indigenous suburb of Hohola and rents then averaged $62.40 a year for Administration employees. They were raised in 1965 to $117 a year for three-bedroom houses and $104 a year for two-bedroom houses. Service charges probably averaged between $4.50 and $6 a month. It was soon realised that only a small minority of the indigenous population could afford to pay these sums for housing and ways to reduce housing costs were attempted. One way was to reduce the area of the houses. One hundred and six houses with a living space of ten feet by twelve feet were built at Hohola. The houses became overcrowded and in 1964 one house was occupied by 10 people, one by 9 people, four each by 8 people, and seven houses each by 7 people. Bucket latrines opened into the living rooms and the walls were not rain-proof. The houses were condemned by public opinion and the experiment was abandoned.

In 1962 a site-and-service scheme with approximately three hundred sites was begun on land bought by the Administration at Sabama near Kila Kila village. Under the scheme indigenous people could lease cheap serviced sites and build their own homes on them. By November 1965 only one house had been built, and by May 1967 there were only ten houses. Europeans belonging to a religious sect helped their Papuan members to build three of the ten houses by guaranteeing their loans, helping them to fill in the large number of forms required, and giving technical advice. A further three had been built by individual Papuans. It was then considered that the scheme had failed and the decision taken that houses should be built and let under a system of tenant purchase. These houses have since been handed over to the Housing Commission. Recently a sullage scheme costing about $100,000 and discharging into the sea has been approved. This scheme, which serves part of Kaugere as well as Sabama, has increased considerably the over-all cost of the housing project.

There are several reasons why the scheme failed. There was no clear allocation of responsibility for it within the Administration, and there were consequently delays in implementing it. The first sites were not

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[1] See Table 2.5.

offered until September 1964 and tenders for the construction of roads were not let until November 1965, thus delaying the installation of watermains. Secondly, it was a low-covenant and not a no-covenant area. The building covenant of $500 was too high to be raised quickly by the majority of those who needed houses. The scheme, based on a plinth-and-roof scheme financed by loans, ignored the widespread Papuan practice of building a shelter and then improving and rebuilding as funds become available. Few people could obtain loans because of the strict conditions attached to them, and procedures for obtaining leases and loans were complex, requiring, according to one official, seventeen forms to be filled in. Until late in the scheme no official was available on the spot to give advice on procedures and building. The site was too steep for no-covenant development because it greatly increased the cost of services.

When the decision was taken to develop Sabama, little attention appears to have been paid to the successful no-covenant scheme begun by the District Commissioner at Lae in the early 1950s. Indigenous people leased sites cheaply at the 'Papuan Compound' and built houses to a standard which they could afford, including a large number of good quality houses and some to European standards of design and size. Some administrators have concluded from the failure of the Sabama scheme that migrants are only prepared to settle among people of the same ethnic groups, rather than that administrative weaknesses were the cause of failure.

When discussing housing, a problem arises over the classification of housing standards. The Administration refers to high-covenant, medium-covenant and low-covenant housing, and also to low-cost housing. In European terms this classification is correct but it hardly applies in Port Moresby. Low-covenant and low-cost housing does not provide the standard of comfort and amenity desired by the majority of Europeans living in Port Moresby, but it is nevertheless a Western standard which would be considered moderately high by people living in many parts of Europe and is only achieved in Port Moresby by indigenous people in the higher income groups. Many houses built without Administration control in villages and settlements are comparable in standard to Administration low-covenant housing and sometimes the medium-covenant housing. As well, high standards of construction and services do not ensure good social standards if, for example, there is overcrowding. Finally, aesthetic considerations should not be confused with considerations of adequacy on grounds of amenity or health.

The Housing Commission

In 1968 a Housing Commission was established and under the Housing Commission Ordinance the Commissioner has wide powers to provide housing for the public. By September 1969 the Commission had been in existence only twelve months and it owned 569 houses: 259 in Hohola, 57 in the university area, 33 in Sabama, and 220 in Gordon and Waigani.

Rents are said by the Administration to be economic and range from $1 per week for houses with a contract price of $480 to $5.50 per week for houses with a contract price of $2,750. The cost of land and services is not included in the cost of houses. The cost of land varies greatly, and estimates of services provided within a subdivision are inconsistent; but the cost of roads, sewerage and water supply for low-covenant houses may be $800. As service costs are more or less constant, the element of subsidy varies; for a house costing $1,000 it might be 80 per cent but for a more expensive house it would be less. The Housing Commission has been allocated 350 acres of land which supply some 1,000 or more sites; under present Administration policy a small proportion of these sites must be allocated for intermediate and high-cost housing. There were about 1,000 applicants on the waiting list for low-cost houses at the end of July 1969.

Housing on native land

The Administration has continued to provide a limited number of low-covenant houses which approach Western standards. Housing of this kind may benefit about 60-70 per cent of the Commission's applicants, who form only a small proportion of the population whose housing might be considered inadequate for a number of reasons. Meanwhile the possibility of building houses on unoccupied areas on both native and Administration land acts as a safety valve for those who can obtain no other form of housing. As the supply of houses provided by the Administration and by private employers has fallen further and further behind demand, the number of houses built by migrants themselves on native land has steadily increased. In 1966 16 per cent of the indigenous population were housed in this way, and today the percentage may be higher.

In the past urban settlements have been regarded as temporary and attempts have been made to move some of them, although with little success. The Administration's attitude to the villages has also been negative; survey maps of Port Moresby do not indicate development on native land. When it was accepted that long-term settlement of migrants was inevitable there was continued objection to the existence of the settlements on three main grounds: that settlers have no security of tenure,[1] that it is not possible to achieve planned development on native land, and that the settlements constitute a danger to health.

Development on native land has not been planned partly because there are not enough planning and administrative staff to carry out any schemes. The Administration has also thought of planning in terms of complete redevelopment rather than of improving existing layouts and controlling future development. For fear of political repercussions,

[1] See p.50.

the Administration has been unwilling to use its legal powers to acquire land for roads and other public purposes. In fact, the difficulty of planning and developing land held under native custom has seemed insuperable.

This should not be the case if the following approaches are adopted: first a policy of gradual improvement of existing development. Redevelopment of existing areas is often seen by administrators in terms of completely clearing present development and rebuilding. Redevelopment was successfully achieved in some towns in Africa such as Khartoum and Kampala by a gradual process of ensuring that all new houses were built, and all houses which became unserviceable were rebuilt, according to a planned layout (Oram 1948:60).

Secondly, the people concerned must participate in the project. There is evidence throughout the world that people in urban areas wish to live in orderly, controlled conditions. The planned layouts achieved by squatters in Peruvian towns are described later.[1] In squatter settlements in the New Territories of Hong Kong 'amid the apparent visual disorder, a fairly well balanced land-use structure has evolved' (Pryor 1966:61). In Port Moresby the urban villages with the exception of the land sections of Hanuabada, and the urban settlements, were neatly laid out until they became congested. Villagers and settlers have shown themselves willing, for example, to plan residential areas. The District Office has had considerable success, in face of obstacles, in bringing order into the development of parts of Hanuabada; and the inhabitants of one migrant settlement re-aligned some of their houses as a result of reading an article by the present writer.

Thirdly, the Administration should be prepared to use its legal powers if necessary, for example, to acquire land with the approval of the group concerned if a single rightholder does not co-operate. An incentive should be offered by supplying services as well as occasionally using coercion. To adopt these approaches, however, a new administrative organisation for the town would have to be established.

Many houses in settlements, though smaller, are of a standard similar to those in urban villages; others range from mediocre to poor. The standard of building does not appear to cause serious health problems (Oram 1965:43-5), but overcrowding and lack of services adversely affect public health. Houses on native land have been inadequately supplied with services because they have been regarded as temporary. All the villages and older settlements have piped water supplies and probably all settlers have access to piped water; the residents of one Goilala settlement, for example, use the tap in a European's garden. Although some villages and settlements are not connected by all-weather roads and only two villages are supplied with electricity, the absence of

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[1] See p.79.

these services does not adversely affect public health. More serious in this regard is the Administration's failure to organise the removal of refuse, except in Hanuabada, and to provide sanitation. The people of coastal villages relieve themselves along the beach, and while some houses built on land have pit latrines, many people use the areas surrounding their settlements. Overcrowding is likely to increase the prevalence of respiratory diseases although there is no evidence showing to what extent this occurs.

According to a statement by the Administrator,[1] it is hoped to remove all migrants from native land. An experiment is being carried out at Rabia Camp on land which has now been acquired by the Administration. Building sites have been surveyed and the inhabitants are required to rebuild houses worth at least $200 on the sites allocated to them. The experiment will succeed only if the inhabitants can be persuaded to move. Senior officers, responsible for the administration of the very large Central District, devoted a great deal of time to this small settlement during 1969 and they had only some roads to show for their efforts. In the meantime possibly several times the number of people being resettled have built themselves houses without any form of administrative control elsewhere in the town.

The policy at present appears to be to continue to provide low-cost housing for the indigenous upper and middle income groups and slowly to resettle migrants in planned no-covenant areas. There is, however, an attitude of despair towards the problem of housing migrants which is reflected in a statement attributed to the late Mr Henderson, then Assistant Administrator for Economic Affairs in January 1969,[2] 'The squatter problem is inevitable. We're only seeing the start of it'.

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[1] South Pacific Post, 21 March 1969.

[2] Quoted by Laurie Oakes, South Pacific Post, 13 January 1969.

Chapter 6

Characteristics of the indigenous urban population

From the beginnings of British rule in 1884, people who were born elsewhere in Papua have come to work in Port Moresby and have married and settled in the urban villages. Though they represent only a small percentage of the urban village population, they are an important group because they extend the network of kinship and other relationships to people of other areas.

In 1961, 80 per cent of the indigenous population were born within the three districts of the Port Moresby region. In that year, 89 per cent were born in Papua and 11 per cent were born in New Guinea. In 1966, the figures were 85 per cent and 14 per cent respectively. The proportions for the different urban residential areas were given earlier.[1]

Since 1960 there has been an influx of unskilled workers from the highlands and elsewhere in New Guinea including the Sepik. The birthplaces of indigenous male workers in Port Moresby in 1967 are shown in the following table.

Table 6.1

Birthplaces of indigenous male workers in Port Moresby, 1967

District of birth	% of total
Western	4.6
Gulf	16.0
Central	41.0
Other Papuans (excluding Southern Highlands)	12.0
Four highland districts	9.5
Other New Guineans	16.6
Sub-totals: Port Moresby region	61.6
Other Papuans and New Guineans	38.1
Other	0.3
Total	100.0

Source. Department of Labour figures 1967, unpublished.

[1] See p.47.

Thus 61.6 per cent of the total male workforce, and 77 per cent of the total population, including women and children, originate within the Port Moresby region. Place of birth, however, does not fully reflect the ethnic affiliations of the population. Children born to migrant parents in Port Moresby may consider themselves members of the village group to which their parents belong.

Stabilisation of the population

While precise statistical information relating to the extent to which populations of residential areas are stabilised in the town is lacking, some indication is provided by the age structure and sex ratio of these populations in 1966. The age structure of the whole indigenous population is set out in Figure 1. There is a marked preponderance of males over the age of 15 and under the age of 30, indicating the large number of single men who have come to the town to seek employment. In 1966 they formed 48 per cent of the male population. The age structure of the female population is more balanced. The number of children below the age of ten is high; it was 22 per cent of the male and 38 per cent of the female population. Figures for the 10-14 age group were 8 per cent and 10 per cent respectively. Although these estimates of age must be treated with reserve, they suggest that an increasing number of children are being born in the town.

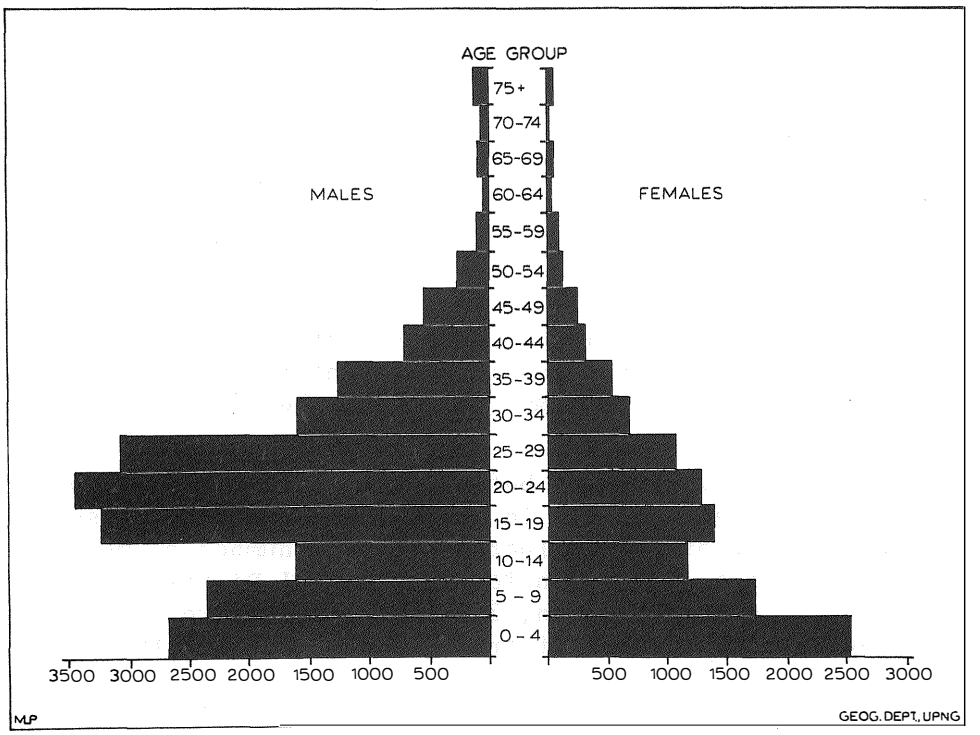

Figure 1. Age structure of the indigenous population, Port Moresby, 1966

There are marked variations in the age structure according to the type of residential area, as Figure 2 illustrates, and this in turn reflects areas of origin. Of those residents of Port Moresby born in the Port Moresby region, 29 per cent of males and 40 per cent of females were under ten years of age. Of those who were born outside the Port Moresby region only 6 per cent of both the male and female populations were under ten years. Single men in Port Moresby over the age of 15 and under the age of 25 formed 39 per cent of the people born within the Port Moresby region and 71 per cent of people born outside it. The small proportion of people of both sexes in the 15-24 age groups in villages and settlements may be due to their leaving their parents' homes to continue their education at boarding schools, to work outside Port Moresby or to work in Port Moresby while living somewhere else, and in the case of women, to marry. Some young people prefer to live outside the settlements, partly to be free of the restraints imposed on them by older people but mostly because of the congested housing conditions which are developing there.

The sex ratio for the whole indigenous population in 1966 was 1,845 men to 1,000 women. There had been an increase in the ratio of women to men since 1961 when there were 2,820 men to 1,000 women but it is difficult to assess the changes which have occurred since 1966. The influx of single men from the highlands and elsewhere in New Guinea may have increased the imbalance between men and women since 1966. Sex ratios for different types of residential areas are as follows:

Type of residential area	Males per 1,000 females
Urban villages	1,103
Urban settlements	1,242
Other predominantly indigenous areas	2,207
Predominantly non-indigenous areas	2,695

Figure 2 shows that in the urban villages and urban settlements the preponderance of males over females in each age group is slight. In other predominantly indigenous areas and in predominantly non-indigenous areas the preponderance of men over women is most marked for men of working age.

There were marked differences between the sex ratios of sub-populations originating in different areas. In general the ratio increases as the distance of the place of origin increases. The number of men per 1,000 women was, for example, 1,398 men for the Central District, and 1,480 for the whole Port Moresby region, 3,289 men for the rest of Papua, including the Southern Highlands District, and 13,207 for the four highland districts.

Marriage patterns are in accord with sex ratio and age structures. In 1966, some 53 per cent of the males over the age of 15 had never

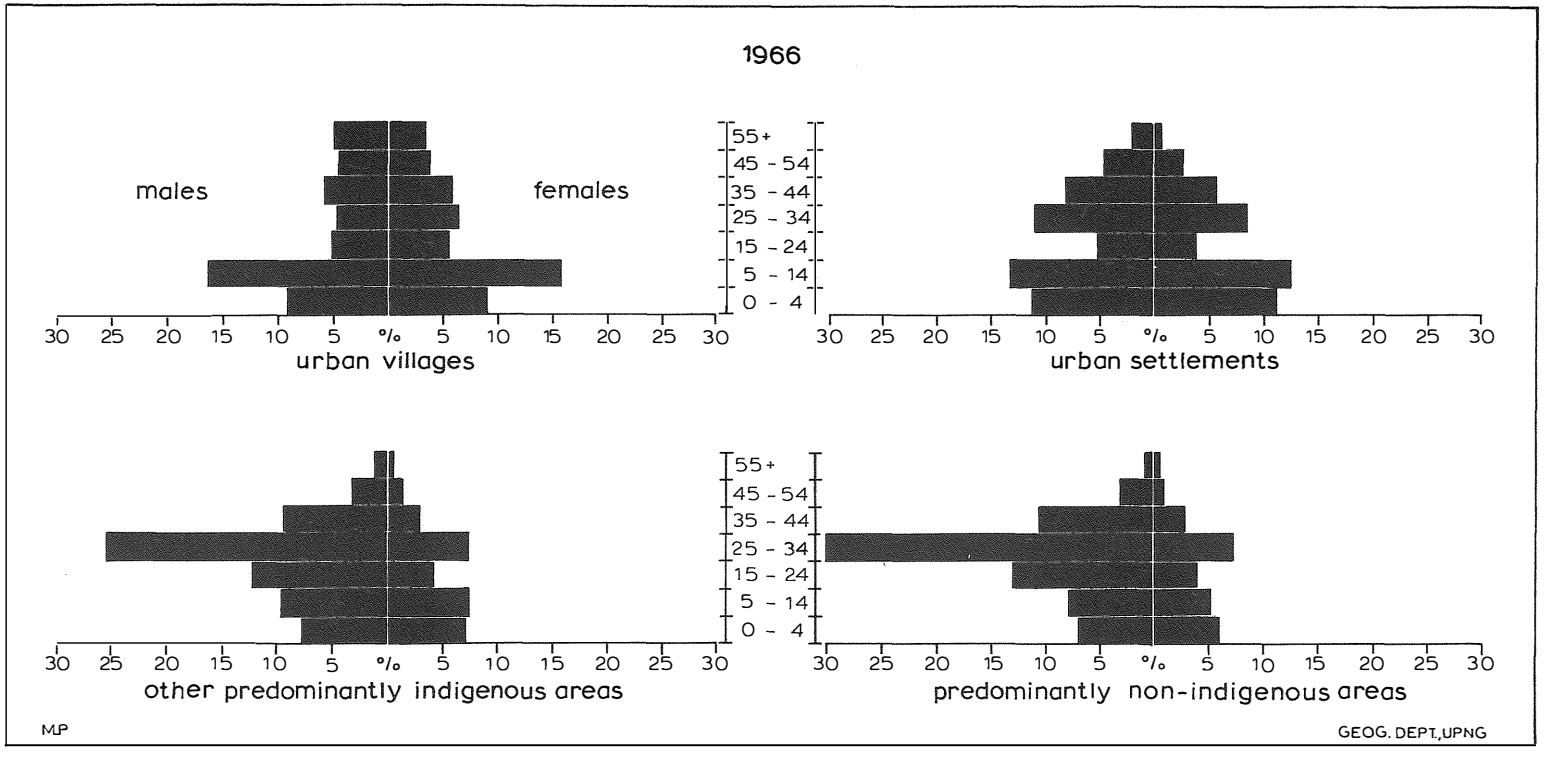

Figure 2. Age structure of the indigenous population by type of residential area, 1966

been married compared with 58 per cent in 1961. In both years only 16 per cent of women over the age of 15 had never been married and nearly all women over the age of 20 appear either to be married or to have been married. A high proportion of men from the Port Moresby region are married; the majority of men over 30 years of age from four groups originating within the Port Moresby region, the Toaripi (Ryan 1966), Purari (Hitchcock 1967:51), Hula (Oram 1968:16) and Kuni (van Rijswijck 1967) are married or have been married. Such studies as these suggest that few migrant men working in Port Moresby leave their wives in their home villages, unlike the pattern in many parts of Africa, for example Uganda (Elkan 1960:5). The situation may be changing as a result of the influx of highlanders, for according to Salisbury (1967), about one-third of the highlanders aged between 25 and 30 had left their wives at home. In 1966 only 2.3 per cent of all indigenous married males in Port Moresby had married more than one wife at a time.

The majority of urban villagers can be considered permanent residents of Port Moresby and a large number of migrants who were born in the Port Moresby region spend long periods in the town. In 1964, for example, 44 per cent of the Toaripi, who formed some 15 per cent of the migrant population (Ryan 1966), had spent more than eleven years in Port Moresby and similar figures can be quoted for the Hula (Oram 1968:16) and the Purari (Hitchcock 1967:51). There is, however, considerable movement between town and villages and many workers do not stay continuously in Port Moresby but spend periods of varying lengths in their home villages. A number of people from more distant areas appear to be spending several years in the town also. Although the sample was small, a recent survey (U.P.N.G. Department of Geography 1969) found that the mean period spent in town by heads of households living in a Gulf District migrant settlement was over six years. Migration from the New Guinea highlands has only begun to occur in significant numbers during the last three or four years; highlanders appear to stay long enough in Port Moresby to earn sufficient money for a particular purpose and they then return to their villages. They say that they have no intention of spending longer periods in the town (Salisbury 1967).

Other than in the urban villages of Port Moresby itself, few people are driven by necessity to work in the town. Throughout Papua-New Guinea there are few opportunities to earn cash incomes in rural areas. People migrate to earn money to buy Western goods which they have come to want. Even the highlanders who have cash-earning opportunities in their home areas pay their own air fares because they believe they can earn more in Port Moresby. Economic factors appear to be a more important cause of migration than the attraction of bright lights. It is possible, since Port Moresby has begun to offer more attractions to indigenous people during the last three or four years, that younger people are also attracted to an urban way of life for its own sake.

As there has only been large-scale migration to Port Moresby since the early 1950s it is too early, and statistical evidence is lacking,

to predict accurately what future patterns of migration and urban settlement will be. Some migrants are known to have severed their ties with their villages and some old people live with their closest kinsmen in Port Moresby, not because they are committed to town life but because their kinsmen live there. Very few indigenous people have received pensions from the Administration or from private employers and the Administration provides no unemployment benefits or old age pensions for the general public. As long as their villages provide their only form of social security, for some years to come the majority of migrants are likely eventually to return to them.

There are, however, a number of factors which may increase commitment to urban residence in the future, provided employment opportunities are available. Until the early 1960s the standards of education achieved by people living in a village and those who moved to Port Moresby were the same. With the increase in educational opportunities, those who go beyond primary school standard can only find occupations commensurate with their education away from their village, and many of them spend so long away at school that they do not acquire the skills such as gardening, hunting and fishing, necessary for village life. Secondly, the first generation of children of migrants who were either born in Port Moresby or who have spent most of their lives there is now reaching adulthood. Their ties with their villages are likely to be weaker and those of their children even more so. Intermarriage between members of different ethnic groups may also cause village ties to weaken. It seems probable that during the next twenty years an increasing proportion of the urban population will come to regard Port Moresby as their permanent place of residence. From the point of view of housing, however, the most important consideration is that a high percentage of migrants are spending much of their working lives with their families in the town.

Education

Of the 77 per cent of the indigenous urban population in 1966 who were born in the Port Moresby region, the majority were born in villages on or near the coast. Many coastal villages have had access to education at mission schools since the early 1880s. Although the highest level of education available before 1962 was primary standard 6, the missions also taught carpentry and other skills. After 1945 a large proportion of the inhabitants of urban villages and settlements were literate in their own vernacular and in Police Motu, and many possessed some manual skills. Some migrants from Milne Bay, the Northern District and some coastal areas of New Guinea had reached a similar level of education in mission schools. People from other areas, such as the Purari and Kikori deltas, the Goilala sub-district and other inland areas of the Central District, the highlands and inland areas of the Morobe District had little or no schooling.

The Administration began to provide secondary schools in the 1950s but there was not an appreciable number of secondary school students until the early 1960s. In 1963, for example, only 807 indigenous students were receiving secondary education throughout Papua-New Guinea (Commonwealth of Australia 1964:viii, 3). Levels of education reached in 1966 by inhabitants of different residential areas are set out in Table 6.2; this shows that in the urban villages and settlements a higher proportion of residents have attended primary schools than in the other predominantly indigenous areas and predominantly non-indigenous areas. Similarly, the proportion of residents in urban villages who have attended secondary schools is higher than in the other areas. The high proportion also found in other predominantly indigenous areas is due to the location there of tertiary institutions such as the teachers' college, and also to the large number of senior indigenous government and commercial employees living in Hohola and Kaugere. The settlements may have only a small number of people with secondary education because young people prefer to live outside them. The least well educated section of the indigenous population now lives and is likely to continue to do so in two areas: in the predominantly non-indigenous areas such as Boroko (unless a large number of indigenous public servants take over houses at present occupied by Europeans), and in the new settlements housing unskilled workers which are springing up in different parts of the town.

Table 6.2

Percentage educational levels* of indigenous population by type of residential area, 1966

	Urban villages		Urban settlements		Other predominantly indigenous areas		Predominantly non-indigenous areas	
	M	F	M	F	M	F	M	F
1. Never attended school - 5 and over	9.7	9.9	21.3	25.7	26.0	21.0	30.9	35.5
2. Attended primary school	55.5	60.3	46.9	43.6	36.4	49.3	36.8	38.9
3. Attended primary school (no English taught)	20.8	23.1	26.8	29.3	22.3	21.6	24.9	20.6
4. Attended secondary school	14.0	6.7	4.9	1.3	15.1	8.0	6.9	4.3
5. Attended tertiary institution	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
6. Not stated but attended school	0.0	0.0	0.1	0.1	0.1	0.1	0.5	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* The figures indicate some schooling at the levels concerned.

Source. Bureau of Statistics 1966, unpublished tabulations.

Tertiary institutions have only recently been established in Papua-New Guinea and in 1966 only a total of twelve indigenous men and five women living in Port Moresby had received any form of tertiary education. Since 1966 numbers attending tertiary institutions including the university have greatly increased. People from the Port Moresby region, with a long tradition of schooling, appear to have a lead in obtaining higher education. Of the preliminary year students joining the university between 1966 and 1968, 37 per cent came from the Central District and another 6 per cent from elsewhere in the Port Moresby region.

The figures cited above refer to people who were educated in Port Moresby and elsewhere. As the number of children growing up in the town increases, access to educational facilities becomes of increasing importance. It has been the policy of the Administration to give preference to the schooling of urban children. In 1968 there were seven Administration primary T schools (schools following a Territory and not an Australian syllabus) in Port Moresby, a further six primary T schools in the vicinity, and four mission primary T schools. A few indigenous children attended primary A schools. The Administration has two indigenous secondary schools in Port Moresby and a few indigenous children attend the predominantly non-indigenous Port Moresby High School. There is a Roman Catholic secondary school for boys and one for girls a few miles outside Port Moresby.

The percentage of children between the age of 5 and 19 in 1966 who had never attended school is set out in Table 6.3.

Table 6.3

Percentage of indigenous children aged 5-19 who had never attended school, 1966*

	Urban villages		Urban settlements		Other predominantly indigenous areas		Predominantly non-indigenous areas	
	M	F	M	F	M	F	M	F
5-11	16.0	12.8	31.9	34.3	20.9	22.8	26.9	31.8
12-19	1.6	2.3	5.5	7.5	13.8	7.2	16.3	20.4

* Approximately half of the children in the 5-11 age group who had never attended school were aged 5 in all four areas. They may have been regarded as too young to enter in 1966.

Source. Bureau of Statistics 1966, unpublished tabulations.

Administration schools will only accept children whom they consider to reside permanently in Port Moresby. It is possible that the proportion of children not at school is increasing. In 1969, 450 children were refused admission to preparatory schools and 420 children were

refused admission to standards 1-6. These, however, are only a small proportion of children of school age who are not attending school. According to censuses carried out by the Department of District Administration in 1968, 57 per cent of children between the ages of 5-15 at Rabia Camp were at school; in 1969, 47 per cent of children between the ages of 6-15 and also of secondary school age were at school at Horse Camp. An official estimate for 1969 is that 1,296 children living in urban settlements alone were not at school. Provision for schools is made by the Department of Lands, Surveys and Mines according to a formula based on population projections. Primary schools are planned for Gordon and Ward Strip in 1970, and an additional secondary school is planned for the near future. Provision is not, however, being made for children living in urban settlements. Proposals for two new primary schools made by the District Inspector of Schools for the Vabukori-Kaugere-Kila Kila complex, where the need seems to be greatest, were recently rejected; apparently the proposal for a school at Sabama was turned down because it was considered that sufficient land was allocated to education in the area, even though it was not enough to build a new primary school.

Thus the most significant factor which is now producing and will continued to produce economic and social changes among the indigenous population of Port Moresby is the advance in the level of Western education. Table 6.4 gives some indication of the progress which is being made. Those who have gone on to secondary education are included in the figures for primary education. It seems clear that educational standards are rising for each age group and that the difference in educational standards between populations of different residential areas is decreasing. At the beginning of the 1960s there were few indigenous people with secondary education living in Port Moresby. By the beginning of the 1970s there will not only be a larger number of secondary leavers but also a number who have had some form of tertiary education.

Table 6.4

Percentage of indigenous population by age and sex having received or receiving some primary and secondary education, 1966

	Urban villages		Urban settlements		Other predominantly indigenous areas		Predominantly non-indigenous areas	
	M	F	M	F	M	F	M	F
12-19: primary	98.4	97.7	94.5	92.5	86.2	92.8	83.7	79.6
secondary	32.4	22.1	11.2	6.0	27.0	24.6	16.8	12.8
20-29: primary	93.8	92.6	88.5	81.7	73.4	78.9	69.4	61.4
secondary	32.3	9.9	10.0	0.8	17.3	6.4	5.8	3.6
30-39: primary	93.0	93.9	82.2	72.4	59.0	66.9	54.1	51.8
secondary	10.3	0.3	0.0	0.0	6.3	0.7	2.1	1.0
40+ : primary	85.5	79.9	50.4	42.2	55.5	56.5	42.0	39.3
secondary	4.6	0.0	0.0	0.0	4.5	0.0	0.9	0.0

Source. Bureau of Statistics 1966, unpublished tabulations.

Employment

In developing countries there tends to be an upwards progression among members of different ethnic or regional groups as opportunities for higher paid and more skilled employment increase. For example, in the early days of colonial rule the people of Hanuabada were first employed as unskilled workers. By 1942 they were working as cooks, semi-skilled workers and clerks, and since 1945 they have increasingly occupied the best-paid positions held by indigenous people in the town. The employment of other local people who have had access to schools has followed a similar pattern. In 1964, for example, very few Hula people in Port Moresby, whose village is on the coast seventy miles southeast of Port Moresby, worked in unskilled occupations: 11 per cent worked as 'white collar' workers, 8 per cent as technicians, 38 per cent as artisans and 24 per cent in positions which demanded some skill or responsibility (Oram 1968:21). The process of occupational change by members of different groups is a continuing one. Migrants from more remote areas take over the lowest paid and least skilled jobs from members of other groups. Until about 1965, large numbers of domestic servants came from the Kairuku sub-district and from the Marshall Lagoon area; by 1969 they appeared to have been largely replaced by people from the highlands and the Sepik.

The occupations followed by the inhabitants of different residential areas naturally correspond to the educational levels they have achieved. These are shown in Table 6.5, although there is not yet any information about the number of artisans and technicians in each area. In 1966 only 3 per cent of the indigenous population were described as self-employed.

Table 6.5

Percentage of male inhabitants aged 15 years and over, working in 'white collar' occupations and as domestic servants, 1966

	Urban villages	Urban settlements	Other predominantly indigenous areas	Predominantly non-indigenous areas
White collar	23	10	11	9
Domestic servants	0	3	4	36
Other	77	87	85	55
Total	100	100	100	100

Source. Bureau of Statistics 1966, unpublished tabulations.

As a result of a number of factors, such as low level of education and the poverty of the region there are very few, from observation probably not more than half-a-dozen, indigenous entrepreneurs whose undertakings are conducted on a European scale. There are a number of building

contractors but they contribute only the hand tools with which they work and limited skills. As they have no capital they are unable to buy materials and are only able to undertake minor sub-contracts (Langmore 1967:52). The few indigenous storekeepers have only small tradestores in their villages and settlements. Recently one or two indigenous entrepreneurs have initiated more ambitious projects and in time an economically significant body of indigenous businessmen will develop.

In 1966 only a small proportion of the female population of working age was employed and of this group 32 per cent were in domestic service. Since the early 1960s, however, the number of women in employment has increased rapidly. In 1965, for example, 18 per cent of the women (over the age of fifteen) living in Port Moresby from the well-educated Hula coastal group were employed in such occupations as shop assistant, typist, librarian, nurse and teacher (Oram 1968:22). Today the majority of girls whose parents come from the urban villages and elsewhere in the Port Moresby region are probably expected, and are eager, to find work before they are married. New employment opportunities for women are likely to affect considerably the economic and social organisation of the indigenous population: household incomes are increasing and women are becoming more emancipated. Only recently, for example, have indigenous women begun to drive motor vehicles.

Unemployment

It has long been an offence to stay in the town without employment and men are reluctant to admit to being unemployed. As Langmore points out the 1966 Census probably underestimated the number of persons not earning money.[1] A sample survey carried out in April 1968 found a very much higher number of unemployed persons, including an increasing number of those who leave towards or at the end of primary school (Conroy 1969).

In Western countries where an individual's training and education qualify him for a fairly well-defined and limited range of occupations, the extent and nature of unemployment can be accurately estimated; in developing countries this is more difficult. In Port Moresby individuals may undertake a wide range of occupations demanding some skill (e.g. see Oram 1968:20), and are not wholly committed to a cash economy. Statistics are also unreliable. There are seven main groups of people who are not at any given time earning a cash income. First are those who seek work but cannot find it. During most of the period since 1945, those who have been willing to undertake any kind of work have usually been able to find it. However, there have been periods when few jobs were available in certain industries, particularly construction industries. Secondly, indigenous small-scale contractors such as painters,

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[1] See p.26.

carpenters and bricklayers, find it difficult to obtain consecutive contracts and frequently spend several weeks or months without occupation (Langmore 1967:54).

There are also those who are only prepared to undertake work which they consider suited to their education and talents. According to the survey above (Conroy 1969), a number of boys finishing school at the primary level were not working because they could not find the work to which they felt entitled. The number of people within this group may increase with the growing number of children who do not go on to secondary schools. Some men are resting for a few months because they do not receive paid leave. Older men may stop working for a period when their children are working. Many who have lost one job may not be in a hurry to find another. There are in addition, a probably small number of voluntary unemployed men other than those who are resting or who will only undertake certain kinds of work. A distinction should be made between those who are merely idle and those who, while not earning a cash income, fish or do odd jobs for their own community. Some people are permanently unemployed through retirement or chronic illness. There is no retiring age generally recognised by Papuans and New Guineans and the age when people stop work varies greatly. Finally there are the temporary town-dwellers, who come to town to spend varying lengths of time with their kinsmen. They may decide to find employment in the town or to return home. Visits may be prolonged for a number of reasons; members of some ethnic groups may be obliged, for example, to stay in the town for some months as a mark of respect if a kinsman dies there.

There is no stigma attached to not working, even for long periods, and people who are without employment enjoy a similar standard of living to members of their local group who are employed (Hitchcock 1967:111). As yet the majority of people who are unemployed can return to their village if life in the town becomes uncongenial. For an increasing number of people, especially those born of migrant parents in Port Moresby, their villages may cease to provide security in the future. There is still among most migrant groups continuing interchange between town and village. It seems clear that even if there are ample employment opportunities for many years to come, an appreciable proportion (perhaps more than 5 per cent) of the male population will be without a cash-earning occupation at any given time.

With the introduction of opportunities for higher education, greater stratification of income is developing. In the near future many indigenous employees who have achieved a high level of education will replace Europeans and reach the highest positions in the public service and in private employment at an early age. Considerable economic opportunities should become available to skilled and semi-skilled indigenous workers, partly through localisation, and at the same time there will be a continuing need for unskilled workers who will come as they do now from the least sophisticated areas of Papua-New Guinea. It is unlikely,

however, that social classes based on economic stratification on the Western model will develop, in which the nuclear family is the economic unit and social distances are wide between different strata. Experience elsewhere, for example among the Toba Batak in Indonesia (Bruner 1963: 4-12) suggests that kinship obligations will continue to be acknowledged, although in a selective and modified form. This means that members of higher income groups will continue to house and to help financially their closer if not their more distant kinsmen. These obligations will tend to reduce incomes and increase the size of households beyond the nuclear family.

Chapter 7

The housing problem

The inhabitants of the urban villages form the most stable and well-educated section of the population. The villages are not entirely homogeneous and residents are involved in a network of relationships with others living in Port Moresby, throughout the Port Moresby region, and beyond. The majority of villagers appear to be satisfied at present with their accommodation but as there is a rapid population increase in the villages, a more rational use of land and controlled building are urgently required.

The older urban settlements comprise people from the Port Moresby region and this population is also stable in that the majority stay for long periods in the town. There is also considerable movement between town and village. While living conditions in some settlements are as good as those in the urban villages, conditions in others are rapidly deteriorating through lack of space for expansion. Consequently, the highest-paid residents leave to find houses in such areas as Hohola and Kaugere. The settlement population is unlikely to decrease.

Within the other predominantly indigenous areas there are two categories of inhabitants. The first are the senior public servants and employees of private firms, living in Kaugere, Hohola, and Gordon, and to a lesser extent in quarters provided by employers elsewhere; they will spend long periods in the town. The second are unskilled and semi-skilled workers living in labour lines, who may return to their homes at intervals. The number of people in both categories, provided that the population of the town continues to expand, should increase rapidly. In particular there will probably be a rapidly increasing demand for medium-covenant houses from well-educated people in senior positions.

The inhabitants of the predominantly non-indigenous areas form possibly the least stable element in the population and they are also the least well-educated. While their housing conforms largely to the building regulations, living conditions are often socially undesirable. Single-roomed houses are often grossly overcrowded, and servants are made to feel inferior in status by living within their employers' compounds. There is no possibility of a feeling of community developing among them. While the European population grows, the proportion who employ domestic servants is almost certainly decreasing. Servants'

quarters are an undesirable feature of many towns in developing countries; but the situation worsens if, as in Port Moresby at present, no alternative accommodation is provided when such quarters are no longer built.

In Western countries it is possible to quantify the extent of the housing problems in any given area and to make realistic projections of future needs. Reasonably accurate statistics of population and income are kept over a long period, and standards of housing and services are clearly laid down and in some areas enforced. In Port Moresby elementary statistical data are lacking; and while the first census carried out in Port Moresby in 1966 is very valuable, its findings must be treated with reserve.

One main problem arises over standards of development. Partly because in tropical countries there is always a concern for the health of non-indigenous populations, standards of building and sanitation prescribed for urban areas in Papua-New Guinea are comparable to those laid down in Australia. When legal standards are modified or relaxed, officials regard such actions as an aberration to be remedied as soon as possible. In Port Moresby at the present time, however, it is unlikely that more than half the indigenous dwellings fully comply with public health regulations.

A second problem involves assessment of the capacity of individual town-dwellers to pay for housing. This requires taking into consideration the income of the household and the value which individuals may place on housing as opposed to other forms of expenditure, for example food or luxury goods. In Port Moresby a number of budgetary studies based on very small samples have been carried out, and while they throw light on the economic behaviour and values of different groups, they do not provide information on household incomes and expenditure over a period of time. My own attempts (unpublished) to estimate annual incomes show that they cannot be arrived at by multiplying weekly income and expenditure by fifty-two. Variable factors which must be included are changes in household size, changes in the number of people earning cash incomes, savings, and major items of income and expenditure such as marriage exchanges.

The only tentative conclusion I have been able to reach is that many inhabitants of Port Moresby are involved in two exchange networks: the first among kinsmen and others with whom relationships are acknowledged who live in the town, and the second between members of the same group living in the town and in the village. These exchanges tend to produce a levelling of incomes among members of the urban group, whether employed or not, and the amount of money available to income-earners to spend on themselves and their immediate families is reduced. The balance of exchanges between town and village appears to be in favour of the village, and there may be a levelling of urban and rural incomes in favour of the latter (Oram 1967:49-50; 1968:29-31). It is clear,

especially in the study of Hitchcock at Rabia Camp (1967), that members of the lower income groups can make little regular contribution to the cost of housing. There is no means by which the number of such people can be estimated, although wage levels provide a rough guide. According to the 1966 wage levels given by Langmore,[1] only 15 per cent of indigenous wage-earners earned $15.50 or over. This means that 85 per cent of wage-earners would not be able to afford unsubsidised family housing of the standard provided by the Housing Commission if dependent on their wages alone.

The value set on housing as opposed to other kinds of goods varies greatly among groups and individuals. It is likely that a majority of the population would prefer to live in a modern house well-provided with services. Only those who earn comparatively high incomes ($15-$20 at least for a medium-sized family), however, are likely to try to move from their present homes to more expensive dwellings. It is true that a number of people with low incomes apply to the Housing Commission for houses: at 27 June 1969, 18 per cent of the total number of applicants were earning less than $10 per week and a further 10 per cent were earning $10-$15 per week. The Housing Commission has not been operating long enough to see how many of the applicants actually take up housing. Some may withdraw and others may share houses with other income earners.

Quantification of the housing problem can therefore only serve as a rough guide, and attempts at quantification have frequently led to a false assessment of the problem; many developing countries, such as those of East Africa (East Africa Royal Commission 1955:226), have found after spending huge sums on low-cost housing, that the position at the end was worse than when they began their programme. The limited supply of a number of high quality though cheap houses could not satisfy the new demand, let alone reduce the backlog of people needing houses. Much official housing was subsidised and this tended to attract more migrants to towns. A housing policy is therefore needed which meets the increasing demand from those who cannot or will not afford housing at the minimum standard now approved. It is unlikely that any way can be found of closing the gap between the cost of such housing and the amount which a large but unknown proportion of the indigenous population can afford and are willing to pay. Few people can afford economic rent. The cost of subsidising sufficient housing for the whole population would be exorbitant and lead to the withdrawal of scarce financial resources from economically productive projects. The effect of raising wages to close the gap would have a disastrous effect on the economy (Oram 1965:45-6).

On 20 August 1969, the House of Assembly 'requested the Administration to re-introduce restrictions on movements to towns...'. The

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[1] See Table 4.1.

desirability of such restrictions and their effect on the housing situation require consideration. There are obvious moral objections to such restrictions which were pointed out by some members of the House. Some unjustified assumptions were made, for example, that a reasonable cash income can be obtained in all rural areas or that the majority of urban crimes are committed by those who are unemployed. However, even if, as in the Belgian Congo, elaborate controls of movement are efficiently exercised both in country and town, such controls eventually break down. Moreover, every man becomes a potential criminal and may be constantly pestered by the police, who become generally hated as a result. Control of movement might reduce, but it would not eliminate, the problem of workers with low incomes who would continue to form a significant proportion of the indigenous population.

Therefore, as 'the gap between costs and capacity to pay is too great for it to be closed by improved building techniques, although appreciable reductions in costs may be made' (Oram 1965:46), it seems clear that costs can only be lowered if the Building and Sanitation Regulations are relaxed. Standards required by the sewerage regulations are higher than those required in parts of Australia, and effluent schemes, which can be put in at about half the cost of sewerage schemes in Australia, should be tried. A careful examination of road building costs appears desirable; curbing, for example, costs $1.90 a foot in Port Moresby while a slightly smaller curb section costs only 70 cents a foot in South Australia. If savings could be effected in this way, more people would be able to live in better houses. Nevertheless, a large proportion of the population would still not be able to afford houses which met the Administration's minimum requirements.

The cheapest kind of housing which a senior official[1] of the Housing Commission thinks that it would be possible to provide is housing with a floor space of 250 square feet at a cost of $600, provided that the Administration met the cost of sullage. If a choice had to be made between provision of roads and sewerage or sullage disposal, he suggests that road standards could be reduced to the level of tracks. In considering this proposal, the Administration would have to consider to what extent it was prepared to subsidise the cost of low-cost housing. The Administration is already heavily subsidising low-cost housing, and such subsidies benefit only a limited number of people. It is argued later that the Administration should make its contribution towards improving housing conditions by making land and basic services available to all those who cannot afford unsubsidised housing.[2]

The majority of indigenous households are large and flexible. The reduction of houses to two-and-a-half squares would lead to serious overcrowding, as has occurred in nearly every developing country which

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[1] Personal communication.

[2] See p.76.

has attempted to solve the housing problem in this way. Even if this proposal was adopted and large numbers of houses were built, there would still be a large number of people who would not or could not afford rents and service charges. These people would settle in uncontrolled conditions either inside or outside the town boundary.

The inevitable results of trying to impose by administrative action housing standards which people cannot afford are uncontrolled settlement and the constant removal of people further out as town boundaries are extended. A situation which has arisen in many parts of Africa and in some parts of Papua-New Guinea is described for Lautoka in Fiji in the Annual Report of the Colonial Sugar Refining Co. Ltd (1969). The Company said that in spite of providing free land and finances at a very low rate of interest, due to rising costs and the required building standards, employees on lower incomes could not afford to build. The report continues:

> The desire of the local government authorities for higher housing standards is understandable, but there is urgent need for those standards to be balanced against the means available. Many people on lower incomes cannot afford to build in urban areas if existing regulations are too rigidly applied. They are forced to move outside town boundaries in search of sites with less exacting requirements.
>
> During the year the company sold to the Government for a token price 1,000 acres of freehold land on the outskirts of Lautoka but outside the area controlled by the Town Council. Many people had 'squatted' on this land in order to be able to build homes within their means. It now appears that the town boundaries will be extended to include most of this 1,000 acres, thus repeating the process already referred to, with the likelihood of seekers of cheap homes moving still further out. This tendency is probably basic to the circumstances of Fiji, but, while reasonable standards are needed, the difficulties of home seekers are aggravated by 'perfectionist' standards laid down for houses and subdivisions within the boundaries to the towns.

Housing is adequate if it is safe and provides sufficient protection from the rain and cold according to the climate, protection from intruders, privacy in accordance with local customs, and if services, especially pure water, are accessible. In very few Western countries is the whole population adequately housed in this sense. The greatest problem in Port Moresby is overcrowding. Traditionally a large number of people sleep in a single room and today in the majority of households all available space is used for sleeping. Privacy in the Western sense is not demanded. A small sample survey carried out by the U.P.N.G. Department of Geography (1969), found that the mean number of people sleeping in each room was three and three-quarters for servants' houses, and three for a migrant settlement of people from the Gulf District.

There is some overcrowding even in Papuan terms, for example in Hohola,[1] and there may also be a number of people who have no regular shelter and sleep, for example, in cars.[2]

Attempts by health authorities to enforce regulations to prevent overcrowding will not succeed. The answer to the problem of overcrowding can only be found in providing more houses. The majority of people living in Port Moresby would almost certainly prefer more space if they were given a choice between a large dwelling with low building standards and a small dwelling with a high standard of building and services. As Patrick Geddes said 'I have to remind all concerned (1) that the essential improvement of a house and family is room, and (2) that the essential improvement of a house and family, is more room' (quoted Turner, J.G. 1967:167). Turner points out, therefore, that ordinary families 'prefer to live in large unfinished houses - or even large shacks - rather than in small finished ones' (ibid).

The basis of a housing policy

The foregoing discussion gives pointers to a more realistic housing policy. Instead of a policy allowing for a limited number of high-standard dwellings which benefit only a small number of people, the aim should be to improve the housing conditions of the whole indigenous urban population. The basis of such a policy should be:

(i) to ensure that no building takes place in the present and future urban area except on planned and demarcated sites;

(ii) to allow all who are unable to acquire other kinds of housing to obtain building sites with basic services and to build houses to a standard which they can afford; and

(iii) to employ every possible means to help people of different income levels to improve their housing standards.

It must be stressed that no housing provided by the Administration should be subsidised. The extent of subsidies for Housing Commission housing, which only indigenous people with the highest incomes can afford, is mentioned earlier.[3] At present non-indigenous public servants pay an annual rent for a three-bedroom house of only $96, after the rental allowance has been deducted. This rent is less than indigenous people pay for small houses at Hohola. It seems desirable on both economic and political grounds that subsidies for non-indigenous houses should cease.

The suggested policy can only succeed if building is rigidly controlled. Many people may prefer to settle where they are not subjected

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[1] See p.53.

[2] Personal communication, Mr A. Rew, 1966.

[3] See p.55.

to administrative control unless they are prevented from doing so. In Africa building was frequently strictly controlled inside town boundaries but uncontrolled settlement occurred immediately outside. If this is to be avoided, it is essential that building should be controlled within the potential as well as the actual urban area. Such control demands a new form of administrative organisation and a greatly enlarged staff. Conventional forms of local government are not adequate for this purpose.

If all building is to be controlled, sites must be available for all who wish to build. Initially all that is required to ensure building takes place according to planned layouts is the provision of demarcated sites, tracks marking road reserves, water stand-pipes within a quarter of a mile of each house or preferably closer, and instructions to dig pit latrines. Bringing building under control in this way does not itself raise standards greatly above those obtaining in the present migrant settlements, beyond avoiding congestion; but it makes it possible gradually to improve environmental conditions as funds become available to houseowners and to public authorities. The principle should in general be adopted that improvements in the standards of services should be paid for largely by those who benefit.

The main problem which prevents the successful carrying out of a no-covenant policy is the failure of administrators to accept that such a policy is logically the only means by which an over-all improvement in housing conditions can be achieved. They tend to try to raise standards from the beginning by means, for example, of loans and of plinth-and-roof schemes, and to insist on unrealistic standards of services. There are also examples in Port Moresby of attempts by some administrators to install costly services in no-covenant areas. At Rabia Camp the Public Works Department at first proposed to put in roads costing some $90,000 to service some 80 house sites. The cost of providing roads at this standard for large no-covenant areas would be prohibitive. The revised estimate is $14,000.

The Administration has sought a solution to low-cost housing problems through making loans available to house owners, but it is likely that only a small proportion of the indigenous population are in a position to make regular loan repayments. Even so, experience in Africa and other developing countries suggests that attempts to provide loans for urban housing on a commercial basis are rarely successful. There are several reasons for this: few of those requiring houses are willing and able to take advantage of loans, land and buildings are an unsatisfactory form of security, and administrative overheads are extremely high and make loan schemes uneconomic. Much of the time of the small general administrative staff available can be consumed in recovering arrears of loan repayments. While availability of loan finance does not benefit the poorest sections of the population, ways

in which such finance can benefit other sections of the population are discussed later.[1]

Nearly all medical authorities are opposed to pit latrines in urban areas, although the construction of pit latrines has now been approved for Rabia Camp.[2] Water-seal squat latrine bowls have also been installed for some houses at Sabama. There is little evidence, at least over a period of years, that properly constructed pit latrines are a danger to health. In 1952 very shallow pit latrines had been in use for a number of years on small house sites in the Cité Indigène of Leopoldville without apparently spreading disease, and they were widely used in towns in Uganda (Oram 1948:60). Good piped water-supplies reduce the risk of infection from seepage. In Africa and in other developing countries, otherwise well-conceived low-cost housing schemes have failed because of insistence by medical authorities on water-borne sanitation, resulting in delays in installation and in prohibitive costs. At present a large proportion of the population have no arrangements at all for the disposal of foul waste. Unless pit latrines are accepted, there is no practicable alternative for providing a large number of houses with some form of sanitation quickly. Pit latrines can be improved by the provision of water-seal bowls, and the possibility of introducing bore-hole latrines, suggested in the past by one District Commissioner in Port Moresby, should be explored. Bore-hole latrines are, however, expensive. When selecting sites for no-covenant housing, areas should be chosen in which pit latrines can be dug. Close administrative control is required to ensure that such latrines are adequately constructed.

Officials also express concern at the problem of disposal of waste if water is supplied. Houses in villages such as Hanuabada and Kila Kila have installed water taps and single taps create no problem of waste disposal except on steep and rocky slopes; the sun dries any waste water, as indeed any other form of waste matter. The provision contained in the Uganda Grade 2 Building Rules that soak-pits should be dug near each house and enclosed washing-places constructed could be adopted.

Once people have built their houses according to a planned layout, the aim should be to raise the standard of housing and services. A number of ways of doing this can be considered. First, at least two housing co-operatives have been formed in Port Moresby but they quickly failed, although a co-operative at Lae supervised by the Welfare Officer has been more successful. As a market in indigenous houses is now emerging, the development of small-scale building contractors should be encouraged, as Atkinson (1960:89) recommends. The people being resettled at Rabia Camp are talking of employing contractors to build houses for them. Secondly, an administrative organisation is required

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[1] See p.79.

[2] South Pacific Post, 21 March 1969.

which makes it simple for applicants to obtain sites quickly and which guides them through all procedures and provides technical advice. It must be emphasised that such an organisation is at present lacking. Thirdly, elsewhere short-term loans have been made successfully by governments and private employers without other security than the known reliability of the individual concerned. In India, for example, one commercial concern successfully made loans for a period of not more than three years. The loans might not exceed eighteen months' wages or 75 per cent of the value of the house, whichever was the lowest (International Labour Organisation 1953:44). While such aids are valuable they cannot be provided for more than a small proportion of those building houses, and the majority will have to build houses by themselves.

A no-covenant housing policy is not merely a second-best solution to an otherwise intractable problem. Instead of locking up scarce financial resources in housing it encourages town-dwellers to save and invest in their own housing. Experience elsewhere in the world suggests that opportunities to build houses, if conditions are attractive, release a great upsurge of energy in saving and building. The slum problem was overcome by the New Deims project in Khartoum whereby the government provided sites and services. Similar schemes were successfully carried out in Uganda towns. The barriadas movements in Peru are of great significance (Mangin 1967:21; Turner, J.C. 1967:170 ff.). Some 450,000 people live in barriadas squatter settlements in Lima. In many of them the inhabitants have employed skilled people to plan layouts for the settlements and have set about steadily improving their living conditions. Services have been installed by the government and through the inhabitants' own efforts.

A large number of men working in Port Moresby are skilled in some craft such as carpentry or have kinsmen and friends who can help them build. They need a sufficiently large site to enable them to enlarge their houses over the years; the present size of no-covenant sites adopted by the Administration may be too small. Consideration might be given to the scheme adopted in Uganda (Oram 1948:60) of giving a home-builder a temporary occupation licence to a site for five years, and then a long lease if the building was satisfactory. This is in accord with local Papuan practice of building a house over several years; some of the best village houses have been built in this way. It is essential that procedures in obtaining sites should be simple and that positive administrative assistance rather than regulatory supervision is provided.

Once all building is brought under control, the redevelopment of existing villages and settlements can be undertaken at leisure. The Administration is undertaking the redevelopment of Rabia Camp in a practical and imaginative way, but it is doubtful whether the best way to tackle the present housing problem is to concentrate on redevelopment rather than to bring future development under control. Moreover, the complete resiting of existing buildings is not practicable or desirable

in such areas as Hanuabada and Vabukori. Once building is controlled, a plan is needed for future expansion and gradual redevelopment as buildings become obsolete. Such a policy would not preclude the removal of individual houses if this was necessary, for example for building a road.

The no-covenant housing policy is designed to meet the needs of those who cannot afford housing of modern standards. There will be a continuing need for houses to be provided by a number of different agencies, including the Administration and private employers. It seems desirable that as far as possible the element of subsidy should be removed from public housing, except in relation to the provision of land and basic services for co-covenant areas.

For any housing policy, an adequate area of land is required. If planning schemes were adopted for the development of native land, more building sites would become available. The extent to which migrants would be allowed by rightholders to settle on such land would be determined by the ease with which land could be transferred to non-indigenous people. The return from leasing land to Europeans would be far higher than that obtained from leasing land to Papuans and New Guineans. Whatever legal arrangements were made for transfers of native land, the area in which migrants would be required to build if they could find no other accommodation would be land owned by the Administration. It would be the duty of the Administration always to have a supply of demarcated house-sites ahead of demand. Failure to provide such sites would cause the policy to fail.

Chapter 8

Future housing needs

For planning purposes estimates of future housing needs are required, but as these are based on population projections they are uncertain; housing policies must therefore be very flexible and housing needs frequently reassessed. Langmore suggests the population of Port Moresby may increase rapidly,[1] but there are factors which may reduce the rate of growth. The Port Moresby region is sparsely populated and except for a few areas where conditions are favourable for agriculture (see Brookfield 1966:66), there are serious limitations to the use of land. Approximately half the population of Papua-New Guinea lives in the four highland districts with outlets at Lae and Madang. Port Moresby is cut off from New Guinea and even if indigenous politicians do not decide to move the capital to New Guinea, they may insist on considerable administrative decentralisation to other New Guinea towns.

The factors which determine the number and type of houses required are wage levels, the number of householders, the number of people in a household, the level of housing subsidies, and housing standards. For wage levels, Langmore's estimates by employment classes for 1980 and 1990 (Table 4.2) are accepted here. A large number of households include two or more wage earners and may comprise more than one nuclear family. In 1966 over 53 per cent of males over the age of fifteen had never been married, to whom must be added a few who had been married but who were then living as single men. Possibly half of the single men would be living in institutional housing, and it is assumed for the purposes of these calculations that the other half become part of family households already having one income earner. It is probable that fewer people share households in the upper income groups, that is, Classes A and B, than in the lower income groups; it may be reasonable to estimate one-half of Classes A and B share houses and two-thirds of Classes C, D and E. Household sizes also vary greatly and they are likely to be somewhat smaller in the upper income groups than they are in the lower income groups; a mean size of four people for Classes A and B and six for lower classes is estimated, plus in each case one or more single male income earners.

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[1] See Chapters 1 and 2.

A large proportion of the population is at present living in subsidised housing. The assumption is made here that subsidies as at present provided by the Housing Commission, that is, the cost of land and of service connections which are not included in the rent, will be continued. The further assumption is made that individual incomes can be equated with household incomes for this purpose for although there is more than one income earner in many households, responsibility for kinsmen and others reduces the amount of money available for housing.

As incomes rise, Papuans and New Guineans are likely to seek higher housing standards. People in Classes A and B, as in other developing countries, will probably seek parity in houses with Europeans and after self-government will be in a position to gratify their desire even if heavy subsidies are involved. For the purpose of present calculations, a negligible number of indigenous people live in high-covenant houses. If the decline in the value of money, or alternatively, rising building costs are taken into account, only Classes C and D will be able to afford to live in either low- or medium-covenant houses in 1980 and 1990. It is not possible to make a meaningful distinction between the two, and a number of variables besides income, including family size, location and length of residence in a particular house, would determine whether people in Classes C and D live in low- or medium-covenant houses.

It is assumed that 25 per cent of high-covenant houses will become obsolete between 1980 and 1990. Fifty per cent of low- and medium-covenant houses will become obsolete between 1970 and 1980 (many at present are of low quality), and 25 per cent between 1980 and 1990. The rate of replacement in no-covenant areas is estimated to be 50 per cent throughout the whole period; a constant process of building and rebuilding is likely to go on.

Estimates for different types of housing required by 1980 and 1990 are set out in Table 8.1. The number of houses in each category in 1970 has been calculated by adding 25 per cent to the 1966 figures. The number of high-covenant houses for 1980 and 1990 has been calculated by taking the number of income earners in Classes A and B (Table 4.4), subtracting half the number as single men and assuming that one-half of the remainder share houses and one-half do not. The number of medium- and low-covenant houses for these years has been found by adding the number of income earners in Classes C and D (Table 4.4), subtracting half the number as single men and assuming that two-thirds of the remainder share households and one-third do not; the number of no-covenant houses was found by the same method using the number of income earners in Class E. The number of people who would prefer to lease a site in a no-covenant area would depend on Administration policy towards native land, the size of the site, and the conditions under which the land was held. If, for example, sites were large and tenants with homes of a sufficiently high standard were allowed to apply for a long lease after several years, many people might prefer to build a large house with their own savings over a period.

Table 8.1

Estimated requirements of different types of housing by 1980 and 1990

	Type of houses			
	High-covenant	Medium- and low-covenant	No-covenant	Total
A. Existing houses, 1970	Nil	4,807	2,193	7,000
B. Obsolete, 1970-80	Nil	2,403	1,096(50%)	3,499
C. Total needed by 1980	662	5,992	6,747	13,401
D. Houses to be built, 1970-80 (C-A+B)	662	3,588	5,650	9,900
E. Houses obsolete by 1990	165(25%)	1,498(25%)	3,373(50%)	5,036
F. Total houses needed by 1990	2,529	17,447	15,576	35,552
G. Houses to be built, 1980-90 (F-C+E)	2,032	12,953	12,202	27,187

In various respects these estimates can be challenged. The 1961 count of the Port Moresby population recorded a mean household population of six persons while the mean number for all classes according to these estimates is slightly higher. If so, this would slightly increase the number of houses required. No allowance has been made for the reduction of the number of Europeans in the public service and in other government agencies after 1975; this could reduce the number of high-covenant houses required. Assuming that approximately half of the houses now standing in urban villages and settlements remain during the next ten years, an average of at least 500 sites for no-covenant houses will be needed each year. It is probable that the greatest demand will be during the early 1970s.

House design

There is no traditional form of house design which can be transferred to the urban area and traditional designs are quickly abandoned as villages come under Western influence. There are also no particular cultural factors affecting design which should be considered, such as the partial segregation of women in Muslim communities or the need in parts of Africa to prevent strangers from seeing food being cooked. Since 1945 indigenous housebuilders have tried to imitate prevailing European designs, though these are more suitable for suburban Australia than for a tropical country. The same factors which should influence design probably apply to both indigenous and non-indigenous people.

Most indigenous town-dwellers welcome the measure of privacy provided by the partitioning of a house into separate rooms, though not all rooms need to be closed off from the rest of the house; the design of some

houses at Hohola with half walls and few doors is sensible. Much of life is lived out of doors, and therefore large verandahs and a space under the house, provided they are not uneconomic, are a desirable part of the design. There is a strong dislike of sharing toilets, but for all but the most sophisticated section of the population, an enclosed shower outside the house would be acceptable. Many women would welcome communal clothes-washing facilities, especially if there were also, as in some towns in the Belgian Congo, fenced playgrounds for small children.

Before European contact it was necessary to import some building materials into the Port Moresby area. Today no houses are built of traditional materials in Port Moresby and the majority of indigenous people have become accustomed to using fibrolite and corrugated iron sheeting. Fibrolite, however, is easily broken. During the last five years the Administration has encouraged Papuans living in the Gulf to make 'selo' walling from sago palms. If after treatment this proves durable and cheaper than imported materials, it might prove acceptable in no-covenant areas. Administrative staff are needed to investigate and, if satisfactory, to develop this home industry.

Planning layouts

The contrast between indigenous towns and towns founded by Europeans in Africa is relevant to consider here also. In 1943, Ibadan in Nigeria was the largest indigenous town south of the Sahara. Expensive modern houses were built among mud and wattle buildings and houses, while shops and workshops were intermingled in the same area. Sanitary conditions were very poor and streets were dirty and congested. Twenty-five years later the impression of vigorous, joyous life remained. In East Africa the housing compounds in such towns as Nairobi and Kampala seemed dreary and sterile. Only areas which Europeans regarded as slums, such as Katwe outside Kampala municipal boundaries (East Africa Royal Commission 1955:213), had the dynamic quality of West African towns.

To some extent the same contrast is to be found in Port Moresby. Hanuabada, for all its lack of order is alive; some of the Administration housing areas are dead. The planning of the Gordon Estate was criticised because it did not provide for people without cars, although the nearest shops were several miles away; there were no footpaths or bicycle tracks separated from motor roads, schools were isolated by being surrounded by busy main roads, and playing fields were not interspersed through low-covenant areas (Ward 1969:14). The Administration, however, is concerned to avoid development of this kind in the future. An increasing number of villagers, and also of migrant settlers if they have sufficient space, are building their houses on separate fenced building sites. It seems probable that this is the preferred pattern of settlement for most indigenous people. Few, if any, live at present in high-rise buildings and it is difficult to determine what their attitude to living in flats would be. If the rents were economic, only

members of the highest income groups could afford to rent them. Flats would be unlikely to provide the same opportunities for outdoor living as separate houses and, at least for those with children, bigger dwellings in no-covenant areas might be preferred; however, if flats were conveniently located and other housing was not available, they might be acceptable.

Indigenous town-dwellers are either still members of or have recently come from societies in which there is constant interaction between members of the community. Layouts are required which are designed to meet the needs of a predominantly pedestrian community and which encourage such interaction. One example of an attractive spontaneous layout is to be found at the Motu-Hula settlement at Taikone where houses are built round an open space shaded by coconut trees. The Housing Commissioner has pointed out that this is similar to the Radburn principle, by which houses are built round three sides of a square with an access road at the back and an open space in front of the houses (cf. Mumford 1938:490).

A number of officials consider that it is essential that members of the same village or language group should settle together in the same area. They argue that the leaders of the group are able to exercise social control, and that the rate of juvenile delinquency appears to be highest in heterogeneous areas such as Hohola. They suggest that the Sabama scheme failed because settlement was not carried out on an ethnic basis.[1] In principle, everything should be done to encourage the development of a heterogenous society, and in areas such as Hohola or Vabukori little conflict arises between different ethnic groups. The answer to the problems of social control lies in the development of new administrative institutions which involve the urban population in responsibility for its own affairs rather than in trying to preserve traditional forms of control which are now ceasing to be effective. In practice, however, a compromise between these two approaches may be most effective. There are two separate issues: resettlement of existing populations and schemes which provide for all comers.

Most existing settlements, for example Rabia Camp and Horse Camp, already include people from a number of different areas. It seems desirable, if it is indeed necessary to move existing groups, to move them en bloc as a community. In new settlement areas it does not seem practicable or desirable to set aside separate areas for people of different ethnic origins. It may be possible, however, for those in charge to enable small groups of people from the same village or language group to live near one another. This appears to have occurred in Hohola, where there are, among a number of examples, small concentrations of nine Kerema houses in Section 4, and eighteen Kukipi houses in adjoining Sections 8, 9 and 10.

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[1] See p.

A standard zoning practice has been accepted in Port Moresby, but arguments have been put forward, for example by Jacobs (1964:164-90), in favour of mixed primary uses in a street or area. There may be good reasons for allowing this in indigenous areas, for there is little opportunity in Port Moresby for the emergence of the kind of small-scale indigenous entrepreneurs found in large numbers in African towns: bicycle and motor vehicle repairmen, barbers, tinsmiths, tailors and shoemakers. Many of these carry on their activities in no-covenant housing areas. The main problem such would-be entrepreneurs face in Port Moresby is lack of capital to pay for land and premises. However, if they are allowed to operate in or near their homes, this problem is partly overcome. Mixed uses eliminate journeys to work and reduce the transport problem.

Indigenous people form some three-quarters of the population, but the predominantly indigenous residential areas, the Kaugere-Kila Kila-Vabukori complex, the Hanuabada complex, Hohola, and low-cost housing at Gordon are peripheral to the town. Present policy is that all housing areas should contain a mixture of housing standards but it may be difficult to apply this principle to no-covenant housing. Few indigenous employees own motor cars and the bus service is extremely poor; its deficiencies are partly remedied by indigenous-owned, often unlicensed, utilities which carry passengers throughout the town, and partly through many employers collecting their workers in trucks.

The relegation of the local population to the outskirs of the towns is a common pattern in developing countries. According to a former Sudanese administrative officer, wedged shaped low-cost areas pointing towards the centre of town were planned for Khartoum in the Sudan in an attempt to overcome this problem (Oram 1948-60). A number of factors, such as distance from centres of employment and availability of land suitable for low-cost housing, are likely to determine the siting of low-cost areas in Port Moresby, but it is important the predominantly indigenous areas should be fully integrated with other areas of the town.

Conclusion

Probably no developing country has found an answer to the problem of providing adequate shelter and services for the poorest residents of urban areas. In many towns a few people enjoy good-standard housing, while the remainder of the population live in housing built without planning or other administrative control and with no services provided. This situation has developed in Port Moresby, but the problem is small at present in comparison with that existing in many towns in other developing countries such as those of Africa or southeast Asia. It should be possible to provide acceptable and healthy living conditions for the whole Port Moresby urban population.

Housing problems can only be overcome, however, if all relevant factors are taken into account when policies are framed, and if the activities of all those concerned are co-ordinated when policies are put into effect. A planned no-covenant scheme, for example, will fail if people prefer to settle in the bush and are permitted to do so. The redevelopment of villages and urban settlements requires not only the co-operation of the people concerned, preferably through a representative body, but also the continuing close involvement of officials concerned with the scheme.

Those concerned with urban problems in developing countries appear to have paid too much attention in the past to economic factors such as housing costs and building and service standards, and too little to administrative factors and the provision of necessary staff. The present administrative structure of Port Moresby is designed for a rural population rather than for an important and rapidly growing urban centre of some 50,000 people. In particular a radical re-thinking of currently accepted policies relating to urban government, and especially to the constitution and role of local government bodies is required. Possibly the greatest barriers to the effective administration of urban areas in developing countries are the refusal to give the population any responsibility for maintaining law and order and administering justice, and the failure to establish urban administrative units at a level requiring the active participation of the local population. For a number of reasons, including those discussed, for example, by the East Africa Royal Commission (1955:234-46), a system of urban administration based on a division of functions between the central government and a Western-type municipal authority does not seem suited to the needs of a town such as Port Moresby. In particular administrative subdivisions or wards, readily accessible to the inhabitants of these areas and providing a means of ensuring their co-operation in such matters as town planning and housing are needed.

Colonial administrations are often both psychologically and technically ill-equipped to deal with processes whereby people living in a customary environment become townsmen. Administrators not only find people with a limited amount of Western education less attractive to deal with, but they feel a genuine sense of loss at the decay of a way of life which to some extent they may romanticise. They are likely also to impose consciously and unconsciously their own standards on people who differ in culture and social organisation. As outsiders, they may condemn certain housing conditions as health risks or as unsightly or for some other reason, while the people who experience them may find them quite satisfactory. Many Badili canoe-dwellers, for instance, would undoubtedly prefer to continue to live in grubby and overcrowded canoes rather than in comfortable and well-serviced houses in Gordon; they get money and food by fishing, they are accustomed to live by the sea and they live in their own group.

Many Papuans and New Guineans will become permanent town-dwellers in the future; attention should be concentrated on their needs and aspirations as townsmen and not as temporary sojourners in urban areas. In a very few years Papua-New Guinea is likely to become self-governing. With the fate of economically dominant non-indigenous minorities in recently independent countries, such as the Indians in Kenya, as a warning, it is essential to plan for the full social and economic participation of indigenous people in the life of their town.

Appendix

Manpower classes

Class A Professional, managerial and related workers

Professional workers and top-level managerial, administrative and executive workers whose level of responsibility is regarded as giving them professional status. In the Public Service, all those occupying positions which require a university degree, and those in Class 10 and above.

Class B Sub-professional, higher technical and related workers

Diplomates of post-secondary diploma courses of at least two years' duration. Medium-level managerial, administrative and executive workers. In the Public Service, all those in positions with a 'degree desirable' requirement and those in Classes 7 to 9 inclusive, not included in Class A.

Class C Skilled workers

Higher clerical and supervisory workers with higher secondary schooling (form 3 and above). Technicians, artisans and other workers having at least one year of formal training at from 3 or above.

Class D Semi-skilled workers

Lower clerical workers, low level technical workers and others with one year or less of formal training after lower secondary schooling (form 2 and below).

Class E Unskilled workers

Workers in low level positions requiring no formal training, education or exercise of particular skills such as labourers, messengers, cleaners.

Bibliography

Atkinson, G.A., 1960. 'Mass housing in rapidly developing tropical areas', Town Planning Review, vol.31, no.2, pp.85-102.

Barber, W.J., 1967. 'Urbanisation and economic growth: the cases of two white settler territories' in Miner, H. (ed.), The City in Modern Africa, London, pp.91-126.

Beltz, C.L., 1970. 'High level manpower: current situation and future prospects' in 'People and planning in Papua and New Guinea', New Guinea Research Bulletin, no.34.

Berg, E.J., 1966. 'Major issues of wage policy in Africa' in Ross, A.M. (ed.), Industrial Relations and Economic Development, London, pp.185-208.

Brookfield, H.C., 1966. 'An assessment of natural resources' in Fisk, E.K. (ed.), New Guinea on the Threshold, Canberra, pp.44-79.

Bruner, E.K., 1963. 'Medan: the role of kinship in an Indonesian city' in Spoehr, A. (ed.), Pacific Port Towns and Cities, Honolulu, pp.1-12.

Bureau of Statistics, 1966. 'Central District and Port Moresby urban area', Population Census, 1966. Preliminary Bulletin No.23, Konedobu.

Colonial Sugar Refining Co. Ltd, 1969. Annual report.

Commonwealth of Australia, 1964. Administration of the Territory of New Guinea 1962-63, Canberra.

-- 1965. Report of the Committee on Economic Enquiry, Melbourne.

-- 1969. Department of the Treasury, The Australian Economy 1969, Canberra.

Commonwealth Law Reports, 1943. Case of Geita Sebea, vol.67.

Conroy, J.D., 1969. Unemployment in Port Moresby: an analysis of data collected by students of Port Moresby Teachers' College, 24 April 1968.

Department of Labour, 1967. 'Income and expenditure survey of base grade local officers - 1966', The Industrial Review, vol.5, no.3, pp.8-17.

Department of Native Affairs and the New Guinea Research Unit, 1961. Census of the indigenous population of Port Moresby and environs. Mimeo.

East African Royal Commission, 1955. 1953-1955 Report, London.

Elkan, W., 1960. Migrants and Proletarians, London.

Forster, L.R., 1956. Survey of native affairs, Port Moresby, unpublished, Port Moresby.

Frank, C.R., 1968. 'Urban unemployment and economic growth in Africa', Oxford Economic Papers, vol.20, no.2, pp.250-74.

Groves, M., 1960. Minimum wage rates in Port Moresby, Auckland. Mimeo.

Hitchcock, Nancy, 1967. 'Migration and employment' in 'Rabia Camp', New Guinea Research Bulletin, no.14.

International Bank for Reconstruction and Development, 1969. United Nations Development Programme transport survey of the Territories of Papua and New Guinea, London.

International Labour Office, 1967. 'Correcting racial imbalance in employment in Kenya', International Labour Review, vol.95, nos 1-2, pp.61-77.

International Labour Organisation, 1953. Workers' housing problems in Asian countries, Geneva.

Isaac, J.E., 1962. Report to the Government of Ghana on Questions of Wage Policy, International Labour Office, Geneva.

Jacobs, J., 1964. The Death and Life of Great American Cities, London.

Juppenlatz, M., 1970. Cities in Transformation: the Urban Squatter Problem of the Developing World, Brisbane.

Kenya, Republic of, Ministry of Economic Planning and Development, 1965. High-level Manpower: Requirements and Resources in Kenya 1964-1970, Nairobi.

Knight, J.B., 1967. 'The determination of wages and salaries in Uganda', Bulletin of the Oxford Institute of Economics and Statistics, vol.29, no.1, pp.233-64.

-- 1968. 'Earnings, employment, education and income distribution in Uganda', Bulletin of the Oxford Institute of Economics and Statistics, vol.30, no.4, pp.267-97.

Langmore, J., 1967. 'Contractors in Port Moresby' in 'Papuan entrepreneurs', New Guinea Research Bulletin, no.16.

Mangin, W., 1967. 'Squatter settlements', Scientific American, vol.217, no.4, pp.21-9.

Martin, C.J., 1961. 'Estimates of population growth in East Africa, with special reference to Tanganyika and Zanzibar' in Barbour, K.M. and Prothero, R.M. (eds), Essays on Africa Population, London, pp.49-62.

Mumford, L., 1938. The Culture of Cities, London.

Oeser, Lynn, 1969. 'Hohola: the significance of social network in urban adaptation of women', New Guinea Research Bulletin, no.29.

Oram, N.D., 1948-60. Field notes.

-- 1965. 'Health, housing and urban development', Papua and New Guinea Medical Journal, vol.8, no.2, pp.41-51.

-- 1967. 'Social and economic relationships in a Port Moresby canoe settlement', New Guinea Research Bulletin, no.18.

-- 1968. 'The Hula in Port Moresby', Oceania, vol.39, no.1, pp.1-35.

-- 1970. 'Land and race in Port Moresby', Journal of the Papua and New Guinea Society, vol.4, no.1 (in press).

Pryor, E.G., 1966. 'The squatters of Hong Kong', Australian Planning Institute Journal, vol.4, no.3, pp.61-4.

Ryan, Dawn, 1966. Toaripi-speaking people in Port Moresby, unpublished seminar paper, A.N.U., Canberra.

Salisbury, R.F., 1967. Highland workers in Port Moresby, U.P.N.G. Mimeo.

Territory of Papua and New Guinea, 1968a. Import replacement study, Port Moresby.

-- 1968b. Programmes and Policies for the Economic Development of Papua and New Guinea, Port Moresby.

-- 1968c. Youth survey of Port Moresby and environs. Report by Daw, T.E. and Doko, N., Port Moresby.

-- 1970. Population statistics, Port Moresby urban area, Konedobu. Mimeo.

Turner, H.A., 1965. Wage Trends, Wage Policies, and Collective Bargaining: the Problems for Underdeveloped Countries, Cambridge.

-- 1967. Report on the wages incomes and prices policy, Legislative Council paper, no.26, Suva.

Turner, J.C., 1967. 'Barriers and channels for housing development in modernising countries', American Institute of Planners Journal, vol.33, no.3, pp.167-81.

-- 1968. 'Housing priorities, settlement patterns and urban development in modernizing countries', American Institute of Planners Journal, vol.34, no.6, pp.354-63.

University of Papua and New Guinea, 1969. Department of Geography, Sample survey of indigenous housing conditions in Port Moresby, unpublished.

van de Kaa, D.J., 1970. 'Estimates of vital rates and future growth' in 'People and planning in Papua and New Guinea', New Guinea Research Bulletin, no.34.

van Rijswijck, O., 1967. Bakoiudu: resettlement and social change among the Kuni of Papua, Ph.D. thesis, A.N.U., Canberra

Ward, R.G., 1969. 'Reshaping New Guinea's geography', Bulletin of the Geographical Society of New South Wales, vol.1, no.2, pp.9-15.

Wilson, R. Kent, 1968. Industry in New Guinea towns: Rabaul, Lae, Port Moresby, G.L. Wood Memorial Lecture, University of Melbourne.

Zambia, Republic of, 1966. Manpower Report. A Report and Statistical Handbook on Manpower, Education, Training and Zambianisation, 1965-66, Lusaka.

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