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Economic development, migrant labour and indigenous welfare in Irian Jaya 1970-84

Chris Manning and
Michael Rumbiak

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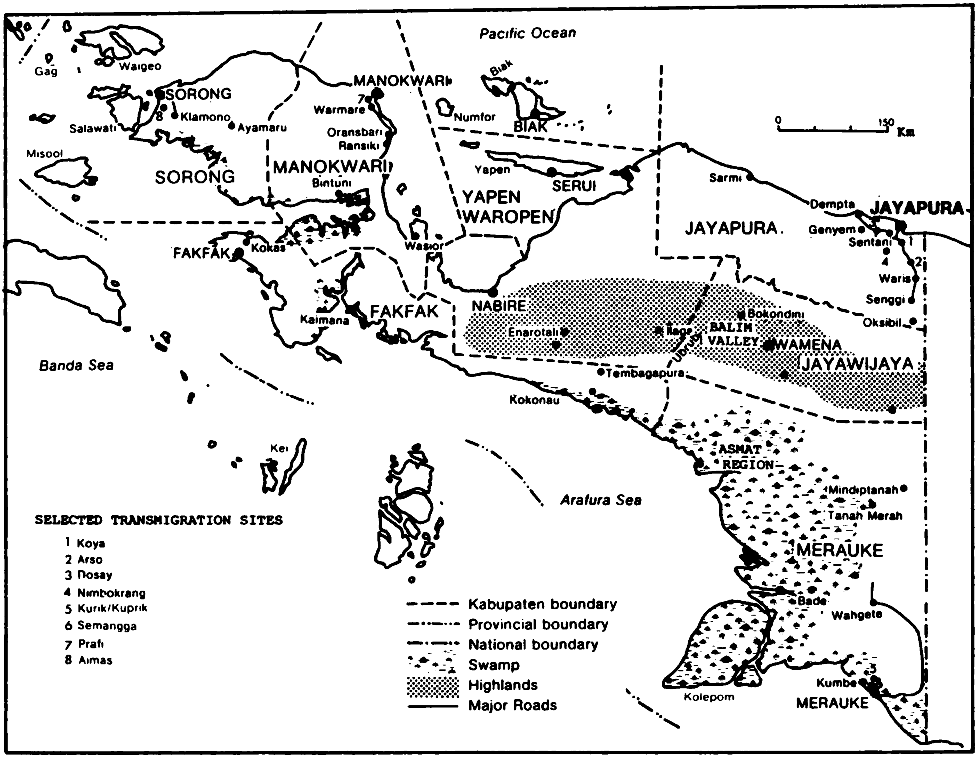

Map of Irian Jaya

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Abstract

Since the early 1970s, the Indonesian Government has mounted a major program of development in Irian Jaya, the nation's largest and least densely populated province. Supported by international assistance, the government has focused on improvement of infrastructure and communications, expansion of health facilities and educational opportunities and promotion of agriculture primarily through the transmigration program. Government expenditure has been the major stimulus to economic growth which has been impressive compared with other provinces and also with neighbouring Papua New Guinea. Hopes for substantial private investment in resource based industries have not been fulfilled, and largely primary export activities in fisheries and timber have had a limited impact on regional income and welfare.

The distribution of economic change and its benefits has been highly uneven, however, both in geographical terms and between the indigenous population and migrants from elsewhere in Indonesia. The northern towns and their hinterlands have experienced increasingly intensive trade with Java and Sulawesi and substantial labour inmigration from these islands. Income growth has been stimulated by heavy investment infrastructure and agricultural development in transmigration settlements. But substantial natural and economic barriers to trade and communications severely constrain potential spread effects from economic growth in the north to the predominantly subsistence, agricultural based indigenous communities in the highlands and southern coastal regions. Although the government has given considerable attention to extension of administration and educational expansion in rural areas, insufficient attention to traditional agriculture and smallholder exports has meant levels of living have improved little for most of the indigenous population.

In the northern areas of rapid economic change, Irianese now derive a much greater share of income from public administration and service activities. But the major beneficiaries from urban growth have been the immigrants who dominate small scale businesses in trade, transport and construction, and new opportunities in commercial agriculture. The control of many new economic opportunities by the newcomers poses a major problem for the provincial government. There are some signs of considerable concern among the new generation of better educated Irianese politicians and administrators, although their options for redressing the imbalance are constrained by continuing tight security control, especially in rural areas.

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Glossary and Abbreviations

APDN	Civil Service Training Institute
BAPEDA	Provincial Planning Board
DOLOG	Regency Rice Procurement Agency
FUNDWI	Fund for West Irian
GKI	Indonesian Council of Churches (Protestant)
IHH	Forestry royalty
IHPH	Forestry licence fee
INPRES	Regional Public Works programs under special Presidential Instruction (INSTRUKSI PRESIDEN)
IPEDA	Land tax
JDF	Joint Development Fund
kantor	Office
Kalurahan	Basic village administrative unit
Keamatan	District (third level of regional administration)
Kabupaten	Regency (second level of regional administration)
KUD	Village level co-operative
LBH	Legal Aid Institute (private)
NUDS	National Urban Development Strategy Project
OPM	The Free Papua Movement (Operasi Papua Merdeka)
Perintis	Pelayeran Perintis – Subsidized local shipping services
PIR–BUN	Nucleus estate (plantation sector)
PKK	Family Welfare Organisation (government supported, women's village organisation)
REPELITA	Five Year Development Plan (first plan initiated in 1969, third and fourth plans in 1979 respectively)
sarjana	Five year tertiary degree
sarjana muda	Three year tertiary degree (equivalent to B.A.)
SD	Primary school
SMEA	Economics (Vocational) Senior High School
SPG	Teachers Senior High School
STT	Theological Institute (tertiary level, Protestant)
STFT	Institute of Philosophy and Theology (tertiary, Catholic)
swakarsa	Self-supporting
SUSENAS	National Social Economic Survey
translokal	Local transmigrants (members of the local or provincial population allocated land in the transmigration settlements)

Preface

The National First Five Year Plan (REPELITA I) and United Nations supported fund for Irian Jaya initiated in 1969 administered the Fund for West Irian (FUNDWI) program marked the beginning of a major program of development in Irian Jaya. As elsewhere in Indonesia, rehabilitation and extension of infrastructure and communications was the primary focus of the early development effort aiming to stimulate private economic activities in agriculture and associated sectors. Poor communications and low levels of education in Irian Jaya were characteristics shared by other areas in eastern Indonesia, but this province faced several unusual problems. There were major physical constraints to the extension of government administration, trade, and labour mobility exacerbated by highly dispersed patterns of human settlement; agriculture was largely subsistence oriented; and both trade patterns and monetary structures imposed by the Dutch were very different from those prevailing elsewhere in Indonesia. In addition physical infrastructure was probably more run down in Irian Jaya in 1969 than elsewhere in Indonesia as a result of 'export' and pilferage of capital and goods to other areas of Indonesia in the early years of Indonesian control. The central government and military were particularly concerned with security and problems of unrest within the province, a factor limiting the pace of Irianization of the administration, and making extension of administrative control a high priority in government programs. Shortages of human capital were exacerbated by the exodus of many Dutch and Irianese trained personnel in 1963 and at the time of the 'Act of Free Choice' in 1969 and the government seems to have been more preoccupied with perceived problems of unskilled labour shortages than in many other outer island provinces (see REPELITA IV Volume III: 764).

Also even more than in most other outer island provinces, economic change for the large majority of the population has been heavily influenced by the large and growing central government subsidy. This is a consequence of low levels of intra-regional, inter-island and export trade coupled with low levels of investment outside resource-based extractive activities. Income generation has, therefore, been largely dependent on demand created by civil service salaries and public investment in urban infrastructure, communications and, more recently, transmigration projects. But probably more than anywhere else in Indonesia the distribution of benefits flowing from the central government subsidy between the indigenous population and migrants from other regions of Indonesia is a major development issue in Irian Jaya. This is partly related to the large number of interprovincial migrants principally moving to urban areas, and partly to recent labour migration into Irian Jaya compared with other provinces. The high proportion of migrants seconded to Irian Jaya to work in the government, 'spontaneous' migration of skilled and unskilled labour mainly from eastern Indonesia and, since 1979, an expanded transmigration program have all created tensions with the indigenous population. In the discussion of the impact of the central government subsidy on regional development one must inevitably deal with this issue, looking both at the direct employment and income distribution effects of government policies and programs and also at the interaction between migrant and indigenous economic activities.

These issues are not only important to an assessment of regional development patterns in Irian Jaya. It is also necessary to raise them in the context of international alarm generated by often ill-informed, selective and exaggerated accounts of economic hardship and discrimination affecting Irianese welfare contained in politically inspired reports of economic and social change in the region in recent years (TAPOL 1983; Osborne 1985). Considerable data are now available from Indonesian sources on the role of the indigenous population in economic affairs over the past 15-20 years, and this monograph attempts a comprehensive review of trends evidenced by these data. It is necessary to give special attention to Irianese economic participation within the framework of debates regarding the effects of economic development programs and from the perspective of Irian Jaya's unique history and geopolitical situation.

Although the regional economy continues to remain highly fragmented, developments over the past 15 years have brought major changes to the structure of economic activity in the province. Government spending has grown rapidly, extending road communications into inland areas close to the major cities, greatly expanding educational facilities, extending administration and supporting a major increase in transmigration. Major oil finds in the mid 1970s, copper exports from Tembagapura and shrimp and tuna exploitation off Sorong and Biak have all raised the contribution of resource-based products to regional product and have become significant sources of revenue for the central government. As a consequence of more intensive sea communications with Java and eastern Indonesia and integration of tariff structures within the national economy, almost all consumer items purchased in the towns (outside the flow of vegetables and some staple foods from hinterland regions) are imported from elsewhere in Indonesia. These developments have stimulated trade, transport and construction industries, encouraging inflow of labour and capital from eastern Indonesia and Java.

The impact of these changes has been, however, quite uneven. The majority of Irianese continue to depend on subsistence oriented agriculture, livestock fishing and hunting for a living, being little touched by new economic opportunities opened up in urban areas and their hinterlands. Expansion of administration and education have not been matched by significant inputs aimed at stimulating indigenous economic activity. Traditional tree crop exports have stagnated in the face of government preoccupation with food crop production in the urban hinterlands and with the transmigration program. The issue of indigenous gains from the large development effort is more pressing now than 15 years ago, and the 1984 border crossings and associated unrest should be viewed in this light.

In this monograph we look first at the changing composition of public expenditure and government policies and their overall impact on the distribution of regional product and employment. The second section focuses on the urban economies and particularly on the role of migrant labour in economic activities and the significance of their presence for employment and income generation among the indigenous population. A third section deals with enclave investments in mining, oil, fisheries and forestry and their overall contribution to regional development, employment and the incomes of local communities. Rural development activities and how they have influenced the welfare of the local population is the subject of the fourth section, and in the final section we examine the transmigration program in some detail.

CHAPTER 1

Regional Economic Change and Public Finance

The structure of the Irian Jaya economy was highly fragmented when the first Indonesian government development program was initiated in 1969.[1] Subsistence agriculture predominated both in small dispersed communities in coastal areas and in the inland and more densely populated highland regions. These were cut off from small urban settlements dotted mainly along the north coast depending almost entirely on imports from abroad for food and other consumer goods. Poor road and sea communications and the limited infrastructure established by the Dutch (which had fallen into disrepair during the 1960s) were a major obstacle to the development of trade links and the growth of commercial farming to serve the needs of the towns. Linkages between urban centres and rural communities depended on irregular air and sea transport; none of the *kabupaten* (regency) capitals was linked by road and most highlands settlements could only be reached by small mission planes. Aside from traditional barter trade, indigenous commercial activity outside the towns consisted mainly of a minuscule flow of exports from smallholder tree crops, timber and fish exploitation close to urban areas and limited wage employment in government offices.

Population mobility within the province was severely hampered by poor communications with foot paths providing the major means of access to urban settlements and the chief vehicle for traditional trade between rural communities. Migrant labour from elsewhere in Indonesia was still relatively small in numbers and dominated mainly by Javanese middle and upper level civil servants who had replaced both Dutch and Irianese administrators. The only resource based venture of any significance was a small, declining oilfield at Klamono near Sorong in the west of the province.

Although a very crude measure of economic activity in a highly fragmented and subsistence dominated economy, the structure of regional gross domestic product (GDP) in the early 1970s reflected these substantial barriers to trade and population mobility. As elsewhere in Indonesia, agriculture was the dominant sector. But unlike most other sparsely populated and resource-rich outer island provinces where trade accounted for close to half of non-agricultural regional GDP, in Irian Jaya this sector contributed only about one-fifth of this figure and less than ten per cent of total regional product (Table 1.1). The manufacturing sector was tiny (contributing less than one per cent of regional GDP) consisting mainly of coconut oil production on the coast, small tailoring businesses, brick and tile making, sawmilling, and a few food processing enterprises (bread and bottled soft drinks) established during the Dutch period. The transport and construction industries were not much larger; road transport was largely limited to movement within the small urban settlements and construction activity depended heavily on the relatively small government and FUNDWI development programs. The major non-agricultural sectors were government and service activities, the latter particularly prominent in Irian Jaya (and relatively much larger than any other

[1] See Garnaut and Manning (1974) for a detailed account.

Table 1.1 **Composition of regional product at constant prices by sector of activity, Irian Jaya, 1971, 1980 and 1984**

Sector	Including minerals/oil			Excluding minerals/oil		
	1971[a]	1980[b]	1984[b]	1971[a]	1980[b]	1984[b]
Agriculture	60	15	23	62	46	44
Mining/oil	3	67	49	..	..	..
Manufacturing	1	(0.4)	1	1	1	1
Construction	3	2	4	5	5	7
Transport	3	2	4	3	8	8
Trade	5	6	8	5	19	16
Government admin.	12	4	8	12	13	17
Services	9	2	2	10	5	5
Other	2	(0.6)	1	3	3	2
All sectors	100	100	100	100	100	100
(Rp billion)	52.6	976.2	847.5	51.1	317.9	433.8
Regional GDP per capita (Rp 000)	57	832	652	55	271	334

[a]1973 prices.
[b]1983 prices.
Sources: World Bank, *Selected Aspects of Spatial Development in Indonesia* Annex 4, Washington, D.C., 1984; Irian Jaya, BAPEDA and Kantor Statistik Tingkat 1, *Pendapatan Regional Kabupaten dan Propinsi*, Irian Jaya 1984, Jayapura, 1985.

Indonesian province) due to the activities of mission organizations which provided a wider range of services (mainly education but also health and agricultural extension) to rural communities than the government. This distribution of regional GDP was reflected in the composition of the urban work-force in 1971: nearly 60 per cent of non-agricultural employees (a total of approximately 30,000 persons) were in services and a further 30 per cent in trade, transport and construction.[2]

With the partial exception of Maluku, commercial agriculture was far less developed than in any other province in Indonesia. Almost all cultivated land was devoted to staple food crops for local consumption. With the exception of sago (grown widely in eastern Indonesia) most of these crops (notably taro and sweet potatoes) were less common elsewhere in Indonesia. Similarly, crops grown elsewhere in Indonesia were relatively rare in Irian Jaya. Even dryland padi was virtually unknown to indigenous farmers and of far less significance even than in Maluku or Kalimantan, and both corn and cassava hectarage was less significant than in other Indonesian provinces. The reported total area devoted to export crops (copra, rubber, nutmeg and mace, cocoa and coffee) amounted to less than 20,000 hectares (three-quarters of this planted to coconuts much of which were consumed locally), a land area much smaller than that devoted to tree crops and smaller than in any other outer island province (World Bank 1984: Annex 4). Exports of these commodities amounted to less than US$1 million, slightly over one dollar per capita. The latter contrasts to the situation in Papua New Guinea where by the early 1970s tree crop exports, mainly tea, cocoa and coffee, amounted to close to US$50 million.

Changing Economic Structure

Regional economic growth was impressive by both national and international standards during the 1970s and early 1980s. Total regional GDP grew at around 7

[2] The 1971 Census was conducted in urban areas only in Irian Jaya.

per cent from 1971 to 1984 and excluding oil and mining by 10 per cent, the latter implying nearly a fourfold increase in income at constant prices. Official data suggest that all non-oil/mining sectors grew rapidly with construction, transport and trade all growing above 10 per cent and agriculture, manufacturing and government administration only slightly below this figure.[3] In the period 1975–82 (for which comparable national accounts data are available for all Indonesian provinces) total real regional GDP grew more slowly than in most other provinces. But excluding oil and mining the annual growth rate in real regional GDP (1975 prices) was above 10 per cent, much higher than the national average (8.6 per cent) and growth rates achieved by other resource rich, underpopulated provinces (Riau and East Kalimantan), most eastern Indonesia provinces (including South Sulawesi, Nusa Tenggar, Timur and Maluku) and the more heavily populated islands of Sumatra and Java. Real non-oil and mining regional GDP per capita income grew at a respectable rate of around 5 per cent per annum, again higher than in most other provinces.

Irian Jaya's aggregate economic performance from the mid 1970s was much better than in Papua New Guinea where total GDP grew at only around 2 per cent from independence to 1984, implying a slight decline in per capita income over a nine-year period (Goodman, Lepani and Morawetz 1985: 34–43). In Papua New Guinea, however, it is believed that incomes earned by nationals probably grew much more rapidly than gross national product (GNP) whereas in Irian Jaya a considerable share of regional income growth has almost certainly gone to migrants from elsewhere in Indonesia and, from the mid 1970s, to the national economy through a net outflow of public revenues derived from oil and copper production and exports. On balance it seems likely that average incomes of the indigenous population in Irian Jaya probably grew at least as fast as those earned by Papua New Guineans but the gains from economic growth were probably much less evenly distributed among the indigenous population in Irian Jaya. In the discussion of both urban and rural economic change we shall argue that the proportion of the local population who benefited from growth of the cash economy in Irian Jaya was relatively small — fewer Irianese gained from new employment opportunities in the towns or from expansion of cash cropping in rural areas, a situation which contrasts markedly with the much wider diffusion of economic change in most other outer island provinces and in Papua New Guinea.

The major stimulus to economic growth has come from the greatly expanded public budget and economic opportunities opened up by closer integration within the national economy. Observers of the regional economy in the early 1980s viewed investment in resource-based industries as a major potential stimulant to future economic development in the province (Garnaut and Manning 1974). These expectations have been realized only to a limited extent. Discovery of rich oil deposits near Sorong in the 1970s and exports from the Freeport mine at Tembagapura resulted in a substantial increase in the share of mining regional GDP, contributing two-thirds of the total in 1980 (see Table 1.1). Once a major drain on central government coffers, Irian Jaya became a net contributor to the central government budget by 1980 with the value of total exports from the province exceeding $500 million or about 3 per cent of national export earnings

[3] These growth rates must be considered very crude estimates bearing in mind the substantial size and largely unknown trends in production in the subsistence economy and considerable problems involved in the estimation of regional accounts. In Table 1.1 data are presented on relative shares of various sectors in regional GDP only; these at least give some indication of the changing structure of the cash economy.

(Table 1.2). This was supported by a much smaller but significant expansion in log and fish exports which accounted for close to one-third of the total estimated value of agricultural production in 1980. But although growth in oil and copper, and to a lesser extent fish and timber exports contributed to rapid expansion of regional GDP in the 1970s, regional product fell in the 1980s, largely because of a decline in oil and timber production. The ban on log exports from Indonesia implemented in 1985 in Irian Jaya (where, in contrast to some other regions, plywood plants have not been established to compensate for the cutback in log exports) contributed to a substantial fall in timber production and exports, accompanied by the fall in the volume of oil exports as the wells in production began to dry up.

Resource-based industries have continued, nevertheless, to dominate total regional product in the 1980s, especially oil and minerals which contributed nearly half of the total in 1984. But the impact of these activities on regional economic activities was small. Exploitation and processing of resource-based products employed around 10,000 workers: about 3000 in mining and oil projects and a further 6000–7000 in timber and fishing industries. Almost all timber was exported in the form of logs. Cold storage facilities were the only processing facilities established for prawn and tuna export operations off Sorong. Almost all government revenues from these enclave operations accrued to the central government. Only in the Sorong region did the new investments appear to have a significant impact on regional employment and income generation, trade in this region accounting for an estimated one-third of all trade activities within Irian Jaya in the early 1980s.

The direct and indirect impact of growth in government spending is predominantly reflected in the growth of trade which by the early 1980s had increased to close to 20 per cent of non-mining regional GDP. Employment data suggest that this growth occurred mainly in urban areas. In contrast to most other outer island provinces where trade sector employment was predominantly rural,[4] the large majority (over 70 per cent) of employees in trade were living in urban areas in 1980. The spread of market trading and the bazaar economy (the large AMPERA market selling a wide range of consumer goods imported from Java and South Sulawesi is an outstanding example) and substantial expansion of trade in primary products produced within the province have been major developments since the early 1970s. Nevertheless even in urban areas the proportion of tertiary sector employment in trade was much lower than in any other Indonesian province in 1980, reflecting continued dependence on imports from Java and Sulawesi for urban consumption (see Chapter 2).

Government programs have also had a direct effect on employment in construction and transport, the latter stimulated by the improvement and extension of urban and feeder roads linking hinterland areas with the towns; both sectors registered a significant rise in their share of regional GDP. Like trade, transport employment was concentrated in urban areas. But construction activities spread more widely, considerably influenced by the various Regional Public Works programs under special Presidential Instruction (INPRES) programs and road construction projects.

Manufacturing on the other hand has not increased its share of regional product over the past 15 years. After increasing slowly in real terms in the 1970s this sector recorded steady growth in the 1980s linked to the growth of timber-based activities to meet construction and urban consumer demand and the processing of some

[4]East Kalimantan is a notable exception to this pattern.

Table 1.2 **Irian Jaya exports, 1960/61–85**

Commodity (Unit)	Volume					Value (US$'000)				
	1960/61	1971	1980	1984	1985	1960/61	1971	1980	1984	1985[a]
Village exports										
Copra (tonnes)	5428	1834	–	–	–	747	317	–	–	–
Nutmeg	392	357	326	488	279	521	125	393	531	252
Mace (tonnes)	111	100	248	289	70	180	80	297	440	198
Cocoa (tonnes)	–	–	22	82	74	–	–	29	152	130
Crocodile skins	..	..	..	..	..	527	392	52	..	73
Subtotal						1975	914	771	1083	653
Oil ('000 oil barrels)	208	71	21,700	14,320	10,148	2780	1184	540,910	430,600	286,620
Copper (M.DMT)	–	–	176	210	185	–	–	114,000	123,870	103,400
Prawns–frozen ('000 tonnes)	–	642	3,306	2,443	2,559	–	704	19,770	16,470	15,480
Tuna ('000 tonnes)	–	–	4.890[c]	5,771[d]	8,172	–	–	5,180[c]	2,660[d]	4,280
Logs[c] ('000 m^3)	13	5	479	125	2.7[e]	286	58	29,630	8,400	120
Other						221	26	1,280	2,540	420
Total						5,262	2,860	708,240	585,663	410,973

[a]To November.
[b]Estimate.
[c]1981.
[d]Various sources provide different figures on tuna exports. These are based on port of destination figures.
[e]A small amount of sawn timber was also exported in 1984 and only sawn timber in 1985.
Sources: Irian Jaya, Kantor Statistik Tingkat 1, Irian Jaya Dalam Angka, various years; R. Garnaut and C. Manning, *Irian Jaya: The Transformation of a Melanesian Economy*, ANU Press, Canberra, 1974

foodstuffs — tahu, tempe, bread and coconut oil — for town consumption. But other consumer goods industries, most notably soft drink manufacture, previously enjoying natural protection as a consequence of Irian Jaya's isolation from international and Indonesian markets now found it increasingly difficult to compete with cheaper imports from elsewhere in Indonesia. The share of the manufacturing sector in non-oil regional GDP was only one per cent in 1980 and 1985, very much lower than in most other outer island provinces with the exception of Maluku, Southeast Sulawesi, East Kalimantan, West Nusa Tenggara and Bengkulu in 1980, and the share of total employment in manufacturing lower only in Maluku and Bengkulu in 1980 (NUDS 1985).

The share of agriculture in non-mining regional product has declined (as in most other outer island regions), despite both a significant increase in cash cropping close to urban areas — partly related to the expansion of the transmigration program — and a reported increase in the real value of food and livestock production in the province since 1971. In part this reflects the stagnation of traditional tree crop exports which had increased little since the early 1970s. Food crop production in inland and highland areas continued to remain largely subsistence oriented, little touched by the growth of urban settlements.

New economic activities in the province were concentrated in the north coast *kabupaten*, particularly the capital Jayapura and Sorong, which accounted for a large share of the urban population but for only about 40 per cent of the total population of the province. Over half of the provincial value of manufacturing, construction, transport and trade was recorded in Jayapura and Sorong, and around 70 per cent of these sectors and government administration in the north coast *kabupaten* in 1984 (Table 1.3).

Migrant labour from South Sulawesi and Java played an important role in all these sectors chiefly in the northern towns, and has been the major beneficiary of modern sector growth (see Chapter 2). In the southern *kabupaten* of Merauke and Fak-Fak and the highlands, non-agricultural activity was largely dominated by government administration and trade, with the highlands *kabupaten* producing nearly 60 per cent of the estimated food production in Irian Jaya. Non-oil regional GDP per capita was lowest in the southern *kabupaten*, less than one-third of that recorded for Jayapura and Sorong, despite the greatly increased number of transmigrants moving to the province since 1979 and the predominance of traditional export crops in this area. Although efforts are being made to break the isolation of the highlands regions through the construction of the trans-Irian highway, it will be many years before natural barriers to trade and labour mobility are broken down. Lack of integration of the growing urban-oriented economies in the north with economic activities in the highlands and southern regions remains a major development problem in Irian Jaya.

To sum up, economic growth has been remarkably rapid in Irian Jaya during the 1970s and early 1980s. This phenomenon was not particularly dependent on the reported rich natural resource base of the province but rather on the expansion of all sectors of the regional economy, and especially the non-agricultural sectors supported by high levels of central government subsidy. In per capita terms total GDP was extremely high by national standards in 1980 (but excluding oil and mining, much closer to the national average), lower than in the wealthier provinces of Sumatra and Kalimantan (North and South Sumatra, and East Kalimantan) and considerably higher than in the poorer Java and eastern Indonesian provinces (Central Java, East and West Nusa Tenggara, Southeast and Central Sulawesi). But per capita incomes were probably distributed more un-

Table 1.3 **Distribution of regional product by sector in various regions of Irian Jaya, 1984 (constant 1983 prices)**

	North coast Jayapura/Islands Sorong	Manokwari[a]	Southern regions[b]	High-lands[c]	Total	Percent excl. mining
Percentage of population	27	15	22	36	100	–
Agriculture	33	12	12	43	100	44
Food and livestock	(17)	(13)	(11)	(59)	100	(32)
Perennial crops	(14)	(7)	(79)	-	100	(1)
Fisheries & forestry	(78)	(13)	(7)	(2)	100	(11)
Mining and oil	86	-	14	-	100	–
Manufacturing, construction and transport	54	25	16	10	100	16
Trade	57	16	8	15	100	16
Government admin.	41	26	17	15	100	17
Total regional GDP	64	10	13	13	100	–
Non-oil regional GDP	43	19	12	26	100	–
Non-oil regional GDP per capita (Rp'000)	645	491	212	269	334	–

[a]Diak-Numfor and Yapen-Waropen
[b]Merauke and Fak-Fak
[c]Jayawijaya and Paniai.
Source: Irian Jaya, BAPEDA and Kantor Statistik, *Pendapatan Regional Kabupaten Dan Propinsi Irian* Jaya 1984, Jayapura, 1985

evenly within Irian Jaya: between the more accessible and more nationally integrated northern *kabupaten* on the one hand and the highlands and southern *kabupaten* on the other; between urban and rural areas; and between the migrant population and indigenous Irianese. An indication of the latter two patterns is given by national expenditure data which suggest that the incidence of recorded urban poverty was relatively low by Indonesian standards, indeed lower than in any other province with the exception of North Sumatra, but rural poverty was recorded as higher than almost all other outer island provinces with the exception of South Sulawesi and the Nusa Tenggara provinces (NUDS 1985).

Public Finance and Development Programs

In the early 1970s central government expenditure in Irian Jaya was high compared with other relatively sparsely populated, outer island provinces. This expenditure was mainly directed to the provision of high salaries of civil servants, government administrative costs and a range of subsidies to goods and services, most notably rice and fuel. By the mid 1980s the size of the government sector had grown considerably in real terms, with expenditure in the 'development' budget and transmigration now accounting for a large share of the total. Due to the low

Table 1.4 Composition of government expenditure, Irian Jaya, 1970–72 and 1984/85

	Average annual budget			
	1970–72[a]		1984/85[b]	
	Rp billion	Per cent	Rp billion	Per cent
Routine budget				
Personnel	5.4[c]	31.0	38.6	21.0
Other	6.3	36.0	11.8	7.0
	(11.7)	(77)	(50.4)	(28)
Development budget/INPRES			38.0	21.0
Govt depts:				
Trans-migration	5.6	33.0	43.2	24.0
Other			49.4	27.0
Subtotal	5.6	(33)	(130.6)	(72)
All government expenditure	17.3	100	181.0	100
$USm	43.0		181.0	

[a]Planned expenditure.
[b]Realized routine expenditure, planned development expenditure.
[c]Includes estimated allocation to *kabupaten* personnel.
Sources: R. Garnaut and C. Manning, *Irian Jaya: The Transformation of a Melanesian Economy*, ANU Press, Canberra, 1974: 45-7; Irian Jaya, BAPEDA and Kantor Statistik Tingkat 1, *Pendapatan Regional Kabupaten dan Propinsi Irian Jaya 1984*, Jayapura, 1985.

level of commercial activity outside the enclave mining sector, revenue collected in the province remained a small proportion of total government revenue. Major development expenditure continued to be channelled into develop-ment of communications and infrastructure, with construction of road networks assuming far greater importance towards the end of the decade. As in other regions, the various INPRES programs (in particular the primary school building program) assumed far greater significance in the early 1980s.

Table 1.4 indicates the changing composition of total expenditure in various programs in Irian Jaya in the period 1970–72 and the budget year 1984/85. The decline in the share of the routine budget from close to 80 per cent in the early 1970s to less than 30 per cent in 1984/85 is largely a result of the reduction in the role of non-salary expenditure items. The special rice subsidy to Irian Jaya which held prices below those prevailing elsewhere in Indonesia was removed in the early 1980s, and the special branch of the Department of Internal Affairs (*Sektor Khusus Irian Jaya*) established to coordinate government programs in Irian Jaya was disbanded in the mid 1970s. The development budget in 1984/85 was fairly evenly distributed between the various INPRES programs (INPRES DATI I and II, INPRES *Penunjang Jalan Kabupaten*, INPRES Sekolah Dasar and others), central government departmental allocations to development projects in Irian Jaya and the transmigration program. In 1984/85 the latter alone exceeded the total value of all INPRES programs undertaken in Irian Jaya and was only slightly below the total value of the routine budget.[5]

[5] The 1984/85 allocation to transmigration was relatively high compared with annual REPELITA III allocations and thus slightly overstates the relative importance of transmigration in total expenditure in the 1980s.

These figures, however, somewhat overstate the actual size of departmental development spending since realized expenditure fell well short of budget allocations (by an estimated 50–60 per cent of departmental budgets in the mid 1980s). The decline in central government allocations for 1986/87 to government departments — departmental budget allocations were more than halved in 1986/87 and the transmigration budget reduced by over 60 per cent compared with the previous year — owing to central government budget revisions in light of declining oil revenues will not affect development programs in Irian Jaya on a scale implied by the budget cuts. The major impact is likely to be felt through the influence of a much smaller transmigration program on construction employment and associated spending in urban areas.

The province has remained heavily dependent on central government subsidies as shown in Table 1.5. Although as a percentage of total government revenues these were not far below central government grants to several other less developed outer island provinces, per capita grants to Irian Jaya were approximately double those made to selected resource rich and isolated provinces outside Java in 1984/85. This is partly a consequence of the large size of Irian Jaya's routine budget, primarily related to continuing high civil service salaries — basic salaries (excluding allowances) are 60–80 per cent higher than in other provinces due to the special Irian Jaya allowance — and the relatively large number of civil servants involved in government administration in the province.

Table 1.5 Provincial government budget receipts (APBD) in selected provinces, 1984/85

	Riau	East Kalimantan	Central Kalimantan	Maluku	Irian Jaya
Routine budget total (Rp billion)	35.2	30.2	22.8	27.8	52.9
Provincial receipts as per cent of total[a]	24	27	11	5	4
Development budget total (Rp billion)	30.3	30.0	26.2	21.2	14.6
Provincial receipts/ income returned by central govt as percent of total	33	35	21	10	7
Total budget[b]	65.8	60.2	59.0	49.0	67.5
Central govt subsidy as per cent of total	54	51	50	67	85
Total population 1984 ('000)[c]	500	1400	1100	1600	1300
Central govt. subsidy per capita (Rp '000)	14	22	27	21	44
Total budget per capita (Rp '000)	26	43	54	31	52

[a]Includes IPEDA and forestry taxes (IHH and IHPH).
[b]Includes carryover from previous year.
[c]Estimate based on population growth rates 1971-80 except for East Kalimantan (assume 3 per cent annual growth rate).
Source: Indonesia, Department Kenangan, Rencana Anggaran Belanja Negara, various years.

Revenues raised in the province were derived from the same principal sources as in other regions of Indonesia — vehicle registration and sales taxes allocated to the routine budget, and the land tax (IPEDA), forestry-licence fee (IHPH) and forestry royalty (IHH) returned to the provincial government for allocation to the provincially managed development budget (APBD). These sources contributed well over 90 per cent of total provincial government revenue — amounting to about Rp 3 billion in 1984/85.

As noted above, however, Irian Jaya was certainly a net contributor to central government revenues from the late 1970s, with income derived from mining and oil operations contributing about Rp 200–300 billion to Jakarta's budget in the mid 1980s. Income from these sources and forestry royalties have declined substantially, however, in recent years following the ban on timber exports and falling oil production.

As in other provinces the allocation of development expenditures through a variety of government INPRES programs and central government departmental budgets has made it difficult to gauge the overall impact on various sectors of economic activity, has reinforced central government control of development budget allocations and has increased the difficulty of planning and evaluating regional development efforts.

Communications and infrastructure

A very high proportion of total development expenditure outside the transmigration program has gone into infrastructure development and communications, both through the INPRES programs and central government department budget allocations (Tables 1.6 and 1.7). The beginnings of the trans-Irian highway, construction of primary schools and extension and rehabilitation of urban and feeder roads associated with hinterland and transmigration development have been the major areas of government expenditure. Around 70–80 per cent of all INPRES grants went to the development budget managed by the provincial government and the primary school building program, with *kabupaten* road building and maintenance and direct grants to *kabupaten* administration taking a further 13–18 per cent in REPELITA III and IV. The balance was allocated to health programs, rural development projects with a small allocation for construction of market facilities.

The share of total development expenditure allocated to the seven INPRES programs has increased over time and, given substantial delays in the implementation in major road construction and transmigration projects funded by government departments, accounted for a higher share of total development expenditure than the 27-28 per cent allocation figures suggest for the period 1979/80–1985/86 (see Table 1.6).

In REPELITA III (1979–84) and IV (1984–89) a high proportion — approximately one third — of the INPRES development budget managed by the province and almost all the INPRES *kabupaten* grants have gone to road and bridge construction within major towns and on road links with nearby agricultural areas. Road construction work has also received a major share of the large public works departmental allocation in recent years. A start has been made on the ambitious plan for a provincial highway system linking *kabupaten* capitals, and considerable attention given to road construction projects related to transmigration projects. In all, probably between one third and half of the provincial budget outside transmigration has been spent on road construction and rehabilitation over the past seven years.

Table 1.6 Development budget allocations by program, Irian Jaya REPELITA III and REPELITA IV

	Rp billion			Per cent		
	REPELITA III	REPELITA IV 1984/85 –1985/86	1986/87	REPELITA III	REPELITA IV 1984/85 –1985/86	1986/87
INPRES programs			27	28	44	
Provincial grants	33.4	19.0	11.9	35	27	31
kabupaten grants	6.8	3.8	2.0	7	6	5
kabupaten roads	9.8	8.2	3.0	11	12	8
Primary school bldgs	33.6	30.5	18.3	36	44	48
Health	4.4	4.9	1.6	4	7	4
Markets	1.9	-	-	2	-	-
Rural development	4.9	2.9	1.5	5	4	4
Subtotal	94.8	69.3	38.3	100	100	100
Presidential grants	2.1	0.1	-	1	(-)	-
Central government departments	255.7	181.2	48.1	72	72	56
Total	352.6	250.5	86.4	100	100	100
Total per annum	70.5	125.2	86.4			

Source: Irian Jaya, BAPEDA, unpublished data, August 1986 and Kantor Statistik Tingkat 1, *Pendapatan Regional kabupaten dan Propinsi Irian Jaya 1984*, Jayapura, 1985.

Table 1.7 Composition of central government department budget allocations by major sector of activity, Irian Jaya, 1969–72, REPELITA III and REPELITA IV

	1969/70 1971/72[a]	REPELITA III	REPELITA IV 1984/85 1985/86	1986/87
Excluding transmigration	[100]	[80]	[60]	[78]
Public works	7	37	19	40
Communications	56	17	14	9
Education	12	14	24	18
Health	4	4	5	3
Social affairs	..	3	9	4
Agriculture, fisheries and forestry	15	6	10	7
(Agriculture)	5	..	9[b]	5[b]
Other	6	19	19	19
Subtotal	100	100	100	100
Transmigration	-	20	40	22
All sectors	100	100	100	100
Rp billion -				
excl. transmigration	16.6	205.3	109.0	37.4
Transmigration	-	50.4	72.2	10.7
Total	16.6	255.7	181.2	48.1

[a] Includes FUNDWI budget and counterpart allocations and PELITA budget
[b] Includes fisheries.

Sources: Irian Jaya, BAPEDA, unpublished data, August 1986 and Kantor Statistik Tingkat 1, *Pendapatan Regional kabupaten dan Propinsi Irian Jaya 1984a*, Jayapura, 1985; R. Garnaut and C. Manning, *Irian Jaya: The Transformation of a Melanesian Economy*, ANU Press, Canberra, 1974:49.

This marks a substantial shift in allocations compared with REPELITA I and the FUNDWI program in the early 1970s in which just on half of the total development budget was allocated to air and sea communications. The latter efforts were pressing priorities in the early 1970s with the deterioration in wharves and airstrips in the 1960s, the poor conditions of shipping available for local trade and the urgent need to develop administration networks throughout the province. Improvements to port facilities and upgrading of most major *kabupaten* airstrips to receive jet aircraft, additions to the major airstrips at Biak and Jayapura to facilitate better communications with Jakarta, Surabaya and Ujung Pandang, and the extension of several smaller strips to service Twin Otter aircraft have, nevertheless, continued to receive a considerable share of departmental expenditure. Together with extension of telecommunications networks — installation of satellite-linked automatic telephone systems in Biak and Jayapura and introduction of television relay stations in all the *kabupaten* capitals — these activities have accounted for around 10–15 per cent of the non-transmigration development budget in recent years. These have all contributed to much improved communications, transport and trade links with major commercial and administrative centres elsewhere in Indonesia.

Some of these expenditures have helped to alleviate the isolation of rural communities, especially the feeder roads from towns to hinterland areas on the north coast around Jayapura, Biak, Manokwari and Sorong,[6] and a network of simple village roads in the highlands centred around Wamena in the densely populated Balim valley, Bokondini and Oksibil.[7] Their impact on indigenous economic activity has nevertheless been limited by much slower growth in commercial agricultural activities undertaken by the local population and the domination of urban commercial activities by migrants in many areas (see below). The large majority of villagers continue to carry their goods to the busy Wamena market on foot; there is virtually no public transport in the highlands and the major benefits from these developments appear, at this stage, to have been in facilitating government administration, security and limited extension services.

Provincial planners place considerable hopes in a trans-Irian highway network, integrated with denser population settlements promoted through transmigration, as a major means of 'opening up' inland areas and promoting development in Irian Jaya. So far major construction has occurred south from Jayapura through Arso to Ubrub (approximately 150 kilometres) and north from Merauke to Muting (250 kilometres), both close to the sensitive border areas with the difficult sections into the highlands still to be constructed. Progress has been slow and costly partly due to inadequate land surveys and access to aerial maps.[8] Costs per kilometre of the gravel reinforced road have been high and gravel roads too expensive to construct in the Merauke area because of the complete absence of raw materials. As a consequence, the section of the road running north of Merauke is virtually impassable except by 4-wheel drive

[6] About 500 kilometres of asphalt roads with regular public transport were almost entirely concentrated in these four areas in 1985 although gravel roads (about 700 kilometres in 1985) were spread more widely. The total 4600 kilometres of roads in 1985 (60 per cent dirt roads) had increased more than fivefold since the early 1970s.

[7] By the mid 1980s about 700 kilometres of village roads had been constructed in upland Jayawijaya and about 300 kilometres in Paniai *kabupaten*.

[8] Construction of part of the section north of Merauke into Papua New Guinea territory caused a major upset in 1984 before the error was taken care of.

vehicles, and these encounter difficulties during the wet season due to flooding.[9] Given these problems on what is viewed by most observers as by far the easiest part of the road network, the potential economic benefits of the trans-Irian highway must be viewed with some scepticism, especially at a time when funds allocated for maintenance of roads and bridges are likely to be even scarcer than in the past. Opening of highlands regions to land communications with the north coast could greatly reduce the costs of development programs but in the south the large areas of swamp and heavy wet season flooding suggest that reduction of extremely high transport costs will depend on improvement to relatively neglected river transport.

Education

A major share of the development budget has gone to education, mainly to the INPRES primary school building program in the past eight years. This program accounted for over one-third of all INPRES allocations in REPELITA III and closer to half in REPELITA IV, with all expenditure on education amounting to just on 20 per cent of total development budget allocations over the period 1979/80–1986/87. These very large allocations to education have radically increased school enrolment ratios with numbers in primary schools almost doubling and in secondary schools increasing more than sixfold since the early 1970s.

In 1980 school enrolment for ages 7–12, 13–15 and 16–18 were estimated to be 67, 58 and 33 per cent of children in these age groups respectively.[10] These figures are a poor guide to enrolment ratios in secondary schools for the relevant age groups, however, given the late age of entry into newly constructed schools especially in the highlands *kabupaten* and in inland areas generally. Thus school statistics suggest lower and upper secondary school enrolment of 30 and 14 per cent respectively in 1980, levels fairly similar to those recorded in many other Indonesian provinces. By the mid 1980s enrolment in primary, lower and upper secondary schools had probably increased to around 80, 50 and 20 per cent respectively largely as a consequence of expansion in government school building programs. Mission schools still accounted for over half of primary and lower secondary enrolments and about one-third of upper secondary enrolments in the early 1980s, but the relative importance of totally government funded and administered institutions had increased considerably.[11]

As elsewhere in Indonesia vocational secondary schooling has been given less attention than academic (SMP, junior secondary and SMA, upper secondary) schooling, the latter having been largely phased out at the lower secondary level and accounting for a little over half of upper secondary school enrolments in 1984 (mainly in Economics, Economics (Vocational) Senior High School (SMEA), schools and the Sekolah Technic Menengah (STM) technical schools). As might be expected, the capital Jayapura and north coast *kabupaten* accounted for a high

[9] See, for example, a report by Peter Hastings on a trip north from Merauke in 1983 (*Sydney Morning Herald*, 30 August 1983).

[10] The census data suggest relatively small sex differences in enrolment rates except at senior high school where female rates were about half those recorded for males. Provincial data report the number of enrolments in primary schools at around 155,000 in 1980/81, 25 per cent higher than the census data for enrolments recorded for age groups 7-12 in the 1980 census. and also certainly an overstatement of actual numbers of primary school children in 1980.

[11] It is reported, for example that enrolments in mission primary schools had fallen from about 85 per cent in 1970 to 59 per cent in 1982/83. It should be noted that the government provides subsidies for the salaries of teaching staff in mission schools.

proportion of all secondary school enrolments—Jayapura, Sorong, and Biak *kabupaten* taking over half of all enrolments (including nearly 75 per cent of senior high vocational enrolments) in 1984. In contrast the highlands *kabupaten* supported a much smaller number of secondary schools and pupils, amounting to less than 20 per cent in 1984.

This impressive government record of support for schooling needs some qualification. The speed of construction of primary schools has outpaced both enrolments and the supply of teachers available particularly in inland areas. Many of the new buildings were underutilized in the mid 1980s, often located too far from population settlements. The strict central government specifications regarding the size of schools and teaching systems — the objective of having one teacher for each class — has often been ill-suited to the need for smaller more widely dispersed institutions run by one or two teachers. Major constraints have been imposed by a serious shortfall in the number of qualified teachers — only half of the highlands *kabupaten* requirement for teachers was achieved by 1982/83 — and by poor qualifications of the teaching staff employed. [12]

The shortfall in teachers has been partly met by part-time teaching by other government officials in primary schools and shortened class hours, but low teacher : pupil ratios in many areas have probably contributed to a low standard of primary schooling.[13] Relatively constant enrolments at SPG, teacher training schools over the past 15 years (see Table 1.8) and difficulties in recruiting teaching staff from elsewhere in Indonesia reflect the reluctance of young people to staff isolated village school posts, a situation not helped by conditions of uncertain security in many inland areas which have encouraged a high turnover among

Table 1.8 Enrolments at various levels of education, Irian Jaya, 1970 and 1984

Educational level/type of school	1970	1984
Primary	123,700	212,900
Lower secondary	8698	38,086
General	4,788	37,582
Vocational	3,910	504
Upper secondary	1,700	14,598
General	952	9,846
Technical	208	1,102
Other	540	3,650
Teacher training(secondary)	3,346(?)	2,612
Tertiary	632	3,020
Law/politics andsociology	..	1,264
Education/teacher training	..	1,285
Agriculture	..	471

Sources: Irian Jaya, Kantor Statistik Tingkat 1, *Irian Jaya Dalam Angka 1984*, Jayapura, 1985; R. Garnaut and C. Manning, *Irian Jaya: The Transformation of a Melanesian Economy*, ANU Press, Canberra, 1974: 26, 30.

[12] About 40 per cent of all teachers in primary schools in the province were reported to be underqualified in 1982/83 (that is, had not received basic Teachers Senior High School (SPG) teacher training). See Irian Jaya (1984).

[13] In Jayawijaya regency the pupil : teacher ratio was reported to average 50 in 1984, about double the rates in other *kabupaten*.

teachers. In the early 1980s special six month courses in teacher training were instituted for academic school (SMA) graduates in an attempt to quickly raise the number of qualified teaching staff, but the provincial government sees this program as largely a stop-gap measure in view of immediate constraints to increasing SPG enrolments.

The general emphasis in curriculum at primary school levels on preparing students for secondary education is particularly questionable in rural Irian Jaya.[14] Low levels of participation in the modern sector and non-agricultural activities in rural areas, combined with little prospect of significant change in these conditions in the medium term, suggest the need for far more vocationally-oriented courses related to present challenges in agricultural development.

Provincial planners are aware of these needs but have relatively little say in the development of curriculum. The rapid spread of secondary education on the other hand raises expectations for salaried employment which is likely to expand much less rapidly than in the past and increasingly it is likely to create unrest among discouraged, secondary educated job seekers, especially in urban areas.

Tertiary education has also expanded substantially through government grants principally to Cenderawasih University and the Civil Service Training Institute (APDN) administered by the Ministry of Home Affairs.[15] Enrolments at the University of Cenderawasih have increased about fivefold since 1970 with over 1500 and 200 students graduating at the Bachelor of Arts (*sarjana muda*) and five-year tertiary degree (*sarjana*) levels respectively by the end of 1984. About 50 students, nearly half from the education faculty, were graduating annually at the *sarjana* level, by the mid 1980s. The university together with the APDN, the latter catering almost solely for Irianese and producing about 50 graduates annually in the mid 1980s, have probably provided sufficient graduates to fill new government positions since the early 1980s. In previous years, in addition to the inflow of trained personnel from outside the province, shortfalls in the supply of educated workers had to some extent been met through central and provincial government scholarships for Irianese to study in Java. Although many bright graduates elected not to return to Irian Jaya, the total number trained this way has probably exceeded the number of graduates from institutions in Irian Jaya.[16] With the cutback in central government funding and private sector activities in resource-based industries, the prospect of a surplus of graduates is imminent.

One final point should be made in relation to the impact of government programs on the educational status of the population. At senior high school and tertiary levels, the growth in the educational status of the indigenous population has been much smaller than the figures suggest. Local Irianese compete with migrants and their children — mainly the children of civil servants in educational institutions, especially in the towns. Over half the enrolments in Cenderawasih University were non-Irian born in 1970. This proportion has probably not changed significantly since then. Unofficial sources suggest non-Irian born

[14] Targets for lower secondary school expansion are set on the basis of estimated numbers of primary graduates in the various *kabupaten*.

[15] Several privately funded tertiary institutions mainly in the fields of management and economics offering *sarjana muda* and diploma degrees have also been established over the past decade mainly taking in civil servants on a part-time basis.

[16] Mention should also be made of the quite large numbers of Irianese trained in the Protestant and Catholic theological colleges (Theological Institute (STT), Indonesian Council of Churches (GKI) and Institute of Philosophy and Theology (STFT)) which have for more than a decade produced many of the informal leaders in Irian Jaya.

children and children born to migrants in Irian Jaya still accounted for about half of the intake in 1985/86 and two-thirds in 1986/87. The high proportion of non-Irianese among graduates from the university has tended to entrench the prominent role of migrants in highly skilled administrative and professional positions in the modern sector, and the continuation of a large share of new enrolments allocated to non-Irianese suggests this pattern is unlikely to change in the near future.

Agriculture

The third major area of government spending has been agriculture (including fisheries and forestry), accounting for about 15–20 per cent of the provincial government development budget (APBD) and 5–10 per cent of allocations to government departments in recent years. A considerable proportion of allocations in both budgets and probably about half of the total budget allocated to agriculture has gone to projects aimed at supporting transmigration projects — the provision of subsidized Bimbingan Massal Rice Intensification Support Program (BIMAS) inputs and equipment for rice production in Merauke and Sorong in particular. Other allocations have been made to a wide variety of projects: equipment and training in fisheries mainly off Sorong; import and distribution of seedlings, and establishment of seed distribution centres and demonstration plots for commercial crops (coconuts, coffee, cocoa, rubber, sugar cane and cashew nuts); and distribution of livestock on a credit, production sharing basis. These projects have been spread widely throughout the province with food crop programs concentrated in hinterland areas close to the major towns and in transmigration settlements. In the highlands major emphasis has been on introduction and distribution of new seeds for food production, introduction of sheep and pigs under INPRES and departmental budget programs and opening of small areas for *sawah* (wet rice field) rice cultivation (50 hectares had been prepared by mid 1986) in the Baliem valley close to Wamena. The impact of these programs has been severely limited by lack of extension workers and access to relatively isolated, dispersed communities.

Other sectors

Expenditure in other sectors outside transmigration can broadly be divided into two categories: development of urban facilities and rural development programs. In the first category the major allocations have been in development of urban water supplies, electricity, hospital facilities, and the construction of government offices. Rural development programs outside the primary school building program have concentrated on construction of rural PUSKESMAS in *kecamatan* (district) centres, village INPRES grants to selected villages especially for churches and mosques, resettlement of small numbers of villagers (several thousand households in the past decade) into larger village units, construction of model housing units and the building and equipment of government offices mainly at the *kecamatan* level but also in selected villages close to *kecamatan*. Sixteen *kecamatan* had been established in the highlands *kabupaten* of Jayawijaya and Paniai by the early 1980s with *kecamatan* closest to the *kabupaten* capitals being the focus for rural development programs. Government reports stress the limited impact of infrastructure and social development programs beyond these areas due to communication problems.

Both government and privately funded activities in the field of health have expanded substantially in recent years especially through the INPRES program for the establishment of PUSKESMAS throughout the province[17] and, since 1984, through the activities of the Bethesda Health Foundation in coordinating government and mission allocation of medical supplies and the payment of salaries to paramedical staff in outlying areas. Despite continued shortages of medicine and equipment, there is some indication that these efforts, together with improved communications, have probably contributed to a significant decline in mortality in many areas since the late 1960s.[18] But, nevertheless, the relatively small total budget allocations for health through INPRES and departmental budgets are one particular area of concern particularly in view of the continued widespread incidence of malaria in most north coast regions. Although infant mortality is estimated to have been higher and life expectancy lower in several other provinces (mainly in eastern Indonesia) in 1980, in the area of health the development record contrasts with that of Papua New Guinea. In Papua New Guinea total expenditures amounted to around 7–8 per cent of the budget in the early 1980s and it has been suggested that 'primary health facilities are within the reach of most people' in 1985 (Goodman, Lepani and Morawetz 1985: 166, 236). In Irian Jaya allocations to health were only 3–4 per cent of the total development budget outside transmigration in the past decade, despite relatively low life expectancy (estimated at 51 for males and 54 for females in 1980) and rates of infant mortality (127 in 1980) that were considerably higher than in Papua New Guinea.[19]

[17] The number of PUSKESMAS accounted to 125 in 1986, covering most of the 117 *kecamatan* in Irian Jaya. These were heavily understaffed including only 35 doctors and 23 formally trained paramedic staff (*mantri* and *bidan*) (see *Kompas* 6 December 1986:9).

[18] Mission surveys suggest that the P5 health and nutrition program significantly reduced infant mortality but the samples were too small (and basis for calculations unclear) to enable generalizations to be drawn even about the survey population.

[19] Infant mortality was estimated at 117 for Indonesia as a whole and a much lower 72 in Papua New Guinea in 1980, the latter declining by 46 per cent in the period 1971-80 (Goodman, Lepani and Morawetz 1985;41). One should bear in mind, however, that low mortality rates in Papua New Guinea are partly a consequence of considerable efforts in this field from the prewar period and much improved communication networks than in Irian Jaya.

CHAPTER 2

The Urban Economies

Outside the small number of enclave resource-based industries, the major centres of economic change in Irian Jaya have been the small urban settlements and their hinterlands. These have grown quite rapidly in recent years, particularly on the north coast, supported by high levels of government expenditure, increasingly intensive communications and trade and labour market integration with Java and eastern Indonesia. Growth of the urban economies and investment in infrastructure have in turn encouraged hinterland agricultural development, the latter given considerable stimulus through the transmigration program and 'spontaneous' settlement of migrant farmers. The towns are now very similar in appearance and economic structure to many other areas of Indonesia, sporting highly competitive market trade and urban transport, and in the larger centres of Jayapura and Sorong, major problems of overcrowding — urban slum dwelling, pollution and pressure on scarce supplies of water and electricity. Nevertheless they have several distinctive features: considerable dependence on government spending; high cost structures with heavy reliance on goods and labour from elsewhere in Indonesia; and continuing weak linkages with rural areas beyond immediate hinterland areas and with other urban areas in the province. The stranglehold over most private sector activities by migrants from eastern Indonesia has become more pronounced, with attendant social conflict causing increasing concern within provincial government circles.

Urban Economic Structure

A rough picture of urban economic structure can be gleaned from labour force data. Service employment, predominantly in the government sector, was of far greater significance than in most other regions of Indonesia in 1980; this sector accounted for over 60 per cent of non-agricultural urban employment, compared with close to 40 per cent in both Java and other outer island areas (Table 2.1). This was matched by a much lower proportion of the urban work-force in trade (about half or less of the proportion recorded in other provinces) and to a lesser extent in manufacturing. The high percentage of government expenditure in the province is reflected in the structure of the labour force in the towns of Irian Jaya.

The low proportion of total employment in trade and manufacturing, on the other hand, was directly related to relatively low levels of production of non-agricultural commodities in the towns. The urban population, and especially migrants, continued to depend on imports from outside the province for almost all commodities consumed on a day to day basis — rice, sugar, salt, a range of vegetables (onions, garlic, potatoes and chillies), meat, textiles, canned food, beer and a range of building materials. Major exceptions were fresh fish and green vegetables, increasingly eggs (although in periods of peak demand these were still brought in from Java) and timber. But in contrast to the early 1970s when a high proportion of these products were imported from abroad, almost all consumer goods, including canned foodstuffs and beer, were now supplied from elsewhere in Indonesia, principally Surabaya and Ujung Pandang. Imports to Irian Jaya still amount to about US$3–5 million a year in the mid 1980s, a figure much higher than the value of traditional exports, but these goods consisted almost entirely of consumer products supplied to the Freeport mine and capital equipment brought in by mining and oil companies.[1] Increased volume of trade with other parts of Indonesia has been supported by much more regular inter-island shipping—approximately 8–10 ships arriving from Java via Ujung Pandang each month in the mid 1980s.

Table 2.1 Distribution of employment by major non-agricultural sector, Irian Jaya and selected outer island provinces, 1980

	Selected outer island provinces						
	Irian Jaya	Maluku	East Kali-mantan	Central Kali-mantan	South Sulawesi	All outer islands	All Indonesia
Urban services[b]	61	53	36	36	42	43	41
Trade	12	18	22	25	29	27	27
Manufacturing	6	8	14	20	9	10	17
Transport	11	6	9	7	10	9	8
Construction	7	7	7	6	5	7	6
Other[b]	2	8	12	6	5	4	·2
Total	100	100	100	100	100	100	100
N(000)	46	31	117	25	244	2361	8828
Rural services[a]	53	57	38	30	31	34	29
Trade	5	18	21	29	27	26	31
Manufacturing	17	10	22	25	27	22	24
Transport	2	6	9	5	7	6	5
Construction	17	8	6	6	7	8	8
Other[b]	2	1	4	5	1	4	3
Total	100	100	100	100	100	100	100
N (000)	44	82	71	71	403	3914	13656
Non agriculture	15	22	29	21	30	24	33
Agriculture	85	78	79	70	76	67	

[a]Includes banking and other financial services.
[b]Mining and public utilities.
Source: Biro Pusat Statistik, 1980 Population Census, Series S2, Jakarta, 1984: Tables 45.3, 45.6.

Despite these changes in the direction of trade and the improved transport, the cost of living in Irian Jaya towns remains higher than elsewhere in Indonesia, to some extent justifying special supplementary allowances to civil servants. Department of Manpower data on basic physical minimum requirements (KFM) covering food, clothing, housing and other basic needs, suggest prices in the major northern port towns of Irian Jaya were about 20 per cent higher than in other high cost, outer island provinces (East and Central Kalimantan and Maluku) and close to 30–40 per cent higher than in South Sulawesi and Java in 1985. Prices of several basic commodities, most notably rice, salt, sugar and flour in the major towns are closely monitored by the provincial government through the periodic setting of standard prices (HPS—*Harga Pedoman Setempat*) not far above those prevailing elsewhere in Indonesia. Imports and stock management by Regency Rice Procurement Agency (DOLOG) ensures that market prices of basic commodities

[1] In 1984 imports of consumer goods, mainly from Cairns in north Australia, to the Freeport mine amounted to over US$3 million. In 1986 the company was prohibited from bringing in a range of consumer goods from abroad.

are only about 10–20 per cent above the HPS in the major towns. But the prices of other commodities — consumer goods such as eggs, fresh meat, vegetables and canned foodstuffs — are frequently more than double the prices prevailing in Java and South Sulawesi (Table 2.2).

Table 2.2 **Prices of beef, eggs and cement in selected towns in Irian Jaya, 1985**

Selected urban centres	Beef (kg)	Eggs (each)	Cement (sack)
Jayapura	5370	150	4,710
Nabire	..	188	5,500
Merauke	3170	210	5,300
Wamena	..	190	17,500
Ujung Pandang	2810	67	3,560
Surabaya	3010	81	3,340
Kupang	2000	103	4,110

Source: Irian Jaya, Kantor Wilayah Perdagangan, *Laporan Tahunan 1985*, Jayapura, 1986.

The general cost of living index in Jayapura increased slightly less than in most of the other 17 principal cities covered in the Indicator Ekonomi over the period 1977 to mid 1986, suggesting that integration of trade patterns within the rest of Indonesia has marginally reduced the cost of living in urban Irian Jaya compared with other regions, although it is noteworthy that food components of the index, (especially staples, eggs, nuts and cooking oil) increased at a more rapid rate than in most other cities in Indonesia.[2] Unification of tariffs and import restrictions with the rest of Indonesia in the early 1980s, however, produced relatively high rates of inflation in Jayapura (and considerable disruption during the period of transition) compared with other cities in Indonesia.[3]

Several factors have contributed to the continuing high cost structure even in the larger northern port cities of Jayapura and Sorong. Distance ensures that sea and air transport costs are high from Java and South Sulawesi. The small volume of consumption is a major obstacle to achievement of economies of scale in trade and production necessary to reduce costs. Two major factors are relevant here. Low levels of commercialization in rural areas limit the demand for imported and locally produced goods, and this is exacerbated by the high cost and irregularity of transport services between both towns and their hinterlands and isolated urban centres. Despite a substantial increase in road mileage over the past decade and in the number of commercial vehicles in operation near the major north coast towns, transport costs between the larger urban centres and their hinterlands remain high, ranging from Rp 10–30 per kilometre for passengers and a slightly lower figure for a small consignment (10–20 kilograms) of goods in Jayapura and Sorong in mid 1976. Introduction of special village transport vehicles in the Jayapura region has facilitated the flow of agricultural produce to the towns, but marketing margins of 30 to 50 per cent are not uncommon for vegetables sold in Hamadi market in Jayapura. Increasing flows of products from new transmigration sites

[2] The index, with the base year 1977–78, had risen to 245 in Jayapura by August 1986 compared with an average of 260 for the 17 cities, 286 in Surabaya and 244 in Ujung Pandang. Reduction of subsidies for major foodstuffs, most notably rice, probably explains the relatively rapid growth in the index for basic foodstuffs.

[3] See Biro Pusat Statistik, *Bulletin Ringkas*, August 1986. Rates of inflation during the period 1981–83 were close to 15 per cent, nearly double those recorded for the 17 cities in the same period.

have also contributed to an increase in the volume of trade and a lowering of marketing margins, but a substantial decline in the latter is dependent on increased allocation of funds for road maintenance, a problem shared by many other outer island areas.

The cost of living in the majority of urban centres which are not directly linked to the rest of Indonesia through inter-island shipping is very much higher than in the major north coast towns. In 1985 the prices of basic commodities imported from elsewhere in Indonesia — rice, soap, textiles, onions, eggs and cement — were 10–50 per cent higher in Nabire on the north coast, and in Merauke and Fak-Fak in the south, compared with Jayapura and Sorong. The differentials were very much larger in the highlands, and in inland areas reached only by river transport in the south; bulky materials such as cement and fuel were sold at several times the prices prevailing in the major towns in the north. Cement prices in Wamena in 1985 were close to Rp 20,000 per sack, four times those in Jayapura and market prices of subsidized rice (Rp 600–700), 50 per cent more than the price prevailing in the capital of the province.

Special government subsidized local shipping services (PERINTIS, *Pelayaran Perintis)* provided by the national shipping line (PELNI) were introduced to Irian Jaya in 1975 to provide isolated coastal settlements with a regular supply of basic commodities. The number of ports served by small PERINTIS ships (150–750 deadweight tons DWT capacity) has increased from 26 to 77 since the mid 1970s, with 5 boats on the north coast and 4 boats in the south in the mid 1980s. In addition to subsidies of around Rp 500 million provided annually for the operating costs of PERINTIS ships, the government introduced a special 50 per cent subsidy for supply of 27 basic commodities transported to outlying urban settlements and *kecamatan* posts in 1982.

The PERINTIS shipping service has improved the flow of basic commodities to urban settlements but the impact has been much smaller than the number of ships and ports visited might imply. Shipping services are irregular, especially in the south, PERINTIS ships not always keeping to scheduled routes and calls often being determined by the private gains accruing to the crew. Major problems of inadequate docking facilities, shortages of fresh water and damage to ships have also limited the impact of the program (Maman Suryana 1986a). The volume of goods and persons transported by PERINTIS ships increased only marginally in the 1980s in the north although it does appear to have increased more in southern areas from a much smaller base. The low volume of return cargoes has necessitated continuing high levels of subsidy to shipping services: Maman Suryana (1986a) estimates a low figure of only about 5 per cent of existing capacity of PERINTIS shipping utilized in 1985.

The special subsidy to goods delivered to outlying areas administered by the Department of Trade had until 1985 been largely allocated to air transport of basic commodities to the highlands at Wamena, with only a marginal impact on the supply of goods and prices in coastal areas.[4] In Wamena, however, the project contributed to a considerable decline in prices of several basic commodities in 1983–84, subsidized prices of cement and salt being delivered at nearly half the normal prices of these goods in the *kabupaten* market. The subsidy program appears to have stimulated more regular air transportation — several daily flights serving Wamena from Jayapura throughout the week in the mid 1980s — and

[4]The subsidy amounted to Rp 250,000 in 1982/83 rising to close to Rp 1 billion in 1984/85 and serving all *kabupaten* and a projected number of 89 *kecamatan* throughout Irian Jaya (Indonesia, Departemen Perdagangan 1984).

encouraged both the flow of non-subsidized goods to Wamena and return trade in vegetables supplied to Jayapura.[5]

Despite these improvements in road, sea and air communications, the urban economies of Irian Jaya continue to remain poorly integrated. The relative surplus of fresh vegetables — cabbages, chillies, tomatoes and onions — produced in the highlands at Wamena fetched prices lower than half those prevailing in Jayapura in 1985–86. Natural constraints to trade help explain the highlands-lowland differentials but on the coast poorly administered shipping services appear to be a major obstacle to lowering the costs of public administration and the relative shortage of basic commodities in small urban centres. Relative neglect of river transport in the south near Merauke (in contrast to large public expenditures on road transport) has been a major factor limiting the flow of goods to the indigenous population in inland areas, with major river transport services continuing to be supplied by small mission boats.

Urban Growth and Migrant Labour

As in most outer island areas, including Maluku and Sulawesi, the rate of urban population growth has been high in Irian Jaya over the past 15 years. Migrant labour mainly from South Sulawesi, Java and Maluku has contributed substantially to the growth of new employment opportunities in most centres. Although migrants from Java and South Sulawesi have also been an important component of urban growth in some other outer island areas, most notably East Kalimantan and to a lesser extent Maluku,[6] competition for jobs between migrants and the local population has been particularly marked in Irian Jaya. Weak rural–urban linkages and the limited urban experience and skills in commercial activities of indigenous people have been major obstacles to increased indigenous participation in the urban economies. Increasingly intensive sea and air communication links with the rest of Indonesia, rapid growth in urban labour demand and relatively high wages and incomes earned in self-employed activities compared with those available in eastern Indonesia and in Java have all encouraged the inflow of migrant labour.

The overall urban population growth rate was close to 5 per cent in the intercensal period 1971–80, and has probably remained at this level or even increased somewhat since then. The major north coast towns, most notably Jayapura (including nearby Abepura) and Manokwari, have experienced the most rapid growth in population (6.6 and 5.6 per cent per annum respectively over the period 1971–80) in contrast to relatively low rates of urban growth in the more isolated southern cities of Merauke and Fak-Fak (Table 2.3). The urban share of the total population had risen to about 20 per cent in 1980, a little under one-third of the urban population residing in the capital Jayapura–Abepura. The NUDS (National Urban Development Strategy) study of urbanization in Indonesia estimates on the basis of past growth rates that Jayapura–Abepura with a relatively small population of 40,000 in 1971 will grow to a major city of about 200,000 by the end of this century.

Almost half the growth of the urban population in the intercensal period has consisted of migrants, mainly from South Sulawesi. The share of non-Irian born in the total urban population was still relatively small (about 30 per cent) in 1980, but it has risen gradually since then to about 40 per cent in 1986, or a total of

[5] Around 350 metric tonnes of vegetables were reported to have been transported from Wamena to Jayapura in the first five months of 1984 with larger volumes being transported in the past few years.

[6] In 1980, a high proportion of the urban population, 32 per cent in East Kalimantan and 20 per cent in Maluku, were born outside the province; in both cases migrants were mainly from Java and Sulawesi.

Table 2.3 Urban population growth rates in major cities, Irian Jaya, 1971–80

	Population 1980 N(000)	Per cent	Per cent *kabupaten* population	Annual growth rate %	Per cent of increment
Jayapura/Aabepura	74.2	32	50	6.6	39
Sorong	33.3	14	25	4.2	12
Biak	24.9	10	35	3.8	8
Manokwari	24.5	10	29	5.6	11
Maaerauke	12.4	5	7	2.3	3
Other	68.0	29	14	4.7	27
All Irian Jaya	237.3	100	21[a]	5.0	100

[a]Percentage of total Irian Jaya population.
Source: National Urban Development Strategy *Final Report, NUDS,* Table E.1, Census Penduduk 1980, Series S No.28.

about 130,000 persons of an urban population of around 330,000 (Table 2.4 and Annex Table 1). Based on past rates of growth non-Irian born would account for just under half the Irian urban population in 1990; if account is taken of the children born to migrants, the non indigenous population probably amount to almost half the urban population in 1986 and may be closer to two-thirds by 1990.

Data on the net number of passengers arriving at various ports in Irian Jaya provide a crude estimate of net migration to the province during the 1980s. The data generally confirm the impression of an increasing number of arrivals from the early 1980s, from around 3500 per annum in 1980–81 to 4500–5000 in 1983–84 and a much higher figure of about 8500 in 1985, with the introduction of the Umsini regular passenger liner service from Java through Eastern Indonesia to Sorong and Jayapura. However, the figures, which also include travellers moving to and from local ports, probably substantially underestimate the number of arrivals by sea.[7] It seems safe to conclude that annual net migration of around 4000–5000 persons in the period 1971–80 (reflected in the census data on province of birth) had probably doubled by the mid 1980s due to more regular and cheaper sea communications with Java and eastern Indonesia. The number of migrants, especially from Sulawesi, living in urban Irian Jaya in 1986 was probably smaller than some foreign commentators have estimated[8] but they were almost certainly substantial and have significantly affected the pattern of urban economic activities.[9]

Despite migration, daily wages were considerably higher in Irian Jaya compared with Java and South Sulawesi in the mid 1980s, even after account is taken of cost of living differences. Basic wages of sawmilling operators in Irian Jaya, for example, were more than twice those recorded for Java and South

[7] Data on net arrivals by the *Umsini* passenger liner to Jayapura suggest a monthly figure of about 470 since March 1985 implying an annual figure of over 5500 in 1985 by this ship alone; all net arrivals to Jayapura by inter-island vessels were recorded at 7500 in 1985. Net arrivals by *Umsini* and a second regular passenger liner *Rinjani* (operating from Java since April 1984) to the port of Sorong in 1985 also amounted to about 5000 persons.

[8] See for example Hastings (1983) and TAPOL (1983).

[9] It should be noted that figures mentioned in Table 2.3 are broadly consistent with Adicondro's (1986a: 14–15) estimate of about 50,000–70,000 Sulawesi migrants in Irian Jaya in 1985/86, although net migration from this region was probably higher than his estimate of 3000–4000 persons in the mid 1980s. Projections of relatively constant rates of increase in the number of migrants in urban areas shown in Table 2.4 may slightly understate the importance of non-Irian born in the towns of Irian Jaya in 1986, although the slowdown in growth in private and public investment from the mid 1980s suggests that the above increases in net migration may not continue to the end of the decade.

Table 2.4 Actual and estimated components of population, Irian Jaya, 1971–90

	Number '(000)				Per cent	
Urban	1971	1980	1986	1990	1971	1990
Urban population						
Irian born	118	164	204	228	13	13
Non-Irian born:						
Java	14	20	32	44	(43)	(22)
Sulawesi	10	34	70	113	(29)	(58)
Maluku	6	14	23	32	(18)	(16)
Other	3	5	7	5	(10)	(4)
Sub total	33	73	132	198	4	12
All urban	151	237	336	426	17	25
Rural population						
Irian born	769	916	1040	1141	83	66
Transmigrants	(1.0)	7	12	18	(60)	(11)
Sub total	3	20	101	163	(0.3)	9
All rural	772	936	1141	1304	184	75
Urban and rural						
Irian born	887	1080	1244	1369	96	79
Migrants	36	93	233	361	4	21
All Irian Jaya	923	1173	1477	1730	100	100

Notes:
1. The 1971 and 1980 data are taken from the 1971 and 1980 Censuses for total population in urban and rural areas, the Irian-born and non-Irian born in urban areas, and from estimated number of transmigrants living in rural areas based on transmigration data. The non-transmigrant migrant population is rural and is an informed guess for 1971 and as a residual from data on number of migrants living in rural areas minus estimated number of transmigrants in 1980 (1971 Census only covered urban areas). The Irian-born rural population is calculated as a residual for 1971 and taken from census data in 1980.
2. The 1986 and 1990 data are both projections based on assumptions concerning the rate of increase in the number of migrants in urban areas and non-transmigrant migrants in rural areas according to past trends, and the actual number of transmigrants moved over the period 1979–86 as a basis for estimating trends to 1990.
See Annex Table 1 for assumed and derived growth rates for the period 1980–90.
Source: Sensus Penduduk 1971 and 1980; data provided by the Transmigration Office, 1986.

Sulawesi in 1984 and higher than in all other provinces with the exception of East Kalimantan (Table 2.5). Estimated monthly incomes of wage labourers were sufficient to cover living costs of a single worker (though not enough to meet the estimated needs of a family) in Irian Jaya, but fell short of the requirements of even a single worker in Central Java and South Sulawesi (see Table 2.5). In 1986 unskilled construction workers earned Rp 3000–3500 in Jayapura and drivers of *colt* minibuses reported monthly earnings in the range of Rp 150,000–200,000 a month, both several times the equivalent earnings in Java. Skilled workers in the construction industry — carpenters and tradesmen — in Jayapura earned daily wages of around Rp 7500-10,000.[10]

[10] Data from National Social Economic Survey (SUSENAS) on the earnings of wage employees in urban Indonesia in 1982 confirm a picture of relatively high wage incomes compared with other Indonesian provinces except East Kalimantan. Irian Jaya and East Kalimantan recorded by far the lowest proportion of low income workers (less than Rp 50,000 a month) and Irian Jaya easily the highest proportion (35 per cent) of employees with incomes of Rp 100,000 or above, the latter reflecting high civil service salaries in the province (Indonesia, Biro Pusat Statistik, 1985b: Table 7.1).

Table 2.5 Wages of sawmill operators and minimum physical needs, selected provinces of Indonesia, 1984

Province	Wages (Dec. 1984)			Minimum physical needs (Rp '000)[b]		Monthly wage as % of min. physical needs	
	Daily	Monthly[a]	Index	Single	Married	Single	Married
Central Java	1320	33.0	1.0	35.8	76.2	92	43
South Sulawesi	1370	34.3	1.04	40.7	86.8	84	39
Jakarta	1660	41.5	1.3	39.5	89.8	105	46
Riau	2240	56.0	1.7	50.1	96.1	111	58
Maluka	3070	76.8	2.3	52.0	107.9	148	71
Irian Jaya	3570	89.3	2.7	67.0	119.5	133	75
East Kalimantan	3680	92.0	2.8	49.1	104.1	187	88

[a]Assumes 25 working days a month.
[b]Average July-December 1984. Includes food, housing, clothing and other basic costs.
Source: Indonesia, Biro Pusat Statistik, *Nilai Rata-Rata Kebutuhan Risik Minimum*, 1978–1986, Jakarta, 1985; Indonesia, Biro Pusat Statistik, *Upah Buruah Menurut Jenis Pekerjaan 1984*, Jakarta, 1985

Wages were, however, much lower on government road construction projects in inland areas and in the south. Low wages of Rp 1500, plus meals offered by the government in rural construction projects, and of Rp 2000 in the nucleus estate oil palm plantation near Jayapura, are one explanation for the difficulty in recruiting indigenous unskilled labour although, as in Papua New Guinea, recruitment of coastal people for wage labour activities has been a continuing problem in many areas. This contrasts with a high demand for cash incomes sought through very low wage labour jobs in the highlands; even at the lower Rp 1000 per day wages offered on rural road construction in the Jayawijaya mountains, contractors faced little difficulty in recruiting wage labour.[11] In the south in Merauke unskilled wages in construction were closer to Rp 2000, much lower than in the northern towns due to the flow of seasonal workers from transmigration areas and the relatively low level of commercial activity in the city.

The origins of a highly segmented employment structure in terms of ethnicity can be seen from data on the sex and educational composition of urban residents according to province of birth published in the 1971 Census.[12] The 1971 urban population, both the migrant population and the Irian born, was heavily weighted in favour of males, and the employment structure even more so with only slightly over 10 per cent of all employed persons in urban areas being females.[13] The dominant migrant group in Irian Jaya were Javanese, a high proportion of whom consisted of civil servants and military personnel. Nearly half of all male senior high school graduates and the large majority of tertiary educated males in the province in 1971 were born in Java, double the number of male Irian-born senior high school graduates, and ten times the small number of 92 Irianese tertiary

[11] Contractors often made substantial gains from low wages, with formal wage levels specified in contracts frequently around Rp 3000–500.

[12] See *Sensus Penduduk 1971*, Series E No.26, Table 23. Unfortunately similar tabulations were not available from the 1980 Census.

[13] Urban sex ratios for the population aged 10 and over in 1971 were 163, 155 and 176 for the total urban population Irian born and non-Irian born respectively.

educated males recorded in urban areas in that year. Other senior high school graduates born outside the province, also predominantly employed in the civil service, came largely from Maluku — mainly Ambonese and Kei graduates employed by the Dutch after the war — and Sumatra, the latter mainly from North Sumatra.

Whereas nearly half of all Javanese in the province — and probably a considerably higher proportion of employed Javanese — had graduated from senior high or tertiary institutions in 1971, a relatively small proportion (just over 10 per cent) of those born in South Sulawesi had similar educational qualifications, the large majority being primary educated or less. Together with relatively uneducated Irianese, almost half of whom had not graduated from primary school, these made up the bulk of the unskilled labour force in the towns of Irian Jaya. But while Irianese were strongly represented in unskilled occupations in the civil service, the South Sulawesi migrants were largely employed in wage labour activities in the private sector and in trade.

Private sector employment

Data on duration of residence of migrants in Irian Jaya in 1971 confirm the picture of Javanese moving to the province from 1963 to fill government positions. But migration from South Sulawesi has been more recent; the large majority of Bugis, Macassarese and Butonese from south and southeast Sulawesi entered Irian Jaya after the 'quarantine' was lifted on spontaneous migration to the province following the Act of Free Choice in 1969. George Adicondro's (1986a) fascinating account of migration of a wide range of groups from Sulawesi to Irian Jaya describes the wide range of occupations into which these migrants have moved, again fragmented according to area of origin. Butonese and Torajanese were prominent in the early years, moving into fishing and timber exploitation on the outskirts of major cities, in particular Jayapura. This was followed by large numbers of Buginese traders and urban self-employed and poorer Macasserese in a wide range of low income self employed jobs. In the wake of the construction boom stimulated by the transmigration and associated road building projects, many Butonese and Macassarese have entered wage work in construction projects, and Butonese obtained land for market gardening on the fringe areas of Jayapura. Several large, mainly Buginese business firms (outstanding amongst these the Benteng Mas group) have emerged in recent years, some of them starting from humble beginnings in the late 1960s and early 1970s. Adicondro (1986a: 19b) mentions 10 such firms engaged mainly in construction and trade, providing strong competition for more established Chinese businesses, all with total assets of over 1 billion rupiah (about US$1 million) in late 1985. Similarly several Torajanese timber enterprises have blossomed into large companies supplying sawn timber and furniture to the government, private business and private consumers.

Migrants from South Sulawesi have spread widely in urban areas in Irian Jaya — most intensively in the north, but also including employment in logging and sawmilling, and establishment of market stalls in the highlands at Wamena and similar activities in Merauke in the south. But their impact on the enclave urban economies and their hinterlands has differed in intensity, and tensions with the local population also have varied from location to location. Whereas their presence is dominant in almost all areas of non-Chinese private sector activity in Jayapura and conflicts with local population are common, indigenous fishermen and wage labourers (especially in the port of Sorong) appear to be much more prominent in several other regions. Moluccans and migrants from east Nusa Tenggara play a major role in transport in Sorong and seem to be better integrated with the local population than the Bugis–Makassarese (*Kabar Dari Kampung* 4 (20), April 1986: 24–5). In the highlands town of Wamena almost all the vegetables and fish sold in the market place are sold by the indigenous Dhani population, and both Javanese and indigenes seem to participate more actively in market trade in Merauke than in Jayapura. A few, relatively small-scale Irianese building contractors now compete with migrants for government contracts in most urban areas, including Wamena, and small Irianese workshops in radio and motor cycle repair activities are common.

Migration, especially from South Sulawesi, has stimulated employment of Irianese in some areas. Adicondro (1986a) notes adherence by the large Benteng Mas company to the provincial government's exhortation that local firms employ a minimum of 50 per cent indigenous workers in their company; several logging companies in the highlands employ local labour, and small indigenous contractors are involved in construction projects in several regions including near Wamena in the highlands. Tuna and prawn fishing companies operating off Sorong and Biak employ several hundred Irianese. Although the hopes that the Joint Development Fund (JDF) set up under the FUNDWI program might make a major contribution to the development of indigenous skills and entrepreneurship have not been realized, this organization has stimulated small amounts of Irianese employment in shipbuilding, *batik* work (using traditional Irian designs) and urban transport. [14]

The overall effect of the influx of migrant unskilled and skilled labour has, nevertheless, been severely to limit opportunities for employment of Irianese in private sector activities. Contractors prefer to employ what they regard as more reliable, harder working migrant labour. Many Irianese are reported to work short periods for target incomes and remain tied to traditional agricultural patterns, returning to their villages after short periods of wage employment. The close social organization of migrant groups, facilitating extension of marketing links and distribution of capital from the larger traders to newcomers, makes entry of less experienced Irianese extremely difficult in market trade. Complaints of unfair trade practices by local sellers of primary products, especially playing on the Irianese lack of bargaining skills, relative lack of accurate price information and price–quality relationships, remain a familiar theme in the area of retail trade (Garnaut and Manning 1974; Adicondro 1986a). Higher technology employed by migrant fishermen and the continued use of dynamite in fishing in some areas, despite government bans, remain a major obstacle to Irianese attempts to maintain their share in the marketing of this important consumer good in urban areas.

Adicondro (1986a) also notes a range of practices adopted by migrants to obtain control of land for market gardening close to the towns: temporary marriage with local villagers, and playing on the weakness for alcohol among some indigenous groups and tribal leaders to obtain land leases being most prominent. He also reports the involvement of government officials (Irianese and non-Irianese), and larger migrant and Chinese businessmen in land acquisition schemes as contributing to the alienation of traditional land control among Irianese groups living close to the cities.

[14] The JDF credit programs in urban areas in particular have also been directed at non-Irianese, especially in public transport, and the major JDF contribution to indigenous skills and enterprise made in fisheries, animal husbandry and plantations in rural areas.

The government has become increasingly alarmed and senior officials more outspoken about the conflicts between migrants and the indigenous population, especially those living in the vicinity of Jayapura. The problem has been brought to public notice through repeated outbreaks of violence, especially a major conflict which claimed several Irianese and migrant lives just prior to the border crossings in 1984. Reports of incidents and conflicts of interest between migrants and Irianese have also been more widely publicized than in the past through investigative reports published by the independent Irian Jaya Rural Community Development Foundation (of which the study by Adicondro is an outstanding example), both published independently and summarized in the highly informative *Kabar Dari Kampung* magazine [15]

Systematic attempts to address the problems, most of which were quite apparent in the early 1970s, are yet to be canvassed. Some innovative approaches have been tried in recent years, such as the present Governor's policy of subcontracting small-scale construction projects to indigenous entrepreneurs in the Jayapura region. But government policies, especially the opening of regular passenger liner services from Java to Sorong and Jayapura in 1984–85, have generally encouraged migrant participation in urban economies. Restrictions on migration would be extremely difficult to enforce and, in any case, run counter to a fundamental central government commitment to interregional labour mobility throughout the archipelago.[16] One observer (Koentjaraningrat 1984b) has suggested that major efforts should be made to train Irianese in semi-skilled and skilled jobs in urban areas (carpentry, mechanical work, welding, electrical work and the like), accepting the reality that trade and unskilled labour will continue to be dominated by migrant labour in the immediate future. Such a program may contribute to Irianese participation in the economy, although the experience of the vocational training centre in Jayapura suggests close cooperation between private sector firms and training institutes is essential if trained personnel are to be utilized effectively. But unless positive employment discrimination policies in favour of the indigenous population are pursued with greater consistency and political commitment than in the past, giving a much greater supervisory role to the seemingly weak local manpower office (and possibly supported by fiscal policies which encourage the employment of indigenous labour), continued social conflict arising from the inability of the local population to compete with migrants would appear to be unavoidable.

Public sector employment

Given the overwhelming importance of the public sector as a source of employment, especially of educated manpower, in the urban economies, government policies with respect to employment in the public sector are of critical importance to Irianese participation in wage labour in the towns of Irian Jaya. Approximately 30,000 civil servants were employed in the province in 1980, including 9000 officials on the payroll of central government departments, accounting for over 80 per cent of all wage workers in services and over 60 per cent of all wage employees in the province. The number of officials employed by the provincial government had almost doubled by the mid 1980s and included just over 18,000 employees on secondment from the central government. National

[15] Adicondro's (1986a) report caused upset among some migrant leaders in Irian Jaya in mid 1986 and led to a temporary ban being placed on *Kabar Dari Kampung*.

[16] Senior officials are aware, moreover, that anattempt to control the number of migrants would be extremely difficult to enforce.

Social Economic Survey (SUSENAS) data for 1982 suggest that Irian Jaya had by far the highest proportion of wage labour households (76 per cent) reporting government employment in urban areas as the major source of household income of any province in Indonesia, and together with Maluku by far the lowest proportion (less than 30 per cent) of informal sector workers among urban employees. Over half of all wage employees in urban Irian Jaya were clerical (38 per cent) and professional workers (15 per cent), the latter mainly teachers. [17]

The educational composition of the urban labour force changed significantly during the 1970s with a doubling of the number of senior high school and tertiary graduates, the large majority of these (including about 80 per cent of tertiary graduates) employed in services, predominantly on the government payroll. [18] It seems likely that about half of the increment in this relatively well educated labour force were Irian-born placing increasing pressure on the government as the major employer to find jobs for locally educated people. [19]

No official data are available on the proportion of Irianese working in government offices, but as in the private sector, competition with migrants has been a major issue of controversy within the province. The initial justification for employment of outsiders, the shortage of educated and experienced personnel, is becoming less relevant as Irianese graduates from the University of Cenderawasih, from other educational institutions in Indonesia and from abroad come into the labour market. Attracted by high salaries, many middle level civil servants from Java, North Sumatra and Maluku appointed in the late 1960s and early 1970s have elected to remain in Irian Jaya, limiting opportunities available to new Irianese graduates. The problem is exacerbated by the second generation of educated migrants (and the children and relatives of non-Irian born civil servants who have taken up a significant proportion of places in educational institutions) beginning to seek jobs in Irian Jaya's major cities in recent years. Migrants have continued to retain a substantial share of senior positions within the civil service, especially as representatives of central government departments and key administrators, the *bupati* (regent) and the senior staff in the provincial and *kabupaten* administration.[20] Only four of the nine *bupatis* were Irian-born in mid 1986. One should note, however, that participation of tertiary educated Irianese in the modern sector has also been hampered by the failure of many bright *sarjana* to return to the province after graduating in Java, and a marked preference of Irianese to seek secure government positions rather than look for openings in the private sector or less stable employment with non government organizations.[21]

Unskilled occupations within the civil service have since Dutch times been the

[17] The survey was only conducted in the north coast regions of Jayapura (including Abepura and Sentani) and Biak and probably overstates the importance of public sector employment in the province as a whole (see Indonesia, Biro Pusat Statistik, *Keadaan Upah Buruh/Pekerja di Setiap Propinsi di Indonesia 1982* Jakarta 1985; Tables 5.3, 9.1; *Pekerja Sector Informal*, Jakarta 1985b: Table 6.2.3).

[18] This includes graduates recorded as rural residents in the 1980 census mainly living in housing complexes on the outskirts of Jayapura.

[19] Unfortunately no data are available from the 1980 census on the educational status of the urban population by province of birth.

[20] Although very recently some attempt has been made to move Irianese into key positions in the bureaucracy, Mulyarto (1985: 19) notes, for example, that only 2 of the 38 senior representatives of central government departments were Irianese at a meeting he attended organized by the transmigration office. A similar impression was gained by the authors during visits to various government offices in August-September 1986 in Jayapura, Wamena, Sorong and Merauke.

[21] One informant suggested that only quite recently have young tertiary educated Irianese begun to take up posts in a wide range of non-government organizations operating in Irian Jaya,

major source of wage income for Irianese. Rumbiak (1978) for example, notes the overwhelming importance of public service employment for relatively uneducated Irianese migrants from Genyem, about 100 kilometres from the capital. But here too Irianese appear to be increasingly facing competition from migrants. Koneksi (connections, usually family relationships) with existing employees has been a major channel for entry into the civil service, family members often travelling from Java to apply for jobs. Despite provincial government attempts to encourage the employment of Irianese in the civil service, the predominance of informal channels of recruitment remain a major obstacle to implementation of this policy. In addition, the higher quality of secondary educational institutions in Java has been suggested by one informant as a factor giving migrant labour the edge in civil service tests given to new job applicants.

Substantial constraints to expansion of wage employment of Irianese in urban areas do not, however, appear to have contributed to high levels of unemployment in urban areas. Recorded open unemployment levels in urban Irian Jaya (3 per cent according to the 1980 census and a higher 7 per cent recorded in SUSENAS 1982) were not significantly higher than in other Indonesian provinces, showing the familiar pattern of higher rates among females, young job applicants and the secondary educated. Major physical constraints to rural–urban migration and continued involvement of temporary urban workers in agricultural activities within the vicinity of towns has probably substantially reduced the volume of semi-permanent migrants seeking work in the cities — a situation which contrasts with conditions prevailing in several major towns in Papua New Guinea. Migrant labour has, moreover, kept urban wages relatively low, although the provincial minimum wage (Rp 1600–2500 in various sectors) for unskilled labour appears to be well below actual wages prevailing in most firms.

To conclude, two major problems are associated with the pattern of urban employment described in this section. The first is the continuing weakness of linkages between urban centres and rural areas. Relatively limited opportunities for employment expansion for unskilled local labour in the towns constitute an obstacle to the remittance of cash incomes back to villages, a flow which has been a major stimulant to rural development and cash cropping in neighbouring Papua New Guinea. Second, expansion of education at a secondary and increasingly a tertiary level has not been matched by commensurate growth in opportunities for educated indigenous labour to participate in the urban economies. In part this reflects the tiny contribution to total employment growth of new investment in manufacturing of consumer goods and processing of natural resources. In part it is related to the continued prominent role of migrant labour in employment at senior and middle levels of the civil service, and increasingly also in unskilled government jobs. It seems clear that growth in indigenous participation in the urban economies will be achieved only through explicit, coordinated policies to raise the skills of Irianese and reserve a certain proportion of new jobs for them. Failure to follow such policies can only increase the already apparent signs of dissatisfaction among the educated and urban Irianese, a problem likely to grow as schooling opportunities spread more widely throughout the province.

CHAPTER 3

Resource-based Industries

The 1970s and early 1980s saw a flurry of large investments in resource-based activities in Irian Jaya in the areas of oil, mining, fisheries and forestry, accounting for almost all the increase in the value of provincial exports (see Table 1.2). But the impact of these activities on the regional economy has been small, with virtually no major processing facilities established in the province. Lack of close central and provincial government supervision of projects and of determined attempts to maximize regional economic gains through integration with the economic activities of the local population has contributed to the disappointing flow of benefits, and several important backwash effects on local populations.

Sorong has been the centre of resource-based investment and exports with all oil exploitation and foreign investments in prawn fishing being concentrated in this region, which accounted for well over 90 per cent of total regional exports in the mid 1980s. Oil exploration in the region contributed to significant employment creation from the mid 1970s to early 1980s, providing short-term contract work for several thousand workers at various times throughout the period. Together with the operations of the prawn fishing firms based in Sorong and a tuna fishing company (PT Usaha Mina) owned by the Fisheries Department all of which had begun operations by the mid 1970s, hopes of substantial growth in employment based on natural resource industries contributed to an inflow of job seekers to the town from eastern Indonesia and Java. These hopes have not been realized, however. There has been little new investment in exploitation of fish reserves in the past decade, nor any addition to processing facilities beyond a cold storage plant established for export of tuna and prawns. The decline in oil exploration activities associated with the fall in oil prices, and static employment in fish based industries have contributed to problems of youth unemployment in the town in the mid 1980s. Plans to establish a tuna canning factory at Sorong, similar to that already under construction by the French joint venture operation in tuna fishing centred on Biak, appear to be the only prospect for new job creation in the immediate future.[1] But the feasibility of the canning factory remains in doubt with current exports of around 3000 tonnes per annum far short of the required volume of 10,000 tonnes for economic operation of a canning factory.

One objective of the tuna fishing operations by PT Usaha Mina has been to enourage local fishermen by the provision of equipment and guaranteeing the purchase of the tuna catch. The company reported in mid 1986 that 20 fishermen were supplying tuna to PT Usaha Mina, but the volume of the catch was still a small proportion of total exports and has largely involved migrants from Maluku and South Sulawesi.

One backwash effect of the presence of PT Usaha Mina and the prawning enterprises in Sorong has occurred through the sale of the side catch on the Sorong market, depressing fish prices and discouraging the operations of local

[1] The company also has hopes to establish brackish pond (*tambak*) cultivation of shrimps but this operation is still in the early stages of planning. It should also be noted that the Joint Development Fund has begun the p[lanning of a fishing port at Deppre on the north coast west of Jayapura for tuna fishing operations which it supported in 1987.

fishermen. In the case of PT Usaha Mina the problem has been exacerbated by low salaries paid to crews employed on its boats, encouraging them to seek additional incomes through sales of fish in the local market (Mambraku et al., 1984).

Despite considerable exploration for oil and other mineral resources on concession areas throughout the province, the Petromer Trend exploitation of oil in a series of onshore wells close to Sorong and the Freeport copper mine at Mount Ertzberg in the south remain the only large mineral projects established in Irian Jaya in the past decade. Low world prices of most minerals, high exploitation costs, combined with security threats in some areas, have been the major factors discouraging new investment. The Pacific Nickel mining project on Gag Island off Sorong, with very large investments in processing facilities and port and infrastructure development, was abandoned in the late 1970s due to the slump in nickel prices; security threats to the Mamberamo Shell investment in oil exploitation in the Sarmi–Mamberamo region off the north coast were the ostensible reasons for withdrawal of the company in 1985, although low oil prices clearly contributed to the company's decision to discontinue operations.

The Freeport copper project was well established when copper prices slumped in the mid 1970s and operations were extended to underground mining in 1981–82, encouraged by improved copper prices at the end of the 1970s. The new underground resource is several times the size of the already exploited open cut copper deposits. Mining has also been made more profitable by discovery of considerable deposits of silver and gold (*Tempo* 7 June 1980). The mine now supports the large town of Tembagapura, with a population of around 4000 and a total work-force of over 2000 in the mid 1980s, the large majority of employees now being Indonesian, with a small foreign work-force of close to 300 employees (*Kompas* 17 January 1981). Quite a high proportion of Indonesian employees, including almost all the managerial and highly skilled personnel, come from outside Irian Jaya, but the company also employs several hundred local unskilled employees on a temporary basis as well as both skilled and unskilled labour recruited especially from the northern island of Biak.[2] As with other mining projects, wages of the permanent employees are relatively high by local standards (starting rates in 1986 were Rp 75,000 per month for unskilled labour, provided with free board and lodging), and their impact through remittances is visible in the string of brick houses established by employees on the outskirts of Biak.

Relations with the local population have not been good over the years, however, and positive spread effects on incomes of the local population relatively slight. Although the company has been active in providing health care and nutritional assistance to local villagers, after nearly 15 years of operation, foodstuffs, especially for foreign employees, continue to be imported from abroad or elsewhere in Indonesia. Only after serious threats to the project through sabotage in 1977 and pressure from Jakarta did the company begin to purchase vegetables from the local population. Labour relations have been strained, as a consequence of large wage differentials between foreign and Indonesian permanent staff, the continuing temporary status of locally recruited workers and the failure to provide fringe benefits (especially housing) made available to permanent staff (Adicondro 1982; *Kompas* 17 January 1981).

Investors did not begin to turn their attention to forestry in Irian Jaya until the late 1970s, as some of the richer and more accessible forest reserves in Kalimantan

[2] See especially Adicondro (1982) and Wilson (1981) for accounts of the impact of the project in the early 1980s.

and Sumatra were depleted, and logging operations in several of these locations were increasingly contracted. The boom in log exports in Irian Jaya has been a short one. The value of exports rose to close to US$30 million in 1979–81 (about 2–3 per cent of national log exports in these years), but then fell substantially, following the imposition of export quotas and stopped abruptly with the imposition of a total ban on log exports in January 1985. As in other outer island provinces, the total area of production of around 7 million hectares of forest had been divided up among a large number of potential domestic and foreign investors, but only a small number of these (including two joint venture firms) had actually begun production when the ban on log exports was introduced in 1985.[3]

Contracts obliged all investors to establish local processing facilities, most of them stipulating establishment of sawmills. But in 1986 only three of the six investors remaining in production had actually done so (all of these sawmills close to urban centres), with three others from the large Jakarta-based Djajanti group processing timber in plywood plants in Maluku. The casualties included a large Korean-financed joint venture operation based at Dempta on the north coast about one hundred kilometres from Jayapura. Its contract included the establishment of a plywood factory but the company withdrew in early 1986 ostensibly for security reasons (it had received repeated threats from The Free Papua Movement (OPM, *Operasi Papua Merdeka)* guerrillas). It seems more likely that the company, like the large majority of smaller investors, never intended to establish a plywood factory in Irian Jaya and shut down once the lucrative log export trade was banned (*Kabar Dari Kampung* 4 (21), June 1986: 10–13).

Irian Jaya indeed seems to have been fortunate that investors turned to this province rather late and the regional economy will have lost little from the ban on log exports. Although we are not in a position to generalize about the impact of logging, all indications suggest the benefits to the local population have been small and the destructive effects of uncontrolled logging on the environment, and traditional social economic patterns of life, have been substantial. The effects appear to have been worst in the south, especially in the Asmat region, where logging has been subcontracted by the concession holders to middlemen who (with the support of local government officials and the military) have in turn directed the indigenous population to undertake logging on a contract basis.[4] The initial payments to the local population of Rp 3500 per cubic metre, together with the provision of simple logging equipment (machetes, axes and the like) and tobacco, amounting to around 5–10 per cent of free on board (fob) price of exports from Agats, caused such a stir that the *Bupati* was forced to intervene to raise the contract fee, and ban the role of middlemen and government officials in the trade.[5] Taking into account deductions for equipment and tobacco supplied, local estimates of incomes earned from up to a month's work in the jungle were around Rp 10,000–15,000, well below the minimum wages prevailing in the province at that time. Maintenance of this basic contract system of exploitation has continued,

[3] In 1984 a total of 53 companies had been granted concession areas with a total of 22 companies being granted forest exploitation rights (HPH) by the Forestry Department to proceed with logging. A total of about 16 companies (official figures are inconsistent regarding the exact number) had actually been involved in production by 1985.

[4] These practices were widely exposed in Indonesia and caused something of a public outcry following a series of articles published in *Kompas* in early October 1982 (4–9 October). A follow-up study was conducted in 1984 by Adicondro, Rumbiak and Mandibondibo (1985) on the impact of logging operations on local welfare.

[5] The new contract fee was, however, only raised to Rp 4500.

with concession holders taking no responsibility for the welfare of employees, the effects of overcutting or for replanting. The forced consignments of timber delivered to some local officials for personal gain will be to some extent removed by the ban on exports of logs and closer supervision by *kabupaten* officers. But the continuation of logging in this region for shipment to plywood factories in Maluku ensures little improvement is likely to take place within the present system of exploitation in the Asmat region.

Adicondro, Rumbiak and Mandibondibo (1985) provide a detailed account of the detrimental effect of logging on the social and economic life of villages in the region. Males are attracted to logging chiefly for the tobacco supplied by the companies and their agents, and their long periods of absence in the jungle disadvantages the schooling of children, village cooperative activities and any attempt by local officials and missions to introduce new more viable economic activities in the villages.[6]

On the north coast, wage labour appears to have been much more prevalent in most areas, with investors directly involved in the supervision of logging operations. Roads constructed by the logging companies have also brought some benefits to the local population. But problems of reafforestation and lack of selective cutting familiar elsewhere in Indonesia remain a problem, perhaps more severe than in other provinces because of obstacles to intensive supervision posed by poor communications networks. Various reports suggest that benefits from the special cess (\$4 per m^3) levied on all log exports in Indonesia, and designed to pay for reafforestation, have been minimal in most areas.[7] The problem of threats to indigenous hunting, fishing and agricultural practices by logging operations in the concession areas and inadequate environmental evaluation of the impact of new roads and infrastructure seems also to be a general one in most logging areas.[8]

In sum, the hope that resource-based industries might play a major role in stimulating employment and generating indigenous incomes in Irian Jaya have been realized to only a small extent, with conflicts of interest between new investors and economic activities of the local population often running counter to gains from the new activities. In part this is related to *de facto* lack of provincial government control of new investors several of whom have powerful backing in Jakarta.

It also derives from problems of supervision in remote locations and a tendency for some companies and local officials to exploit the simple economic aspirations of local peoples or, alternatively, to ignore some of the fundamental work and resource use patterns on which traditional economic activities depend. Considerable disenchantment with the mode of operations of new companies and lack of benefits flowing to villagers affected by them has undoubtedly encouraged

[6] Several timber cooperatives had thrived in the 1960s and early 1970s in various villages in the region under missionary guidance, but most had disappeared by the late 1970s primarily as a consequence of poor management and irregular work patterns of many of the local people. Attempts to resuscitate these appear to have been impeded by involvement of male labour in logging activities for private investors.

[7] In addition to the references mentioned above see also *Kabar Dari Kampung* 1 (2), (English Edition), 1984.

[8] See various editions of *Kabar Dari Kampung* for examples and especially the discussion of the impact of the Ypu Lim Sari's operations in the Dempta region (Korwa 1985). One extraordinary facet of the latter project was the government's approval of the company using a local secondary school building and church for its offices in the town of Dempta.

sabotage and sporadic armed resistance to intruders both from local tribesmen and OPM guerrillas. Experience of the past 15 years would suggest that some fundamental changes are required in the planning and execution of new projects by government officials at all levels, and also by many private companies, if increasing tensions with the local population are to be avoided.

CHAPTER 4

Rural Economic Change

As noted in Chapter 1, production in most rural areas in Irian Jaya continues to be largely subsistence oriented, with trade restricted to traditional barter or incidental sales of produce from agriculture, hunting and fishing to meet demand for a limited number of consumption items. Although macro data on employment by primary sector of activity are a poor guide to the diversity of economic pursuits in rural areas,[1] they do suggest that the structure of rural employment in Irian Jaya differs quite markedly from most other outer island provinces of Indonesia[2]. In 1980, for example, only 15 per cent of the rural work-force were involved in non-agricultural employment as a primary activity, in contrast to a much higher 20–30 per cent in most other outer island provinces, and this represented a smaller absolute number of persons than the number of non-agricultural workers in urban Irian Jaya (see Table A1). Over half of all non-agricultural workers were employed in service activities, mainly as teachers and government officials, and only a fraction gave trade (5 per cent) or transport (2 per cent) as their major sector of employment, in contrast to a much higher proportion — especially of trade employees (averaging 26 per cent for all outer island provinces) in other provinces.

By far the most intensive areas of rural economic change in recent years have been in the urban hinterland regions, supported by new transmigration settlements and improvements in land communication links with the rapidly growing towns chiefly on the north coast. As noted above, food crop production has been the major emphasis in government programs centred in these regions with less intensive and less successful programs of tree crop development and encouragement of traditional fishing activities playing a subsidiary role.

Food Crops

The most important development in terms of production has been the growth in partially irrigated and rain-fed sawah rice production from less than 1000 tonnes per annum in 1974 to an estimated (but probably overstated) 20,000 tonnes of dry unmilled *gabah* in 1984 (Table 4.1). Production in 1984 probably amounted to around 10–15 per cent of Irian Jaya's estimated need of around 60–70,000 tonnes of milled rice in the mid 1980s. Most of this growth in production has been a consequence of extension of land areas in the transmigration projects in the Merauke, Jayapura and Manokwari regions (Table 4.2), although more recently increased yields at some of the older transmigration sites have also played a role. In all the new rice growing areas, yields have been highly dependent on supplies of inorganic fertilizer and pesticides. Given the high cost of delivery of these inputs to the farmer, and high transportation costs of surpluses from major producing areas to nearby towns, and beyond these to other urban settlements,

[1] See Garnaut and Manning (1974: Chapter 9) for a detailed account of agricultural diversity in Irian Jaya.

[2] This applies especially in a province where most households market their own products and are often involved in non-agricultural activities in slack periods of activity in agriculture.

the wisdom of basing transmigration agricultural efforts on rice as the major crop in most areas must be open to considerable doubt.[3]

Table 4.1 Estimated production of major foodstuffs in Irian Jaya, 1974, 1980 and 1984 ('000 tons)

	Production ('000 tons)			1984	
	1974	1980	1984	Area ('000 ha)	Productivity
Rice:					
sawah	0.9	3.3	21.4	6.2	3.4
ladang	0.3	0.8	4.2	2.2	2.0
Corn	2.6	2.0	2.8	3.4	0.8
Cassava	26.3	26.0	35.8	5.3	6.8
Sweet potatoes	314.0	332.0	333.0	47.3	7.0
Peanuts	0.7	1.7	1.7	1.8	0.6
Mung beans	0.2	1.3[a]	..	..	-
Soya beans	0.4	1.8	2.4	2.8	0.9
(Vegetables)	4.1	12.7	17.8	5.9	3.0
(Fruit)	13.9	..	19.2	6.1	1.4
Total				85.1	

[a]1981.
Note: These figures are very rough estimates. As with other series, different sources report widely different figures on production and area cultivated. Productivity data especially for rice are likely to be significantly overstated and subject to large annual fluctuations.
Sources: Irian Jaya, Kantor Statistik Tingkat 1, *Irian Jaya Dalam Angka*, Jayapura, 1984; Irian Jaya, Dinas Pertanian, *Laporan Tahunan 1984*, Jayapura, 1985.

Increases in production of other food crops have been much smaller and, as with rice, concentrated in the northern *kabupaten* adjacent to major towns. Corn, peanuts, soya bean and mung bean production has varied considerably from year to year according to climatic conditions and is barely keeping up with the estimated growth in urban demand. Near Jayapura, vegetables and fruit have been supplied by Butonese market gardeners acquiring land from the local population, in addition to production flowing from the transmigration settlements. In some locations Irianese farmers have also been involved in market gardening, even in *padi* production (both *sawah* and dryland cultivation) outside the transmigration settlements in the south (*Kabar Dari Kampung* 3(18), December 1985: 49–52), but most marketed food crops have been produced by migrants.

Other major staples — sweet potatoes and sago — consumed by the majority of the local population have received little attention in government programs and very small amounts find their way to local markets for sale to wage employees. There have been periodic reports of localized famine, especially in the agriculturally poor and relatively isolated *kecamatan of* Kurima in the Jayawijaya highlands in 1982 and more recently in late 1986 and early 1987. In 1982 a prolonged drought in Kurima was estimated to have claimed 46 lives (although estimates of the actual number of deaths varied widely) and the more

[3] See Chapter 5 for a more detailed discusssion of rice production in the transmigration areas.

recent drought anything from 50–170 lives according to various Indonesian and foreign press reports.[4]

The extent and causes of the late 1986 famine are a matter of conjecture. One observer, basing his conclusions on interviews with mission representatives and reporters who visited the affected region, has suggested that 'politics of the stomach', the tendency for local officials (including the Kurima region camat from Biak on the north coast) to overstate the extent of deprivation in order to obtain extra rice for the Christmas and New Year celebrations, and similar exaggerated reports by local health workers to gain additional consignments of much needed medical supplies, both contributed to rather wild reports of the extent of the famine (Adicondro 1987).[5]

Failure of the *pandana* harvest and neglect of staple, sweet potato gardens resulting from both inattention to the *pandana* crop and wage labour activities on government sponsored INPRES road construction projects, a much sought after source of cash income for many highlanders, have both been mentioned as factors contributing to food shortages. But it seems that the fragility of the

Table 4.2 Distribution of area planted to various food crops, Irian Jaya, 1984

Kabupaten	Rice	Corn	Cassava	Sweet potatoes	Soya beans	Peanuts
North coast						
Jayapura	21	17	7	1	35	23
Biak	-	2	25	2	1	1
Sorong	7	27	23	2	9	23
Manokwari	18	18	15	1	45	26
Yapen-Waropen	-	-	7	-	-	1
Total	46	64	77	6	90	74
South coast						
Merauke	46	4	5	-	2	9
Fak-Fak	-	12	13	1	-	10
Total	46	16	18	1	2	19
Highlands						
Jayawijaya	-	10	4	43	2	2
Paniai	7	10	1	48	6	5
Total	7	20	5	93	8	7
	99	100	100	100	100	100
Total area ('000 ha)	8.3	3.4	5.3	47.3	1.8	2.8

Source: Irian Jaya, Kantor Statistik Tingkat 1, *Irian Jaya Dalam Angka 1984*, Jayapura, 1985.

[4] News of the famine became an issue of both national and international concern following an Australian Broadcasting Commission report of 84 deaths, many of them infants, and 13,000 persons affected by food shortages in the Kurima region (see also *Kompas*, 10 and 20 December 1986; Tifa Irian 24 December 1986 and Tempo 6 December 1986).

[5] Adicondro argues that the actual death toll probably did not exceed 50, bearing in mind that the recent drought was much less severe than in 1982 in the Kurima region.

population food balance has become a serious problem in Kurima and also in some other isolated, already densely populated highland regions, a problem exacerbated by higher rates of population growth related to relatively recent declines in mortality (*Kompas* 7 January 1987: 7). The response to the recent crisis appears to have been quite rapid (contrary to the impression created in both national and international press reports), aided by increasingly intensive mission and to a lesser extent government communications links with both dispersed communities and between administrative centres and Jayapura. But a longer-term solution to the problem rests in more intensive efforts to raise agricultural productivity, diversify basic food production and consumption patterns and to reduce the rate of population growth through encouragement of outmigration and birth control.

Recently introduced sweet potato varieties in the Balim valley have not demonstrated higher yields than traditional varieties, and lack of seed multiplication centres, shortages of extension workers and communications difficulties have all limited the introduction of new seed varieties for other crops in most highlands regions. Although vegetables — cabbages, tomatoes, potatoes, carrots, etc. — sold to local markets in some highland locations (especially Wamena) provide a valuable source of cash for farmers living nearby, expansion of commercial cropping is severely limited by the small size of urban and administrative settlements and the high costs of air freighting these products to coastal centres. The variable quality of local production of vegetables in the Balim valley, partly influenced by lack of success on the part of the local agricultural office in introducing improved seed selection and multiplication practices, has been a major obstacle to increasing this trade, despite the more intensive air transportation and subsidized air freight on return flights.[6] For most villagers beyond the immediate vicinity of towns, lack of transport facilities restricts the amount of goods marketed to urban areas.[7]

In 1985 the *kabupaten* agricultural office in Wamena had begun a project to establish *sawah* in the Balim valley to meet the rice consumption needs of the urban population, with nearly 50 hectares completed by mid 1986.[8] Yields of around 3 tonnes per hectare using seeds imported from the upland Toraja region of South Sulawesi and high market prices of Rp 600–700 per kilogram of milled rice are sufficient, according to local officials, to justify the high investment costs of around Rp 0.5 million required per hectare of land converted for rice production. But, curiously, in Irian Jaya's most densely populated region, shortage of labour has been a major problem in meeting targets for construction and cultivation; contract payment systems offer little incentive to local Dhani people to participate in the project. Perhaps a more fundamental reason is the local population's scepticism concerning the potential benefits from the project — full-time *padi* cultivation forces them to neglect their traditional sweet potato crops and become dependent on the marketing of rice for their basic consumption

[6] This has been the major factor limiting purchases of vegetables by Freeport in Wamena for consumption by employees at the mining town of Timika.

[7] One typical example is the four-day return journey on foot by Ar fak tribesmen carrying sweet potatoes and garlic to the Manokwari market, providing them with sufficient cash to buy (once local taxi costs are taken into account) only a small packet of monosodium glutamate (vetsin) and a few small bags of salt! (De Fretes 1986)

[8] The funds were provided under the provincial INPRES (50 hectares) and Presidential Grants (30 hectares) programs. The office plans to open about 500 hectares over a 5–6 year period, an area regarded as necessary to make Wamena self-sufficient in rice.

needs. Here once again one sees the potential conflicts posed by the support of programs aimed at meeting the different consumption patterns of migrants in Irian Jaya. [9]

Tree Crops

As noted earlier, traditional tree crop exports have largely stagnated in the past fifteen years. The local agricultural office (*Dinas Perkebunan)* has been active in distributing new seedlings throughout the province and in the rehabilitation of plantings established mainly by the Dutch. Production of several commodities — most notably cocoa and rubber — have been supported by missions and the Irian Jaya Joint Development Fund (JDF and its trading subsidiary PT JODEFO) through extension and marketing credit programs. But these efforts have been insignificant compared with government budget extension support for hinterland and transmigration food crop production, and have been severely limited in their impact by high internal marketing margins and irregular sea communications from small export centres.

Almost all traditional exports have stagnated in the recent past (see Table 1.2). Copra, the major tree crop export until the early 1970s, is now only traded within Indonesia with the estimated volume (less than 1500 tonnes in the mid 1980s) still lower than in 1971 and about 30 per cent of production in the early 1960s. Nutmeg and mace production have fluctuated over the years and earned only slightly more in 1985 than 14 years ago. New cocoa and rubber exports — the latter chiefly from plantings established by the Dutch — are still relatively small in volume. The former appears to have relatively good prospects, especially from new smallholder plantings in Serui and the small private estate (PT Cokran, a joint venture operation between Commonwealth Development Commission from the United Kingdom and JDF) at Ransiki near Manokwari. But rubber plantings of over 1000 hectares, largely in the Merauke area, earning approximately $200,000 through transhipment of about 500–600 tonnes through Surabaya in 1985–86, recorded extremely low levels of productivity with little prospect of significant improvement in the future (despite improvements in processing and replanting organized by JODEFO in the Merauke region).[10] Coffee, amounting to about 80 tonnes of production in the mid 1980s, was mainly consumed locally, with some inter-island trade. The other important new crop, cloves, has spread widely near major urban centres, including investments by migrant businessmen near Jayapura, but recorded relatively small volumes of inter-island trade (about 15 tonnes in 1984) in the mid 1980s.

Small volumes of production in dispersed locations make unit costs of shipment of all these commodities relatively high and act as a major obstacle to expansion of production. Official data suggest moreover that several thousand farmers in various regions were involved in the production of each of these commodities, perhaps as many as 8000–10,000 farmers throughout Irian Jaya in the mid 1980s. The total value of production from export, inter-island trade and local consumption amounted to not much more than US$1 million in value in the mid 1980s, grossing about US$100 or less per household involved. These figures imply relatively low levels of labour inputs devoted by producers to these

[9] It should be noted, however, that rice has become an increasingly popular dish on festive occasions even in the highlands and also the staple food for many urban Irianese particularly on the north coast.

[10] Rubber exports are not shown in Table 1.4 since this commodity was sold through exporters in Surabaya.

activities in what for most were very much part-time secondary pursuits supplementing other agricultural activities.

Why has the record of traditional tree crops been so poor in a country which has been a major world producer of several of these commodities for many decades? Low international prices of several of these commodities — especially rubber, nutmeg and mace — provide one explanation. High internal marketing margins and transport costs are another. Farm gate prices of rubber (Rp 240–250) in the Merauke region were less than half the fob value of exports shipped by PT JODEFO in the Merauke region. Poor quality latex, high costs of local river shipments from inland Bade and Mindiptanah and of unit shipping costs to Surabaya were the major factors at play. In the case of rubber and cocoa, the near monopoly in marketing held by PT JODEFO (given as an incentive to ensure regularity of purchases) has also contributed to low prices, as has the control of all nutmeg and mace exports in the Fak-Fak region by three small Chinese trading companies.[11] Government officials report that Singapore prices were in the region of four times the farm gate price of mace and nutmeg in the Fak-Fak region in 1986.

The PT JODEFO credit and processing support programs in rubber and cocoa production have been criticized for lack of intensive extension efforts (Puhim and Ansaka 1986), a criticism which might also be levelled at the government estates service which has largely concerned itself with seed multiplication and distribution programs. But especially in the south, coordination of marketing extension and credit programs within a long-term subsidized program of development would seem to be a precondition for providing higher prices and more regular sales needed to induce farmers to devote time to more intensive tree crop production. The PIR–BUN program, with its almost inevitable call on migrant labour and continuing problems of land compensation in sparsely populated areas, seems unlikely to solve the problem of raising indigenous incomes through tree crop production. A major program of development of smallholder tree crop production would seem justified given the now inevitable domination of many urban jobs and more intensive food cropping by migrant labour, and the much more flexible and extensive patterns of labour use underlying tree crop cultivation — more in tune with traditional agricultural pursuits — compared with new annual food crop systems.

Livestock and Fisheries

Introduction of livestock — mainly cattle, goats and sheep — by the government Animal Husbandry Service and through credit programs supported by PT JODEFO has been a complementary activity to other government agricultural activities in rural areas. On the coast the program has concentrated on providing cattle as draft animals for the transmigrant settlers with a secondary objective of providing local supplies of beef for urban markets. It seems to have been much more successful among migrants familiar with cattle raising than among the indigenous population. In the Jayapura region both the government service and PT JODEFO complain of poor credit repayment rates among Irianese, quite a high proportion of stock losses due to failure to set aside and maintain grazing areas, unsuitability of Brahman-cross cattle for smallholder livestock raising techniques and sale of animals prior to repayment of credit to meet consumption

[11] Private trade participation in cocoa purchasing in the Serui area (Yapen–Waropen) in 1985–86 forced PT JODEFO to raise its purchasing price from Rp 1300 to Rp 1400–1500.

needs. In some areas such as Genyem the repayment rate has been relatively good, however, and in the Balim valley several farmers have built up cattle herds and used the proceeds from local sales to finance other commercial activities.[12]

Introduction of Australian sheep into the Balim valley as part of the Presidential Grants program and also through PT JODEFO has not been successful.[13] Despite short courses in management, farmers often failed to maintain yards, and losses occurred through tape-worm contracted from pigs and natural fodder unsuited to the new farm animals. Inadequate extension services by the local animal husbandry office coupled with insufficient prior research or evaluation of problems likely to arise in this new natural and social environment seem, as with many other agriculture programs, to be the major underlying factors for the lack of success in this endeavour. A report in the magazine *Kabar Dari Kampung* (4(21), June 1986) suggests that hopes for stimulating a local weaving industry based on wool have not been realized due to shortages of simple weaving equipment adapted to the needs of the local population.

Introduction of fish in inland rivers and lakes has been an important program aimed at improving the nutritional status of the indigenous population, although at least in the highlands this program seems to have been only partially successful as warm water fish are not suitable for highlands conditions (Irian Jaya, Gubernor Kepala Daerah Tingkat I Irian Jaya 1984). Much less successful have been attempts to raise incomes of coastal people through transfer of technology brought in by migrants (especially the *bagan-bagan* floating fishing platforms), credit and cooperative marketing ventures. Fish marketing cooperatives have been established throughout the province, but examples from Fak-Fak and Sorong suggest many have failed as a consequence of poor management and inadequate capital (Mambraku *et al.* 1984). Credit programs initiated by PT JODEFO for motor boats and equipment in the Jayapura region have a poor repayment record. Despite a ban since 1974 on fish bombing introduced by migrant fishermen, this practice was still common in the Sorong region and also practised in Biak and Jayapura in 1984. This together with overfishing appears to have seriously depleted rich fish resources in the close vicinity of Jayapura and Sorong (Mambraku *et al.* 1984; *Kabar Dari Kampung* 2 (7-8), April 1984).[14] Fish are still relatively abundant in most other coastal areas and a major source of protein in the diets of village people, but with the partial exception of enterprising Serui fishermen operating in many areas of Irian Jaya, new income opportunities related to the growth in urban demand for fresh fish have been enjoyed largely by migrants from outside the region.

Rural Development

These notes on developments in agriculture do little justice to the multitude of small village programs in a range of fields. These include agriculture, education, marketing and cooperatives, health, nutrition and water supply, home industries

[12] This was the case for one of the more successful small indigenous building contractors in the Balim valley interviewed in August 1986.

[13] The Animal Husbandry Office reports that of a total number of 400 sheep introduced in the early 1980s stock numbers had fallen to 200 (see also *Kabar Dari Kampung* 4(21), June 1986: 27–9).

[14] One important factor contributing to depletion of fish resources seems to be the breakdown of traditional taboos on fishing in the off season widely practised in Irian Jaya to around 1970.

and women's self help groups, Family Welfare Organization (government supported, women's village organization (PKK)), often initiated by mission organizations, non-government organizations and individuals, and supported by teachers and some local government officials. All of these activities have had an impact on standards of living of villagers throughout Irian Jaya in the past two decades.[15] We have also only briefly covered the enormous variety of traditional economic behaviour patterns and responses to economic change among various tribal groups in Irian Jaya.[16]

Although cash incomes have probably not risen significantly for the majority of villagers and inequalities probably sharpened between those in close contact with urban areas and the rest of the rural population, few now remain untouched by efforts to provide some basic social services and to extend communication links between dispersed communities. The REPELITA IV acknowledgement that development programs must be based on an understanding of social and cultural practices of local peoples has to some extent been heeded, as illustrated by the movement away from crude crash, 'civilizing' programs such as the *Operasi Koteka* efforts to clothe highlanders or the introduction of ill-suited housing structures to replace traditional *honai* homes. There is now a growing realization that changes in life styles will occur only as part of more general economic advancement, with changing agricultural practices and acquisition of cash incomes preconditions for social change.[17]

Some of the dilemmas of rural development programs have been summed up in a perceptive article by Soemardjan (1984). Three points in particular are worth noting. First, he criticizes the emphasis on construction and provision of equipment and materials in government programs oriented towards fulfilment of rigid, centrally-determined financial and physical targets not matched by extension services or based on the actual needs of the indigenous population. Many agricultural programs seem to have faltered as a consequence of relative neglect of extension services—the very small number of personnel and small incentives offered to extension workers, and their relative ignorance of social practices and economic behaviour. Similar problems are faced in the field of education discussed earlier. These include wastage of public funds for construction of buildings in inappropriate locations, competition between established mission schools and new INPRES buildings for scarce teachers, and the general low quality of primary schooling in many areas as a consequence of shortages of teachers and teaching materials.[18] Soemardjan suggests the need for more selective development programs more in tune with local social institutions and needs.

Second, Soemardjan calls for development programs and administrative structures more suited to the unusual natural environment and human settlement

[15] Many of these are documented in *Kabar Dari Kampung* and the Catholic Press Foundation publication *Tifa Irian*.

[16] A recent very readable account of some of these contrasts between different groups is contained in Boelaars (1986).

[17] One example is a new approach to introduction of improved housing and clothing in the Balim valley with the Social Affairs Office planning to coordinate integrated courses on variuos aspects of rural development for local leaders and villagers. New styled *honai* houses based on the same principles of social organization and heating provided by traditional homes have also been recently constructed as model homes by the Social Affairs Department.

[18] All of these points are made in studies sponsored by the Irian Jaya Rural Community Foundation summarized in various issues of *Kabar Dari Kampung*; see also Adicondo, Rumbiak and Mandibondibo (1985).

patterns which prevail in Irian Jaya, citing the example of the inability of new village units, *kaluruhan* (in rural areas, *desa)* to function as viable administrative centres with the responsibility of coordinating local development efforts (1984: 8). Finally he notes that development programs need to be designed specifically to meet the needs of the Irian Jaya population, with efforts made to reduce the emphasis on construction of new facilities which will inevitably benefit more mobile commercially oriented peoples from elsewhere in Indonesia. Although the transmigration program in Irian Jaya has its origins in national rather than regional development priorities, one major side effect has been to absorb large amounts of public funds in agriculture, education, health and the like, and divert scarce government personnel to coping with the problems faced by the projects. This has limited resources available for activities of greater potential benefit to Irianese. The neglect of smallholder tree crops is one example of the latter.

Finally, mention should be made of the impact of new development programs on the fragile ecological balance which has been maintained for centuries by traditional hunting, fishing and agricultural practices. Mention has already been made of the impact on marine resources from overfishing and of logging company activities on soil erosion, flooding and pollution of local water supplies. Erosion resulting from uncontrolled tree felling for new settlements such as the *kabupaten* capital of Wamena in the Balim valley, especially the substantial consumption of local timber for tile and brick making for local housing, is one example of the environmental consequences of development.[19] Numerous construction activities — transmigration site roads, airstrips, school buildings — have been identified by the Irian Jaya Rural Community Development Foundation as having an adverse environmental effect on land use and economic activities of the local population, many of which might have been avoided through careful environmental and social impact studies conducted prior to the planning of new construction sites. Such an approach will inevitably challenge the vested interests in rapid turnover of construction projects and slow down the pace of economic change. This would seem essential, however, if the village population is to benefit significantly from new development programs.

[19] See *Kabar Dari Kampung* 2 (2),April 1984.

CHAPTER 5

Transmigration

In 1977 Irian Jaya was declared a major transmigration recipient region by Presidential decree leading, in REPELITA III, to the beginnings of a large-scale settlement program of mainly poor Javanese in the province. The transmigration program in Irian Jaya has probably been the subject of more controversy, particularly in international circles, than it has been in relation to any other province of Indonesia. In addition to the problems experienced by transmigrants caused by the magnitude of the targets and short time frame allowed for their realization, the impact on the indigenous Irianese population and the natural environment has been a focus of critics of the transmigration program and its targets. This is especially so in a province where political sovereignty remains an international issue in some circles and where the benefits of development for the local population have received continuing national and international attention. Foreign assistance to transmigration and especially the International Bank for Reconstruction and Development (World Bank) support for the program have been in the spotlight, particularly with the greatly increased program for Irian Jaya announced for REPELITA IV in 1984. [1]

An evaluation of the success of the transmigration program in Irian Jaya, in terms of both raising incomes of the new settlers and contributing to regional development, and also through its impact on the local population directly affected by the program, should be viewed in the broad perspective of central and provincial government perceptions of potential benefits and of the program in Irian Jaya. From a central government standpoint Irian Jaya has been viewed as having extensive, largely unexploited land resources with considerable potential for agricultural development and suffering from major problems of labour shortage for resource exploitation and development projects.[2] In language reminiscent of the pronouncements of Sukarno concerning the capacity of Indonesia to sustain a much larger population through exploitation of extensive land areas outside Java and Bali, frequent mention by government officials of the extensive land areas in Irian Jaya (three and a half times that of Java) supporting one per cent of the total population of Java, and its low population density relative to all other Indonesian provinces, underlies a belief that this province

[1] See especially the special edition of the *Ecologist* in early 1986 (Volume 16, Nos 2/3) focusing on the transmigration program in Indonesia with special reference to Irian Jaya, including an open letter to Mr Clauson as retiring President of the World Bank seeking a major re-evaluation of the program. Also of influence outside Indonesia have been the largely politically inspired attacks on the transmigration program contained in *West Papua: The Obliteration of a People*, TAPOL (1985), and Budiardjo's (1986) article in the *Ecologist*, and a subsequent open letter to Mr Clauson's successor, Mr Conable, from representatives of a wide range of non governmental organizations involved in developing country programs (writing under the umbrella of the Environmental Defence Fund) dealing with Mr Clauson's reply to the *Ecologist* and responses to other citizens groups. Several Indonesians and Indonesian non-governmental groups have also focused on the environmental impact of the program and exhorted the World Bank to re-evaluate its policies in the area of transmigration (although they have also dismissed some of the more extreme foreign criticisms of the transmigration program). See especially Adicondro (1986b, 1986c).

[2] Labour shortages as a major constraint to development in Irian Jaya have been a continuing theme in REPELITA documents from the first five-year plan drawn up in 1969.

should play a major role in redistributing population away from densely populated Java for several decades to come.

The provincial government, with both Irianese and migrant officials, have been no less enthusiastic about the potential of Irian Jaya to support a vastly larger population. The current Governor sees resettlement of migrants as a major justification for developing infrastructure to remote areas throughout the province, extending government administration and enabling exploitation of Irian Jaya's rich resources.[3] A second, equally important motive for enthusiasm for transmigration by the provincial government has been the desire to lessen dependence on often uncertain inter-island trade in basic foodstuffs (especially rice) and the high cost of living and large price fluctuations of foodstuffs in urban areas. Settlement of 'high technology' Javanese farmers has been viewed as the major means of achieving these goals, encouraging transfer of knowledge of new farming practices to largely subsistence-oriented indigenous agriculturalists who would be encouraged in the longer term to develop sedentary, commercially-oriented agriculture.

Two brief points need to be made concerning the overall availability of land for agricultural settlement in the transmigration program. First, although this overall picture of considerable agricultural potential and possibilities for more intensive land use patterns appears broadly consistent with data classified by the Directorate of Agrarian Affairs on land available and used for agricultural purposes, it does require substantial qualification. Less than half of Irian Jaya's total land area is classified as suitable for cultivation, only about one-third for food crop production and slightly more than 10 per cent for wet rice cultivation with one crop a year (the land area targeted for most transmigration settlements). Given relatively little knowledge of actual soil fertility and ecological systems even these figures are likely to represent a major overstatement of actual agricultural potential.[4] Second, as we have noted above, the rich natural resource potential of Irian Jaya has been overstated — at least in terms of current world prices and in comparison with the more accessible resources at present being exploited elsewhere in Indonesia. Many forest areas have a low commercial value and there have been no recent discoveries of economically viable mineral and oil resources, with the exception of copper at Mount Ertzberg and the dwindling oil wells near Sorong, despite the flurry of exploration activity in the 1970s.

Turning to transmigration targets and their realization over the past 20 years, from a relatively small movement of about 1500 families from 1964–78, the target for REPELITA III (1979/80–1983/84) was increased to 20,000 households (about 100,000 persons), a goal which was largely achieved by early 1986 (Table 5.1). Despite substantial problems incurred on a large number of these sites, the target was raised sevenfold for the subsequent REPELITA IV to approximately 138,000 families, almost 700,000 persons, suggesting a projected increase in the total provincial population of more than half due to transmigration alone.

Despite largely unsubstantiated claims that the central government's principal aims have been to 'Javanize' Irian Jaya (although at least in demographic terms this probably would have been one result of the achievement of the above targets) and create a cordon sanitaire along the border with Papua New Guinea to deal with security problems, this massive increase in transmigration targets

[3] Personal communication with the authors.

[4] This would certainly be the case if mistakes in land and soil classification applied equally to Irian Jaya as in areas of Central Kalimantan (see Secrett 1986). See also Adicondro's note in *Kabar Dari Kampung*, 3 (18), December 1985.

Table 5.1 **Transmigration targets and their realization in Irian Jaya, 1964–August 1986**

	Target		Realization to August 1986		
	Initial	Revised	No. of households	Per cent of original target	No. of individuals
	(No. of households)				
Up to REPELITA III (1964–78)	(1,527)[a]	-	1,527	(100)[a]	6,291[b]
REPELITA III (1979–83/84)	20,000	19,324	19,156	96	78,406
REPELITA IV					
Year 1	21,900	14,201	2,177	10	10,191
Year 2	16,400	8,125	120		
Year 3	25,500	3,105	1,303[c]	5	5,160
Subtotal	63,800	25,431	3,600	6	15,351
All REPELITA IV	137,800	136,500[d]	3,600	3	15,351
All years (1964–August 1986)	85,327	?	24,283	38	100,048

[a]No data on targets in the early years.
[b]Estimate.
[c]To August 1983.
[d]Revised in 1985.
Source: Irian Jaya, Kanwil Transmigrasi, Propinsi Irian Jaya, Jayapura (various publications).

occurred mainly for other reasons. It is principally related to the shortage of suitable land in traditional areas of destination in southern Sumatra, and the search for alternative venues outside Java to meet the expanded national target of 750,000 households (including partially or non assisted self-supporting (*swakarsa*) transmigrants). Both sparsely populated Central and East Kalimantan also received major increases in allocations for the current five-year plan, together with Irian Jaya accounting for just on half the national target (Hardjono 1986) Less than 25 per cent of all transmigrants planned for settlement in Irian Jaya in REPELITA IV were to be situated in three major areas close to the Irian Jaya–Papua New Guinea border (within a distance of approximately 50 to 75 kilometres from the border) at Senggi, Arso and Bupul. Even in the border *kabupaten* of Jayapura and Merauke, which together account for slightly over half the transmigration target, less than 50 per cent of all transmigrants are to be located in areas at all close to the border region. Claims that the expanded transmigration program was drawn up with the prime objective of sealing the 600 kilometre border with Papua New Guinea would appear, therefore, to be largely unfounded, although the location of planned settlements in strategic areas undoubtedly has been influenced by security objectives. It is also worth pointing out that the resettlement of retired military personnel has been a very small component, certainly no more than 5 per cent, of the total transmigration flow so far (Adicondro 1986b).[5]

Whatever the motives for planning to greatly expand the transmigration program in Irian Jaya during REPELITA IV, a drastic reassessment of the targets

[5] It is noteworthy, moreover, that revisions in 1985 of the original destination areas (drawn up prior to the border crossing incidents in 1984) actually excluded several new settlements to be established along the border owing to their unsuitability as upland settlement areas (*Kabar Dari Kampung* 3 (18), December 1985: 14-15).

and program of resettlement was underway by late 1985, one and a half years into REPELITA IV.[6] Although no revision to the five–year target had been made, the target for resettlement had been more than halved for the first three years of the plan. In the first two years of REPELITA IV only 10 per cent of the revised target had been fulfilled, and the target for the third year of the plan (1986/87) had been revised to only a little over 10 per cent of the original figure (see Table 5.1). In all, at close to the mid point in the five–year plan (August 1986) less than 3 per cent, or 3600 households, of the original target had actually been resettled in Irian Jaya.[7] It is widely rumoured, and predicted by the World Bank, that the REPELITA IV transmigration target for assisted migrants for Indonesia as a whole will be reduced by about one half or less, and in Irian Jaya reduced to 20,000–30,000 households, a target already looking rather ambitious compared with achievements to date. Emphasis has also moved away from the almost exclusive dependence on Javanese (and Balinese) to include a considerable number of transmigrants from eastern Indonesia (especially Flores) beginning in 1986.[8] It also appears that there has been a major reassessment of the capacity of border regions to absorb large numbers of transmigrants especially in upland areas.[9]

Why this rather dramatic (unannounced) turnabout in policy? The most important reason has been, of course, the cutback in the national budget and especially development expenditures at the national level beginning in 1986/87 and on a greater scale in 1987/88.[10] The transmigration program has been one of the prime targets in budget reductions. Why has this been so, and why specifically in Irian Jaya? First, by the end of the first year of REPELITA IV it was becoming increasingly clear that problems of large–scale settlement in the new, less developed provinces were much greater than had been the case in Sumatra. There appears to be a growing awareness in Jayapura and Jakarta, encouraged by World Bank evaluation results, that without a program of consolidation and 'second stage' development in a large number of sites, the incomes and standards of living of transmigrants are likely to remain very low in Irian Jaya. Second, major conflicts with the indigenous population especially over land compensation have convinced the provincial government that attempts should be made to settle these issues prior to construction and resettlement. And, finally, although the Indonesian government has rejected much of the questioning of its objectives, considerable criticism of the potential demographic social and economic impact of the greatly expanded transmigration program has probably encouraged the

6 See interview with the head of the Provincial Transmigration Office reported in *Kabar Dari Kampung* 3 (18), December 1985.

7 These figures understate the numbers actually moved during this period because the government was also making up for shortfalls in its target for the previous REPELITA.

8 The resettlement of eastern Indonesians has been enthusiastically supported by the dynamic Eastern Nusa Tenggara Governor Ben Mboi who has suggested up to 50,000 households from his region are likely to benefit from transmigration to Irian Jaya. The central and provincial governments are interested in this reorientation partly because of the saving in transportation costs and partly to help diffuse the issues of 'Javanization' and 'Islamization' associated with the past concentration on Java as the major source of migrants. See *Kabar Dari Kampung*(18 (3), December 1985) and Adicondro (1987b).

9 The head of the Jayapura office mentioned 500 households or less for these settlements. Senggi, for example, near Jayapura (ostensibly included as a site for relocation of many of the 1984 border crossers) with an original target of 10,000 households would receive only 100! This site has subsequently been cancelled altogether, at least for REPELITA IV.

10 The national budget for transmigration was cut from Rp 677 billion in 1985/86 to Rp 395 billion in 1986/87 with a further decline by two-thirds to Rp 111 billion ($68 million) in 1987/88 (about one-third of the latter is to be funded from foreign sources, mainly the World Bank). See *The Asian Wall Street Journal* (5 March 1987).

Table 5.2 **Regional distribution of transmigrant households settled in Irian Jaya, 1964–August 1986**

Region	1964–79	1979/80–83/84	1984/85–Aug. 86	Total	Per cent	Approx. percent of *kabupaten* population 1986
Merauke	169	6213	368	6750	28	14
Sorong	150	6484	74	6708	27	17
Jayapura	637	2274	1610	4521	19	9
Manokwari	449	2150	1228	3827	16	16
Paniai (Nabire)	261	2035	-	2296	9	5
Fak-Fak (Timika)	-	-	320	320	1	2
Total	1666	19156	3600	24422	100	6[a]
Per cent	7	78	15			

[a]Percentage of provincial population.

Source: Irian Jaya, Kanwil Transmigrasi Propinsi Irian Jaya, Jayapura (various publications).

government to tread much more warily, especially in Irian Jaya. We look briefly at these issues below first, dealing with the 'success' of the program in terms of raising the living standards of transmigrants and, second, the impact of the program on the local population and environment, and its contribution to overall regional development.

The Program and Welfare of Transmigrants

Prior to REPELITA III, small transmigration settlements were dispersed in various regions, before 1969 principally in the potential rice growing region of Merauke (Kumbe, Kurik and Kuprik) and during REPELITA I and REPELITA II close to Jayapura, Nabire (Paniai), Manokwari and Sorong—all on the north coast (Table 5.2). During REPELITA III two-thirds of all households were settled in the flat plains north and west of Merauke and in the more undulating, dryland areas close to Sorong, with the balance going to north coast settlements close to Jayapura, Nabire in Teluk Cenderawasih and Manokwari. While Merauke has long been viewed as the potential hinterland for rice production in Irian Jaya, Sorong was chosen partly because of projected rapid urban growth and demand for labour and foodstuffs associated with natural resource and fisheries development, and partly because the long history of commercial contact with eastern Indonesia was likely to facilitate integration with the indigenous population.

Although Merauke was targeted as the major recipient region for the greatly expanded REPELITA IV program (36 per cent of the 138,000 household target for the province), continuing problems faced in consolidating viable settlements established during REPELITA III has meant only a small proportion (10 per cent) of all households moved during REPELITA IV have been settled there. Almost half of REPELITA IV settlers have gone to Jayapura, mainly to the border settlements of Koya and Arso (including the palm oil PIR–BUN settlement at Arso), and a further one-third to Prafi, Manokwari also partly for the palm oil plantation established there.

Due to difficulties encountered in the early years of settlement in the major recipient areas of Merauke and Sorong, long distances and high transportation costs from Java (approximately Rp 50,000 by boat from Surabaya to Sorong and Rp 75,000 to Jayapura and Merauke), *swakarsa* unassisted or partially assisted transmigrants have been a relatively small proportion of the total number of families moved compared with other provinces in Indonesia. The contrast is particularly marked with well established settlements in southern Sumatran provinces where *swakarsa* transmigrants have made up the large majority of new settlers in recent years (Hardjono 1986: 42). Central government figures report approximately 2000 *swakarsa* transmigrant families, a little over 25 per cent of all settlers to Irian Jaya under the program, during the first two years of REPELITA IV, but even these figures are almost certainly an overestimate compared with provincial data: a figure of 5–10 per cent for all transmigrants moved to Irian Jaya is probably closer to reality.[11]

In some ways the movement of over 20,000 families in the past seven years to far flung, dispersed settlements, many largely virgin forest areas, might be judged a considerable achievement. Although a few of the settlements, most notably on the island of Salawati near Sorong and close to Merauke, were found to be inappropriate for sedentary rice agriculture, the majority have fulfilled their original objective of providing a new place of settlement for largely poor and landless Javanese. No data are available on the numbers leaving the new settlements as a consequence of economic hardship. But only a relatively small proportion, perhaps 10–15 per cent, have done so.[12] Partly, of course, the high cost and irregularity of return land and sea transport from existing sites help to explain this. Nevertheless, after initial periods of hardship by no means unique in the history of the transmigration program elsewhere in Indonesia, agricultural production, most notably of rice but also of vegetable crops and fruit, has risen considerably. Rice yields of 4–6 tonnes of *gabah* (dry, unmilled rice) are not unusual in many of the older locations and these, unlike some areas in Kalimantan, have been sustained after several years of settlement. The physical appearance of some of the older settlements are not unlike some of the villages in lowland Java, at least during the wet season, with intensively cultivated house gardens sporting a wide variety of annual and perennial crops, many households making major improvements to their original, simple houses allocated under the program and the greenery providing an initial impression of relative prosperity. Agricultural produce, vegetables and fruit, from locations in close proximity to major cities, Arso near Jayapura, Aimas I and II near Sorong, and Kurik near Merauke, and even more distant settlements such as Nimbokrang about 100 kilometres from Jayapura, are sold in urban markets often at prices several times those in Java. They provide a major source of cash income for the new settlers in addition to the staple food crops — rice and to a lesser extent corn and cassava.[13]

[11] For the year 1985/86, for example, the local transmigration office reports that only 186 *swakarsa* families, and a much larger number of 585 new families formed in the transmigration sites (*pecahan keluarga)* were settled, swakarsa migrants contributing only 6 per cent of the total number of transmigrants.

[12] Adicondro (1986b) mentions a figure of 1500 households permanently leaving the transmigration areas to settle in urban areas in Irian Jaya, although elsewhere (1986c) he mentions a higher figure of 10–20 per cent. This should include several airloads of households returned to Java from the Merauke region who left one ill-planned site and whose women folk engaged in 'unsavoury' activities in the town in 1984–86.

[13] See also Hastings (1983) on a report of the Dosay and Koya projects near Jayapura. The above observations are based on discussion with various informants in Jayapura, Sorong and Merauke and visits to transmigration sites in all three regions in August–September 1986.

Official transmigration figures report rice as the major crop in the three largest transmigration areas (Merauke, Sorong and Jayapura) but, whereas in Merauke rice dominates all other crops, in Sorong and Jayapura a much more diversified pattern of agriculture is evident. Corn (mainly in Jayapura) and cassava (mainly in Sorong) hectarage is not much below that of rice, and soya beans in particular is a major cash crop.[14] In the Sorong region, at the Aimas I and II settlements in particular, perennial fruit and other tree crops — cloves, coffee and cocoa — are widespread and it is hoped that the non-fruit tree crops will provide a valuable source of income in the future.

Various reports of recent harvests in Sorong (1985) and Merauke quote high rice yields (see earlier) but on *average* yields from all crops on the transmigration sites in 1985/86 were all substantially below those achieved in Java — rice being closer to 2 than 4 tonnes of unmilled *gabah* per hectare, and most non vegetable annuals recording yields of around 1 tonne per hectare. Relatively poor soils, unfamiliarity with seasonal patterns and pest outbreaks seem to have been the major factors reducing yields.

The new schools, mainly primary but also several secondary schools opened in the older settlements, many bicycles and some motorbikes, even a few privately owned four-wheel drive vehicles, and the ubiquitous *warung* (small shop, stall) all give the impression of living standards better than could have been hoped for in Java for some transmigrant families. In many areas also cash incomes from agriculture have provided a stimulus to home industry and service activities. A government report on Jayapura settlements still administered by the transmigration department records manufacture of *tahu* and *tempe* as the major home industry undertaken by 3–7 households in each location and radio and bicycle repair shops, and tailors are all represented (Irian Jaya Kanwil Transmigrasi 1986).

These gains have been achieved, however, at considerable cost and not without many initial failures; they have been unevenly spread throughout the transmigration areas and agricultural productivity is heavily dependent on subsidized inputs supplied from outside Irian Jaya.

In both Merauke and Sorong, lack of an understanding of local climatic patterns, the appropriate timing of cultivation, and toxicity of soils were major initial problems in early years. Modest to good rice yields only were achieved in both areas; this was especially so after successive harvest failures in Sorong prior to the first bumper harvest *(panen raya)* in 1985, following advice given from outside agronomists on nutrients required by the soils (especially sulphur and phosphate). In rice growing areas, reasonable yields are dependent on large inputs of fertilizer and pesticides subsidized under a special program of food (rice) development in Irian Jaya. Even under this program delivery of inputs appears to have been irregular and yields substantially influenced as a consequence (*Kompas* 8 April 1983). In Merauke, the major complaints from farmers are about delays in delivery of inputs; in Sorong (Aimas II) in 1986 this problem meant farmers had to purchase fertilizer and pesticides at 2–3 times the government subsidized price. It is likely that the end of priorities which transmigrants have received under the subsidized input program — extending for the first three years of settlement — will considerably increase problems of access to purchased inputs and may result in substantial yield declines.

Marketing problems are no less intractable especially in less accessible areas.

14 See Indonesia, *Kanwil Transmigrasi* (1986) for details. The data, especially on production, are only very broad guesstimates.

Dependence on irregular, slow river transport in the Merauke area — a journey of 100–150 kilometres taking up to two days along the Maro river to Merauke during the wet season when most roads are impassable — severely constrains attempts to market perishable vegetables. Near Sorong in one newly settled location about 50 kilometres from the city, farmers were selling tomatoes at Rp 100 per kilogram, less than one–tenth of the market price in Sorong in September 1976, due to lack of regular transport to the city.[15] Unit transport costs are high and given relatively small consumer demand in some areas such as Merauke (a total urban population of only 16,000 in 1980, and about 19,000 in 1985) the possibility of the bottom dropping out of the market following a glut in the production of particular food crops increases the risk of food crop activities. These problems are not unique to Irian Jaya, but they do indicate the continuing problems associated with inadequate infrastructure development and a lack of budget allocations for maintenance, and little economic analysis of potential income effects of food production regimes in the new transmigration areas.

As in other areas of Indonesia, the nucleus estate (PIR–BUN) tree crop program, supported by the World Bank as a vastly improved model compared with food crop settlements for transmigration areas, has also been introduced in Irian Jaya. Transmigrants have already been moved to new oil palm estates under the management of PTP II (Medan) at Arso (Jayapura) and Prafi (Manokwari). The Prafi estate is reported to be well advanced but at Arso withdrawal of local labour following continuing disputes over compensation for incomes forgone as a result of the cutting down of sago groves, loss of traditional hunting and fishing sources of livelihood, and uncertainty regarding the location of the processing facility, are all problems still to be solved.[16] Nevertheless the majority of sites already established and awaiting transmigrants,[17] and also new areas targeted for transmigration, are still designed for food crops, although planting of perennials has also been encouraged.

The search for new locations not only forces the selection of marginal sites in terms of soil fertility (Hardjono 1986), but equally important in relatively underdeveloped regions such as Irian Jaya, means less suitable locations in terms of potential marketing margins and transport costs. In Irian Jaya these problems would seem to be particularly severe due to the lack of indigenous commercial farming settlements which might provide demand for some of the products from transmigration areas.

Many of these problems of adaptation are common throughout transmigration areas in Indonesia and to some extent are regarded by the government as an unavoidable cost of opening up new areas of settlement. As in other locations, they have been exacerbated by the attempt to impose unusually stringent targets — as the head of the Transmigration Office in Irian Jaya points out, a consequence of a site development program which theoretically should take 5 years, being crammed into half or less of that time period (*Kabar Dari Kampung* 3 (18), December 1985: 19–20). But some difficulties have their origins in aspects of the planning and execution of the program which have been especially

[15] The problem was exacerbated by a road construction program.

[16] Following continued local protests concerning the provincial government and the estate's neglect of the compensation issue, the matter was reported to have been subsequently taken up by the provincial parliament (DPRD) with a strong promise of support from its vocal chairman Bas Suebo in late 1986. See *Tanah Air* 6 (67), October 1986: 5–6, 11.

[17] It has been estimated that about 7000 houses in various new locations were still awaiting new arrivals in mid 1986.

unfavourable in Irian Jaya. Many of the original sites were inadequately surveyed and especially in the Merauke region, some had to be abandoned after settlement and others shifted to more appropriate nearby locations. Poorly prepared fly-by-night contractors, many from Jakarta seeking windfall profits from the construction boom, have fallen far behind in targets and left sites only partially prepared. Some sites approved by transmigration officials, have neglected fundamental aspects of viable agricultural systems and health in the new settlements, most notably adequate drainage (*Kabar Dari Kampung* 3 (18), December 1985). Outbreaks of malaria in several areas (mainly in the regions of Jayapura and Manokwari) which had claimed 41 lives to the end of 1985 and seven more in 1986 have been attributed partly to inappropriate site preparation. In the early 1980s lack of involvement of the provincial and *kabupaten* officials combined with low levels of expertise within the *kabupaten* government, and poor coordination between government departments appear to have been major factors contributing to the disappointing preparation of sites.

Merauke, targeted as the major region for rice production in Irian Jaya largely through the development of transmigration sites, has perhaps received most attention concerning the long-term economic viability of transmigration sites. Almost all the new locations have been established for wet rice cultivation, with over half of all transmigrants being settled at Kumbe, about 40 kilometres north of Merauke. In 1985/86 transmigration sites were reported to have produced approximately 9000 tonnes of padi (*gabah kering*), well over half the total production of *padi* in the *kabupaten*of Merauke and about one-third of the estimated consumption needs of the *kabupaten;* provincial data estimate overall wet rice land yields at about 4 tonnes of *gabah* per hectare — a surprisingly high (and probably significantly overstated) figure compared with closer to 2 tonnes per hectare reported by the Transmigration Office for transmigration areas.[18] A high proportion of the reported increase in rice production for Irian Jaya in recent years, more than tripling since 1983 (see above), has derived from transmigration areas in this region.

Despite these impressive figures, there have been major problems of rice production and economic welfare of transmigrants in the Merauke region. Many *padi* growing areas, formerly classified as irrigated, depend on uncertain rainfall and crops are grown only once a year. Pests and plant diseases, as in the Sorong region, continue to be a major problem, including the *tungro* virus, *wereng,* rice blast, rats and wallabies ((*Kabar Dari Kampung* 3 (18), December 1985). Cultivation of dry season crops is severely hampered by lack of water which frequently needs to be transported several kilometres even for consumption purposes. Rice producers are obliged to sell to the local *Koperasi Unit Desa* (KUD) but often have to transport their padi on foot considerable distances to nearby villages where processing facilities and KUD purchasing facilities are available. The Regency Rice Procurement Agency (DOLOG) price of Rp 175/kilogram of dry *padi* is regarded as barely profitable given the high prices of inputs often purchased outside the government controlled prices.[19] Although DOLOG rice prices in Irian Jaya are now on a par with other areas of Indonesia, following the removal of the special subsidy for Irian Jaya consumers (Garnaut and Manning 1974), the potential economic viability of rice production on less fertile soils in relatively isolated locations with high marketing costs of inputs and outputs remains a major issue.

[18] The latter figure is probably an understatement however as some of the area reported to be devoted to rice production was probably uncultivated or planted to other crops.

[19] Interview with head farmers group (*Kelompok Tani*) from Semangga II, Merauke, reported in *Kabar Dari Kampung* December 1985: 27-8.

The head of the provincial transmigration office has pointed out that the emphasis on rice production has been at the request of the provincial government rather than a priority established in Jakarta by transmigration planners.[20] He sees Merauke, for example, as not well suited to food crop development (somewhat of an irony given the almost exclusive preoccupation with rice in Merauke settlements to date) and sees tree crop development as a more suitable future pattern for new sites in the region. But the latter pattern of development is still in the early stages of planning with attention still to be given to problems of suitable sites and crops, the need for larger land areas per household (minimal 3 hectares as at Arso — ideally 3–5 hectares), and means of support during crop gestation periods.

The response of transmigrants to marked seasonality in agricultural production and shortages of cash income in off-peak periods, especially during the long dry season in the south near Merauke, has been to seek seasonal work in the major towns. The migrants provide new services in the towns but also create added pressure in the search for urban employment, a problem experienced in several transmigration regions elsewhere in Indonesia (Hardjono 1977; Arndt 1986). Thus, in addition to the 'spontaneous' migrants from South Sulawesi and Maluku, Javanese also compete with the local population for wage work in construction and self-employed activities in trade and transport during off-peak periods in agriculture. One observer of transmigration in Sorong noted that the large majority of households earned some income from non-agricultural pursuits mainly in the town of Sorong. The overall impact is to depress wages and discourage temporary, wage earning activities by Irianese living close to urban areas.

Revision of transmigration targets for REPELITA IV, will undoubtedly give the government breathing space to reassess the overall program. But even the size of the current number of settlers is likely to create longer-term problems bearing in mind that no land has been reserved for agricultural activities of the children of transmigrants. The ideal allocation of 6 hectares per family aimed for by the Transmigration Department (to be divided equally between the transmigrant households, swakarsa transmigrants and the children of transmigrants) has not been adhered to in the REPELITA III and IV settlements. Normal sized locations of 1000 hectares have been made available for 500 households or an average of 2 hectares per household (*Kabar Dari Kampung* 3 (18), December 1985: 26). Fulfilment of targets at all costs, the hallmark of the program to the mid 1980s, is likely to bring a host of second stage employment problems in small, dispersed settlements as the communities grow older.

Benefits to the Local Population and the Land Issue

The demographic impact of the expanded transmigration program since 1979 has been relatively small compared with some rather far fetched estimates, and the original REPELITA IV targets (see TAPOL 1983: 54–63). Over the period 1979–86 a total of just under 94,000 persons (slightly above 4 persons per household), were settled in transmigration sites, approximately 13,000 of these consisting of local transmigrants. Assuming that about 20 per cent of the latter were non-Irian born, then transmigrants from outside Irian Jaya accounted for about 6 per cent of the total Irian Jaya population, about 15 per cent of the *Irian-born* population, and about 10 per cent of the rural population of Irian Jaya in 1986 (see Table 2.4).[21]

20 See interview reported in *Kabar Dari Kampung* 3 (18), December 1985: 25–6.

About one-quarter of the estimated total population increase during the period 1979–86 consisted of transmigrants from outside Irian Jaya.[22] Of course, the demographic impact of the program has been much greater in recipient *kecamatans* where in most cases the transmigrant population would have outnumbered the Irianese population by 1986, and in the *kabupaten* of Merauke and Sorong. It has also been much greater, as has the spontaneous movement of migrants to Irian Jaya, in the lowland regions close to major cities that have been the main areas of focus of the transmigration program.

Nevertheless, given the numbers actually moved over the past seven years, the figures do help to put in perspective the overall impact of transmigration on the distribution of population between Irianese and migrants. Even if one takes account of the children born to transmigrants in addition to the flow of new transmigrants, and assuming an average annual transfer of 15,000 persons to Irian Jaya to the end of the century, the total transmigrant population would not exceed half a million persons in the year 2000. This would amount to one-third of an estimated indigenous population of about 1.6 million. Given past trends, the much publicized threat of the Javanese becoming a majority in Irian Jaya largely through transmigration is unlikely to materialize in the foreseeable future. It is true, nevertheless, that the major urban areas of Irian Jaya and their hinterlands settled by both unassisted migrants and transmigrants already support a high proportion of migrants, and these areas are likely to be largely dominated by migrants by the end of the century.

As in other provinces where shifting cultivation, and hunting and gathering activities have been major sources of income for the local population and where traditional communal land rights covering extensive, 'uncultivated' areas are vested with clan and tribal groups, the issues of land compensation and local participation in the transmigration settlements have raised problems in many sites in Irian Jaya. The size of the targets beginning from REPELITA III and the short time span allowed for their achievement have exacerbated difficulties inherent in negotiation of land for new sites, forcing the government to forgo intensive extension efforts required to ensure full participation of 'local' transmigrants in agricultural activities. These problems have not been helped by Java-centric views which tend to equate low population density with large, unclaimed land areas much of which is believed to have no economic value to the indigenous population, and beliefs that traditional agricultural, hunting, gathering and fishing activities are basically primitive and have to be quickly transformed into a 'modern', sedentary (and preferably *sawah*) farming mould. As with the resettlement program coordinated by the Department of Social Affairs, administrative and security objectives have been important factors behind the decision to develop larger Irianese settlements.

Tribal leaders have been offered a variety of incentives to hand over land to the provincial government for transmigration sites. These include cash compensation for existing crops and plants (especially sago groves) which provide a basic source of income for local inhabitants, and the offer of participation in the new settlements

21 This assumes overall population growth rates in the absence of transmigration of approximately 2.7 per cent (the estimated figure for the intercensal period 1971–80), and of the Irian born population of about 2.3 per cent.

22 It should be noted that this figure is very much lower than the World Bank estimate of closer to the 50 per cent transmigration component of the increment in Irian Jaya's population over the period 1980–85. The 50 per cent figure would apply, again approximately, to all migrants to Irian Jaya over this period.

and use of public facilities established on them. More recently, expenditures have been made on improvements to housing and preparation of agricultural sites, similar to those provided for transmigrants in new settlements. In some areas tribal leaders appear to have, at least initially, willingly given up land to new settlers. They have been attracted by the prospect of both new roads linking isolated areas to urban centres and the potential benefits offered to the local population from the establishment of health and educational facilities. Local leaders have accepted small amounts of cash compensation for crops and commercially valuable plants destroyed during the construction of transmigration facilities. Adicondro (1986b: 12) notes that initial reluctance to give up land has only been a 'minor factor in some isolated areas'.

But in some regions survey and construction work has gone ahead leading to continuing conflicts with the local population as has occurred at Arso near Jayapura. More important causes of conflict, however, appear to have been the failure of the government to adequately compensate for or take account of income lost from traditional hunting activities, payments made in kind rather than in cash as demanded by the local population, and the large profits made by some contractors from the sale of timber cut down in the new sites. One notable example is the above mentioned case of the PIR project at Arso and complaints of the Skou tribe, the traditional land owners of the area now supporting over 1000 transmigrant households at Koya close to Jayapura.[23] The land area originally agreed upon by the local population for transmigration was reported to be 3300 hectares with compensation for sago stands and fishing areas amounting to Rp 130 million. But over 5000 hectares were taken over at the new site and to the disappointment of the local population compensation was provided in the form of building materials rather than cash. The local leader (*ondoafi*) Herman Rollo complained, moreover, of felling and sale by contractors of rattan and martoa timber (the former alone valued at about Rp 300 million) from which the local population earned cash income through the sale of matoa fruit. Competition from transmigrants for *mudjair* fish in traditional ponds and in hunting wild pigs and kaswari was a further complaint. Only ten members of the Skou tribe have been reported to have joined the transmigration settlement, the majority of other settlers selected from the local population (*translokal*) coming from other areas of Jayapura. Not surprisingly the *ondoafi* saw few benefits flowing to the traditional landowners from the transmigration project.

Conflicts over land appropriated for transmigration have been most marked in the Jayapura region (at Koya, Arso and Nimbokrang II) where traditional leaders are supported by educated Irianese and non-government organizations and where the conflicts between spontaneous migrants and local landowners are a major problem. But the issue of appropriate compensation for loss of hunting income (especially for the deer hunting Marind people in the Merauke region) and division of spoils from forest exploitation between local transmigration officials and contractors appears to be a general phenomenon. The head of the provincial transmigration office admitted frankly in his interview with *Kabar Dari Kampung* that past projects have been hampered by the failure of *kabupaten* officers to secure agreement for transfer of land prior to the decision to proceed with transmigration projects, and that future settlements will not be planned until written agreement is obtained from the local inhabitants. Nevertheless the gap between indigenous values concerning the economic use of land (aside from the issue of its spiritual and social significance) and the government's evaluation of economic worth on the one hand, and the

[23] See *Kabar Dari Kampung* 3 (18), December 1985 for a detailed account.

commercial interests of contractors and government officials on the other, are likely to remain obstacles to smooth implementation of the new policy.

Acceptance of transmigration settlements by the local population depends partly on the success of efforts to encourage participation of the indigenous people as local transmigrants in the new sites. Since 1982 25 per cent of places in the transmigration settlements (compared with 10 per cent allocated elsewhere in Indonesia) have been reserved for local residents, either in separate, adjoining blocks or interdispersed with regular transmigrant households. Overall, the policy of encouraging local participation has been only partially successful. Official data suggest the 10 per cent *translokal* target established prior to 1982/83 was largely fulfilled in all *kabupaten* but there has been a wide range in regional experience in meeting the higher 25 per cent figure established since then. The local participation program has largely failed in Merauke where a low 3 per cent of all transmigrants have come from the local population, although above target percentages have been achieved in the more recent Jayapura settlements (Table 5.3).

Table 5.3 **Local participation in transmigration settlements, 1982/83–August 1986**

Region	Local transmigrants (*translokal*) No.	%	All transmigrants No	%	Local as a percentage of total
Merauke	127	6	3631	27	3
Sorong	445	20	2558	20	17
Jayapura	800	36	3284	25	28
Manokwari	524	23	1878	14	24
Nabire	274	12	1535	12	18
Fak-Fak	76	3	320	2	24
All Irian Jaya	2246		13,206		17

Source: Irian Jaya, Kanwil Transmigrasi, *Laporan Tahunan Transmigrasi Tahun Anggaran 1985/1986*, Jayapura, 1986.

In the Merauke region the Marind people have a long history of suspicion of outsiders and have shown little interest in changing their traditional agricultural patterns to become *padi* farmers (Boelaars 1986). But even in other regions where the program would appear to have been more successful, there have been problems in assimilating the local population with new settlers and encouraging commercially-oriented food crop production. In some areas, Nimbokrang in particular, local transmigrants have become commercial farmers selling vegetable crops to urban areas and generating considerable cash income. At Koya most of the local transmigrants are not from the Skou tribe, the original inhabitants of the region, but from other areas in the Jayapura region and include several ex-civil servants[24] A similar pattern appears to have occurred in many areas of Sorong

[24] See also Mubyarto's interview with *Tempo* (23 February 1984: 82). In Koya Barat, for example, only 10 of 75 local transmigrants were reported to be Skou people (*Kabar Dari Kampung* 3 (18), December 1985: 44.

where a considerable number of local transmigrants consist of non–Irian born residents already settled in Sorong.[25] But even in cases where the local population have, at least initially, accepted the government's offer of places in the transmigration sites, many have done so on a nominal basis only. Numerous examples, confirmed by our field trips to transmigration sites at Arso (Jayapura), Semangga (Merauke) and Aimas I–IV (Sorong) in August–September 1986, are given by observers of *translokals* returning to live in their original *kampungs*. Even if they have remained in the original transmigration houses, few appear to have cultivated plots allocated to them, preferring rather to continue traditional hunting, fishing and sago gathering activities (in spite of increased difficulty in obtaining a subsistence from these sources).[26]

Why has the *translokal* program faced so many difficulties? The problems faced by the program are very similar to those encountered elsewhere in Indonesia and in many programs aimed at bringing about rapid change in economic activities among groups with very different agricultural and associated economic pursuits to those in *sawah* areas. It should seem hardly surprising that local people, having observed major problems faced by new transmigrants in many areas in the early years — the numerous *padi* harvest failures in various locations near Sorong and Merauke–might have opted for well tried, less risky means of earning a living. New farming activities, especially *sawah* rice cultivation, require a major change not only in techniques of farming but also patterns of labour and social–economic organization. The relatively scarce supply of agricultural extension workers, grappling with problems arising from largely untried rice varieties and planting schedules in new locations, delays in the 'dropping' of major inputs and major pest problems, have often been unable, moreover, to devote intensive attention to the *translokal* farmers. Other factors specific to the transmigration settlements have also played a part. These include: standard housing models (in contrast to raised structures in traditional settlements) unsuited to the local environment and frequently exposed to flooding; unfamiliarity with Javanese language, the lingua franca in many of the new settlements[27]; transmigrant customs which have made many Malay speaking Irianese uncomfortable in the new locations; and poor health conditions leading especially to the malaria outbreaks in several locations. Overall the common government complaint that the 'locals are lazy' might be better expressed as a rational response to highly uncertain agricultural systems often little adapted to the local environment or designed to utilize the skills and knowledge of indigenous inhabitants.

The much publicized suggestion by Inter–governmental Group on Indonesia (IGGI) Chairman Mrs Schoo during a visit to Irian Jaya in April 1986 that the indigenous component of the transmigration settlements be increased to 50 per cent, therefore seems hardly a solution to the problem. Adicondro (1986b) notes that the Provincial Governor Isaac Hingdom has requested that the central government make available 25 per cent of the transmigration budget to the provincial government to be allocated by *kabupaten* officials for resettlement and associated rural development programs according to the needs of local

[25] For example, half of the local transmigrants interviewed by van der Leeden (1984) at Kalobo, Salawati were from other parts of eastern Indonesia, mainly Bugis and several from Java. For example, half of the local transmigrants interviewed by van der Leeden (1984) at Kalobo, Salawati were from other parts of eastern Indonesia, mainly Bugis and several from Java.

[26] Various examples from Sorong, Arso and Koya are given in *Kabar Dari Kampung* 3 (18), December 1985 and 2 (11/12), 1984. See also van der leeden (1984).

[27] Mubyarto also reports lack of fluency in Indonesian among many Javanese settlers as a major obstacle to integration in the transmigration sites (*Tempo* 23 February 1984).

populations in the vicinity of transmigration areas. Not unexpectedly the transmigration department has not been enthusiastic about losing such a large proportion of its Irian Jaya budget. It has begun, however, to move in a similar direction with recent budget allocations in Merauke and Sorong being made for the improvement of existing settlements (improved housing, drainage and infrastructure) close to the transmigration sites. In both areas local officials report this program to be far more successful than attempts to encourage *translokals* to join the new settlements.

Improved infrastructure, roads linking the transmigration settlements to urban centres and the establishment of schools and health centres in the transmigration areas, have also provided benefits to the local population.[28] But new employment opportunities for Irianese which might have been expected to result from the more intensive linkages between transmigration sites and urban areas have been limited by domination of urban employment by spontaneous migrants from elsewhere in Indonesia. Construction work on the transmigration sites and associated infrastructure has largely provided jobs for migrant labour, contract teams mainly from south Sulawesi. Perhaps of more general significance has been the concentration of a wide range of government efforts, especially in agriculture and animal husbandry, in investment and extension in the transmigration areas resulting in relative neglect of efforts to develop productivity and incomes of the very different agricultural systems in which the indigenous population participate. In the major transmigration receiving areas of Merauke and Sorong, *kabupaten* agricultural offices seem to have largely concentrated their efforts developing viable agricultural systems and dealing with frequent crises, particularly in *padi* production, in the transmigration areas. Delivery of farm animals, most notably draft animals for agricultural production, through the Animal Husbandry Office has also concentrated on transmigration areas. Official data suggest that a high proportion of farm animals (50 per cent in the case of cattle and almost 100 per cent in the case of goats) provided to rural areas by the Animal Husbandry Office under credit and production sharing arrangements had been allocated to transmigration sites to the end of 1985.

The provincial government is now beginning to place greater attention on regional development at a *kabupaten* level and on linkages between the transmigration sites and indigenous communities. The World Bank is currently engaged in drawing up a regional development plan for the entire Merauke region both to assist second stage development in the transmigration sites and to strengthen linkages with the activities of the local inhabitants.

Overall, therefore, one might conclude that the transmigration program has made a significant contribution to fulfilling provincial government objectives of providing foodstuffs to urban populations. Well over half of the estimated provincial milled rice production (about 10,000 tonnes) and soya bean production (about 5000 tonnes, and a significant proportion of corn and peanut production, derived from transmigration areas in 1985. Although it has not had a substantial impact on Irian Jaya's dependence on imported foodstuffs, most notably rice, from other provinces in Indonesia, it has helped (together with more regular inter–island shipping services) to reduce irregularity in supplies and price instability of major food commodities sold to urban consumers. The program has also been associated with extension of road transportation linking rural

[28] Although the extension of roads has also had unintended social consequences in some areas, for example the disappearance of local markets and meeting places such as has occurred at Waris in the border region north of Jayapura (see *Kabar Dari Kampung* 3 (18), December 1985: 47–8).

communities to nearby urban centres, cheaper supply of consumer goods to selected inland areas and facilitating the marketing of agricultural products to the towns.

Despite early problems in many locations, the program has also probably succeeded in raising incomes of considerable numbers of poor Javanese. But it has been the transmigrants from Java together with 'spontaneous' migrant traders, transport and construction workers who have largely benefited from the new infrastructure and commercial activities stimulated by the program. The Irianese population living close to the new settlements or living in them as local transmigrants have yet to derive significant economic benefits either through trade and wage labour, or through adoption of new farming practices. The latter in particular would appear to require far more intensive extension and support activities than have been offered so far to the local population, and the development of programs of assistance which build on the traditional agricultural, hunting and fishing skills and economic organization. It seems likely that tree crop cultivation under the PIR–BUN scheme may be a more appropriate model than the food crop systems established so far, although much greater dependence of the local population on wage labour and incomes from an uncertain single income source, and the potential harmful environmental effects of the new plantation system, excessive pesticide use and the new processing plants, suggest that it might not be a panacea to solving transmigration problems[29] But this will not obviate the need to carefully plan longer–term strategies in selection and preparation of sites and to strengthen linkages between the economic changes brought about through transmigration and the economic activities of the local population.

Adicondro's (1986b: 81–2) suggestion that future sites be planned through a systematic, prior evaluation of potential conflicts arising from differences in social and ecological perceptions of both transmigrant and the local inhabitants is one way in which benefits to the local population could be increased and backwash effects minimized. Such an approach inevitably means disposing of rigid physical targets. Revision of REPELITA IV targets is a welcome move in this direction, both in the long-term interests of transmigrants and the indigenous Irianese population. However, a much more fundamental reassessment of ways in which the new settlements can serve the multiple goals of regional and local development, and of increasing both transmigrant and Irianese welfare, is urgently required within the overall framework of provincial and national planning.

[29] See especially Adicondro (1987) and *Tanah Air* 6 (67), October 1986.

CHAPTER 6

Summary and Conclusions

Development programs have faced enormous difficulties in Irian Jaya. More than in any other province in Indonesia, constraints imposed by a harsh physical environment and dispersed settlement patterns have continued to limit the impact of government expenditures and private sector investnent on incomes and welfare. Together with the complex and often disturbed nature of political economic integration within Indonesia, these have greatly complicated efforts to promote economic advancement.

Government programs have not faltered through lack of funds. Although government per capita expenditures have been much smaller than in neighbouring Papua New Guinea in recent years,[1] per capita grants made by the central government have been considerably higher than in most other provinces. In the absence of significant autonomous private sector investments outside the scattered resource–based industries, government spending has been the major stimulus for economic change and employment growth within the province. Nevertheless, the impact of government efforts has been spread quite unevenly. They have encouraged investment and employment in trade, transport and construction in major urban centres, and growth in agricultural production and associated activities in hinterland areas close to the towns. But poor communications and the high cost of infrastructure development in inland areas have hampered the effects of urban growth and government spending on the rural population. The most important elements of change here have been the spread of primary schooling and administration, a range of decentralized mission and non–government organization activities aimed at promoting the welfare of villagers, and not always favourable economic change stimulated by the activities of mining, oil and logging companies in dispersed locations.

In recent years very large expenditures on establishing transmigration settlements located for the most part close to urban centres have also contributed to a strengthening of linkages between selected towns and certain rural areas facilitating the spread of government services and commercial activity. Much closer integration of the major urban economies with eastern Indonesia and Java has paved the way for an increasingly prominent role played by migrant labour and capital from other parts of Indonesia. The inflow of skills and cheap labour has been a major stimulant to urban economic growth. But it has also limited the impact which government expenditures could have otherwise had on employment and incomes of the indigenous population, especially dampening the effect which new employment opportunities might have had on rural economic change through an increased flow of Irianese labour into the towns and remittances to their villages of origin. The constraints which the presence of migrant labour have placed on efforts to raise indigenous incomes have been heightened by the continuing large number of non–Irianese in government and

[1] Total government expenditure per capita in Papua New Guinea was about US$200–250 compared with planned expenditures of around US$125 and actual expenditures of less than $US100 per capita in Irian Jaya in the mid 1980s. See Goodman, Lepani and Morawetz (1985: 57) for data on government expenditure in Papua New Guinea.

the expansion of the transmigration program from the late 1970s. The dominant role which migrants have played in the centres of economic change has undoubtedly contributed to a degree of disenchantment of many Irianese, especially the growing number of secondary school and tertiary graduates, with the development effort in Irian Jaya over the past 15 years. Any attempt to directly control the volume of 'spontaneous' migration is unlikely to be successful, but coordinated government support for positive discrimination in favour of Irianese in educational enrolments and in the labour market would seem to be well justified on the grounds of equity, bearing in mind the potential social and political consequences of a continuation of past t rends in Irian Jaya.

The root causes of dissatisfaction with gains to Irianese from development programs go beyond the issue of migration from elsewhere in Indonesia, or rather simplistic racial stereotyping (Malay versus Melanesian) and reference to inherent geopolitical obstacles to integration which have been highlighted by many foreign observers, and also used to justify a large military presence and tight controls of security in Irian Jaya. There is a genuine concern for the welfare of the Irianese population, and a commitment to minimizing the backwash effects of economic change on the local population, among many government officials and some private entrepreneurs. But practices adopted by construction companies and several large resource-based investors, especially the logging companies, have often paid scant attention to indigenous welfare and traditional economic practices. Continuing land compensation problems, a marked preference for employment of migrant labour, low wages and employment practices in conflict with basic labour protection legislation, and little respect for the environmental impact of construction activities have all played a part.

In development projects, failure to take account of local interests in the planning and execution of projects has been partly related to rigid physical targets set within the one-year budget allocation framework. Further problems have arisen from substantial delays in the release of funds from Jakarta necessitating rushed completion of work. They have also been exacerbated by Jakarta-centred planning and, in most large projects, involvement of contractors unfamiliar with local conditions.

There has been a growing awareness of many of these problems and exposure of some of the worst abuses by private companies in local research reports, seminars and national press coverage. Non-government organizations have played an increasingly important role in recent years in publicizing the abuses and lobbying the provincial and central government (especially through the Ministry of Population and Environment) to take action. Apart from church based organizations, a new type of citizen-based largely secular and community oriented non-government organization has emerged in Irian Jaya in recent years (of which the Irian Jaya Rural Community Development Foundation, YPMD, and the recently opened chapter of Legal Aid Institute (LBH) are prime examples). Their activities are widespread in the Jayapura, Merauke and Jayawijaya regions and they cooperate closely with church based groups (and both of these with various government projects) as well as acting as watchdogs over the excesses of government and private sector activities. It is too early to see whether such developments will have a significant effect, especially given the pecuniary interests of quite powerful government officials and private organizations and individuals, but they have undoubtedly forced some private and official companies to tread more warily. Greater reliance on Irian based contractors, increased provincial government involvement in execution of development programs, and more coordination between government departments, especially in the transmigration program, are also reported to have improved the quality of some development projects.

Finally, an overall evaluation of the impact of development programs in Irian Jaya cannot be divorced from the long history of political action and armed resistance to integration within Indonesia through the activities of the OPM. There is little evidence that the threat to security posed by sporadic but continuing operations of the OPM has been brought under control in recent years by repeated efforts on the part of the Indonesian military (Osborne 1985). One Irian-born, Jakarta based journalist has drawn attention to the climate of fear and apathy prevailing in many rural areas as a consequence of a long period of armed conflict and the often harsh actions of the military, suspicious of the allegiance of villagers to the OPM cause (*Kompas* 17 April 1984). Continuation of the military conflict severely limits the scope of development programs and the activities of government personnel, teachers, health workers and administrators in rural areas. Strong political commitment to a coordinated effort to raise the welfare of Irianese, and to stamp out the abuses of private companies, local officials and military, would seem to be a precondition for winning the support of the indigenous population and encouraging participation in development programs.

Annex

Table A1 Annual growth rates of the Irian Jaya population, 1971–80

	Actual[a] 1971–80	Projected 1980–90
Urban[b] population		
Irian born	3.7	3.3
Non-Irian born:		
Java	3.3	8.0
Sulawesi	13.9	12.0
Maluku	9.9	8.0
Other	5.3	5.0
Subtotal	8.7	9.9
All urban	5.0	5.9
Rural[c] population		
Irian born	1.9	2.2
Non Irian born:		
Transmigrant	(26)	(24)
Others	(15)	(10)
Subtotal	23.0	21.0
All rural	2.1	3.3
All Irian Jaya	2.7	3.9

[a] Except for non Irian migrants in rural areas.

[b] Urban: the growth rates for all non Irian born are based on 1971–80 trends with the exception of the Java born figure which is estimated to rise considerably as a consequence of the transmigration program. Total urban growth rates are based on the NUDS projections 1980–2000 and growth of the Irian born population derived as a residual.

[c] Rural: transmigration growth rates assume a continuation of the same trend in 1979–86 for the period 1986–90. Other migrant growth rates rising from a small base in 1980, are arbitrarily assumed to rise at a high rate of 10 per cent associated with swakarsa transmigration settlement and spontaneous migrant settlers (mainly from South Sulawesi) establishing cash crop farms in urban fringe areas. Irian born growth rates are assumed to rise slightly as a consequence of the net impact of lower levels of mortality. All rural and total population rates are derived as a residual.

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