

International Boundaries Research Unit

**BOUNDARY &
TERRITORY
BRIEFING**

Volume 2 Number 3

**The Riau Islands and Economic Cooperation
in the Singapore–Indonesian Border Zone**

*Karen Peachey, Martin Perry
and Carl Grundy-Warr*

Boundary and Territory Briefing

Volume 2 Number 3
ISBN 1-897643-27-6
1998

The Riau Islands and Economic Cooperation in the Singapore Indonesian Border Zone

by

Karen Peachey, Martin Perry, Carl Grundy-Warr

Edited by

Clive Schofield

and

Andrew Harris

International Boundaries Research Unit
Department of Geography
University of Durham
South Road
Durham DH1 3LE
UK

Tel: UK + 44 (0) 191 334 1961 Fax: UK +44 (0) 191 334 1962

E-mail: ibru@durham.ac.uk

www: <http://www-ibru.dur.ac.uk>

The Authors

Karen Peachey is finishing her Master's degree in the School of Community and Regional Planning at the University of British Columbia, Vancouver, Canada. She spent five months carrying out research in Batam's squatter settlements about the housing challenges faced by low-income residents and planners on the island.

Martin Perry is a senior lecturer in the Department of Geography, National University of Singapore. He is an economic and regional geographer with a particular interest in public policy. His most recent book is *Singapore: A Developmental City State* (1997, John Wiley) (with Lily Kong and Brenda Yeoh). Articles from his research on growth triangles has appeared in the *Singapore Journal of Tropical Geography* and *Pacific Viewpoint* as well as in three edited books.

Carl Grundy-Warr is a senior lecturer in the Department of Geography, National University of Singapore. He is a political geographer with a particular interest in transborder integration. His experience of research and writing on cross-border issues have contributed to several books, including: *International Boundaries and International Boundary Conflict Resolution* (edited, 1990, International Boundaries Research Unit, University of Durham); *World Boundaries, Volume 3: Eurasia* (edited, 1994, Routledge); *International Boundaries and Environmental Security: Frameworks for Regional Cooperation* (edited, forthcoming, Kluwer). Articles from his research on borderlands and on transboundary issues have appeared in *GeoJournal*, *Singapore Journal of Tropical Geography*, *Boundary and Security Bulletin*, and as book chapters in various edited volumes. The author serves on the international advisory board of *Geopolitics and International Boundaries* (Frank Cass) and the *Journal of Borderlands Scholars* (Association of Borderlands Scholars, USA).

The opinions and comments contained herein are those of the author and are not necessarily to be construed as those of the International Boundaries Research Unit.

Contents

| | Page |
|---|------|
| 1. Introduction | 1 |
| 2. Context for Change | 3 |
| 2.1 Introduction | 3 |
| 2.2 Regional development in Indonesia | 3 |
| 2.3 Riau Province | 5 |
| 2.4 Batam | 8 |
| 2.5 Singapore and Riau | 10 |
| 3. Investment Agreements | 14 |
| 4. Flagship Developments | 15 |
| 4.1 Introduction | 15 |
| 4.2 BatamIndo Industrial Park | 16 |
| 4.3 Bintan | 17 |
| 4.4 Karimun | 20 |
| 5. The Indonesian-Malaysian-Singapore Growth Triangle | 20 |
| 6. Batam's Economic Transformation | 22 |
| 6.1 Introduction | 22 |
| 6.2 BatamIndo Industrial Park - Investment Growth | 22 |
| 6.3 Batam Island - Infrastructure Investment | 25 |
| 6.4 Batam Island - Private Investment | 28 |
| 6.5 Population and housing | 30 |
| 6.6 Social problems | 35 |
| 6.7 Labour | 37 |

| | | |
|-----|--|----|
| 7. | Developments in the Other Riau Islands | 41 |
| 7.1 | Introduction | 41 |
| 7.2 | Bintan Industrial Estate | 41 |
| 7.3 | Bintan Water Projects | 42 |
| 7.4 | Bintan Beach International Resort | 43 |
| 7.5 | Karimun Marine and Industrial Complex | 43 |
| 7.6 | Bulan | 44 |
| 7.7 | Natuna Islands | 44 |
| 8. | Singapore's Regionalisation Programme | 45 |
| 9. | Summary and Conclusions | 46 |
| 9.1 | An Overview of Developments | 46 |
| 9.2 | Implications for “ <i>Borderless Economies</i> ” | 49 |
| | References | 53 |
| | Data Sources | 58 |

List of Figures

| | | |
|----------|-----------------------------------|----|
| Figure 1 | Singapore, Indonesia and Malaysia | 2 |
| Figure 2 | Riau Province | 6 |
| Figure 3 | BatamIndo Industrial Park | 16 |
| Figure 4 | Projected Land Use on Bintan | 17 |
| Figure 5 | Tourist Developments on Bintan | 19 |
| Figure 6 | The 'Barelang' Area | 27 |
| Figure 7 | Land Use on Batam Island | 29 |
| Figure 8 | <i>Rumah Liar</i> on Batam Island | 31 |

List of Tables

| | | |
|-----------|--|----|
| Table 1 | Riau Province and Indonesia Economic Indicators | 5 |
| Table 2 | Riau Province and Indonesia Development Indicators | 7 |
| Table 3 | Development Initiatives in the Riau Islands, post-1970 | 9 |
| Table 4 | Number of Parent Transnational Corporations and Foreign Affiliates, by Selected Area and Country (various years) | 11 |
| Table 5 | Share of Inward Foreign Direct Investment (FDI) of GDP, by Selected Area and Country | 12 |
| Table 6 | Comparison of the Riau Islands | 20 |
| Table 7 | Relative Unit Cost Comparison for Land and Labour (1991) | 23 |
| Table 8 | BatamIndo Industrial Park (BIP) Development Progress | 23 |
| Table 9 | Nationality Profile of BatamIndo Park Tenants | 24 |
| Table 10a | Batam Labour Force Growth, 1985-1996 | 37 |
| Table 10b | Employment Structure, 1996 | 37 |

| | | |
|----------|--|----|
| Table 11 | Worker Demonstrations on Batam, April 1995-March 1996 | 38 |
| Table 12 | Incidents Reported in BatamIndo Worker Dormitories, 1995 | 40 |
| Table 13 | Bintan Industrial Estate Five Year Growth Objectives, post-1996 | 42 |
| Table 14 | Summary of progress of Singapore's Flagship Projects, 1997 | 47 |

The Riau Islands and Economic Cooperation in the Singapore-Indonesian Border Zone

Karen Peachey, Martin Perry and Carl Grundy-Warr

1. Introduction

In the early 1990s, Indonesia's Riau islands to the south of Singapore (Figure 1) experienced an investment boom. In the five years up to 1993, Batam, the closest Riau island to Singapore, experienced population growth of over 50%, an eight-fold increase in the value of its exports and a fifteen-fold increase in annual private investment. The direct stimulus of this transformation was the decision by the Singapore government to develop, in partnership with Indonesian investment interests, a self-contained industrial estate on Batam. From a greenfield site in 1989, this estate, now known as BatamIndo Industrial Park, accommodated 56,000 jobs in 1996, many in manufacturing branches of leading multinational companies. While BatamIndo was not the first industrial estate to be designated, as its employment performance suggests, several aspects of this development gave it special significance.

Along with the development project, Singapore's political leaders secured changes in the investment rules and administrative procedures for foreign investors in the Batam economic zone. With a more favourable regulatory regime in place, the Singapore government provided investment in BatamIndo's infrastructure and management and marketed the location to Singapore-based companies. Self-containment was a further distinctive feature of the Park. Along with factories, power generation, telecommunications and other utilities, dormitory accommodation for the factory workers was constructed. The plan was to recruit workers, mainly young females, from Indonesia's main islands who would live in the dormitories whilst working on two year employment contracts. This arrangement completed the separation of the estate from its immediate context. The marketing strategy was to promise the efficiency of Singaporean infrastructure and management combined with the much lower operating costs of Indonesia.

The investment formula has since been replicated in the neighbouring islands of Bintan, where tourism as well as industry is being emphasised, and Karimun. Collectively these projects, as well as the investment from other sources that has been encouraged, have fuelled the long-standing Indonesian ambition to link the development of the Riau islands to Singapore. The Indonesian Minister for Research and Technology, Dr B. J. Habibie, developed his "*balloon theory*" to support this case. He argued that Singapore's economy had limited capacity and would burst if it did not have safety valves to draw off some of the excess growth (Grundy-Warr and Perry, 1996). Indonesia had tried in the 1970s and 1980s to configure the Riau islands to act as this outlet. Singapore's planners also showed interest in the idea but for a variety of reasons little progress was made until the BatamIndo project took off.

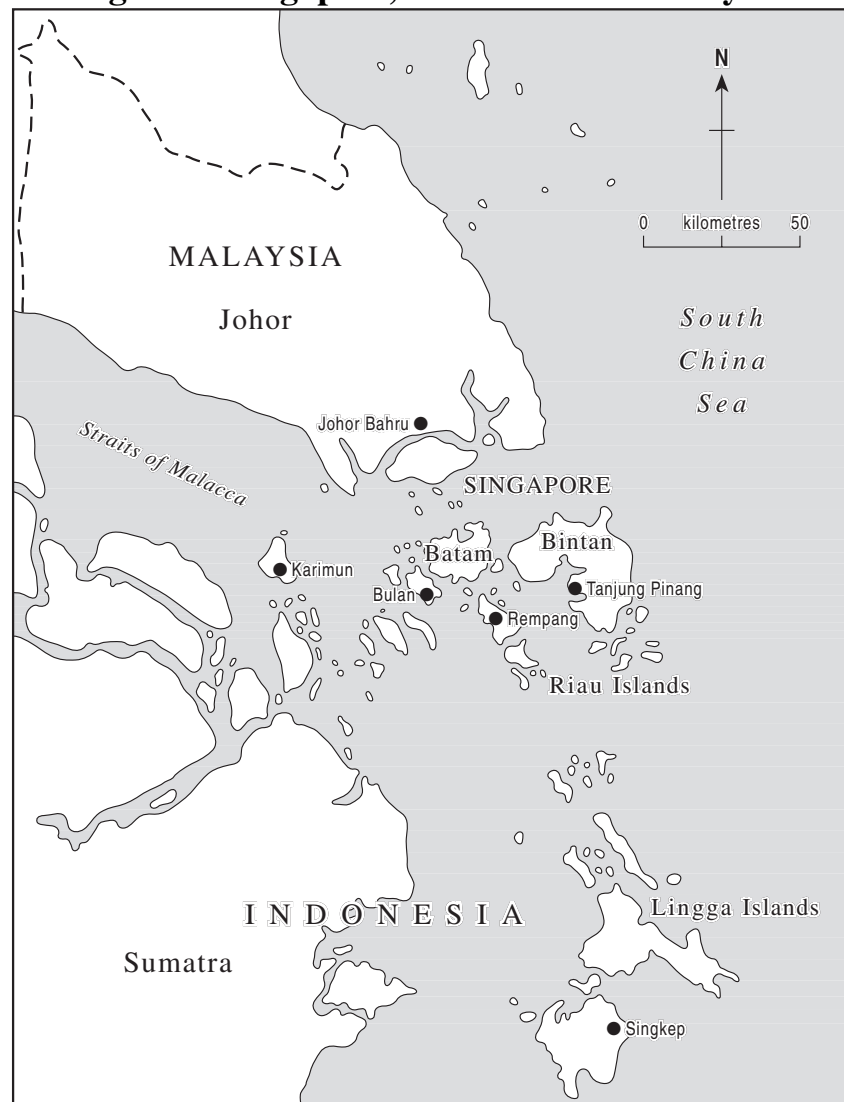
The transformation of the Singapore-Indonesian border zone is of more than local interest for several reasons. First, the investment strategy employed by Singapore in Batam has become the model for a much larger regionalisation programme. This programme envisages the creation of 'mini Singapores' in China, India and elsewhere in Asia, comprising privileged investment enclaves,

built and managed by Singapore agencies and marketed to multinational investors on the basis of Singapore's reputation for efficiency and administrative certainty.

Second, the Singapore-Indonesian cooperation in the Riau became part of a tripartite initiative in subregional cooperation with the inclusion of the southern Malaysian state of Johor (Figure 1). The rapid escalation of investment in the Riau islands seemed to give substance to the growth triangle project. Parallels were drawn with the integration of the Hong Kong-Guangdong subregion and advocacy of other growth triangle projects in other parts of Southeast Asia encouraged (Thant *et al.*, 1994). Two of the more advanced transborder growth triangle projects trying to replicate the Singapore-Indonesia experience are BIMP-EAGA (Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area) (Mijares, 1996) and the Indonesia-Malaysia-Thailand Growth Triangle (Asia Development Bank, 1996). Also of growing interest in this region is the large potential zone of transboundary cooperation in the Mekong Basin (Chapman, 1995) and more specifically in the large area called the 'golden quadrangle' straddling the political borders of northern Thailand, northeastern Burma (Myanmar), Laos and Yunnan Province, China (Hinton, 1995; Mya Than, 1994). A review of recent change in the Riau is therefore relevant to an assessment of the potential progress of growth triangle cooperation and other forms of sub-regional economic development in the broader region.

Third, the experience of Batam and neighbouring islands are a test of the Indonesian development model. This model involves a 'top-down' planning process, including national five year plans (*Repelitas*) prepared by the National Planning Agency (*Bappenas*) but with a multiplicity of government agencies and a lack of detailed planning effort (Hill, 1996: 95). One reflection of this is the opportunity for leading politicians to promote their own priorities. Dr Habibie, for example, is closely involved in the planning of Batam, generating the vision of the island as a place to rival Singapore's economic success. The influence of key politicians and dominance of national development agencies are typical of other high profile projects in Indonesia (Royale, 1997) but in Batam's case

Figure 1: Singapore, Indonesia and Malaysia



the partnership with Singapore adds a distinctive dimension. Arising from this are the political complications associated with Indonesian economic nationalism and ethnic sensitivities raised by facilitating the spread of Southeast Asian Chinese capital from Singapore (Parsonage, 1992).

The experience of Batam is also a case study of the constraints on seeking to 'fast track' development in a low-income country with high levels of population migration. In this context, the Riau islands were thought to have an advantage because of the ability to manage population in-migration compared with a mainland setting. The 'Batam boom' has, however, attracted large flows of legal and illegal migrants, adding to the planning challenges faced by the islands.

The remainder of this *Briefing* is divided into four sections. First (Section 2), the context for Singapore-Indonesian cooperation in Riau is discussed, including a brief history of Indonesia's efforts to promote the development of Batam and the reasons for Singapore's changing interest in the region. Second (Sections 3-4), the investment agreements facilitating cooperation and the development strategy being followed are outlined. This includes a description of Singapore's four 'flagship projects': BatamIndo Industrial Park, Bintan Industrial Park, Bintan Beach International Resort and the Karimun marine and industry complex. The third section (Section 5) explains the linkage to the Indonesia-Malaysia-Singapore Growth Triangle that grew out of the initial cooperation in Batam. The fourth section (Sections 6-9) then examines the progress of the flagship projects and the impacts on the Riau islands, giving particular attention to Batam where most investment has occurred. The influence of the development strategy followed by Singapore's economic planners on a broader regionalisation programme is also explained before the *Briefing* concludes with a summary of the achievements and a discussion of the wider implications of recent economic change in the Riau.

2. Context for Change

2.1 Introduction

Although the transformation of the Riau islands has taken place over a short space of time, the context for the development of Singapore-Indonesian cooperation has evolved over several decades.

As noted in the introduction, Indonesia has been planning Batam's industrial development since the 1970s. Over this time the development objectives set for the island have evolved. As well as the specific planning of Batam, the regional development context and character of the Riau economy are contributory influences on the form of development currently arising. In respect of Singapore's interest in Riau, this has developed alongside Indonesian promotion. Restructuring of the Singapore economy, associated with the outflow of manufacturing activity, changed the priorities of the city state's economic planners, including their willingness to add their promotional weight behind Batam, and subsequently other islands. This section relates these various issues and takes the account up to the commencement of Singapore's first flagship project, BatamIndo Industrial Park.

2.2 Regional development in Indonesia

Regional development takes on a particular importance in Indonesia (Hill, 1996: 215). The underlying reason for this is the persistence of diversity. In 1995, the *per capita* regional product of

the richest province (East Kalimantan) was over eleven times that of the poorest (East Nusa Tenggara) (*Statistik Indonesia*, 1995). Spatial socio-economic disparities in the largest archipelagic state in the world are spread across thousands of populated islands and several widely dispersed regions. It should be stressed that Batam and the neighbouring Riau islands are but tiny fragments within this vast, fragmented politico-territorial entity, which is an unwieldy unitary state. Pronounced economic differences between regions have not diminished, and some may have been exacerbated by different phases in Indonesia's industrialisation (Booth, 1996). For instance, Eastern Indonesia (defined as the four provinces on the island of Sulawesi, as well as East and West Nusanternggara, East Timor and Maluku) contained 12.1% of the country's population in 1993 (some 22.9 million people), and 11.7% of the labour force, but in 1991 produced only 6.4% of GDP. This can be contrasted with the four mineral rich provinces (including East Kalimantan, Aceh, Riau and Irian Jaya), which contained only 6% of the population in 1993 but produced around 17.1% of GDP (1991) with approximately 4.7% of the workforce (*Statistical Yearbook of Indonesia*, 1993; *Penduduk Miskin dan Desa Tertinggal 1993: Metodologi dan Analisis*, Central Bureau of Statistics, Jakarta, 1994). Regional differences also reflect big spatial variations in population density, from over 1,000 persons per square kilometre in some densely populated parts of Java to only a few persons per square kilometre in parts of Irian Jaya and Kalimantan. Income and population contrasts are reflected in wide social disparities; for example infant mortality rates vary by a factor of four between the poorest province and Jakarta.

Regional differences reflect some big disparities in sectoral distribution. As Booth (1996: 116) observes, Eastern Indonesia's share of a range of productive sectors, including public utilities, construction, trade, financial services and non-government services was well below the national average. However, it is important to stress that most aggregated regional data masks big socio-economic disparities at the intra-regional scale and *in situ*, which are also significant in the supposedly better-off localities. The fact is that relative richness in GDP terms at national and regional levels is an unsatisfactory measure of the majority of peoples' true living standards. Very often detailed research is required at the meso- and micro-levels in order to develop a more nuanced understanding of socio-spatial differentiation. As Rigg (1997: 87) has cautioned, regional data tends "*to ascribe human characteristics to (often arbitrary) spatial designations.*" Furthermore, aggregate statistics can be distorted by the highly uneven geography and disproportionate contribution to total aggregate statistics of key sectors, such as oil and gas.

The regional issue takes on other dimensions in Indonesia. Politically, the persistence of regional differences represents a threat to the unitary nation state, which Indonesia's political elite regard as inviolable. Dissatisfaction arises, for example, in the resource-rich provinces (including Riau) because of the way revenue accrues to the nation, rather than the producer locality, and the tendency for local business to be pushed aside by agencies linked to the national government. In certain outlying provinces, the manner of their incorporation into the Indonesian state adds to feelings of resentment over the capture of the proceeds of regional resource exploitation by national elites.

A degree of change in the regional problem is also relevant to the planning of Riau's development. Prior to the 1990s, the high population density of Java (home to 60% of the population on 6% of the country's land area) was thought to give the other islands more favourable development prospects. Growth, it was thought, would be maximised by pushing back the agricultural frontier in the less populated islands while promoting out-migration, reduced fertility, off-farm employment and agricultural intensification in Java's most populated regions. By the 1990s it was apparent that, against expectations, Java's share of the national economy had been growing: for example, Java's share of national exports more than doubled between 1976 and 1991 (Hill, 1996: 218). New

export-orientated industries, labour-intensive manufacturers and tourism fuelled Java's growth and generated increased enthusiasm for encouraging foreign investment in the manufacturing sector.

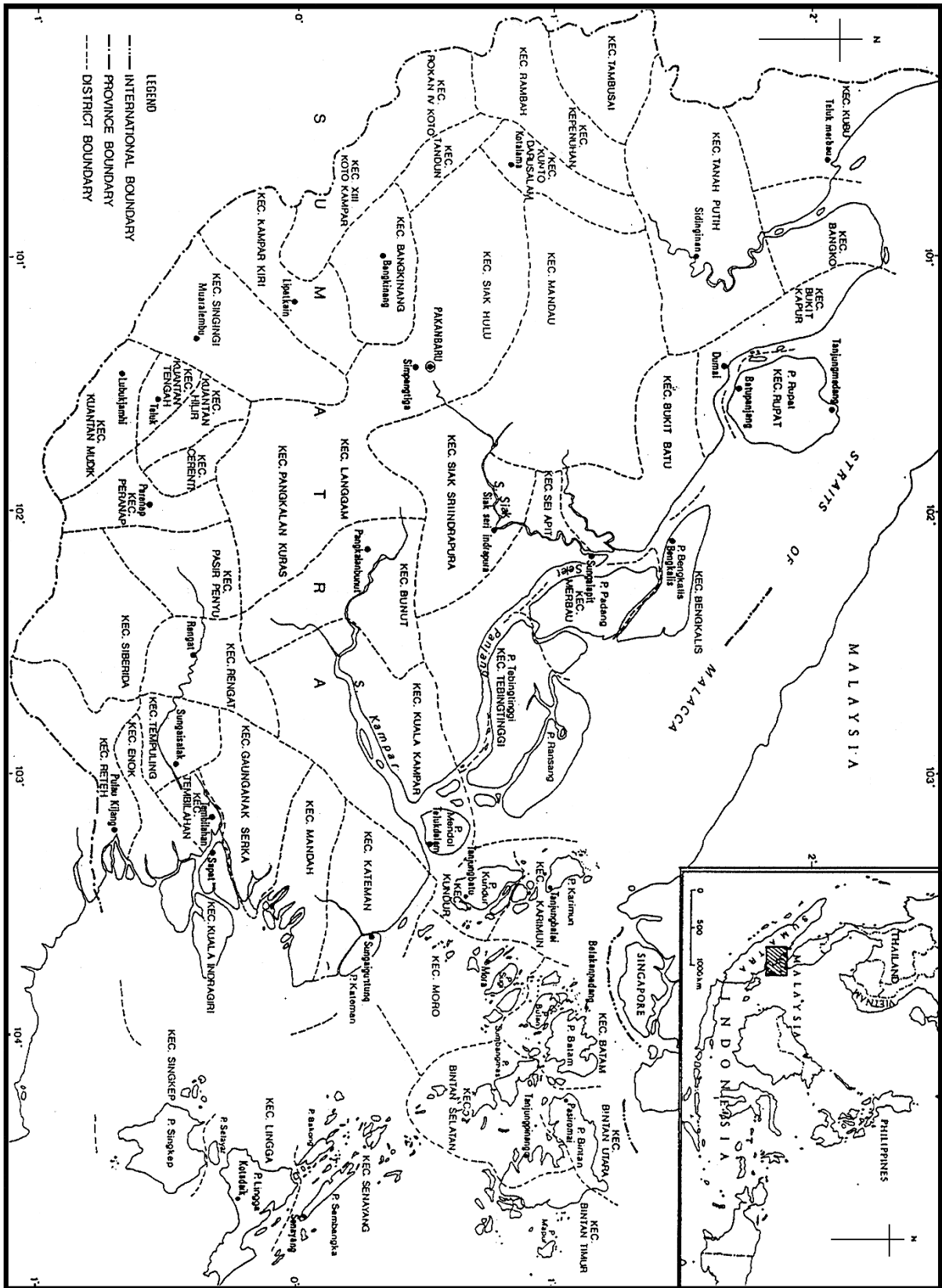
2.3 Riau Province

Riau is illustrative of the regional issues associated with the presence of rich mining enclaves amidst poor communities. The province of Riau stretches over a large area of central east Sumatra and more than 3,000 islands, amongst the most important of which are Batam, Bintan, Karimun and Singkep (Figure 2). Riau province has the second highest gross domestic product (GDP) *per capita* of any provincial economy in Indonesia and the largest share of production accounted for by manufacturing (Table 1). Riau produces around half of Indonesia's petroleum, which is the province's main source of income. Reflecting this, the actual level of development is less than the overall indicators would suggest because of the dualistic structure of the economy. When oil is excluded, Riau's GDP *per capita* falls below the Indonesian average. The capital intensive nature of petroleum refining has resulted in Riau's manufacturing sector being much less important as a generator of employment than as a contributor to regional GDP. In 1990, there were just 85 manufacturing establishments located in 'mainland' Riau, on Sumatra, of which the most important were engaged in timber processing, rubber and food processing (Soh and Chuang, 1990).

Table 1: Riau Province and Indonesia Economic Indicators

| | Riau Province | | Indonesia | |
|---|---------------|-----------|-----------|-----------|
| | Total | Excl. oil | Total | Excl. oil |
| Per Capita Gross Domestic Regional Product (GRDP), 1993 constant price (1,000s Rp) | | | | |
| 1994 | 4,818 | 1,773 | 1,860 | 1,682 |
| 1995 | 4,875 | 1,877 | 1,981 | 1,808 |
| Growth Rate of per capita GRDP at 1993 constant price (%) | | | | |
| 1994 | 0.68 | 5.58 | 5.80 | 6.27 |
| 1995 | 1.18 | 5.84 | 6.50 | 7.50 |
| Manufacturing as share of GRDP (%) | | | | |
| 1990 | | 7.7 | | 18.4 |
| Agriculture as share of employment (%) | | | | |
| 1995 | 52.7 | | 43.9 | |
| Manufacturing as share of employment (%) | | | | |
| 1995 | | 6.7 | | 12.6 |
| Source: <i>Statistik Indonesia</i> , 1995. | | | | |
| Note: Rp2,950 = US\$1. | | | | |

Figure 2: Riau Province



In 1990, Riau's population was slightly over 3.3 million and, mainly as a consequence of the development of Batam and Bintan, reached four million in 1995. The main urban centres are Pekanbaru, the provincial capital (400,000), Dumai, an ocean port in the north of the province, Tanjung Pinang (Bintan) and Batam island (although the main town of the latter is Nagoya, for the purposes of this study Batam is included as a single urban locality). Overall, 70% of the population are located in rural areas but population density is the lowest amongst Sumatra's districts. Around a quarter of the land is cultivated, the balance being predominantly classified as forest, and of this around half is in agricultural estates (rubber, palm oil and coconut). Excluding the oil sector, *per capita* GDP is close to the Indonesian average, but has been growing more slowly than the national average and most other Sumatran provinces. Out of the workforce of 1.5 million in 1995, around half were employed in the rural sector while less than 10% were in manufacturing work. The agricultural share of employment has, however, been dropping, falling by 16.4% 1971-1990. Riau is an importer of rice and while there has been ambition to make the province self sufficient, topographical conditions make this unlikely. Nevertheless, there has been some diversification within the agriculture sector, into crops including pineapples, sugar, grapes, soya bean and bananas, which is opening opportunities for food processing industries.

General living conditions reflect the dualistic structure of the economy (Table 2). In 1995, reflecting the relatively high living costs, the minimum daily wage of Rp4,150, excluding Batam, (US\$1 = Rp2, 947 at the time of writing, so Rp4,150 = approximately US\$1.40) was the highest of any Sumatran province, and not far below the Rp4,600 (US\$1.56) set for Jakarta. In contrast, less than 10% of the population had monthly expenditure of greater than Rp60,000 (US\$20) in 1990. This was above the national average (7.1%) but well below Jakarta (41.2%). The infant mortality rate was almost double that of Jakarta in the late 1980s whilst participation in tertiary education was amongst the lowest of any Indonesian province (Rice, 1989).

The modest nature of the economy outside the oil and gas sector is reflected in the investment opportunities identified by the Riau Regional Investment Coordinating Board in 1989. In the manufacturing sector, outside of activities downstream from oil refining, food processing

Table 2: Riau Province and Indonesia Development Indicators

| | Riau | Indonesia |
|--|------------------|------------------|
| % Population of working age in 1995 ¹ | 52.6 | 56.6 |
| Infant Mortality (per 1,000 live births), late 1980s | 65 | 69 |
| Education Enrollment per 1,000 persons, 1990 | | |
| Primary | 161 | 148 |
| Tertiary | 4.1 | 8.3 |
| % Population in Poverty, 1990 ² | 13.1 | 19.6 |
| Minimum Daily Wage (Rp), 1995 | 4,150 (US\$1.40) | |
| % Population with Monthly Expenditure over Rp60,000 (US\$20), 1995 | 9.6 | 7.1 |
| Sources: Statistik Indonesia, 1995; Hill, H (1996) <i>The Indonesian Economy Since 1966</i> , Cambridge: Cambridge University Press. | | |
| 1. Population aged 10 years and over. | | |
| 2. 'Adjusted headcount indices'; see Bidani, B & Ravallion, M (1993). | | |

activities (pineapple canning, biscuit manufacturing, oil palm products, starch, coconut products) and forest product processing (wood, bamboo and rattan furniture, particle board manufacture) were the main opportunities identified. Mining of coal, various minerals and peat were seen as viable projects, but as mining activity is currently concentrated on several Riau islands, considerable infrastructural investment would be required for commercial production. The agri-business sector has been expanding, especially oil palm plantations. Further scope for investment in oil palm plantations was identified, as well in improving production of other estate crops, aquaculture, livestock farming and a number of exotic fruit and vegetable crops.

In addition, the region's tourism potential was seen to be substantial, based on its numerous island locations and the ability to draw on Singapore as an international gateway and local market. The Indonesian vision is of a 'Caribbean of the East'. In 1990, prior to the expansion of tourist facilities in the Riau islands, the entire Riau province (mainland and islands) had only 140 hotels, offering 2,800 rooms, of which almost a fifth were in three hotels in Pekanbaru. Particularly in view of Singapore's rising affluence and need to diversify its own tourist industry, Riau's potential for tourist growth is already being developed but the Caribbean image is somewhat at odds with existing activity. The islands lie alongside one of the world's busiest shipping lanes, with oil a major cargo and oil pollution widely dispersed (Chua *et al*, 1996). Several of the more accessible islands are extensively mined and while the mining of tin and bauxite is declining, environmental degradation is extensive. For instance, bauxite mines on Bintan island have been producing for over 60 years but are likely to cease production by the year 2000 due to declining reserves and a reorganisation of Bintan's economic land-use (*Petrominer*, 15 February, 1997).

A further constraint in realising Riau's development potential is the limited infrastructure for business. The province's poor telephone service is deemed a serious constraint on investment, along with the limited capacity and unreliability of energy supply. Riau's roads and seaports are congested and the network underdeveloped. The main export port of Dumai, in the north of Riau province, has been expanded but requires further investment to support a significant growth in trade. In the agricultural sector, many farmers have no title to their land, blocking access to loans from the organised financial sector. Large-scale private plantation development has been hindered by land regulations which limit the right to use government-controlled land for estate crop development to a period of 30 years. This has inhibited improvement of established estates.

2.4 Batam

Batam has been identified as a place with particular development potential since the late 1960s. The original interest was for industrial development as a logistics and operational base for oil and gas industries. This arose when it became increasingly apparent that Jakarta could not continue as the sole depot to support the offshore exploitation of oil and gas in the Natuna islands and northern Sumatra. In 1976, Batam was classed as a priority industrial development project, having been the subject of a presidential decree in 1973 (Table 3). The planning of the necessary infrastructures was set out in a first 'Master Plan' in 1972 under the instruction of the Indonesian national petroleum company, Pertamina, reflecting the island's intended development. After the mid-1970s and the crisis caused by Pertamina's financial losses, administration of Batam reverted back to the government.

Table 3: Development Initiatives in the Riau Islands, post-1970.

| Period of Development by Indonesia | |
|---|--|
| 1971 | Batam Island Development Agency (BIDA) established. |
| 1978 | Batam designated as a tax-free bonded zone for export industry. |
| 1979 | Industrial development Master Plan released for development up to 2006. |
| 1980 | Indonesia-Singapore Batam development agreement. |
| Period of Development by Indonesia and Singapore | |
| Oct 1989 | President Suharto and then Prime Minister Lee Kuan Yew discuss Batam's development; foreign investment restrictions modified. |
| Oct 1989 | Growth triangle idea announced by then Deputy Prime Minister Goh Chok Tong. |
| Jan 1990 | Singapore-Indonesian joint venture established to construct BatamIndo Industrial Park. |
| Aug 1990 | Economic cooperation and investment protection agreement signed by Singapore and Indonesia to promote development of Riau province. |
| 1991 | Establishment of Bintan Resort Management for joint venture resort, industrial park and water projects. |
| Apr 1992 | BatamIndo Industrial Park officially opened. |
| Dec 1994 | Partial opening of Bintan Resort Development. |
| Dec 1994 | Memorandum of Understanding signed by trade ministers of Singapore, Malaysia and Indonesia to govern cooperation in the growth triangle. |
| Apr 1995 | Indonesia proposes construction of 50km of highway and bridges to link islands south of Batam, creating Bareleng Bin. |
| Mar 1996 | Expansion of growth triangle to other states in Malaysia and Indonesia proposed by these countries. |
| Source: updated from Sato (1991). | |

A second Master Plan was completed in 1979, taking into account the island's designation in 1978 as a bonded area or duty-free zone. This Master Plan was prepared under the joint control of the Batam Industrial Development Authority (BIDA) and the Directorate-General of Planning of the Indonesian Ministry of Public Works. This new planning document was premised on a population target of 700,000, to be achieved by 2004, compared with the population of 18,640 in 1979. The population target was reduced from the first Master Plan in line with revised estimates of the island's maximum water supply capacity. BIDA, under the chairmanship of Dr B. J. Habibie, Minister of Research and Development, had the responsibility for implementing the plan, along with an interministerial committee called the Supervisory Body of Batam Industrial Zone. These administrative arrangements took the Batam Industrial Zone outside the control of the Regional Development Planning Board, reflecting the national interest in the island's development.

Under its free trade zone status, free importation of all goods intended to be used on the island was allowed, including goods to be processed for export outside of Indonesia. The 1979 Master Plan targeted export industries, trans-shipment, warehousing and tourism. Dr Habibie developed his "balloon theory" to support the island's case (see Section 1). Based partly on this perception, Habibie's vision for Batam extended to it becoming a 'high tech centre'. In practice, it was support for Indonesia's oil and gas industry which provided the main source of industrial development under the second Master Plan. This investment was induced by changes in regulation that forced foreign companies supporting the Indonesian oil industry to operate within Indonesia, inducing some

organisations to shift their support base from Singapore to Batam. This period of growth was cut short by falling oil prices and the corresponding slump in the oil business.

Although the development process was not maintained, the island's population grew from around 6,000 in the early 1970s to over 50,000 in 1985. The number of tourist visitors had also grown substantially. This had been helped by an agreement between Indonesia and Singapore in October 1980 that allowed the free movement of goods, individuals and services between the two islands. Prior to and following this agreement, discussions on Batam recurred regularly at summit level between the two countries. In 1979, Singapore's Prime Minister, Lee Kuan Yew, on a visit to Batam, announced the possibility of a participation of more than US\$1 billion in the development of the island's infrastructure, on condition that investors should be able to remain the prime contractors and repatriate a sufficient share of the profits. This offer did not progress and was the cause of accusations from some Indonesian parties that Singapore's participation in Batam's development would weaken Indonesian sovereignty over the island. A more specific project that was frequently discussed arose from Singapore's willingness to participate in an oil pipeline linking Natuna Island to Batam. This did not progress given the recession in the oil markets and because of certain feasibility problems, although Indonesia did seek to relaunch the idea in 1987 to accelerate its exports of natural gas, which is now in progress between Pertamina, Esso (Exxon), Mobil Oil and a Japanese group (JNOC) (*Petrominer*, March 15, 1997). Ten years after the formulation of the second Master Plan, total employment on Batam was just 11,000, mainly concentrated in local services, tourism and oil-related firms using Batam as a service base (Batam Industrial Development Authority, 1991).

2.5 Singapore and Riau

Until the 1990s, apart from a small amount of weekend tourism encouraged by the 1980 agreement, Singapore made little use of the 'safety valve' offered by Riau. Instead, for additional resources, the city state had tended to look to the southern Malaysian state of Johor. Prior to 1965, when Singapore was removed from the Federation of Malaysia, Singapore had no border or customs control with its northern neighbour. Even after political separation, historical and ethnic ties plus the ease of communication across the causeway favoured expansion in this direction.

Singapore's need for resources to supplement its reserves of land and labour, upon which rapid economic growth and its 'world city' role has placed high demands (Neville, 1992), has resulted in close integration with Malaysia. Half of Singapore's daily drinking water requirements, for example, are supplied by Johor under an accord first signed in 1927 and renewed in 1962 and 1991 (Regnier, 1991). Daily commuting flows of workers from Johor to Singapore have grown to around 25,000, in addition to many more long-term workers on employment passes or as permanent residents. In the opposite direction, large flows of weekend shoppers and tourists cross the causeway with an estimated annual spending of around M\$1 billion (M\$: Malaysian dollars or *Ringgit*. US\$1 = M\$3.0 at the time of writing, M\$1 billion = US\$333 million) (*Straits Times*, 21 June 1990). Business relocation has also occurred, particularly of labour-intensive industry. In 1989, Singapore's foreign direct investment (FDI) in Malaysia was around ten times the value of its investment in Indonesia (Department of Statistics, 1991).

The shift of investment interest to Riau was partly a consequence of Singapore's need for an additional overspill location. In the late 1980s, Johor's rapid economic growth had put local infrastructure under severe pressure, inflating land costs and making it hard to recruit factory workers (Perry, 1991). These pressures brought forward major building programmes including the

development of 12 new industrial estates, covering 2,700 hectares (ha), skills training centres and a massive housing and social infrastructure programme (McGee and Macleod, 1992). Immediately, however, Johor's infrastructure bottlenecks added to the interest in developing an alternative relocation destination for businesses seeking to escape the high costs and limited resources of Singapore.

Underlying the thinking of Singapore's economic planners is the perceived vulnerability of their economy to a loss of attractiveness to foreign investors. Singapore's economy has grown through it becoming a major recipient of foreign direct investment (FDI). Although a small island with a population of less than three million, throughout the 1980s and into the early 1990s, Singapore attracted over 10% of all FDI received by destinations outside the OECD (UNCTAD, 1994: 13-15). Measured by the number of affiliates of foreign transnational corporations present, Singapore is now a major world site of international business (Table 4). Indeed, as measured by share of GDP, Singapore is amongst the most internationalised economies in the world (Table 5). In 1989, almost 95% of the stock of FDI originated from industrialised nations, roughly equally divided between North American, Japanese and European owners (UNCTC, 1992:19). This was a marked change from the 1970s when investment from neighbouring countries represented a much larger share of Singapore's foreign-owned sector. In total, branches and affiliates of foreign multinationals accounted directly for 70% of Singapore's exports and 40% of its employment in the early 1990s.

Table 4: Number of Parent Transnational Corporations and Foreign Affiliates, by Selected Area and Country (various years)

| | Parent Corporations Resident | Foreign Affiliates Resident | Year |
|--------------------------------|------------------------------|-----------------------------|------|
| All Developed Countries | 34,353 | 93,331 | |
| Selected Countries | | | |
| Australia | 732 | 2,450 | 1994 |
| Canada | 1,447 | 4,475 | 1993 |
| France | 2,216 | 7,097 | 1993 |
| Germany | 7,003 | 11,396 | 1993 |
| Italy | 445 | 1,474 | 1993 |
| Japan | 3,650 | 3,433 | 1993 |
| Netherlands | 1,608 | 2,259 | 1993 |
| New Zealand | 247 | 1,717 | 1993 |
| Sweden | 3,700 | 6,150 | 1993 |
| Switzerland | 3,000 | 4,000 | 1985 |
| United Kingdom | 1,443 | 3,376 | 1992 |
| United States | 2,966 | 16,491 | 1992 |

Table 4: (Continued)

| | Parent Corporations Resident | Foreign Affiliates Resident | Year |
|---------------------------------|------------------------------|-----------------------------|------|
| All Developing Countries | 3,788 | 101,139 | |
| Selected Countries | | | |
| China | 379 | 45,000 | 1993 |
| Hong Kong | 500 | 2,828 | 1991 |
| Indonesia | 313 | 3,472 | 1995 |
| Mexico | | 8,420 | 1993 |
| Philippines | | 1,952 | 1987 |
| South Korea | 1,049 | 3,671 | 1991 |
| Singapore | | 10,709 | 1986 |
| Taiwan | | 5,733 | 1990 |
| World | 38,541 | 251,450 | |

Source: UNCTD (1995:8).

Table 5: Share of Inward Foreign Direct Investment (FDI) of GDP, by Selected Area and Country

| | FDI share of GDP (%) | Year |
|--------------------------------------|----------------------|------|
| Selected Developed Countries | | |
| Australia | 26.0 | 1991 |
| Canada | 18.7 | 1990 |
| France | 4.9 | 1989 |
| Germany | 5.5 | 1989 |
| Italy | 5.3 | 1989 |
| Japan | 0.6 | 1990 |
| Netherlands | 27.2 | 1989 |
| New Zealand | 7.8 | 1989 |
| Sweden | 4.1 | 1988 |
| Switzerland | 13.8 | 1989 |
| United Kingdom | 19.4 | 1990 |
| United States | 7.4 | 1990 |
| Selected Developing Countries | | |
| China | 0.8 | 1987 |
| Hong Kong | 17.0 | 1987 |
| Indonesia | 43.4 | 1987 |
| Malaysia | 24.0 | 1987 |
| Philippines | 4.0 | 1987 |
| South Korea | 2.3 | 1987 |
| Singapore | 89.5 | 1987 |
| Taiwan | 5.3 | 1987 |
| Thailand | 5.8 | 1987 |

Source: UNCTD (1993) *World Investment Directory*, Volume 1, 'Asia and Pacific', and Volume 3, 'Developed Countries'.

During the 1980s foreign investors increasingly shifted their use of Singapore away from branch factory manufacturing to regional control and coordination functions. Two influences lie behind this transformation (Rodan, 1993). The first of these processes was the emergence of a 'regional focus' in the corporate strategy of many multinational corporations. This resulted in the decentralisation of an extended range of business functions to enable fuller exploitation of the regional market than had previously been attempted. The original motive for investment – low production costs – has not disappeared as a consequence of this strategic change, rather it has changed the use made of different locations. The second and related process is the regional decentralisation of foreign investment to nearby countries, in pursuit of less constrained manufacturing environments than that now found in Singapore, particularly in terms of labour and land availability. Under these twin processes, an ASEAN division of labour has emerged in which Singapore has assumed importance as a distribution, testing, design and administrative centre for production that is dispersed amongst a new 'periphery' of lower wage countries (Indonesia, Malaysia, Thailand, Philippines). The Economic Development Board (EDB), Singapore's premier economic promotion agency, estimates that around 2,000 organisations now have a regional office in the city state (*The Straits Times*, 31 January 1996).

Singapore's economic planners have sought to retain control over the form that restructuring takes. The ideal shift they hope to encourage comprises a *moving out* of low value, labour-intensive production alongside a simultaneous *moving up* to advanced technology manufacturing and support services of the activity remaining in Singapore. This transition is captured by the development goal set in the late 1980s of becoming a 'total business centre'. By this it is meant that:

Singapore aims to become an important strategic node of global companies for the Asia-Pacific region...we would like companies to do more than production. On the one hand, they should integrate backwards into activities such as production engineering, product design, research and development; on the other hand, they should integrate forwards into marketing, technical support, after-sales services and ultimately regional management (Economic Development Board, 1988: 12).

As one lever to engineer this shift, Singapore's economic planners looked first to Thailand as a place to steer low value manufacturing. The Economic Development Board, through a subsidiary agency, developed an industrial estate in that country and established an International Business Linkages Unit to assist organisations to relocate labour-intensive activities to these estates and neighbouring regions. (This work is now coordinated under the 'International Business Hub 2000' programme linking together efforts to attract investments in headquarters, business service, logistics, communications, information and lifestyle services.) However, feedback from multinational companies (MNCs) was not favourable because of logistical and taxation problems in moving goods and income between Singapore and Thailand (Scherschel, 1991). Coincidentally the possibility of Singapore's participation in the development of the Riau islands was canvassed again by the Indonesian government in 1989, this time leading to an agreement and joint development of industrial infrastructure.

3. Investment Agreements

When the possibility of the Riau islands supplying additional production space for activity linked to Singapore was revived in 1989 there was a transformation in the Indonesian vision of the island's economic role. Rather than Batam becoming a competitor location to Singapore, it was to be rapidly developed as part of a complementary and cooperative relationship endorsed at the highest political levels in both states. In line with this, changes to the investment regime in Batam that were designed to make the island attractive to multinational capital were negotiated with Singapore.

In the Batam Economic Zone (Batam plus five neighbouring islands), 100% foreign ownership was made possible, subject to the divestment of 5% to local ownership after 5 years; this compared with the need to divest 51% of ownership after 15 years elsewhere in Indonesia (a requirement since relaxed). The minimum capital investment for foreign companies was relaxed, allowing projects of US\$250,000 compared with the usual minimum of US\$1 million. A Board of Investment Office was opened in Batam with decision-making autonomy from the head office in Jakarta. Finally, duty payments were restricted to the value of imported raw materials, rather than the finished product, making the island more viable as an export base compared with other parts of Indonesia.

The Indonesian government also opened more industries to foreign investment. Batam island's 'negative list' of industries closed to foreign investment, or requiring special permission, was reduced to labour-intensive industries, shipbuilding, rattan and wood furniture, chemical industries, industries requiring large volumes of water, heavy polluting industries, garments and mining. Specific future growth areas identified were: agro-based industries, electrical and electronic products, food processing, fisheries, hydrocarbon processing, oil industry services, metal engineering and fabrication, ship repair and servicing, textiles, tourism and trans-shipment.

At the same time, restrictions on the private development and control of industrial estates (both by domestic and foreign companies) were relaxed throughout Indonesia. This was mainly a response to the government's lack of resources and increasing willingness to privatise infrastructure provision. By allowing Singapore companies to manage industrial estates, uncertainties associated with the security of land tenure were reduced.

Parallel to the negotiations with Singapore over Batam, Indonesia advanced its planning for the development of the neighbouring island of Bintan. Based on Presidential Decree 31/1990 (25 July 1990) the Coordinating Team for Riau Province Development (KPPR) was formed. This team was given responsibility for the preparation and implementation of development policies within the framework of Indonesia-Singapore cooperation. The team comprises the Coordinating Minister of Economic, Finance and Industry, Junior Minister of Industry, Chairman of the Investment Coordinating Board and the Riau Governor. The setting up of this team reflected the desire to ensure greater participation of the Riau provincial government compared with the national control of Batam's development.

Agreements for economic cooperation in the framework of the development of the Riau province and the promotion and protection of investments were signed between Singapore and Indonesia in August 1990. The framework agreement included the following provisions:

- simplification of product distribution, payment and delivery procedures between Singapore and Riau Province;
- joint tourism promotion and development;

- cooperation in water supply and transportation to Singapore;
- cooperation in development and maintenance of infrastructure for joint development projects;
- cooperation in industrial and technological development in Riau Province, including trade, agriculture and warehousing;
- exchange of visits by advisers, specialists and trainees;
- simplification of the tax system to facilitate investments; and,
- simplification of entry and exit procedures.

The investment promotion and protection agreement provided investment guarantees from the Indonesian government for Singaporean enterprises making investments in Riau Province. Accompanying the agreements, an Indonesian-Singaporean ministerial committee on the development of Riau was established. An *ad hoc* coordination board was also put in place comprising officials from the Riau province regional development agency (Bappeda), the provincial-level Board of Investment (BKPM) and the Singapore Economic Development Board. While BIDA retained administrative control of investment on Batam, responsibility for the other Riau islands was retained by KPPR (see above).

In June 1991, Singapore and Indonesia signed a 50-year water agreement. Under the agreement water resources in Riau will be developed to supply Singapore as well as Riau. Two joint venture companies were formed to further cooperation. One is majority Singapore-owned and has responsibility for infrastructure development, collecting and distributing water to Singapore and to the second joint venture company. The second company, majority Indonesian-owned, is to distribute water on Bintan. In 1993 a further agreement was signed for cooperation in the development of water resources from the Kampar River basin in the Riau mainland.

In August 1991, Karimun was brought into the development picture through a Memorandum of Understanding between Bangun Cipta IndoKarimun (an Indonesian consortium) and the Sembawang Group that committed the parties to plan the joint development of a shipyard and a petroleum processing centre in Karimun. A 4,000ha site was allocated to the joint venture to develop the infrastructure for a marine and petroleum-related industrial sector.

4. Flagship Developments

4.1 Introduction

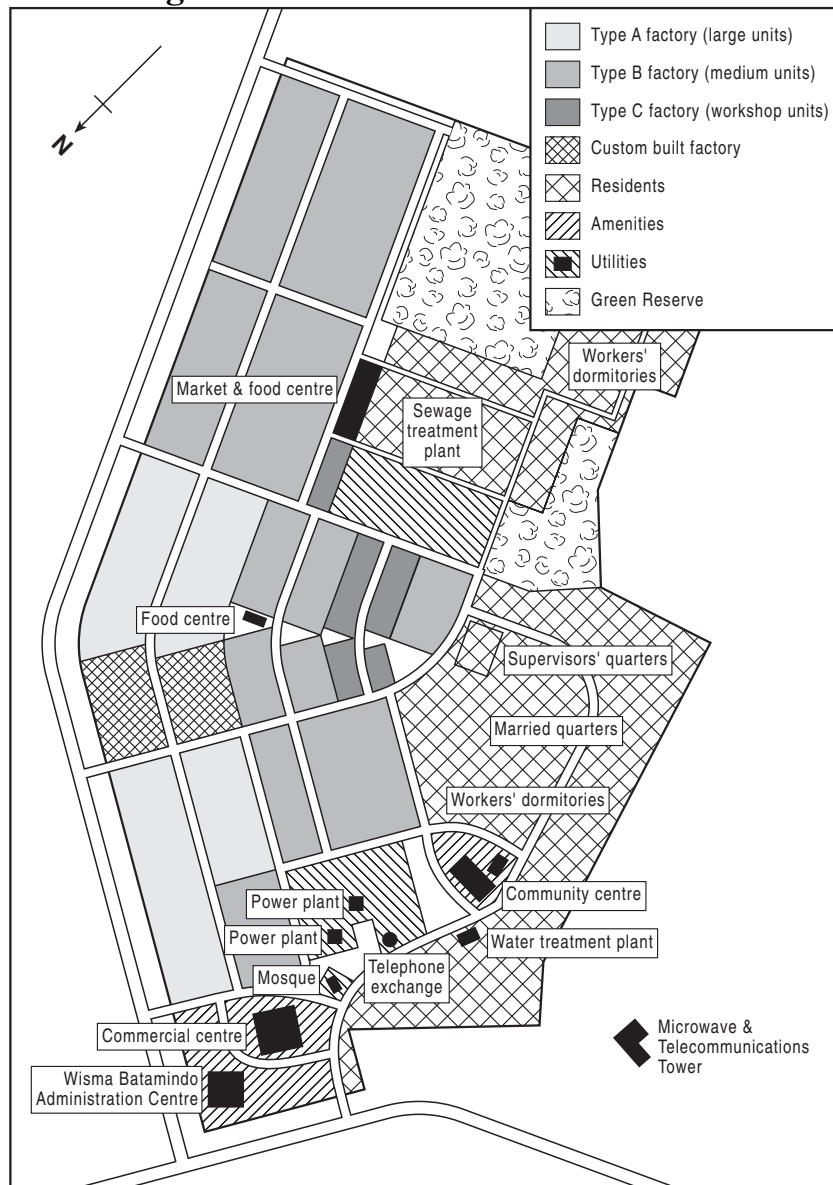
Arising from the investment agreements, Singapore-Indonesian investment cooperation in the Riau has centred on four flagship projects: BatamIndo Industrial Park, Bintan Industrial Estate, Bintan Beach International Resort, and the Karimun marine and industrial complex. These projects are a key test of the effectiveness of the cooperation pioneered through their development formula. In addition, the success of these high profile projects will be critical to maintaining investor confidence in the Riau islands and encouraging any wider investment interest in Riau province.

This section briefly describes each of the projects while a subsequent section will review progress in their implementation, in the wider context of each island's development.

4.2 BatamIndo Industrial Park

The first project arising from the investment agreements was BatamIndo Industrial Park (Figure 3). Although BatamIndo was the eighth industrial estate to be authorised by the Batam Industrial Development Authority, it was the first to see actual development. Land reserved for the Park could eventually see this estate account for 80% of the designated industrial space on Batam. Two features of the Park are crucial to the nature of the cooperation that has developed in Riau.

Figure 3: BatamIndo Industrial Park



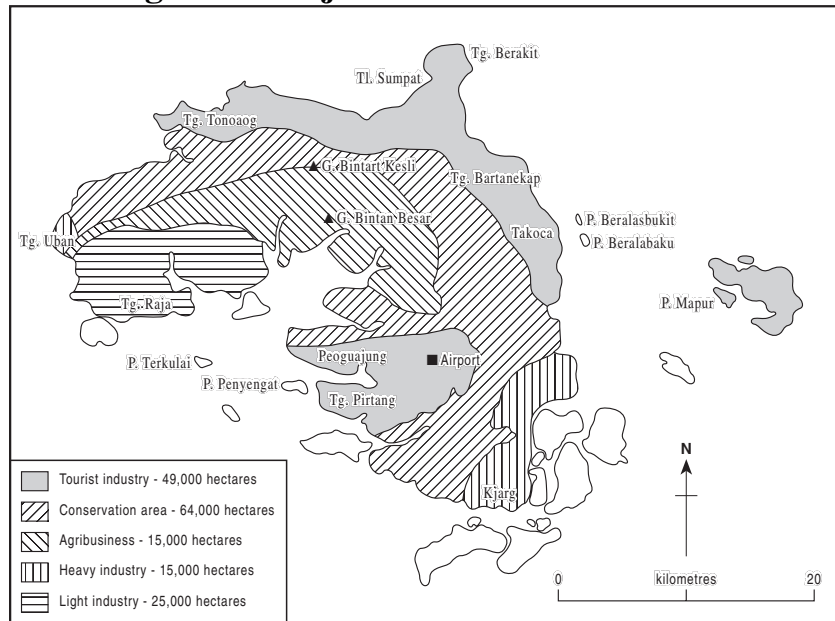
First, this Park is a joint venture between Singapore Technologies Industrial Corporation and Jurong Environmental Engineering (total share 40%) and Indonesian investors led by the Salim Group. This arrangement is designed partly to maximise the resources and connections of each partner. The Singapore contributors took control of the design, physical development and management of the estate. This attaches Singapore's reputation for fair and efficient management to the project and maximises leverage on Singapore-based multinationals to give it their support. A Salim Group subsidiary took responsibility for labour recruitment, bringing in mainly young female workers from the main Indonesian islands, hired on to factory tenants on two year contracts.

Second, the Park was designed to be a self-contained area on Batam, with economic linkages through Singapore rather than through Indonesia. The Park includes its own power supply, water treatment plant, sewerage system, telecommunications facilities, commercial centre with a market, shops, a bank, restaurants, supermarkets, a mosque and a 24-hour medical centre. Dormitory accommodation for workers is provided within the estate and reserved for the new migrant labour. Advance factories are built in various sizes for rent or purchase. Superior housing for supervisory staff has been added to the estate as well as more retail and

residential blocks. Outside the estate, BatamIndo Executive Village includes executive housing and a golf course. It has been developed to accommodate managers willing to reside permanently on Batam. Freight transportation is provided by BatamIndo Shipping and Warehousing who arrange shipment through Singapore to and from any destination. Collectively BatamIndo offers a complete industrial township. As factory managers are able to commute either daily or weekly between the Park and Singapore (exempt from the usual Indonesian departure taxes), the Park's future was designed to be independent of the progress in Batam's wider infrastructural, business and social environment.

4.3 Bintan

Figure 4: Projected Land Use on Bintan



The investment formula utilised in Batam was replicated in the larger neighbouring island of Bintan in tourist and industrial projects. Tourism features to a greater extent in the Master Plan for Bintan (Figure 4) than Batam, based on the perceived attraction of its beaches and Singapore's demand for leisure space and keenness to develop new destinations for international tourists visiting Singapore. Whilst the main gateway for international tourists visiting Bintan is currently Singapore, the upgrading of

Batam's airport to accept international traffic and regular intra-Indonesian traffic is intended as a growing source of new tourist arrivals. Promotion of Bintan is also consistent with current Indonesian tourist promotion strategy, which has dubbed the 1990s as the decade of 'Visit Indonesia', giving special emphasis on water-based leisure (National Information Office, 1996: 186).

The northern section of the island has been acquired by Bintan Resort Corporation, a consortium of Singapore and Indonesian companies including Singapore Technologies and the Salim Group, to develop the area as Bintan Beach International Resort. Marketing and management of the project has been given to a Singapore-based subsidiary, Bintan Resort Management. Their target is for an area of upmarket hotels, holiday chalets, condominiums, golf courses and recreational projects to be completed over 10-15 years by separate groups of investors (Figure 5). The first of these developments was opened in December 1995 which, like the others under development, involves investors linked to the partners in Bintan Resort Corporation as well as other Singaporean, Indonesian and Japanese investors.

Some of Bintan's attractions are geared towards an executive tourist class and relatively wealthy Singaporeans keen to invest in club and resort facilities. For example, the multi-million dollar Bintan Lagoon Golf and Beach Resort boasts two 18-hole championship courses, designed by golf legends

Jack Nicklaus and Ian Baker-Finch, and it advertises “*superlative accommodation*” at its hotels and villas, together with a whole range of sea sports facilities. Whilst these resorts may not attract large numbers of short-term visitors they may induce city-weary Singaporeans to invest in membership schemes that enable them to enjoy outdoor facilities either unobtainable or unaffordable in the relatively high-cost urban space of the bustling city-state. Like the industrial parks, the resort area is envisaged as a privileged enclave to minimise reliance on other island resources. A security fence marks the southern border of the resort strip and labour to work in the resorts is largely being recruited from other tourist centres in Indonesia. Ferry connections directly link this part of the island to a new terminal in Singapore, avoiding the need to travel through Tanjung Pinang, the main settlement on Bintan. To add interest to the resort area, museums, handicraft centres, artists villages and eco-tourism attractions are planned.

The Bintan Industrial Estate has been allocated 4,000ha and is being developed by an identical partnership to the BatamIndo Industrial Park. As in Batam, the industrial estate on Bintan is to be self-contained and is designed to be a “*one stop investment centre*,” which means that the industrial park managers provide most of the services companies require, freeing these companies to concentrate on their production operations. Even so, there are differences between the Batam and Bintan estates. For example, the Bintan Industrial Estate is supposedly targeting different industries to those attracted to Batam. For the first phase of the Estate, textiles, garment and wood processing activities were the priorities. These activities indicate that linkage to the Singapore economy, through the relocation of the low value components of multinational manufacturing operations, is not envisaged for this estate.

Figure 5: Tourist Developments on Bintan

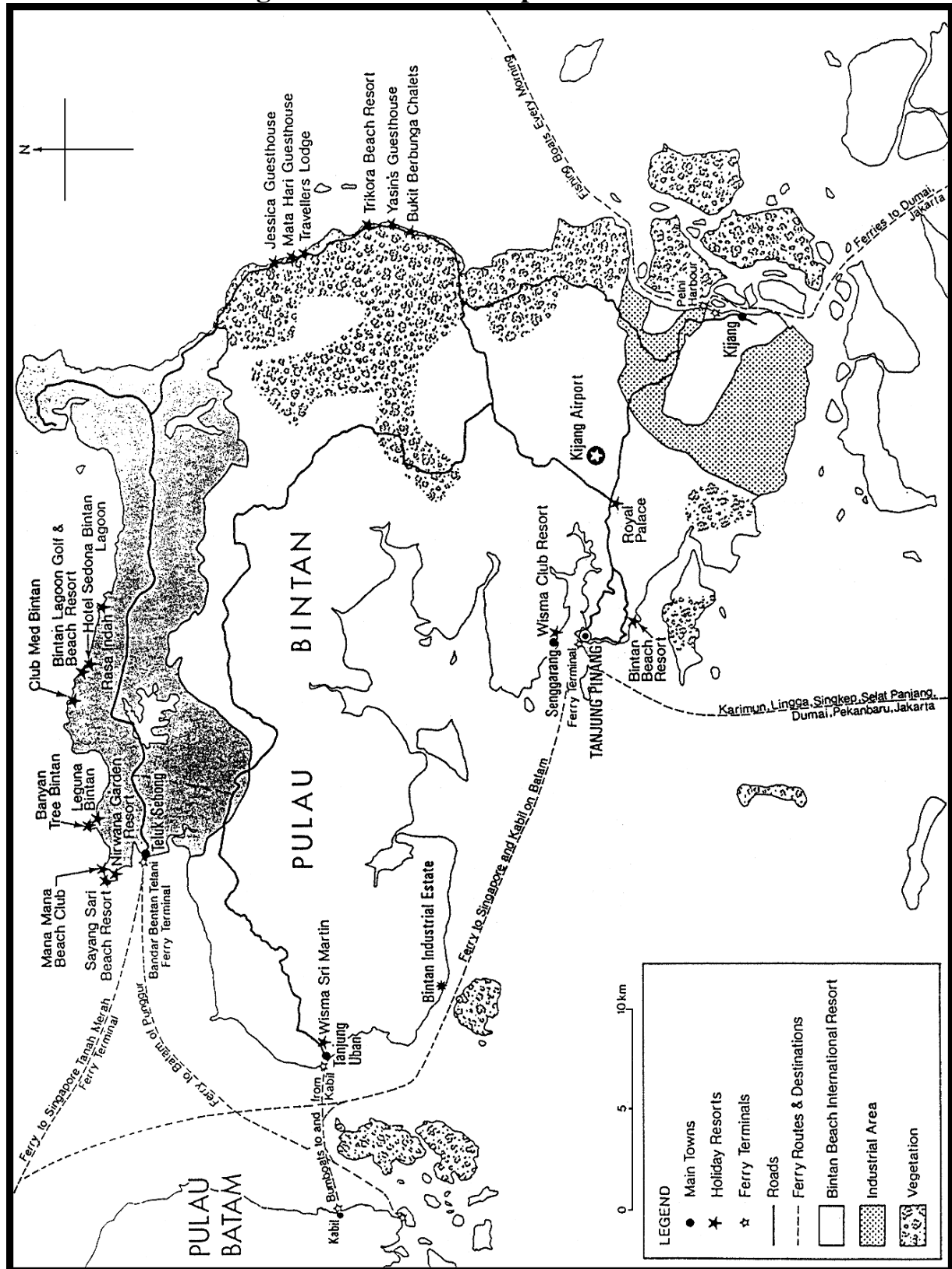


Table 6: Comparison of the Riau Islands

| | Batam | Bintan | Karimun |
|--|--|--|---|
| Distance from Singapore (km) | 20 | 45 | 40 |
| Travel time from Singapore (mins) | 45 | 45-60 | 60 |
| Area (km²) | 415 | 1,030 | 133 |
| Timing of major new projects | 1989-95 | 1991-96 | 1994-98 |
| Investment Priorities | Electronic Industries, Singapore-linked. | Light Industries; incl. clothing, leisure. | Petrochemicals and oil, ship repair and heavy engineering. |
| Key Projects | <ul style="list-style-type: none"> • BatamIndo Industrial Park (500ha). • Southlinks Country Club (golf course and executive housing). | <ul style="list-style-type: none"> • Bintan Beach International Resort (23,000ha, divided among 20-30 projects; 3,000 hotel rooms and sports facilities by year 2000). • Bintan Industrial Estate (4,000ha). | <ul style="list-style-type: none"> • Karimun Industrial Complex (3,600ha). |

4.4 Karimun

Karimun, which had a population of around 54,000 in the mid 1990s, is the smallest of the islands, in terms of land area, targeted for investment (Table 6). It is the base of the Indonesian customs patrol fleet for the southern part of the Malacca Straits, a logistic base for the offshore tin mining and exploration industry and a granite quarrying area for supply to Singapore. The island's potential for development is seen as being based on its location alongside a major shipping route, the ability of its coastal waters to provide berthing for Very Large Cargo Carriers (VLCCs) and the availability of coastal land for industrial development. The Memorandum of Understanding for the development of Karimun signed in 1991 (see above) outlined intentions to develop a petroleum processing centre and a shipyard.

5. The Indonesia-Malaysia-Singapore Growth Triangle

The cooperative initiative in the Riau islands was broadened by inclusion of the southern Malaysian state of Johor, forming what was originally referred to as the 'Sijori Growth Triangle' (Lee, 1991). Inviting Johor into a tripartite regional scheme with themselves and Riau accorded with Singapore's interest in sharing its economic growth amongst its Indonesian and Malaysian neighbours (Regnier, 1991: 80). But while Johor state was enthusiastic (the concept of twinning development with Singapore was incorporated in the Johor State Economic Plan 1990-2005 (MIER, 1989)), the Federal Government delayed commitment. Three factors contributed to Malaysian hesitation:

- a reluctance to accept a subsidiary economic status to Singapore, as implied by the respective roles of the three partners in the triangle;
- a regional development programme including dispersion away from existing growth regions as one of its goals; and,
- uncertainty over the potential for economic cooperation with Indonesian, since both were competing for foreign investment.

A formal framework was agreed for trilateral cooperation including Malaysia in December 1994, by which time there had already been substantial development in the Riau islands. Under this agreement, Sijori was officially titled the Indonesia-Malaysia-Singapore Growth Triangle (IMS-GT).

Part of this name change reflects Malaysia's interest in extending the region of cooperation north of Johor to include Malacca. This develops the possibility of extending linkage between Sumatra and Malaysia across the Malacca Strait, by-passing Singapore.

A point often made about the viability of the growth triangle project is the lack of synergy between Malaysia and Indonesia. Certainly at present Singapore dominates Indonesia's ASEAN trade, consistently accounting for 70-80% of the total (and a similar proportion of inward ASEAN investment). Singapore and Indonesia are highly complementary, with Singapore an efficient supplier of high value added manufacturing, trade and commercial services and Indonesia as the base for labour-intensive manufacturing and service activities. But amongst other ASEAN countries Indonesia's most rapidly developing relationship will most likely be with Malaysia.

Malaysia's rapid development, assisted by proximity and cultural affinity, provides opportunities for growing economic integration with Indonesia. There is a long tradition of labour migration from Indonesia to Malaysia, some of it illegal, for work in the labour-intensive manufacturing, plantation and construction sectors. This labour migration is likely to grow as Malaysia loses its comparative advantage for labour-intensive activities. There are also opportunities to transfer expertise from Malaysia to Indonesia to upgrade the agricultural sector, especially palm oil where Malaysia is already a significant investor. In this context, the economic zone embracing northern West Malaysia, northern Sumatra and southern Thailand has been proposed as another growth triangle (referred to as the northern growth triangle or IMT-GT) (Salleh, 1992; EAAU, 1995).

The first official meetings following the tripartite agreement to progress IMS-GT took place in March 1996 (Singapore Trade Development Board, 1997). These negotiations resulted in agreement to expand the geographical zone of cooperation by the inclusion of West Sumatra and (in Malaysia) Malacca, Negri Sembilan and South Pahang in the IMS-GT. At this meeting, joint ventures and 13 memoranda of understanding were also signed amongst businesses from the three participating countries. These included an agreement between an Indonesian business association in Singapore (the Minangkabau Association) and the West Sumatra Chamber of Commerce and Industry to set up a trading house. Also agreed was cooperation between a Singapore ferry operator (Auto Batam Ferries (S) Pte Ltd, which is a subsidiary of Sembawang, the Singapore participants in Karimun) and a Malaysia ferry operator (Kelana Megah Sdn Bhd) to conduct a feasibility study to look at ferry routes within the IMS-GT.

Supporting the geographical extension of the IMS-GT, it was announced that Dumai would be developed as the gateway to central Sumatra. Dumai is located on the Straits of Malacca, geographically close to Port Dickson and Malacca in Malaysia and is the main export port in mainland Riau. At present, however, because of poor internal communications and limited port infrastructure, most of Riau's exports are shipped through ports outside the province.

As well as growth triangle projects, the prospects for regional integration will also be affected by the implementation of the ASEAN Free Trade Area (AFTA) (Soesastro, 1992; Takeuchi, 1993; Santiago, 1995). The cornerstone of AFTA is a two-stage achievement of a Common Effective Preferential Tariff (CEPT). The first stage involves a fast track programme to reduce tariffs on certain items to 5% or less over seven to ten years; the second involves more general tariff reductions to similar levels over 10-15 years. In 1994, a meeting of ASEAN economic ministers agreed to bring forward full implementation to 2003. In August 1995, it was agreed to expand the range of 'fast-track' items and to bring services into the agreement and that further discussion would be held on a year 2000 implementation date. Indonesia has however insisted that its highly protected sectors, such as capital goods and consumer durables industries, be exempt from the scheme, along with agriculture, mining and services.

6. Batam's Economic Transformation

6.1 Introduction

This section reviews the impact of the Singapore-Indonesian investment accord on the economic and social environment of Batam. It commences with a review of the key flagship project, BatamIndo Industrial Park, before examining the island's broader development. As part of the latter, the section includes case studies of squatter housing and labour issues arising from the island's rapid development.

6.2 BatamIndo Industrial Park – Investment Growth

The Park was opened in 1991, mainly attracting branches of American, European and Japanese multinationals already operating in Singapore (Perry, 1991). Amongst these early movers were assembly plants operated by AT&T, Philips, Sumitomo, Smith Corona, Seagate, Sanyo and Thomson. A survey of the initial tenants found that their decision to establish operations in the Park had been influenced by:

- political commitment from the Indonesian and Singapore government;
- availability of Indonesian workers;
- proximity to Singapore's infrastructural facilities;
- availability of professional and technical personnel in Indonesia;
- ease of setting up operations in Batam; and,
- business confidence in Singapore's track record in industrial development (Lau *et al*, 1994).

This list of corporate motives mirrors much of the official rhetoric underlying the establishment of the growth triangle concept, particularly that emanating from Singaporean politicians and bureaucrats involved in the project.

Allowing companies to train Indonesian workers in Singapore was one of the ways Singapore agencies assisted companies to make the move to Batam. This allowed operations to be relocated

with minimal interruption and without the need to maintain duplicate capacity during a start-up process. Combined with the cost savings in labour and land (Table 7), and with confidence in the delivery of a high quality and efficient operating environment, the Park rapidly became a centre of industry (Table 8). The marketing of the estate benefited from the strength of the Singapore economy at the time – over 10% annual growth being recorded in 1993 and 1994.

Table 7: Relative Unit Cost Comparison for Land and Labour (1991)

| Cost of | Johor | Singapore | Batam |
|---------------------|-------|-----------|-------|
| Land (US\$/sq. m) | 4.08 | 4.25 | 2.30 |
| Labour (US\$/month) | | | |
| Unskilled | 150 | 350 | 90 |
| Semi-skilled | 220 | 420 | 140 |
| Skilled | 400 | 600 | 200 |

Source: Ahmed, 1992

Table 8: BatamIndo Industrial Park (BIP) Development Progress

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| Manufacturers operational in BatamIndo Industrial Park | 17 | 34 | 43 | 57 | 71 | 80 |
| Allocated Factory Space (1,000s sq. m) | 158 | 188 | 268 | 356 | 416 | 451 |
| Workforce | 6,000 | 11,000 | 16,000 | 28,000 | 43,000 | 56,000 |
| Investment (S\$m/US\$m) | 254/ 169 | 305/ 203 | 403/ 269 | 432/ 288 | 524/ 349 | 625/ 417 |

Source: BatamIndo Industrial Management.

The first three phases of the Park had been completed by 1997, covering 330 of the 500ha reserved for development. As of 30 April 1997, there were 85 confirmed tenants, 81 of which were in production. Cumulative investment commitments by occupants were valued at S\$625 million (S\$: Singapore dollars. US\$1 = S\$1.50 at the time of writing, so S\$625m = US\$415m) in 1996, while employment had grown to over 50,000. The industrial workforce recorded in the Park accounted for 54% of the island's total industrial employment in 1996 (Batam Industrial Development Authority, 1996). The Batam Executive Village, a S\$100 million (US\$66.6 million) residential project for expatriates working in BatamIndo, was officially opened in April 1996.

The Park has mainly attracted assembly operations which utilise young female labour. There is a particular concentration of electronics operations, mainly various component assembly processes, and supporting activities to the electronics sector such as plastic moulding and packaging. Of the 85 tenants, over 70 were involved in these activities. Related to the activity specialisation, the Park is also distinguished by the dominance of Japanese companies (Table 9). In April 1997, 41 of the tenants were Japanese companies with Singapore the next largest concentration (22), while Europe (12) and the USA (4) had a comparatively low presence. This 'local' bias has been increasing: 20 of the 25 tenants of the last phase of the Park to open are from Japan or Singapore, while some of the initial European and American companies have closed their operations (for example, Smith Corona).

Table 9: Nationality Profile of BatamIndo Park Tenants

| Nationality | Companies Operating | |
|--|---------------------|------|
| | 1994 | 1997 |
| Japan | 24 | 41 |
| Singapore | 16 | 22* |
| Europe | 9 | 12 |
| USA | 4 | 4 |
| Other | 6 | 6 |
| * Includes one Taiwanese joint venture | | |
| Source: Fukuda, 1995; BatamIndo Industrial Management. | | |

The nationality mix in BatamIndo Industrial Park contrasts with the profile of foreign manufacturing investment in Singapore. In 1994, the respective shares of cumulative investment in Singapore's manufacturing sector were: USA 42%, Singapore 25%, Japan 16% and Europe 15% (Economic Development Board, 1995). The investment distribution also differs from Indonesia's overall profile: when measured according to 'approved foreign investment projects' the top investment sources are Japan (17%), Europe (14%), Hong Kong (13%), China (7%), Singapore (6%) and the USA (5%) for the period 1967-94 (Indonesia Investment Coordinating Board, cited in Singapore trade Development Board, 1995). While Park occupants are drawn largely from organisations with Singapore operations it appears to be most suited to the manufacturing strategies of Japanese organisations. This may be a reflection of the tendency for Japanese foreign direct investment in Southeast Asia to take advantage of factor conditions in the place of investment, even where this requires the adaptation of methods employed in other places (Gereffi, 1996: 103). American and European manufacturing strategies, on the other hand, tend to emphasise conformity between overseas operations and home country technology and production methods. Such a contrast has been noted amongst foreign-owned manufacturing branches in Singapore, with American and European companies showing the greatest propensity to upgrade their operations (Rodan, 1989: 181).

Initial marketing of BatamIndo stressed its potential role as a low cost assembly site for the supply of components to Singapore. It was thought that proximity between the two places would encourage their integration into just-in-time supply relationships (Perry, 1991). Some organisations do use their Batam subsidiary in this way. For example, Seagate set up a facility employing around 450 workers to service, upgrade and repair printed circuit boards for use in its Singapore disk drive manufacturing plant. The Batam plant receives all parts and printed circuit boards from the Singapore plant and ships them back to Singapore where they are tested and installed in disk drives. In a similar way, Thomson opened its Batam facility (employing over 1,000 persons) to assemble parts for television sets. The output is returned to Singapore for further assembly and then shipped to other sites outside Singapore for final assembly into television sets and other consumer electronics.

Most occupants of the Park, however, tend to use it as an assembly base for products that are distributed to many parts of the world. An example of this is the Japanese bicycle manufacturer Shimano. Its factory in BatamIndo assembles bicycle parts that are then exported to Japan and other parts of Asia. In this case the main advantage of proximity to Singapore is access to its freight distribution services, as well as the company's procurement office in Singapore which sources raw components used in the Batam factory from around the region.

The high cost of shipping freight between Batam and Singapore has been a source of dissatisfaction amongst BatamIndo tenants (Applied Research Corporation, 1993). Freight costs charged to BatamIndo tenants by the Park's shipping company are higher than the cost of shipping services between Singapore and more distant ports in Malaysia and even exceed the cost of shipment between Singapore and Hong Kong or Bangkok by around 30%. This cost differential is explained partly by BatamIndo's provision of a door-to-door service, as well as the comparative volumes of traffic and the administrative procedures regulating shipments into and out of Indonesia. These problems can also create difficulties in terms of ability to guarantee delivery times.

6.3 Batam Island – Infrastructure Investment

The investment agreements signed between Singapore and Indonesia and the commencement of BatamIndo Industrial Park resulted in an Indonesian allocation of US\$450 million to improve the island's infrastructure. The Master Plan for Batam envisages the creation of a new administrative centre (Batam Centre), waterfront residential areas, recreation centres catering for locals and tourists, conservation zones, parks, new industrial zones, international deep water harbour facilities and an international airport that can compete with Singapore for stopover traffic. In short the vision is of a modern metropolis which is home to a balanced, permanently-settled community. A total population of 700,000 is aimed for by 2020.

Infrastructural development prior to 1989 had mainly focused on industrial space for supporting the oil and gas industry. The island's social and economic infrastructure otherwise remained rudimentary. There was, for example, no centralised power supply and no international direct dial telephone capacity. Subsequently a number of major projects have been progressed.

The Hang Nadim airport was upgraded to accommodate 747s and other wide-bodied jets. Passenger terminal capacity was expanded to handle 3.3 million passengers a year; this compares with the 200,000 actual users in 1993 (Batam Industrial Development Authority, 1993). Expansion space has been reserved to enable 8.3 million passengers to be handled, which is equivalent to around a third of the passenger volume of Singapore's Changi airport in 1994.

The port infrastructure has also been upgraded with the commencement of the development of 'Asia Port' on the island's east coast near the airport. The Asia Port plan envisages the development of Indonesia's first deep water port capable of handling vessels of up to 250,000 deadweight tonnage (dwt). The master plan for the port includes general cargo and container berths as well as specialised terminals extending over 5.5km, with extensive warehousing and industrial space in the adjoining area of Kabil (Mann, 1990). Fully developed, Asia Port is intended to divert considerable volumes of traffic from other Indonesian ports, as well as to divert goods currently trans-shipped through Malaysia and Singapore. By 1996, berthing capacity had increased to 35,000dwt (from 5,000dwt) and a palm oil terminal opened. The other existing smaller cargo and passenger ports in Batam have also been upgraded.

In 1991 the Master Plan for Batam was extended to cover the islands to the south of Batam, of which the largest are Rempang and Galang (Figure 6). This envisaged the creation of a new territorial entity called 'Barelang' through the construction of six bridges, with a combined span of over 2km, linking Batam to the southern most island of Galang through a pan-island highway.

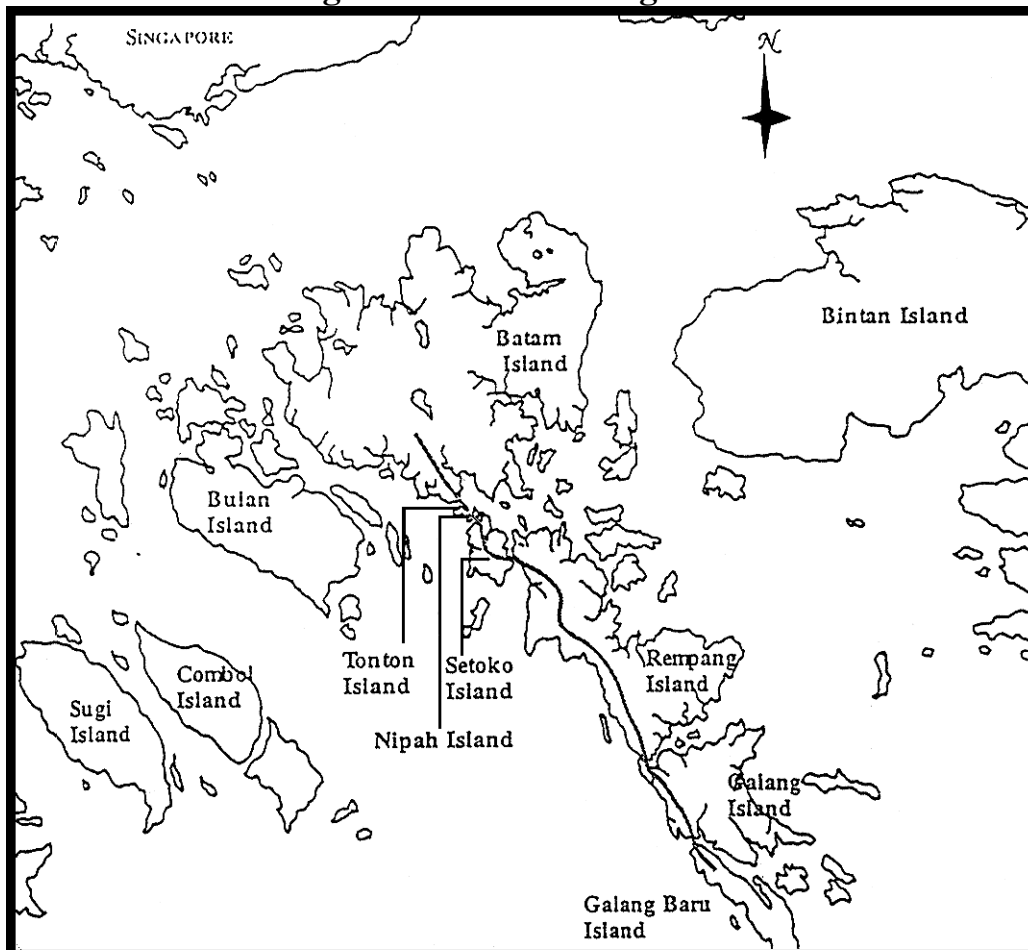
These additional islands expanded the area for development by around one third to 660km², which is not far below Singapore's current land area. The additional territory being integrated into Batam's development zone was occupied by around 3,000 people, mainly engaged in fishing and agriculture. Galang had, in addition, a more recent use as a transit camp for Vietnamese 'boat people'. The first of the bridges was completed in 1996 and construction of the others has commenced at a total project cost of S\$79 million (US\$52.6 million). Both Rempang (166km²) and Galang (80km²) are envisaged as areas for electronics and raw materials processing industries. About 60% of the whole area will be maintained as forest to support the water catchment of the islands.

Batam Centre is the planned new administrative centre being developed as an alternative to the existing commercial centre of Nagoya and main ferry port of Sekupang. From a greenfield site in 1987, when its marketing to international investors commenced, various tourist visitor buildings, a new office block for government agencies, a shopping mall centred on a 'Matahari' supermarket and the basic road layout for the waterfront township had been developed by 1997. However, the new centre has yet to pull development away from Nagoya which continues to expand rapidly. Speculative commercial and housing space built in Batam Centre remains vacant and is deteriorating prior to occupation.

Other infrastructure necessary to support the island's development – water, roads, power, telecommunications – has been expanded at variable rates of progress. Water capacity was doubled 1990-1996 although this still brought the available water supply up to only 22% of the capacity planned to support the target population of 700,000 (3,850 litres per second). The limited telephone capacity and reliability required BatamIndo to link into Singapore's telephone system (Ahmad, 1992). This provides a high quality service for tenants, but does not permit integration into Indonesia's domestic telephone network. Other international callers are routed through Jakarta, creating problems of delay and call quality.

Public sector power generation has not increased significantly since 1990. Consequently private industry was responsible for around 80% of power generated in 1996, as in BatamIndo's internal power supply. Private industry is expected to fund the threefold increase in power supply capacity required for the island's long-term development (Batam Industrial Development Authority, 1996). In contrast, the main highways are already in place with 85% of the planned 125km arterial road network open in 1996, doubling the length existing in 1990. However considerable improvements are needed to roadside drainage and land cover to prevent periodic flooding.

Figure 6: The 'Barelang' Area



Geographical data on the BARELANG Area and four of the islands.

BARELANG AREA

715 km sq = 115% x Singapore Area

Batam Island

415 km sq = 67% x Singapore Area

Rempang Island

Located 2.5 km south-east of Batam Island
165.83 km sq

Galang Island

Located 0.5 km south-east of Rempang Island
80 km sq

Galang Baru Island

Located 118 km south-east of Galang Island
32 km sq

6.4 Batam Island – Private Investment

Out of the total private investment of US\$2,094 million recorded up to 1996, around half is accounted for by the development of BatamIndo Industrial Park and the tenants it has attracted. Outside BatamIndo foreign investment has been directed mainly at industry, tourism and real estate.

The growth of this investment has combined to make Batam a major centre of foreign investment in Indonesia. In a little over five years, the island has captured over 20% of all cumulative foreign investment in Riau province, whose mainland and offshore oil industries are major recipients of foreign investment, and over 2% of that received by the country as a whole (Singapore Trade Development Board, 1997).

As well as BatamIndo Industrial Park, eight other industrial estates have been approved, the largest of which are located between the airport and Asia Port (Figure 7). Most of these other estates have yet to be developed. The main exception is the Kwang Hwa Industrial Park, 75% owned by Taiwanese investors, planning and promotion of which commenced prior to BatamIndo (Mann, 1990). Kwang Hwa has attracted steel fabrication and oil palm processing activities but compared with the space available for 200 factories and 20,000 residents, the park is yet to achieve significant development momentum. Outside of the designated industrial estates, PT McDermott's fabrication site, which constructs and services equipment for use in the offshore oil industry, is the major area of industrial activity. This American company was the first foreign investor in Batam and currently employs around 2,000 workers.

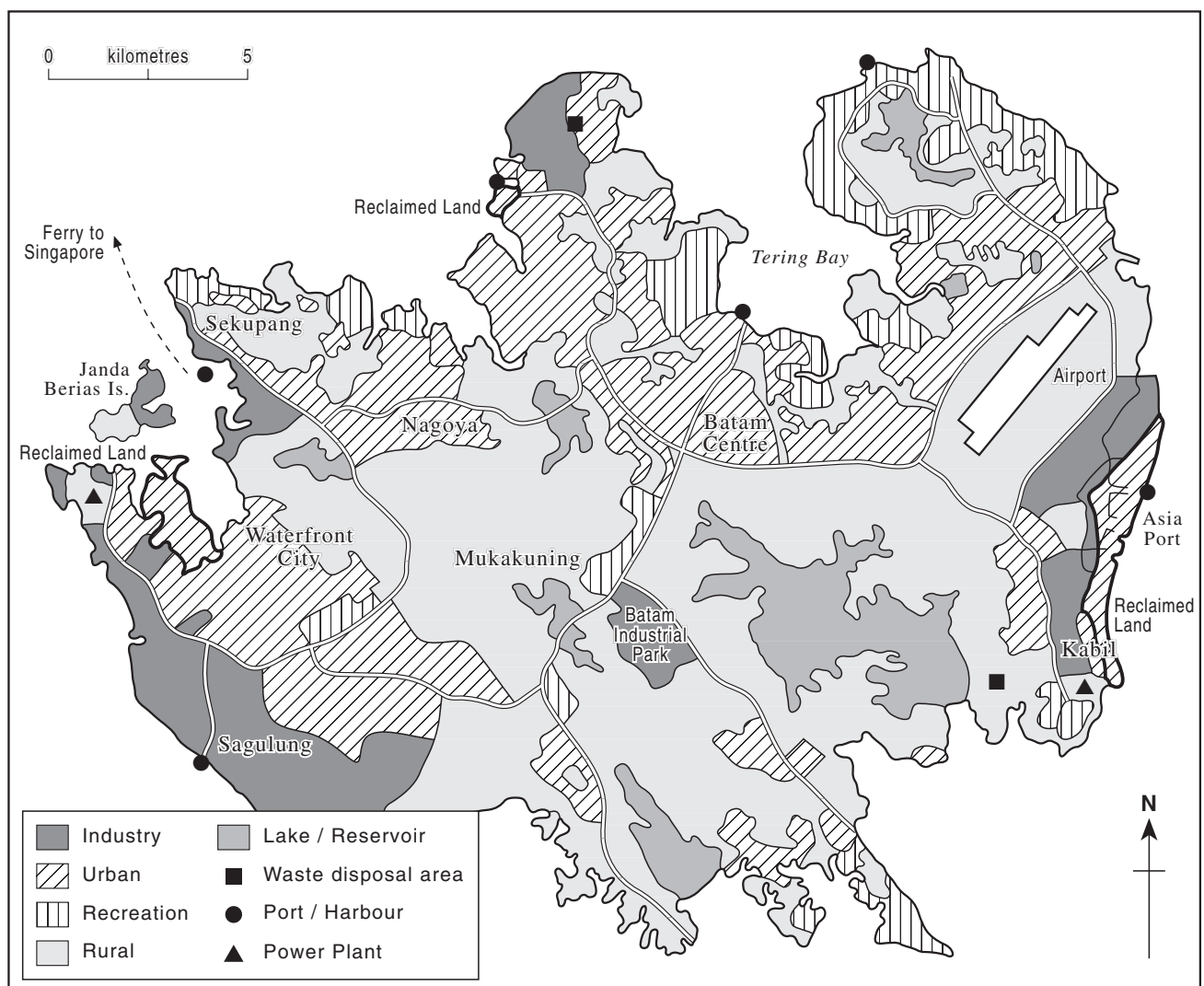
The tourist sector has attracted significant investment aimed mainly at the Singapore market. As well as the perceived interest amongst Singapore's increasingly affluent population in the availability of a 'pleasure periphery' (Parsonage, 1992) to compensate for their congested built-up environment, tourist investment has been encouraged by Singapore's tourist promotion agencies. With its own loss of attractiveness as a tourist destination, it is keen to see the development of the region's tourist potential to retain its role as a stopover destination (Hall, 1994). Tourist arrivals have continued to grow in number but this has increasingly relied on the expansion of visitor numbers from Asia rather than wealthy Western countries. The surplus on Singapore's travel balance (travel export receipts minus travel import receipts) had dropped from 10.2% in 1981 to 5% in 1994 (Hall, 1994: 104).

Singapore government-linked and private investors have been the principle investors in Batam's tourist sector, typically in joint ventures with Indonesian partners. The tourist projects completed have mainly attempted to provide self-contained resorts, with a concentration of new developments along the northeast coastal region of Nongsa. These comprise a number of up-market hotels and recreational facilities with their own ferry service to Singapore. Batam View Beach Resort, for example, is investing around S\$40 million (US\$26.5 million) to upgrade its facilities; these include the construction of a marina, a theme pool, 250 new chalets, and an amphitheatre as well as other entertainment facilities. The Nongsa Point Marina, a S\$30 million (US\$20 million) marina and tourist complex is being developed by Singapore's Keppel Group (a government-linked company) and Indonesian partners, to provide sea-sport facilities, resort-style accommodation and entertainment facilities spread over 11ha of waterfront. The most ambitious project, however, is being developed on the west coast as a mass-market leisure area. This is the Waterfront City project which, fully developed, will cover 2,000ha in a S\$1 billion (US\$660 million) project including theme parks, country clubs, golf courses, supermarkets, accommodation, restaurants and nightclubs. A 24-hour ferry terminal has been constructed to provide direct access between the resort and Singapore.

Visitor arrivals in Batam have grown substantially since the early 1980s, encouraged by the new facilities and improved transport connections to Singapore. From around 60,000 tourist arrivals in the mid-1980s, the number of visitors exceeded one million in 1996. The average spending per visitor per day was US\$180 and the average stay two days (Batam Industrial Development Authority, 1996). The tourist image being sought for the island, as a high class resort based on five star accommodation is, however, challenged by the oil-polluted beaches and scale of development taking place elsewhere on the island. It also has to overcome the role of Batam as a centre for prostitution and ‘second wives’ for Singaporean men.

Real estate, especially housing, has been the third area of foreign investment. Following the announcement of BatamIndo, Batam experienced a housing construction boom based mainly on speculative investment interest from Singapore. Greater confidence in land tenure regulations and the expectations of Batam’s economic growth, coupled with prices for ‘executive housing’ of around S\$30,000 (US\$20,000) fuelled demand from Singaporeans (Mann, 1990).

Figure 7: Land Use on Batam Island



Housing areas mushroomed across the island with seductive names such as ‘Orchid Park’ and ‘Shangri La Gardens’ and promises of attractive landscaped settings and proximity to marinas (Lam, 1995). The expectation of a rapid appreciation in value was the main motive for purchase, however, rather than occupation. Without use by their owners, and in the absence of a local rental market for this type of property, the housing areas have become executive ghost towns. While they may yet show a return for their investors, at present much of the housing is deteriorating through lack of maintenance and lacks the ambience promised by real estate promoters.

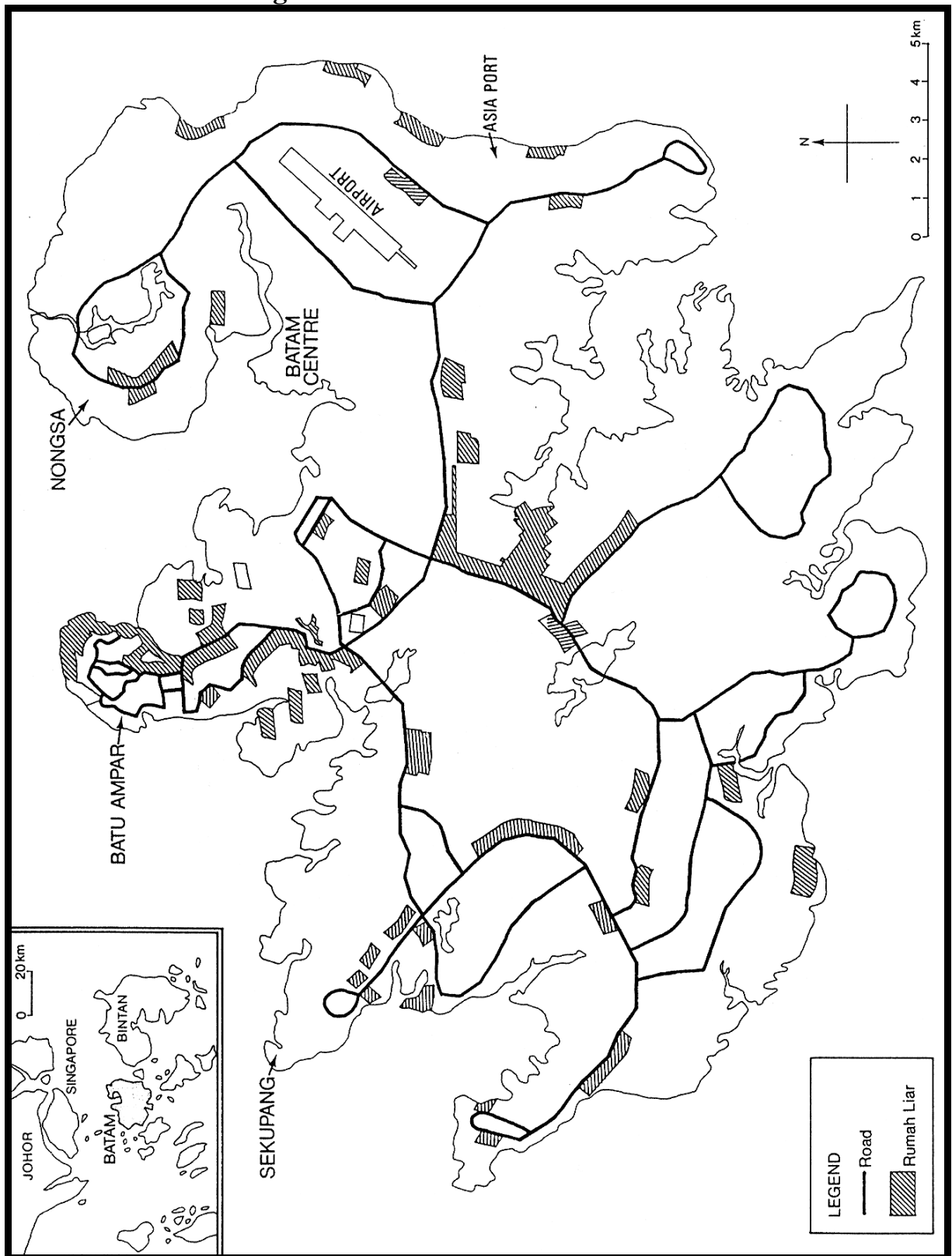
In the hope of stimulating the luxury residential property and linked sectors such as construction, banking, trade, transportation, services and tourism, Dr Habibie announced in early 1996 that rules governing property ownership on Batam Island had been relaxed. Ownership, on a leasehold basis, which was previously set at a maximum of 30 years, has been extended to up to 70 years for foreign buyers who can meet certain requirements. These requirements include: owners must belong to a golf or marina club, have a work permit for Batam, have a Smart Card for visa entry (indicating that they are frequent visitors), or have “*contributed to national development.*” They must purchase houses bigger than 70sq. m, priced at a minimum of S\$123,000 (US\$79,000), and meet the approval of the Batam Industrial Development Authority. As well as seeking to curb purely speculative housing provision, these changes seek to bring greater confidence to the investment market. For Singaporeans, however, residential property investment in Batam competes with China and Australia. Given the bitter experiences of shoddy construction and ambiguous legal titles from the 1990 real estate boom on Batam it seems unlikely that the earlier investment interest will return.

6.5 Population and housing

The deserted estates of executive villas contrast with the housing environment experienced by most of the low-income and unskilled migrants who have found their way to Batam. For this sizeable group, one of the only accessible sources of land and housing are illegal squatter settlements, known locally as “*wild houses*” (“*rumah liar*”, abbreviated as “*ruli*”). These settlements are scattered across the island in anywhere from 59 to 80 different locations (Figure 8). A 1996 estimate approximated the number of *ruli* housing units on Batam to be 20,000. If the conservative estimate of five residents per house is used to calculate the squatter population, it can be assumed that about 100,000 people are living without access to public services such as water, sewage, drainage, local roads, electricity or telephones. What basic services they have managed to obtain, they have secured through their own informal means, often at a price far above that paid by the residents of serviced residential neighbourhoods.

The *ruli* problem is often quoted as the greatest challenge currently facing Batam’s planners. On a superficial level, these settlements are unsightly and mar Batam’s carefully marketed image as a high-tech manufacturing centre and the “*next Singapore.*” Their incongruous presence next to the gated luxury residential enclaves make it difficult for developers to market their properties or for buyers to feel securely removed from the uncomfortably polarised development taking place on Batam.

Figure 8: Rumah Liar on Batam Island



More significantly, every year, illegal housing consumes land designated in the Master Plan for other uses. It is estimated that approximately 4,000 new *ruli* units are being added each year. If each house occupies, on average, 100m² of land, every year about 400ha are being consumed for this kind of illegal development. Much of this land has already been allocated for commercial, industrial or residential purposes. As these developments come on line, the *ruli* settlements are cleared. For both developers and local government, evicting squatters can be a costly, time consuming and disruptive process. For the squatters, eviction means the loss of their houses and the considerable investments they have made in them. For many squatters, eviction also means the loss of income earning opportunities, impoverishment, and social and physical dislocation. With few affordable housing options available, many are forced to squat again in new locations.

Migrants to Batam come from all over the Indonesian archipelago, although most are from West Java, West and North Sumatra and neighbouring areas in Riau. Some migrants come from as far away as Flores in East Indonesia. Migrants are generally quite young, of productive working age, and until recently, biased toward young unmarried males. However, with many industrial jobs being created that target young unmarried female employees, it is likely that, in the near future, the gender balance on Batam will shift in favour of women. It is well-known that migrants tend to follow well-established migrant routes, relying on friends and family members who have gone before them for information and support. This is certainly the case in Batam, where research in two squatter settlements showed that between 58-75% of migrants stayed with either friends or family when they first arrived on the island. These connections are crucial survival and support mechanisms providing not only shelter but valuable information regarding employment opportunities.

While for the most part spontaneous migrants have some secondary schooling, without special skills or expertise it is difficult for many of them to find employment in the formal sector economy. Many men find work in the port and shipping yards, on construction sites as contracted or day labourers, as security guards, as taxi drivers, (both legal and illegal), or in the informal sector economy selling goods and services. Young unmarried women have an easier time finding formal sector employment in the factories and retail stores on the island. However, once married with children, the formal sector market openings for women suddenly shrink. For instance, the BatamIndo Industrial Estate does not hire women over the age of 24 and pregnancy is just cause for dismissal. Those women who do not fit the industrial worker 'profile', tend to rely on informal sector activities and small businesses to earn income.

Frequently, it is the forested areas of Batam, designated on the Master Plan as forest reserve or water catchment areas, which absorb new migrants and displaced squatters. These areas, covering 60% of the land base, have been set aside to be the 'lungs' of the island and to supply water for industry and 700,000 future inhabitants. However, the growth of unplanned settlements in these areas threatens the ability of these reserves to perform in this capacity. When settlers prepare land for housing plots and subsistence gardens, or harvest timber for income generation and house construction, environmental degradation is inevitable. Forest clearance and land grading leads to considerable soil erosion, unstable slope conditions and sedimentation of reservoirs. The untreated solid waste, excreta and greywater from households infiltrate and contaminate drinking water supplies and create unsanitary conditions locally.

From the point of sustaining Batam's investment attractiveness to multinational companies, the squatter camps present several problems. First, the environmental impact of unregulated housing challenges the attempt to present Batam as a 'Singapore-like' environment in terms of its efficiency and order. Second, squatter residents are exposed to a perspective on Batam's development

affected by conflicts over land clearance, residential uncertainty and participation in the thriving prostitution industry. These are not attributes that the island's planning elites would want to be associated with the industrial parks. Third, improving the housing situation imposes a significant resource cost. The possibly low-cost solution of officially sanctioning the squatter areas and assisting their improvement is problematic because of the location of much of the squatter housing in areas originally intended for other land-use purposes such as water catchment areas or executive housing.

As accessible vacant land has become scarce, squatters have been pushed to move further inland or to occupy increasingly marginal land on steep slopes. In October 1996, an early morning landslide in a one *ruli* settlement killed at least 18 people and injured 11 more (*The Straits Times*, 4 October 1996). At the time, it was suggested that this tragedy would be the needed impetus for the authorities to comprehensively address the squatter problem on Batam. However, with a land-base around two-thirds that of Singapore and resource limitations amongst enforcement agencies, Batam's authorities cannot adequately monitor illegal activity in forest reserves or enforce settlement bans. Until more housing and employment opportunities are made available to migrants, the environmental stability and sustainability of Batam will be threatened.

To date, development authorities on Batam have taken a traditional approach to handling the squatter problem. Policies have focused on settlement clearance and relocation of residents to temporary resettlement sites. Residents are responsible for rebuilding their homes on these unserviced sites and are expected to make the transition into the formal property market, either through the purchase, lease or rental of legal accommodation within a time frame of one or two years. If after two years residents have not been able to make the transition to legal housing they are expected to go home or follow the national transmigration programme. Until now, no residents have been forced to leave despite the fact that some residents have lived in these 'temporary' sites for over seven years. In many respects, this policy has done little more than relocate the squatter problem from one part of the island to another. As these sites are poorly situated, without basic services, and do not offer residents legal land title, many evictees do not choose to relocate here. Instead, they secure shelter in illegal settlements located closer to urban services and employment opportunities.

A second approach has been to encourage both the public and private sectors to construct low-income housing units. As there has been a chronic shortage of affordable low-income housing options on Batam, demand for these new units has remained high since they rapidly began being constructed in 1994. However, this type of housing is serving only a small fraction of the residents living in squatter communities on Batam. Those who can gain access to these units leave a much larger group behind with unstable, irregular or chronically low incomes.

The extreme shortage of low-cost units on Batam is creating new avenues for speculative investment. In addition, the process surrounding their allocation and purchase is deeply affected by corruption. Potential applicants, as well as developers, are complaining of bribes which are as high as Rp500,000-600,000 (US\$170-204) that "strangle" the ability of low and middle income earners to purchase these units (*Angkatan Bersenjata*, October 12, 1996). Due to the severity of this problem, a BIDA allocation team has been created. Approximately 50% of all new built *Rumah Sangat Sederhana* (RSS) units, which are small and relatively inexpensive, are to be allocated by the team with priority given to government and army employees, those who have never owned a property, and people living in squatter settlements. All applicants who fall into this group must meet the requirements of the national mortgage bank, Bank Tabungan Nasional (BTN), which requires a

10% down-payment and proof of a reliable source of income. For many, it is difficult to meet these basic standards. For instance, in one of two research settlements examined by one of the co-authors, it is estimated that as many as three-quarters of the residents do not have reliable and stable incomes. This is likely due to the contractual nature of much of the work available on Batam. In that same settlement, 43% of respondents claimed to be unable to save any money at the end of each month, barely able to make ends meet at current expenditure levels.

The RSS units not allocated by the BIDA team are allocated by the developers themselves, who logically favour those who can offer the highest price or greatest security. As a result, most RSS units are not going to those in need of this type of housing. As a strategy posited to address the squatter situation on Batam, it is clearly not working. Furthermore, current clearance of squatter settlement housing is occurring at a faster rate than the formal housing market can supply new affordable units. For instance, in late 1996, about 500 units of *Rumah Sederhana* (RS) and RSS were being built over a four month period. However, in a six week period spanning October and November, it is estimated by the head of the clearance team that 500-600 *ruli* units were dismantled. Therefore, there is a significant and serious gap in the supply and destruction of housing. As sites designated for other purposes continue to expand, it will become evident that the supply of RSS housing alone will not adequately address the squatter problem. Thus, for many of the squatters themselves, who remain ineligible for formal credit and without connections, there is little opportunity to enter the formal sector.

Research shows that *ruli* settlements on Batam are a primary source of shelter to workers in both the formal and informal labour force. With reference to formal employment, the BatamIndo Industrial park is one of the few employers on the island to provide its contracted workers with dormitory-style housing, despite BIDA attempts to get all major employers to provide their workers with accommodation. However, even with 26,000 beds, only half of their industrial workforce is housed in dormitories on site. The other half is responsible for finding their own housing. With the high cost of living, and wages which amount to approximately Rp7,000/day (US\$2.4), most of these workers find shelter in Batam's *ruli* settlements. Whilst some own their own informal units or live with friends and family, others rent rooms for about Rp30,000/month (US\$10.2) plus the cost of basic services such as electricity, water and security if necessary. While BatamIndo has plans to build more accommodation to house its projected workforce of over 65,000, there is some speculation that, in fact, they are not in a hurry to do so as they would rather use the capital and land to expand industrial activities. Furthermore, there is some advantage to industrial tenants not to house workers on site as costs are lower for them and workers can be hired on shorter, more flexible contracts.

It is obvious that the workers residing in the *ruli* settlements, and the services they provide, contribute significantly to Batam's booming economy. Better housing and health conditions for this group will have direct implications for labour productivity and the local labour climate. Therefore, less disruptive approaches to the squatter problem should be explored. These new policies should complement existing efforts to increase the supply of affordable legal housing units. They should also recognise the significant barriers and constraints preventing the majority of low-income workers from securing legal shelter and the importance of *ruli* housing to the low-income housing stock.

Problems regulating land-use already threaten to repeat themselves on the other islands in the Barelang chain. There is evidence that squatters are setting up along the new highway which will link the islands to Batam once the bridges are finished. Some of these squatters are subsistence farmers, forest harvesters, and fisherpeople. Others are opportunists, hoping that their well-located

plots will bring lucrative business opportunities or that they will be eligible for land compensation when development goes ahead. Authorities have suggested everyone living on the islands will be relocated elsewhere before development begins and that illegal settlement will be strictly prohibited to avoid the constant disruption of squatter clearance and compensation claims. However, the magnetic draw that investment in this region will have on migrants will be a formidable challenge to such ambitious plans.

6.6 Social problems

The Batam Industrial Development Authority (BIDA) has concentrated its planning efforts on economic development, major infrastructure projects, and amenities to attract foreign investors and a skilled managerial class. Social planning and governance concerns have not been viewed as their responsibility. Consequently, these issues have been left to the local government to address. It has been difficult for this subsidiary tier of government to deal with the wide range of social and economic problems spawned by Batam's accelerated pace of economic growth. This difficulty lies in financial and human resource constraints as well as estrangement from the planning process on Batam which is directed from Jakarta. Meanwhile, prostitution, crime, and community disintegration are an emerging part of Batam's social landscape. If left unaddressed these issues could undermine the investment attractiveness that Batam has managed to establish as an industrial production zone and tourist destination. As noted above, creating the image of a place like Singapore for security, public order and good management has been a key part of the island's marketing strategy.

As Batam has developed, so too has the sex industry. Male migrant workers, expatriate management, and weekend visitors from Singapore fuel the industry. Batam's high-cost of living, the difficulty of securing work, expectations from family to send wages home, and the absence of community structure make prostitution a common solution to economic woes. Organised prostitution is now well observed in over twelve settlements on Batam as well as in bars, karaoke lounges, discotheques, hotels, restaurants, and massage parlours. The number of prostitutes is increasing with every year. According to the Mayor of Batam, there are approximately 40,000 sex workers in the Batam municipality working in clubs, resorts, restaurants, bars and informal settlements (*Riau Pos*, 28 November 1996: 7). A recent phenomenon of young girls moonlighting as prostitutes at night while working at factories or going to school in the daytime is of particular concern to parents, employers, and authorities. In an attempt to contain and monitor prostitution, the local government has directed some of these prostitution activities into targeted settlements on Batam and on islands just off the coast. For instance, the island of Pulau Babi, serviced by regular ferries from Batam Island, and Samyong settlement on Batam are two such "enclaved" prostitution areas. According to a spokesperson at the Department of Social Affairs, other sites are being planned.

In Samyong, prostitution is surprisingly well managed. Women rent rooms at fixed monthly rates in barrack-style housing blocks lettered A through L and manage their earnings themselves. Clients who want to escort the women outside the settlements are asked to kindly leave their name with a local security guard (*Tempo*, 13 November 1996: 25). Upset with the association Batam has developed with a thriving sex industry, which is fed by large numbers of mostly male short-stay visitors and large numbers of male migrant workers, the local government authorities are trying to encourage the private sector and relevant public agencies to promote a different, more wholesome brand of tourism. Indeed the island does have some splendid resorts, such as the Turi Beach Resort,

which could compete with any in the region. However, the seedy image associated with widespread prostitution is going to be very difficult to change without substantial economic and social policies aimed at providing more stable, formal and better-paid jobs for the large numbers of migrants. On the demand side, it is noteworthy that the average stay of each visitor to Batam is currently only two days. Increasing the number of longer stay visitors to resorts should be a priority, although there is growing competition in this market from neighbouring Bintan. Furthermore, Bintan and Karimun islands are also becoming favoured weekend destinations for Singaporeans seeking some “fun.”

Currently in Batam there exists one non-governmental agency that is working to educate sex workers about how sexually transmitted diseases (STDs), including HIV, are transmitted, and about alternative sources of income to prostitution. Through testing, 22 cases of HIV have been diagnosed on Batam and 44 in Riau province. According to the Department of Social Affairs, the actual number of cases on Batam is likely to be at least 2,200 given the lack of testing and poor education surrounding the disease. Some education has been targeted at male migrant workers who frequently visit prostitutes. Given the scale of the sex industry in relation to the relatively small size of the population, there is a need for more funding to be devoted to health education and STD prevention campaigns for local people, migrant workers, and visitors.

In an unusual twist to the growth triangle story, one of the relatively few connections between Batam and Malaysia has been in the illegal sex trade of women to Malaysia. A *New Straits Times* special report said that a number of syndicates operating from Batam supplied and sold girls to work as prostitutes in Johor Bahru and Kuala Lumpur (*The New Straits Times*, 9 August 1994). According to the report, as many as five boats carrying illegal workers would arrive from Batam each night with up to eighty people packed into a boat recommended for twenty. In addition to prostitutes, men and women wanting to work illegally in Malaysia depart regularly from Batam. Drugs and illegal goods trafficking also centres on Batam (*Riau Pos*, 14 November 1996).

Unemployment, underemployment, and the transient nature of Batam have given rise to a high crime rate. While theft and violent theft are overwhelmingly the most reported crimes, rape, weapons charges and gambling offences are on the rise (*Riau Pos*, 29 October 1996). More concerning to Singaporeans was an incident in November 1996, when a Singaporean national was tied up and strangled to death in his house when thieves broke in and robbed him. Difficult economic conditions have also made for a highly competitive and hostile atmosphere. For instance, the aggressive touting by taxi drivers and middle-men who are eager to earn a fare or commission has frightened off visitors to Batam who find the experience of negotiating their way out of the ferry terminal extremely stressful. Many foreign workers choose to commute to work from Singapore rather than live or stay unnecessarily on Batam.

With a population made up almost entirely of recent migrants from all over Indonesia, achieving social stability has been a formidable challenge on Batam. The challenge however, has been made all the more difficult by the residential segregation of social classes into suburban housing estates and *ruli* settlements. Even within these enclaves of class, building relationships has proven difficult. Many formal housing estates are sparsely occupied and boast no community places to bring households together. Social support networks established in squatter communities frequently disintegrate with settlement clearance. Even the threat of clearance can be detrimental to community building where there is no confidence in tenure. It inhibits squatters from making either a psychological or financial commitment to Batam. Such commitment is, however, vital to stabilise Batam and transform it from a transient place of temporary migrants to a place with identity, a sense of community, and a shared sense of social norms.

Community development has also been hampered by the severe lack of social infrastructure. This need for schools, health units, training centres, day care centres, and recreation spaces will only increase as the current generation of young migrants to Batam continue having children. One indicator of the impending pressures on public services is that in 1995 alone 30,000 children under the age of five were immunised on Batam, indicating the pending demand for education and health services (*Riau Pos*, 26 September 1996). If opportunities on Batam are perceived to be greater than they are in villages of origin, migrants will stay and establish their lives on Batam. Providing them with the basic infrastructure and services to do so is crucial to the development of stable, productive, and healthy communities.

6.7 Labour

The workforce on Batam has increased from 6,000 in the mid 1980s to 127,000 in 1996. Most of the growth has occurred since 1990 when the reported workforce had increased only to 16,330. The recent expansion has been accounted for mainly by the growth of factory work, which is overwhelmingly a female occupation (Tables 10 and 11). Although the first phase of Batam's industrial development had attracted mainly male jobs, the new areas of employment have drawn on female migrant labour from other areas of Indonesia. The migrants have travelled to Batam either on their own initiative, been locally recruited from surrounding areas within Riau Province or are recruited by PT Tunas Karya, a subsidiary of the Salim Group, the Indonesian investors in BatamIndo. Recently, this agency has recruited around 8,000 to 10,000 new migrants each year.

Table 10a: Batam Labour Force Growth, 1985-1996

| Year | Total Workforce | |
|------|-----------------|---------|
| | Indonesian | Foreign |
| 1985 | 6,159 | 230 |
| 1988 | 9,478 | 153 |
| 1990 | 16,085 | 251 |
| 1992 | 31,644 | 427 |
| 1994 | 69,630 | 816 |
| 1996 | 126,311 | 1,097 |

Table 10b: Employment Structure, 1996

| | Indonesian | | Foreign | |
|---------------------------|------------|--------|---------|--------|
| | Male | Female | Male | Female |
| Agriculture | 1,287 | 73 | 7 | 1 |
| Mining | 279 | 40 | | |
| Industry | 27,896 | 68,152 | 789 | 82 |
| Utilities | 631 | 23 | | |
| Construction | 12,934 | 763 | 55 | 1 |
| Trade & Hotels | 6,364 | 1,993 | 157 | 3 |
| Transport | 1,825 | 266 | | |
| Finance | 862 | 198 | 2 | |
| Public Service | 2,326 | 399 | | |
| Total | 54,404 | 71,907 | 1,010 | 87 |

Source: Development Data, various years.

Table 11: Worker Demonstrations on Batam, April 1995 - March 1996

| Company | Workers Participating | Lost Work-hours | Issue |
|--|-----------------------|-----------------|----------------|
| PT Babock | 550 | 7,700 | Wages |
| PT Tanjong Harapan | 1,400 | 33,600 | Wages |
| LabTech | 70 | 210 | Wages |
| Hang Nadim Airport | 15 | 45 | Wages |
| TriCitra Katindo | 7 | 21 | Social Welfare |
| Wanta Indonesia | 50 | 150 | Wages |
| Takamori | 53 | 159 | Bonus |
| Sumitomo | 500 | 3,500 | Break Time |
| Source: Annual Report 1995, Depnaker Kodya Batam, as quoted in Halim (1996). | | | |

Several controls have been in place to manage the inflow of labour. These controls have sought to ensure an adequate supply of workers, of a type preferred by employers, and to minimise labour unrest and social problems potentially associated with a new workforce in a booming economy.

Officially most new migrant labour to be employed in BatamIndo Industrial Park can only be recruited through Tunas Karya. The agency has branches in Java and Sumatra and works with the Ministry of Labour (DEPNAKER – *Departemen Tenaga Kerja*) to promote the advantages of working on Batam to eligible candidates. For most factory jobs, eligibility is restricted to single females, 18-24 years of age, who are high school graduates (Halim, 1996). The latter represent a relatively high education standard as in 1990 only a quarter of Indonesia's population had completed secondary school (Hill, 1996: 207). Companies seeking labour are expected to notify Tunas Karya of their needs, the agency then obtains a shortlist of potential recruits allowing final selection by the company. Selected workers are engaged on a standard two year contract drawn up by Tunas Karya. After the completion of the contract, workers are expected to return to their place of origin, unless the employer offers an extension. Any such extension is negotiated directly between the employer and employee without reference to Tunas Karya.

Employers are expected to support the housing of their recruits. This may involve placement in their own accommodation, as in BatamIndo's dormitories (which housed 24,000 workers in 1996) or through the payment of housing allowances.

Wages are regulated by DEPNAKER through the setting of regionally variable minimum wages. Within Riau a special rate is set for Batam in recognition of its different living costs and employment base. This rate was set at Rp7,350 per day (S\$4.50/US\$2.50) in 1996, making it the highest in Indonesia (Jakarta, for example, was Rp5,200/US\$1.75). Even so there is much dissatisfaction with the perceived inadequacy of the minimum wage set for Batam. For example, the island's Indonesian newspaper *Riau Pos*, reporting a demonstration in support of higher wages, cited research which noted that in 1990 to buy 10 kilograms of rice required 8 hours 20 minutes of work at the minimum wage compared with 10 hours 46 minutes in 1993 (*Riau Pos*, 9 September 1996). For the lowest grade of factory operative in BatamIndo, the total monthly salary cost was approximately S\$300 (US\$200): this comprises the basic daily wage, plus meals allowance (Rp40,000/US\$13.50) and

dormitory cost S\$45 (US\$30). This compared with around S\$600-S\$850 (US\$400-560) for equivalent grades of local worker in Singapore, but the cost saving can be higher in China and other locations competing for multinational investors. The differential with Singapore narrows with higher grades of employee, being estimated as about 30% lower for supervisors and managers (Sato, 1991).

Labour relations are governed through various regulations set by DEPNAKER, which includes the need for workers to give prior notice of any intended industrial action and for employers to negotiate redundancies which may involve DEPNAKER as conciliators. Labour regulations give the right for union representation in any company with over 25 employees, through a single company union (SPTP – *Serikat Pekerja Tingkat Perusahaan*) providing there is majority workforce support and management discretion to approve the union representatives recognised by them. In 1996, 16 companies on Batam had an SPTP, indicating a low level of union activity.

Workers housed in BatamIndo's dormitories have their own additional forms of representation for mediating disputes. The dormitories are divided into blocks accommodating 12-16 persons and every two blocks appoint a head (called an "RT") and each group of 11-15 RTs has a "head of village" (called an "RW"). These divisions correspond to the national pattern in Indonesia of dividing local representation between neighbourhoods (*rukun tetangga, RT*) and communities (*rukun warga, RW*). The RT is a dormitory resident while the RW is employed by the Community Development division of Tunas Karya. The aim of the Community Development division is to keep workers living in harmony, attend to housing and welfare problems and to act as an intermediary on employment matters. If not immediately resolved by the RW, worker-employer issues are referred to the personnel office of the company involved, and if they remain unresolved the Community Development division is responsible for forwarding the matter to DEPNAKER.

Industrial disputes have been increasing in frequency, accentuated by general disquiet about the perceived inadequacy of wages compared with the high cost of living on Batam. From April 1995 to March 1996, eight strikes were reported with the total loss of 45,385 working hours and involving 2,600 workers (Table 11). Most of these cases involved disputes over wages, usually over the payment of wage increments. Allegations of non-payment of the statutory minimum wage persist. For example, the *Riau Pos* has reported that up to 50% of companies were violating the minimum wage (*Riau Pos*, 16 September 1996). The article argued that this was possible because for "every person that leaves a job there are 10 others waiting for the work" and it is often only when jobs are lost that people protest. The need to cope with industrial agitation is, of course, in marked contrast with Singapore's disciplined workforce where only one industrial stoppage, causing a loss of 122 'man days', has been reported since 1978 (Perry *et al*, 1997: 134).

Tenants of BatamIndo often prefer their workers to stay in the dormitories as the controlled environment is thought to put worker productivity less at risk than when they live outside (Halim, 1996). For example, given the limited availability of public transport, workers travelling into the estate from elsewhere on Batam might spend 20-30% of their wages on travel, reducing the budget available for a healthy lifestyle. Proximity also makes the workforce more flexible in terms of their availability for overtime. These advantages are, however, offset by the lower cost of locally recruited labour.

By hiring locally, tenants save the recruitment fee charged by Tunas Karya of about S\$200 (US\$130) per person for 'sourcing', 'delivery' and the mandatory medical exam. Locally recruited workers can be hired and be on the job in a matter of days while the recruitment process through

Tunas Karya can take one to two weeks. Depending on contract conditions, hiring locally may save the cost of housing workers on site and meal allowances. Although off-site workers may get allowances for housing, meals, or transportation, this will all be stipulated in the individual contracts and the package of benefits will vary from firm to firm. Perhaps most importantly, locally recruited labourers do not have to be offered the two year contracts stipulated by Tunas Karya. For instance, they can be hired on initial three month contracts giving the firms more flexibility and control. On the other hand this can also mean that it is harder to retain workers.

In 1997, around half of BatamIndo's workforce resided outside the Park. Workers on a contract extension, whose record of behaviour is known, are given more freedom to choose their place of residence. It is clear, however, that housing their employees in dormitories does not free employers from the consequences of relying on a workforce that is predominantly single, young and away from their place of association.

The social problems arising with a young migrant workforce adjusting to the industrial environment are evident from the incidence of problems arising in the dormitories reported by the Community Development Division (Table 12). The low incidence of sickness may be indicative of the successful medical screening prior to appointment, but the reported problems are suggestive of the stress, frustration, homesickness and monotony of their new situation. As well as the lack of privacy in the dormitories, where sleeping and living space is communal, is the tendency for workers to be divided according to their place of origin and between those who enter Batam's nightlife, sometimes giving access to a second (higher) income, and those who do not. These divisions tend to escalate individual differences into wider disagreements.

Table 12: Incidents Reported in BatamIndo Worker Dormitories, 1995

| Case | No. of Reported Incidents |
|--|---------------------------|
| Overnight Stay by Outsider | 81 |
| Home Late | 32 |
| Fighting | 36 |
| Drunkenness | 7 |
| Pregnancy | 33 |
| Theft | 171 |
| Sexually Transmitted Disease | 10 |
| Tuberculosis | 40 |
| Sickness | 7 |
| Immoral | 52 |
| Morphine Abuse | 3 |
| Frustration / Stress | 20 |
| Total Cases | 492 |
| Source: Annual Report 1995, Community Development Division, PT Tunas Karya, as quoted in Halim (1996). | |

Only about 50% (approximately 26,000) of the workers at BatamIndo are recruited from elsewhere (off Batam) by Tunas Karya. About 50% are hired locally by the tenants themselves from the pool of migrants who have come to Batam without pre-arranged contracts. Only those hired through Tunas Karya are housed on-site in dormitories (26,000 dormitory beds).

While housing workers on site may allow the tenants at BatamIndo to have more control over worker's lives and lifestyles, it is expensive to provide this housing. A further disincentive is that it takes up valuable estate land which does not really serve a productive function (to the degree it could if it were being used for manufacturing). Currently, only half the workers are being housed on site. A BIDA staff person suggested that there is a certain degree of reluctance on the part of BatamIndo and its tenants to build more dormitory housing and that the estate sees it as the responsibility of government to provide low-income units for labourers. BatamIndo claims it will build dormitories for 65,000 workers. How far along they are to achieving this to-date is unclear.

7. Developments in the Other Riau Islands

7.1 Introduction

The Singapore-Indonesian flagship projects on Bintan and Karimun have progressed less quickly than BatamIndo and consequently these islands have yet to experience similar investment and population inflows. In addition to its earlier start, Batam has the advantage of support from Indonesian's Minister for Research and Technology, Dr B. J. Habibie, who has chaired BIDA since the 1970s. Since the early 1980s, Habibie has built up an influential bureaucratic and commercial industrial power base, effectively operating as a *de facto* Minister of Industry (Hill, 1996: 156). His development agenda combines elements of reliance on comparative advantage in labour-intensive and resource-based industries with attempts to engineer accelerated technological breakthroughs based on state-directed investment. Habibie, who was formerly a senior executive in Germany's aviation industry, has pushed the development of an Indonesian aircraft industry (Eriksson, 1995). He is also personally responsible for advancing the vision of Batam as a sophisticated metropolis that will eventually absorb some of Singapore's economic role.

As well as lacking the patronage of a key person in Indonesia's political hierarchy, it is also evident that aspects of Singapore's projects for Bintan and Karimun have been ill-conceived. This is particularly so in the case of the industrial estates. Another difference is that outside the Batam economic zone the Coordinating Team for Riau Province Development is responsible for approving investment and its interest is in supporting growth across the province.

7.2 Bintan Industrial Estate

Of the 4,000ha allocated to Bintan Industrial Estate, 106ha had been developed by March 1997, providing factories, worker and executive housing and associated facilities for the planned self-contained industrial township. Compared with the ultimate workforce originally expected to be in the order of 130,000, by 1997 actual and committed occupants were expected only to make available around 2,500 jobs. The projection at this time was that up to 12,000 workers would be employed in the estate by 2001 (Table 13).

Table 13: Bintan Industrial Estate Five Year Growth Objectives, post-1996

| Objective | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|--|-------|-------|-------|-------|--------|--------|
| No. of Committed Tenants | 17 | | | | | |
| Export Value (S\$m/US\$m) | | 30/20 | 40/27 | 60/40 | 80/54 | 100/67 |
| Workforce | 2,547 | 4,000 | 6,000 | 8,000 | 10,000 | 12,000 |
| Investment (US\$m) | | 70 | 80 | 110 | 130 | 150 |
| Source: Bintan Industrial Estate Management. | | | | | | |

The estate's initial marketing had targeted textiles and garments, furniture and other wood processing activities as the key light industries to be attracted. Of the first 11 tenants that commenced operations, eight were garment manufacturers (the others were a concrete product manufacturer and two electronics assembly plants). The wood processing sector has proved to be difficult to attract because of the tight control of timber availability by existing concession holders. The success in attracting garment makers proved short-lived as these companies were mainly seeking to make use of Singapore's export quota under the multi-fibre agreement. Foreign companies are usually not allowed to export from Indonesia, to reserve Indonesia's export quota for local industry, and so this concession opened up a new opportunity for foreign investors (*The Straits Times*, 3 January 1994). The ability to utilise Singapore's export quota has since been lost, leading to the closure of most of the estate's first occupants. A new marketing strategy for the estate has been required, which was still under preparation in May 1997. Meanwhile a number of electronics companies have been allocated space, which was against the intention of developing a tenant profile that was different to BatamIndo.

7.3 Bintan Water Projects

The development of Bintan's water resources is of dual significance. First, it is necessary to facilitate the expansion of the island's industrial and tourist activity. Second, it potentially offers a surplus for Singapore to draw upon, which is an increasing priority given the city state's dependence on water supplied from Johor and the need for additional supplies to support the island's continuing economic growth. The 1991 water agreement identified five catchment areas, covering 430km², and announced the formation of two Indonesian-Singapore joint venture companies to develop, treat and distribute the water resources. The total cost of the project was put at around US\$1.5 billion. It was also announced that similar cooperation would be used to develop water resources in Riau mainland (Sungai Kampar) including a proportion for supply to Singapore. The water and tourist development projects (see below) are rapidly transforming land-use on Bintan. Indeed, it is reported that the mining company PT Aneka Tambang was refused a permit to expand its bauxite mining operations to the north of the island due to competing developments (*Petrominer*, 15 February 1997).

As of October 1997 there had been little progress on the water projects. Information on these projects is regarded as sensitive by Singapore officials and the reasons for the delay have not been made public. One possibility is that issues of land compensation and resettlement have not been resolved, or that the financial contributions of the participants are still to be agreed. Alternatively, because of the caution that Singapore must exercise in developing an alternative supply to Johor (it

risks Johor raising their charges or curtailing supply) it may be that Singapore requires greater confidence that there will be no adverse reaction from the Malaysian authorities.

7.4 Bintan Beach International Resort

Development of tourist resorts has progressed with greater speed than the island's industrial projects. Much of the investment has gone into the Bintan Beach International Resort. The first development to open, known as the Banyan Tree Bintan, set the tone for the image envisaged by the Resort's planners, being described by one journalist as comprising:

Balinese-style villas wrapped around serene pools, nestled on a hill overlooking secluded beaches, clear waters and the expanse of the South China Sea (Lam, 1995: 24).

This project, at which accommodation can cost around US\$250 per night, is partly owned by a subsidiary of Singapore's National Steel company, a government-linked company. Singapore Technologies, the main Singapore investor in the industrial estates, is a partner to several of the other developments with the resort area now including two 18-hole golf courses and a golf driving range. Temasek Holdings, Keppel Corporation, Sembawang, DBS Bank and NTUC Income and Insurance are other organisations linked to the Singapore government which have invested in tourist projects within the resort area, in partnership mainly with other Singapore investors and the Salim Group. By mid-1996, it was claimed that around US\$1,600 million had been committed to such projects (*The Straits Times*, 19 June 1996). Other developers with ambitious plans, such as Shangri-La International, note that it may be to their advantage to "open later when the infrastructure is in place and Bintan has more attractions" (Singapore Business, February 1995: 25).

Around a quarter of the area allocated to Bintan Beach International Resort had been developed or was subject to definite projects by mid-1997. The total number of visitors to the Resort was projected to be around 250,000 in 1997, compared with around 100,000 in 1996 and 30,000 in 1995. Another boost to Bintan's tourist development was the announcement of a Singapore-Indonesian government agreement to allow a car ferry service between Singapore and Bintan.

7.5 Karimun Marine and Industrial Complex

Development of the 4,000ha Karimun Marine and Industrial Complex, subject to a memorandum of understanding in 1991, commenced in 1997. The consortium undertaking the first phase of the project, covering 155 hectares, comprises two government-linked companies from Singapore (Jurong Town Corporation International, a subsidiary of Singapore's main provider of industrial property, and Sembawang, a marine engineering group) and the Salim group. PT Karimun Sembawang Shipyard commenced operations in 1996 with the full facility expected to be completed in 1999 by which time the Indonesian workforce is expected to be around 1,000.

The marine engineering industry is increasingly perceived as a 'sunset industry' in Singapore. The island's comparatively high labour costs, labour shortages and high operating costs, partly arising from environment controls, are causing Singapore's ship repairers to look for alternative operating sites in the region. While Karimun offers the same geographical advantages that helped develop Singapore's marine industry, the island is lacking in basic industrial infrastructure, supporting industries or an industrial workforce. By mid-1997, only one tenant – a subsidiary of Sembawang –

had been secured for the proposed complex. Without other investors to share development costs, Sembawang's operation utilises a floating dock to minimise its fixed investment, further underlining the limited commitment so far made to this project.

The suggested use of Karimun as an oil refining and petroleum storage location is still to be taken up. There has been feasibility study to investigate these opportunities, reportedly involving Japanese investment interests (*The Straits Times*, 13 June 1996). While the results of this study have not been reported, a constraint on Karimun's use as an oil installation is Singapore's wish to expand its own participation in the industry (Ahmad, 1992). After electronics, chemical products and petroleum refining are the major components of Singapore's manufacturing sector and in recent years have been growing more strongly. Singapore has recently commenced major reclamation projects, including the merging of seven small offshore islands, to provide long-term expansion space for its petrochemical complex (Perry *et al*, 1997: 159). In this context it appears that Karimun's development as an oil refinery and distribution centre will be an even longer-term project.

7.6 Bulan

The island of Bulan, separated by a few kilometres from the southwest of Batam, is of interest for the development of its role as a food production centre for Singapore. Over the last three decades food production has been phased out in Singapore, except for production in designated agrotechnology parks which are envisaged as centres of specialised, export-orientated high technology (Perry *et al*, 1997: 161-165). The Salim Group has leased the entire island of Bulan to build an integrated agribusiness operation including supply of Singapore's basic food needs. A pig farm, Bulan's major activity, was started in 1986 to fill the gap left by the phasing out of pig farming in Singapore. The farm currently supplies more than half of Singapore's demand for pork. The Bulan project has been expanded to include chicken, duck and frog farms, as well as orchids and crocodiles.

7.7 Natuna Islands

The Natuna Islands, which lie over 300km north west of Bintan, are of significance to the development of Riau because of their large natural gas field and oil production. It was due to the need to service these production areas that Batam's use as a logistics base for the industry was originally proposed. In the early 1980s, the possibility of Singapore cooperating in the construction of a pipeline to Batam was discussed frequently (Regnier, 1991: 77), Singapore's interests being to obtain access to the gas for its own energy needs. This project did not progress given the recession in the oil markets and because of certain feasibility problems, although as noted above, Indonesia did seek to relaunch the idea in 1987 to accelerate its exports of natural gas.

The pipeline project reemerged in 1997, this time to link a gas field around the Anambas Islands with Batam and Singapore (*The Straits Times*, 1 May 1997). Singapore government-linked companies – Sembawang Engineering and Construction (Sembec), (a subsidiary of Sembawang Corporation), Tuas Power Pte Ltd and EDB Investments (a subsidiary of the Economic Development Board) – are to construct the Batam-Singapore leg of the pipeline, while Indonesia's state oil company, Pertamina, constructs the connection between the gas field and Batam. The underwater pipeline will extend for 480kms, with first delivery expected in the year 2000. It is envisaged that this project will

give a major boost to Singapore's chemical and petrochemical sector. At present Singapore imports natural gas from Malaysia under a contract that is due to expire in 2007.

8. Singapore's Regionalisation Programme

The rapid conversion of a previously undeveloped island into an enclave of multinational manufacturing is largely credited to the confidence of investors in Singaporean administration and infrastructure provision. This impact encouraged Singapore's economic planners to embark on a even more ambitious regionalisation programme. Based on the model of BatamIndo, 'mini Singapores' are now in the process of development across South and East Asia. As well as many of the reasons that lay behind Singapore's investment in Batam in the late 1980s, the regionalisation programme has three further motives (Kanai, 1993).

First, economic growth and changes to foreign investment controls amongst the countries of Indochina and China have generated many business opportunities. Second, with respect to investment in these markets, Singapore's leaders see themselves as having a privileged access to Chinese business networks and government officials. For example, the President of Singapore Technologies Industrial Corporation (STIC) is quoted as saying:

If you are a multinational in Europe or elsewhere, involved in technology and want to come to Asia then we suggest you look at us as a possible partner. STIC has an established network in the regional market. We also have all important guanxi (connections) in China (Cooke quoted in Yeung, 1994:1940).

A third reason was the perceived need to strengthen the so-called 'external wing' of the economy. It was argued that while companies from other Asian newly industrialising countries (NICs) had built up significant foreign direct investment portfolios in China and Southeast Asia since the mid-1980s, Singaporean companies had been much less active in this area. Moreover, unless specific steps were taken to encourage outward investment, Singapore was thought likely to fall further behind its Asian competitors. There was perceived to be a shortage of people willing to take risks in running enterprises, as well as a reluctance amongst Singaporeans to leave their country's safe, clean environment to live and work elsewhere.

Like Batam, the regionalisation strategy is being led by government-linked companies for the development of infrastructure, typically in the form of self-contained industrial estates. As well as being marketed to foreign companies, these are also being designed to provide a supportive environment for the expansion of local companies. Industrial estates are now under construction in India, China and Vietnam. As well as infrastructure provision, the government endeavours to export the 'software' to manage the property according to Singapore administrative practices by training Chinese officials in various urban administration tasks. This is both to exploit its reputation for efficient, non-corrupt administration and to further ease some aspects of regional expansion for local ventures.

In 1994, to underscore the government's commitment to the new investment strategy, it was announced that initially 2-3% of the republic's financial reserves would be directed to infrastructure projects in Asia but after 10 to 15 years this share could grow to 30-35%. This indicates the high

confidence in the viability of the intended projects and a shift from traditional practice of investing the financial reserves in blue chip stocks and bonds in industrialised economies.

The single largest overseas infrastructure investment is the development of the Suzhou industrial township, 6km inland from Shanghai. The development plan, to be completed over 20-30 years, envisages a town of 600,000 people, covering 70km² and a workforce of 350,000. In return for Singaporean investment capital, the investors have obtained delegated approval authority for new investments and preferential incentives that are said to better those given to some provincial governments (Tan, 1995). The project commenced as a 65:35 partnership with the majority capital provided by 19 Singaporean organisations, with the balance provided by Suzhou municipal government, but subsequently additional Singapore partners have joined including EDB Investments. As well as the direct economic commitment, the project is of symbolic and strategic significance as a sign of the mutual goodwill and trust between the partners (Kwok, 1996). The Suzhou pact was signed in January 1994 between Singapore's Senior Minister and China's Vice Premier, with the respective Prime Minister and Premier in attendance. About 50km from Suzhou, the Wuxi-Singapore industrial park is under development which is one of several smaller projects linked to Singapore's economic development agencies. As well as the profit from real estate development, these projects are being used to push the overseas expansion of a range of Singapore enterprises including taxi firms, medical clinics, warehousing services and retailing.

Through infrastructure provision, Singapore is also extending its linkages into the Indian economy. Singapore is seeking to promote its role as India's gateway to the Asia-Pacific. In 1994, the first phase of the Bangalore Information Technology Park was opened as a forerunner of satellite townships and industrial estates to be developed in joint ventures with Singaporean investment. Among other projects in India, Temasek Holdings with an Indian joint venture partner, are building a small township near New Delhi to be known as Sentosa City. In September 1994, joint venture projects between Singapore and India in third party countries (mainly in ASEAN and China) were reported to be worth S\$1.5 billion (US\$1 billion) (Kwok, 1996: 293). In 1996, construction commenced on a Singapore-Vietnam Industrial Park located 20km outside Ho Chi Minh City with the completed park expected to provide 50,000 jobs (*The Straits Times*, 15 May 1996). Other government-linked infrastructure projects have been completed or are at various stages of implementation in Thailand, Cambodia and Burma.

9. Summary and Conclusions

9.1 An Overview of Developments

Recent Singapore-Indonesian investment cooperation in the Riau islands has centred on four flagship projects: BatamIndo Industrial Park, Bintan Industrial Estate, Bintan Beach International Resort, and the Karimun marine and industrial complex. These projects are a key test of the effectiveness of the development formula being pursued by Singapore. This approach seeks to 'fast track' development by creating enclaves of investment, protected from the diseconomies and constraints of their surrounding environment. The success of these high profile projects will be critical to maintaining investor confidence in the Riau islands and encouraging any wider investment interest in

Riau province. They can also be seen as a test of a development strategy that Singapore is now seeking to employ in many other countries as part of its regionalisation programme.

A review of the major flagship projects (Table 14) reveals that with the exception of BatamIndo Industrial Park the potential of these investments is still to be realised. In the case of Bintan Industrial Estate, for example, just 4% of the land reserved for development has so far been developed and only 17 factory tenants attracted (not all of which remain in operation). Thus while there is no doubt that the Riau island economies have been booming, significant development challenges remain.

Table 14: Summary of Progress of Singapore's Flagship Projects, 1997

| Project Start Date | Area Covered Complete | Area Developed 1997 | Development Indicators |
|---|-----------------------|---------------------|---|
| BatamIndo Industrial Park | | | |
| 1990 | 500ha | 300ha | 84 tenants; 56,000 jobs. Investment: US\$300m FAI ¹ US\$454m infrastructure Exports: US\$1bn |
| Bintan Industrial Estate | | | |
| 1993 | 4,000ha | 106ha | 16 tenants; 2,200 jobs. Investment: US\$68m FAI ¹ US\$126m infrastructure Exports: US\$126m |
| Karimun Marine and Industrial Complex | | | |
| 1997 | 3,000ha | 90ha ² | 1 tenant; 326 jobs. Investment: US\$71.4m FAI ¹ US\$87m infrastructure Exports: US\$1m |
| Bintan Beach International Resort | | | |
| 1991 | 23,000ha | 1,450ha | 4 tenants; 2,000 jobs. Investment: US\$257m FAI ¹ US\$129m infrastructure Visitors: 113,494 |
| 1. FAI: Fixed Asset Investment by tenants. 2. Under Development in 1997. | | | |
| Source: Economic Development Board, Singapore, personal communication. | | | |

At present only the BatamIndo Industrial Park has firmly established itself. Even in this case, however, some slowdown in investor interest in the Park has been noted over the last year or so, with a notable decline in European and American multinationals amongst the profile of new tenants. This may be just a reflection of a recent recession in the electronics industry which, as noted above,

has been a key investor in the Park. Less optimistically, the weakening of investor interest may be a reflection of the shift in investor interest to China and other parts of the region. Whatever the reason it is clearly important that the wider development of Batam island takes off to reinforce the Park's establishment and future growth. The other more recent flagship projects are even more in need of appropriate infrastructure improvement to support their growth. At the same time, some other projects that have been discussed are still to be progressed, including the development of water infrastructure in Bintan and the Riau mainland.

The development of the flagship projects needs to be balanced with the improvement of their surrounding environment. The investment enclaves are experiencing some of the negative externalities associated with the speed of Batam's economic development. Many of the problems are associated with the continuing influx into the island of undocumented migrants from other parts of Indonesia attracted by news of the 'Batam boom'. Rising unemployment, crime, prostitution, squatter settlements and conflicts over land clearance are adding to the difficulty in developing a high standard of urban amenity. Insufficient housing, a lack of basic amenities and inadequate services for the majority of people now living in Batam need to be addressed if the goal of balanced urban growth is to be achieved. It is estimated that there are currently well over 20,000 units of squatter housing accommodating a population of perhaps around 100,000, making up around a third of the island's total population in 1996. The present rate of housing construction for low income residents is well below what is needed to accommodate demand, suggesting that additional action is needed to reduce the problems associated with squatter housing.

One way unbalanced urban growth and unrestrained migration is linked to the viability of the BatamIndo Industrial Park is through the character of the workforce. Developing a committed and responsible workforce is partly dependent on their own residential commitment. This depends on appropriate housing and a social environment which encourages permanent settlement. While dormitory housing is supplied by BatamIndo, this currently accommodates only around half of the workforce employed on the estate and is not necessarily the preferred housing of those who reside in the dormitories. Research suggests that workers living in their own housing, even in a squatter settlement, may have a greater long term commitment to Batam than those living in the dormitories. The quality of urban development also impacts on the ability to recruit skilled workers and managers.

In the case of Bintan, it remains to be seen whether the self-contained resort developments can support a strong tourist industry or whether complementary development of the island's attractiveness is needed. Concept plans for museums, handicraft centres and artist villages, theatre and eco-tourism ventures have been envisaged for Bintan. Arguably, unless there is a high standard of development across the island as a whole there is a risk that the marketing image being sought for the resort area will be damaged.

At present, infrastructural facilities in Bintan are even more basic than those in Batam. There is a need for much improvement before the island can be used effectively for industrial activity. The development plans for Bintan Industrial Estate currently look ambitious against what has so far been realised. The number of companies which have committed to take up space in the Park may be too few for the project to achieve sufficient investment momentum. A 'chicken and egg' dilemma is possible where it is difficult to attract investors into Bintan if infrastructure is not improved but justifying expenditure is difficult without further investment already committed. This situation is again found on Karimun where it has taken several years to obtain the confidence to launch the first phase of the project. Currently, there is only one tenant on the island. It could be many years before

the industrial zone attracts sufficient companies to support the development of the necessary infrastructure and support services for a sustainable industrial enclave.

Part of the attraction of the Batam project to Singapore's economic planners was that the island location offered a context in which migration and urban development could be carefully controlled. As well as the on-Park housing and self-contained services, tight border protection was expected to prevent an influx of job seekers and associated shanty housing development. Residence was intended to be restricted to employed persons but the island's reputation as a booming economy has overwhelmed official controls. As a consequence it has not been possible to separate entirely the Park from the surrounding development of the island and these connections caution against premature celebration of the sustainability of the growth triangle.

9.2 Implications for “*Borderless Economies*”

What does the case of Singaporean-Indonesian cooperation relating to the Riau Islands tell us about the nature of transboundary cooperation in this part of the world? Is this an example of a new type of sub-regional “*borderless economy*” emerging? Can this example of transboundary cooperation act as a model for developments elsewhere in the world, and particularly within Asia?

Regarding the political nature of transboundary cooperation, it should be clear from our study that this is an example of top-down cross-border cooperation for specific purposes. Without the big initial investment of political capital from both sides of the border there would be very little new investment in the Riau Islands today. The developments themselves could be described as state-led, partially state- and private-sector driven. In other words, this is not an example of bottom-up “*transboundary regionalism*” as can be found in some parts of Europe (see Scott, 1993; 1995; 1996) whereby local authorities, communities and business groups have played a dynamic role in generating higher-level support for fostering closer cross-border ties. In emphasising the importance of political will we are not denying the substantial role of new foreign direct investments in the BatamIndo Industrial Park or underestimating the part that local Indonesian or Singaporean capital have undoubtedly played in the industrial, recreational and other developments in the islands. Rather, we are merely drawing attention to the critical political dimension of formal state-to-state cooperation, which was *absolutely necessary* before any of the joint projects could take place.

In several other parts of the world it is possible to envisage considerable local- and provincial-level contacts, socio-economic and cultural linkages emerging in borderlands prior to and sometimes in spite of formal cross-boundary initiatives between central state authorities. For instance, writers examining transboundary developments in Europe and North America have coined the term “*paradiplomacy*” to refer to direct international activity between subnational actors (federated units, regions, urban communities, cities) supporting, complementing, correcting, duplicating, or even challenging the nation-state's diplomacy (see Soldatos, 1993) or have examined various kinds of “*trans-sovereign contacts of subnational governments*” (Duchacek, Latouche and Stevenson, 1988).

In many parts of the developing world borderlands are frequently characterised by a relative absence of central state control and administration, which has allowed for high levels of unimpeded cross-border interaction by local communities (see, for example, Asiwaju and

Adeniyi, 1989). Thus, it is important to pay close attention to the key ‘movers and shakers’ in any form of transboundary cooperation. In the case of Singapore and Indonesia there has been virtually no paradiplomacy in existence at the transboundary level, and the most significant initiatives have all come from senior politicians, planners and technocrats in Singapore and Jakarta. Thus, any characterisation of the Singapore-Indonesia border zone as being an example of a new type of investment-driven “*borderless*” development requires considerable justification. The major linkages between the two sides of the border are politically-inspired ones, albeit with very serious economic motives. Furthermore, the use of this example as a model for transboundary cooperation elsewhere in the region is limited because of the different political relationships involved, the absence of a vibrant city-state like Singapore in other border zones, and the very different levels of contact that already exist at local, provincial and federal levels across borders elsewhere in the region (see, for example, Grundy-Warr, 1993).

Elsewhere, we have also criticised Kenichi Ohmae’s (1995) notion of “*region states*” in relation to the Singapore-Indonesia border zone (see Grundy-Warr and Perry, forthcoming). According to Ohmae, region states represent “*natural economic zones*” conforming more to flows of human economic activity than political bodies. The implication of this being that market linkages and investment flows are overcoming artificial political constraints at national levels and are transcending political borders at international levels. These zones can either lie within or across boundaries, and they possess synergies based upon complementary resources enabling successful linkages with the global economy to develop. Ohmae argues that region states often face legal, political and institutional constraints imposed by their respective national centre(s), but what they all have in common is “*that they gladly sidestep the bunting and hoopla of sovereignty in return for the ability to harness the global I’s (Investment, Industry, Information Technology, and Individual consumers) to their own needs.*” (Ohmae, 1995: 81).

For reasons noted above, the underlying political context of transboundary cooperation seems to have been overlooked or seriously underestimated by Ohmae in his colourful depiction of emerging region states in an interlinked global economy. Far from circumventing sovereignty, the fact remains that all the states of Southeast Asia are extremely sensitive about the issue. Transboundary cooperation poses a dilemma in the sense that the states involved “*have to reconcile the tension between statism and market forces, particularly those which have a tendency to create interdependence and in the process, undermine sovereignty,*” (Ganesan, 1993:6). In this case the states have been careful to restrict cooperation to specific self-contained projects, whether this is an industrial park here or a golf resort there or a water development project elsewhere. Thus the states concerned are making sure that they give up very little sovereignty whilst simultaneously encouraging mutually beneficial economic projects.

From the foregoing it should be clear that we do not see the transboundary cooperation between Singapore and Indonesia as a new kind of “*borderless*” region state reflecting radical changes in a global economy that have made the boundary separating Singapore and Indonesia a relict of a bygone age of economically dysfunctional nation-statism. Undoubtedly, a mix of domestic and global economic pressures have motivated Singapore’s leaders to think of ways to overcome the cost constraints of their limited terrestrial economy, to invest broadly within the region and beyond, and to secure natural resources (especially water supplies) that are critical to Singapore’s long term survival. Whereas Indonesia has recently sought to deregulate and encourage private sector development and to create new zones for export-led growth, such as Batam. Furthermore, economic diplomacy has become a major aspect of foreign policy and of inter-state, state-firm and inter-firm relations throughout the world (Stoford and Strange,

1992). We believe that this concept of “*triangular diplomacy*” in international relations is highly appropriate to any analysis of transboundary regionalism within Southeast Asia (Grundy-Warr and Perry, 1996). The transboundary cooperation between Singapore and Indonesia should be seen as a pragmatic form of economic relations between two very different ASEAN neighbours for essentially distinct but complementary national objectives. Functional transboundary cooperation can be regarded as a flexible response by states in association with business elites to take advantage of certain complementarities in factors of production and to pool resources in order to improve sub-regional competitiveness and attractiveness to foreign investors in export-oriented industries.

At the regional level of analysis the mode of cooperation between Singapore and Indonesia fits in well with ASEAN plans for extending cross-border investments and trade in other parts of Southeast Asia. Given the relatively low level of current intra-regional trade, the so-called growth triangles (including Singapore-Indonesia and Malaysia) of ASEAN may be viewed as a way of advancing the cause of deepening intra-regional economic cooperation in key sub-regions. This idea is not new. For instance, transborder contacts in Europe and between Mexico and the USA were well developed prior to plans to further integrate nation economies through formal treaties. It is widely recognised that sub-regional cross-border contacts can play a significant part in the creation of stronger intra-regional cooperation. This idea is discussed by Kumar and Siddique (1994:53):

...growth triangles have become sub-regional groupings within an ASEAN context that promote intra-ASEAN linkages. Characterising growth triangles as “mini-AFTAs” (ASEAN Free Trade Areas) has provided a niche for them within the evolution of the loosely structured ASEAN framework. Indeed, it has been argued that providing a web of growth triangles covering the ASEAN area may be a critical element in the realisation of AFTA over the next fifteen years.

The notion of a steadily progressing process of regional economic integration based on specific examples of transboundary cooperation requires comparison with the one part of the world where transboundary cooperation is at its most mature stage – that is, within the European Union.

One of the critical features of cross-border cooperation within Europe has been the degree to which new transboundary agencies have been created to handle a wide variety of border region problems, to streamline policy implementation and to manage daily transborder issues within specific border zones. Much of the transboundary cooperation in Europe has arisen “*from informal encounters between local officials*” and over the course of many years has developed into “*more structured and institutionalised forms of policy making*” (Scott, 1996: 83). New cross-border institutional arrangements have evolved within Europe as a direct result of a multitude of low-key contacts between different agencies and groups, including municipal authorities, district government bodies, community organisations and local business associations, who have been motivated by the need to join forces across arbitrary political boundaries in order to manage common problems in a more effective manner. The variety of distinct experiments in transboundary cooperation in borderlands within Europe have subsequently been enhanced by initiatives at the level of the European Union and by the endorsement of transboundary planning agencies and encouraging policy measures by the respective nation-states (Scott, 1996).

In contrast, transboundary cooperation within ASEAN is largely the result of key decisions at centralised, national levels. One of the features of the top-down type of cooperation is the relative lack of sophisticated transboundary institutional linkages and the restricted efforts to harmonise laws and regulations within the designated border zones (Davidson, 1992). Some commentators have argued that avoidance of potentially difficult institutional and legislative changes at the inter-state level is a particularly “Asian” style of cooperation (Abonyi, 1994; Thant, Tang and Kakazu, 1994).

Within Europe there has been a movement towards more integrated spatial planning across borders (Nijkamp, 1994), and aimed at cooperation on a wide variety of issues, including economic, cultural, social and environmental matters (Gallusser, 1994; Scott, 1996). There are many problem areas that are not included in the current transboundary projects between Singapore and Indonesia because they are considered to be politically sensitive. Furthermore, should key, prestige joint ventures like the BatamIndo Industrial Park begin to falter economically or should one side become politically cool towards the neighbouring state for political motives, then there could easily be a reversal of the present trend towards further cooperation. As Acharya (1995: 182) has observed:

While various governments [of ASEAN] speak of the need to let the private sector take the lead in organising the growth triangles, their lack of willingness to familiarise and institutionalise these triangles also ensures that the latter remain hostage to inter-state political relationships, which are vulnerable to periodic setbacks.

Sudden reversals of policy by national centres are much less likely to destroy transborder cooperation in Europe because of the strength of existing institutional ties and cross-border agencies which engage in regular subnational, cross-border and international paradiplomacy (at EU level).

Functional transboundary cooperation has clearly been advanced a long way in the Singapore-Indonesia border zone. Joint projects have led to a huge transformation in the socio-economic landscape of the Riau islands closest to Singapore. Whilst cooperation is having mutually beneficial economic impacts, we have also highlighted some key problems related to the rapid development of Batam. Furthermore, there is still plenty of potential to strengthen and extend existing ties and to create genuine transborder institutions that could survive fluctuations of an economic and perhaps political nature.

References

- Acharya, A. (1995) 'Transnational production and security: Southeast Asia's "growth triangle"', *Contemporary Southeast Asia*, 17, 2 (September): 173-86.
- Ahmad, M. (1992) 'Economic cooperation in SIJORI growth triangle: an Indonesian perspective', *Ekonomi dan Keuangan Indonesia*, 40, 4: 413-444.
- Angkatan Bersenjata* (12 October 1996).
- Applied Research Corporation (1993) *Logistic support services for industrial users in Batam and Bintan*, unpublished consultancy report 922034/03, Applied Research Corporation, Singapore.
- Asia Development Bank (1996) *Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA)*, TA 5625 REG, Asia Development Bank, Manila.
- Asiwaju, A.I. and Adeniyi, P.O. (eds) (1989) *Borderlands in Africa*, Lagos, Nigeria: University of Lagos Press.
- Bidani, B and Ravallion, M (1993) 'A new regional poverty profile for Indonesia', *Bulletin of Indonesian Economic Studies*, 28, 1: 85-100.
- Booth, A. (1996) 'Regional disparities and inter-governmental fiscal relations in Indonesia', pp.102-36 in I.G. Cook, M.A. Doel and R. Li (eds) *Fragmented Asia: Regional Integration and National Disintegration in Pacific Asia*, Aldershot, Avebury.
- Central Bureau of Statistics (1993) *Penduduk Miskin dan Desa Tertinggal 1993: Metodologi dan Analisis*, Jakarta, Indonesia.
- Central Bureau of Statistics (1993) *Statistical Yearbook of Indonesia, 1993*, Jakarta, Indonesia.
- Chapman, E.C. (1995) 'Plans and realities in the development of trans-Mekong transport corridors', *Thai-Yunnan Project Newsletter*, Canberra: Australian National University.
- Chua, T., Natarajan, R. and Ross, S. (1996) 'Analysis of the state of the marine environment of the Straits of Malacca and Singapore', paper presented at the conference *Navigational Safety and Control of Pollution in the Straits of Malacca and Singapore: Modalities of International Cooperation*, 2-3 September 1996, Singapore: The Institute of Policy Studies and International Maritime Organisation (IMO).
- Davidson, P. (1992) 'An economic law perspective', paper presented at the *International Symposium on Regional Cooperation and Growth Triangles in ASEAN*, National University of Singapore, 23-24 April.
- Department of Statistics, (1991) *Singapore's Investment Abroad 1976-1989*, Department of Statistics, Singapore.

- Duchacek, I.D., Latouche, D., and Stevenson, G. (eds) (1988) *Perforated Sovereignties and International Relations. Trans-Sovereign Contacts of Subnational Governments*, New York: Greenwood Press.
- East Asia Analytical Unit (EAAU) (1995) *Growth triangles of South East Asia*, East Asia Analytical Unit, Department of Foreign Affairs and Trade, Commonwealth of Australia, Canberra.
- Economic Development Board (1988) *Gearing Up for an Advanced Role in the Global Economy*, Economic Development Board, Singapore.
- Economic Development Board (1995) *Economic Development Board Yearbook 1994-95*, Economic Development Board, Singapore.
- Eriksson, S. (1995) *Global shift in the aircraft industry*, Department of Geography, University of Gothenburg, Series B, No. 86.
- Ganesan, N. (1993) 'Conceptualising regional economic cooperation: Perspectives from political science', in Toh Mun Heng and L. Low (eds) *Regional Cooperation and Growth Triangles in ASEAN*, Singapore: Times Academic Press: 1-8.
- Gallusser, W.A. (ed.) (1994) *Political Boundaries and Coexistence*, Berne: Peter Lang.
- Gereffi, G. (1996) 'Commodity Chains and Regional Divisions of Labor in East Asia', *Journal of Asian Business*, 12, 1: 75-112.
- Grundy-Warr, C. (1993) 'Coexistent borderlands and intra-state conflicts in mainland Southeast Asia', *Singapore Journal of Tropical Geography*, 14, 1: 45-56.
- Grundy-Warr, C. and Perry, M. (1996) 'Growth Triangles, International Economic Integration and the Singapore-Indonesian border zone', pp.185-211 in D. Rumley, T. Chiba, A. Takagi and Y. Fukushima (eds) *Global geopolitical change and the Asia-Pacific: a regional perspective*, Aldershot, Avebury.
- Grundy-Warr, C. and Perry, M. (forthcoming) 'Economic integration or interdependence? The nation-state and the changing economic landscape of Southeast Asia', in J. McKay and L. van Grunsven (eds) *Regional Change in Industrialising Asia. Economic Restructuring and Local Response*, Aldershot, Avebury.
- Halim, L. (1996) *Migrant workers on Batam Island*, unpublished policy analysis exercise, Master in Public Policy programme, National University of Singapore.
- Hall, C. (1991) *Tourism in the Pacific Rim*, Melbourne: Longman Cheshire.
- Hill, H. (1996) *The Indonesian Economy Since 1966*, Cambridge: Cambridge University Press.
- Hinton, P. (1995) 'Growth triangles, quadrangles and circles: Interpreting some macro-models for regional trade', *Thai-Yunnan Project Newsletter*, 28 March, Canberra: Australian National University: 2-7.

- Kanai, T. (1993) 'Singapore's new focus on regional business expansion', *NRI Quarterly*, 2, 3: 18-41.
- Kumar, S. and Siddique, S. (1994) 'Beyond economic reality: new thoughts on the growth triangle', *Southeast Asian Affairs*, Singapore: Institute of Southeast Asian Studies.
- Kwok, K.W. (1996) 'Singapore: consolidating the new political economy', *Southeast Asian Affairs 1995*, Institute of Southeast Asian Studies, Singapore: 291-308.
- Lam, J. (1995) 'Can the triangle grow?', *Singapore Business*, February: 14-25.
- Lau, G.T., Yeoh, C. and Funkhouser, G. (1994) 'An exploratory study of the investment decision process', in Y. Feng and C. Wee (eds) *Proceedings of the 10th Academy of International Business, Southeast Asia Regional Conference on Asia-Pacific Business Year 2000*, Beijing: China Aviation Industry Press.
- Lee Tsao, Y. (1991) (ed.) *The Growth Triangle: the Johor-Singapore-Riau Experience*, Institute of Southeast Asian Studies, Singapore.
- Malaysian Institute of Economic Research, (1989) *Johor Economic Plan 1990-2005, Final Report*, Malaysian Institute of Economic Research (MIER), Kuala Lumpur.
- Mann, I. (1990) *Batam: step by step guide for investors*, Toronto: Gateway Books.
- McGee, T. and MacLeod, S. (1992) 'Emerging extended metropolitan regions in the Asia-Pacific urban system: a case study of the Singapore-Johor-Riau growth triangle', paper presented to the *Workshop on the Asia-Pacific Urban System Towards the 21st Century*, Hong Kong, 11-13 February.
- Mijares, R. (1996) 'The BIMP-East ASEAN growth area', *Pacific Business and Industries*, IV, 34: 41-56.
- Mya Than (1994) 'Border trade in the Golden Quadrangle', paper presented at the *Conference on Asia's New Growth Circles*, Chiang Mai: The Chaiyong Limthongkul Foundation, Thailand, 3-6 March.
- National Development Information Office (1996) *Indonesia Source Book 1996*, Jakarta: National Development Information Office.
- Neville, W. (1992) 'Agribusiness in Singapore: a capital-intensive service', *Journal of Rural Studies*, 8, 3: 241-255.
- Nijkamp, P. (ed) (1994) *New Borders and Old Barriers in Spatial Development*, Aldershot: Avebury.
- Ohmae, K. (1995) *The End of the Nation State. The Rise of Regional Economies*, New York: The Free Press.

- Parsonage, J. (1992) 'Southeast Asia's "growth triangle": a subregional response to a global transformation', *International Journal of Urban and Regional Research*, 16, 2: 307-317.
- Peachey, K. (1997) *Sustainable planning on Batam*, unpublished report prepared for Lembaga Ilmu Pengetahuan Indonesia (Indonesian Institute of Sciences), Jakarta.
- Perry, M. (1991) 'The Singapore growth triangle: state, capital and labour at a new frontier in the world economy', *Singapore Journal of Tropical Geography*, 12, 2: 138-151.
- Perry, M., Kong, L. and Yeoh, C. (1997) *Singapore: a developmental city-state*, Chichester: John Wiley & Sons.
- Petrominer*, Indonesia, various issues.
- Regnier, P. (1991) *Singapore: City State in South East Asia*, (English edition), London: Hurst & Company.
- Riau Pos*, Indonesia, various issues.
- Rice, R. (1989) 'Riau and Jami: rapid growth in dualistic natural resource-intensive economies', pp. 124-150 in Hill, H. (ed.) *Unity and Diversity: regional economic development in Indonesian since 1970*, Singapore: Oxford University Press.
- Rigg, J. (1997) *Southeast Asia. The Human Landscape of Modernization and Development*, London: Routledge.
- Rodan, G. (1989) *The Political Economy of Singapore's Industrialisation*, London: Macmillan.
- Rodan, G. (1993) 'Regionalism and sub-regional economies in the Asia-Pacific: Singapore and the growth triangle concept' in Higgott, R, Ravenhill, J. and Leaver R. (eds) *Economic Relations in the 1990s: Conflict or Cooperation*, Sydney: Allen and Unwin: 223-249.
- Royale, S. (1997) 'Industrialisation in Indonesia: the example of Batam island', *Singapore Journal of Tropical Geography*, 18, 1: 89-98.
- Santiago, J. (1995) 'A postscript to AFTA's false start. The loss of sovereignty issue', *ASEAN Economic Bulletin*, 12, 1: 18-28.
- Salleh, I. M. (1992) 'Economic cooperation in the northern triangle', paper presented to the *International Symposium on Regional Cooperation and Growth Triangles in ASEAN*, National University of Singapore, 23-24 April.
- Sato, A. (1991) 'Growth triangle and investment development in Batam island', *Pacific Business and Industries*, 1: 5-12.
- Scherschel, P. (1991) 'The EDB's mission for the 1990s', *Singapore Business*, August: 22-30.
- Scott, J. (1996) 'Dutch-German Euroregions: A model for transboundary cooperation?' in J. Scott, A. Sweedler, P. Ganster and W-D. Eberwein (eds) *Border Regions in Functional*

- Transition. European and North American Perspectives*, Berlin: Institute for Regional Development and Structural Planning: 83-106.
- Scott, J. (1995) 'International perspectives of transboundary regional development', project report for the Institute of Regional Development and Structural Planning, Berlin, Germany.
- Scott, J. (1993) 'The institutionalization of transboundary co-operation in Europe: Recent developments on the Dutch-German border', *Journal of Borderlands Studies*, 1, Spring: 39-66.
- Singapore Trade Development Board (1995) *Trade and Investment in Indonesia*, Singapore: STDB.
- Singapore Trade Development Board (1997) *Trade and Investment in Indonesia*, Singapore: STDB.
- Soesastro, H. (1992) *The ASEAN free trade area (AFTA) and the future of Asian dynamism*, Jakarta: Centre for Strategic Studies.
- Soh, S. and Chuang, P.M. (1990) 'Investing in Riau – promises and perils', *Singapore Business*, December: 30-53.
- Soldatos, P. (1993) 'Cascading subnational paradiplomacy in an interdependent and transnational world', in D. Brown and E. Fry (eds) *States and Provinces in the International Economy*, Berkeley, USA: Institute of Governmental Studies Press: 45-64.
- Takeuchi, J. (1993) 'Effect of AFTA on ASEAN industrial structure', *Pacific Business and Industries*, 1: 10-41.
- Tan, C. H. (1995) *Venturing Overseas: Singapore's External Wing*, Singapore: McGraw-Hill.
- Tempo*, Indonesia, (13 November 1996).
- Thant, M, Tang, M. and Kakazu, H. (1994) *Growth triangles in Asia*, Hong Kong: Oxford University Press.
- UNCTAD (1992) *World Investment Report 1992*, United Nation Conference on Trade and Development, New York: United Nations.
- UNCTAD (1994) *World Investment Report 1994* United Nations Conference on Trade and Development, New York: United Nations.
- Yeung, W-C. H. (1994) 'Hong Kong firms in the ASEAN region: transnational corporations and foreign direct investment', *Environment and Planning*, A 26: 1,931-1,956.

Data Sources

Batam Industrial Development Authority, *Development Data*, Batam Industrial Development Authority (BIDA), Jakarta.

Biro Pusat Statistik (Central Bureau of Statistics) *Statistik Indonesia*, various years.