



University
of Glasgow

**THE DEVELOPMENT OF MALAYSIAN
PETROCHEMICAL COMPLEXES OF THE
EAST-COAST INDUSTRIAL CORRIDOR**

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ABSTRACT

Petrochemical industrial (PTCI) sites may be considered a niche in the property market. Mainstream economics, industrial development and real estate studies related literatures treat it as the same as others. By prescribing the New Institutional Economics (NIE) approach, this research seeks to find a definitive line to divide between this sub-sector with other industrial activities. In particular, from the real estate perspective. The key research question is on the effect of formal institutions on industrial land supply.

The empirical research was carried out in Kerteh and Gebeng in the Malaysian East Coast region. Despite being isolated from nation's mainstream economic activities as well as politically distinctive, the tiny townships managed to be host to global petroleum, gas and chemical giants, believed to have received the highest concentration of foreign direct investment (FDI) in Malaysia. Data were gathered on the physical development on the industrial sites, through official records investigation at the government offices as well as interviews with key figures both in the government and firms. Qualitative and descriptive quantitative data analyses were applied.

Within the studied area, it was found that the two State Governments, Terengganu and Pahang are the only land suppliers for PTCI use. Results from the analyses indicate that formal institutions have a substantial influence on supply-side behavior. The key findings suggest that due to the complexity of the government decision making process, government supply of industrial sites for PTCI use is timely, uncertain, and not flexible according to demand. To arrive at a decision, on land in particular, the authorities have to consult a massive set of information, dozens of public offices, hundreds of standards and a wide range of expertises. In addition, a structured decision making process is strictly observed.

The findings indicate that in the PTCI sector, where the investment is vulnerable to various forms of risks, the property transaction mode is slightly distinctive. The deadliest threat is unexpected changes in prices and supply of the chemical feedstock. As natural gas derivatives, especially butane, ethane and propane, the supply is dictated by the global market. Anticipating a threat, new sites must be sought. The authority's inability to respond to the immediate firms' needs invites additional risks. In addition, where the risk is very high, land prices are not imperative in industrial locating.

The findings also signify that the government decision making process which is framed out by the social institutions which has been inherited since generations has hardly changed. The firms however, without touching the institutional arrangements, through a unique clustering process find ways on how to beat the red tape to secure a site together with the chemical feedstock.

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DECLARATION

This thesis has been composed by the candidate. It has not been accepted in any previous application for a degree. The work has been carried out by the candidate and all quotations have been distinguished by quotation marks and the sources of information have been acknowledged.

Sallehuddin Ishak

GLOSSARY OF ACRONYMS

ADS	Administrative and Diplomatic Service
CUF	Centralised utility facilities
DG	Director General
SDLM	State Director of Lands and Mines
DGLMO	Office of the Director General of Lands and Mines
DLMO	Office of the State Director of Lands and Mines
DoE	Department of the Environment
DID	Department of Irrigation and Drainage
DOSH	Department of Safety and Health
DOV	Department of Valuation
ECIC	East Coast Industrial Corridor. However, after data collection the name was changed to Eastern Corridor Economic Region (ECER)
EE	Evolutionary Economics
EIA	Environmental Impact Assessments
ESDS	Economic and Social Data Service
EXCO	State Executive Committee
FIC	Foreign Investment Committee
FMM	Federation of Malaysian Manufacturers
FTZA	Free Trade Zone Act (1971)
GIPC	Gebeng Integrated Petrochemical Complex
GPP	Gas Processing Plant
GSA	Land (Group Settlement Areas) Act 1960
IEA	International Energy Agency
IMP2	Industrial Master Plan 2
KIPC	Kerteh Integrated Petrochemical Complex
KLCC	Kuala Lumpur City Centre
LA	Land Administrator
LOKm	Land Office of Kemaman
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MCS	Malayan Civil Service
MIDA	Malaysian Industrial Development Authority
MITI	Ministry of International Trade and Industry

MoA	Memorandum and Articles of Association
MoF	Ministry of Finance
MPA	Malaysian Public Administration
MPEA	Malaysian Petrochemicals Association
NCE	Neoclassical economy
NEP	New Economic Policy
NIE	New Institutional Economics
NAPIC	National Property Information Centre
NLC	National Land Council
NTT	New Trade Theory
OECD	Organization for Economic Co-operation and Development
OIE	Old Institutional Economics
PAS	<i>Partai Islam Se-Malaysia</i> (Pan-Malaysian Islamic Party)
PGO	Premier Grade Officer
PGU	Peninsula Gas Utility
PSDEC	Pahang State Economic Development Corporation
PWD	Public Works Department
RM	Ringgit , Malaysian monetary denomination. At the time the research was carried out, the value of the ringgit was pegged at USD 1.00 = RM3.80.
SAS	State Administrative Service
SEDC	State Economic Development Corporation
SEPU	State Economic Planning Unit
SIC	State Investment Committee
SO	Settlement Officer
SS	Straits Settlements
SLR	State Land Rules
TCE	Transaction Cost Economy
TCS	Terengganu Civil Service
The Code	The National Land Code
TLR	Terengganu Land Rules
UMNO	United Malay National Organisations
VoII	Value of Initial Investment

GLOSSARY OF TECHNICAL TERMS

Closed files	Official government records that are officially muted after seven years of inactivity (further explanation on Page 131).
District Office	Malaysian government administration is organised according to a three tier system – Central, State and District. The District Office is the centre of district-level government administration. A district is normally sub-divided into <i>Mukims</i> (see Page 126).
Classification of the petroleum and gas industry (the details on Page 38)	<p><i>Primary :</i> Processing crude oil or gas to produce secondary oil and gas products such as ethane and propane.</p> <p><i>Secondary :</i> Processing secondary oil and gas products (as above) to produce tertiary oil and gas products such as ethylene, methane and propylene.</p> <p><i>Tertiary :</i> Processing tertiary oil and gas products (as above) to produce other tertiary or further oil and gas products (but not to the extent of producing finished products). Examples – polypropylene, polyethylene, polyacetal, expanded polyethylene and expanded polypropylene.</p> <p><i>Supporting:</i> Supplying chemical substances other than the above.</p>
EXCO Paper	Paperwork for State Authority consideration (see the discussion in Sub-section 8.3.2.3).
File	Folder in which papers, correspondence and other official printed information are kept.
Investment value	Initial capital brought in and approved by the FIC and reported to MITI (see explanation on Page 183 and the sources on Page 346).
Mukim	Sub-district (see the definition of District Office above).
Premium	A payment to the State government for government land disposal or land development application by way of change in the land use restriction (details on Page 76).
Project initiator	The land owner who initiates land development and the anchor investor in the particular cluster (see the discussion on Page 187).
Quit rent	Annual land tax (see Page 76).
Supply of industrial land	The term ‘supply’ in the case study refers to government land disposal or land development approval by the State Authorities.
State Executive Committee (EXCO)	The highest State Government executive body (further explanation on Page 74).

CHAPTER ONE – INTRODUCTION

1.1 INTRODUCTION

This research is a study of the interplay between economic and political agents involved in the development of petrochemical industrial land. The research framework is based on the concept of the Transaction Costs Economy found in Coase (1937; 1960) and North (1990). However, the empirical study also applies a combination of approaches found in Healey (1992a), van der Krabben and Lambooy (1993) and van der Krabben (1995) to explain both the land development process and the interplay between land development agents.

1.2 KERTEH AND GEBENG INTEGRATED PETROCHEMICAL COMPLEX

1.2.1 Background

The empirical research was carried out in Kerteh and Gebeng in the Malaysian East Coast region. Although isolated from the nation's mainstream economic activities and politically distinctive, these former fishing villages have been transformed into Malaysia's petrochemical industrial hub within a thirty-year period. They have become host to multi-national petroleum, gas and chemical giants and are believed to have received the highest concentration of foreign direct investment (FDI) in Malaysia.

Kerteh and Gebeng are about 77 km apart. They are planned industrial townships and are located within the East Coast Industrial Corridor (ECIC) of Peninsular Malaysia. The two towns are connected by a dedicated railway (a train running between the two industrial sites). Gebeng is within the municipality of Kuantan, the state capital of Pahang and is 470 km away from Kuala Lumpur. In contrast, Kerteh has its own town centre, ports and airport. Both towns are accessible by highways, have their own ports and are accessible within 20 minutes of an airport – Kuantan Airport and Kerteh Airport, respectively. In between the two towns is a 60 km sunny sandy beach untouched by developments, which attracts international tourists all year round and hosts a number of luxurious hotels and resorts. Plate 1 includes images of Kerteh and Gebeng.



- A. Gas processing plant at night
- B. Kerteh from air
- C. Kerteh Mixed Development Zone
- D. Kerteh in the 1970s – just a fishing village
- E. Entrance to Gebeng Petrochemical Complex
- F. One of the plants in Gebeng
- G. Petronas Regional Office, Kerteh

Plate 1 : Images of Kerteh and Gebeng

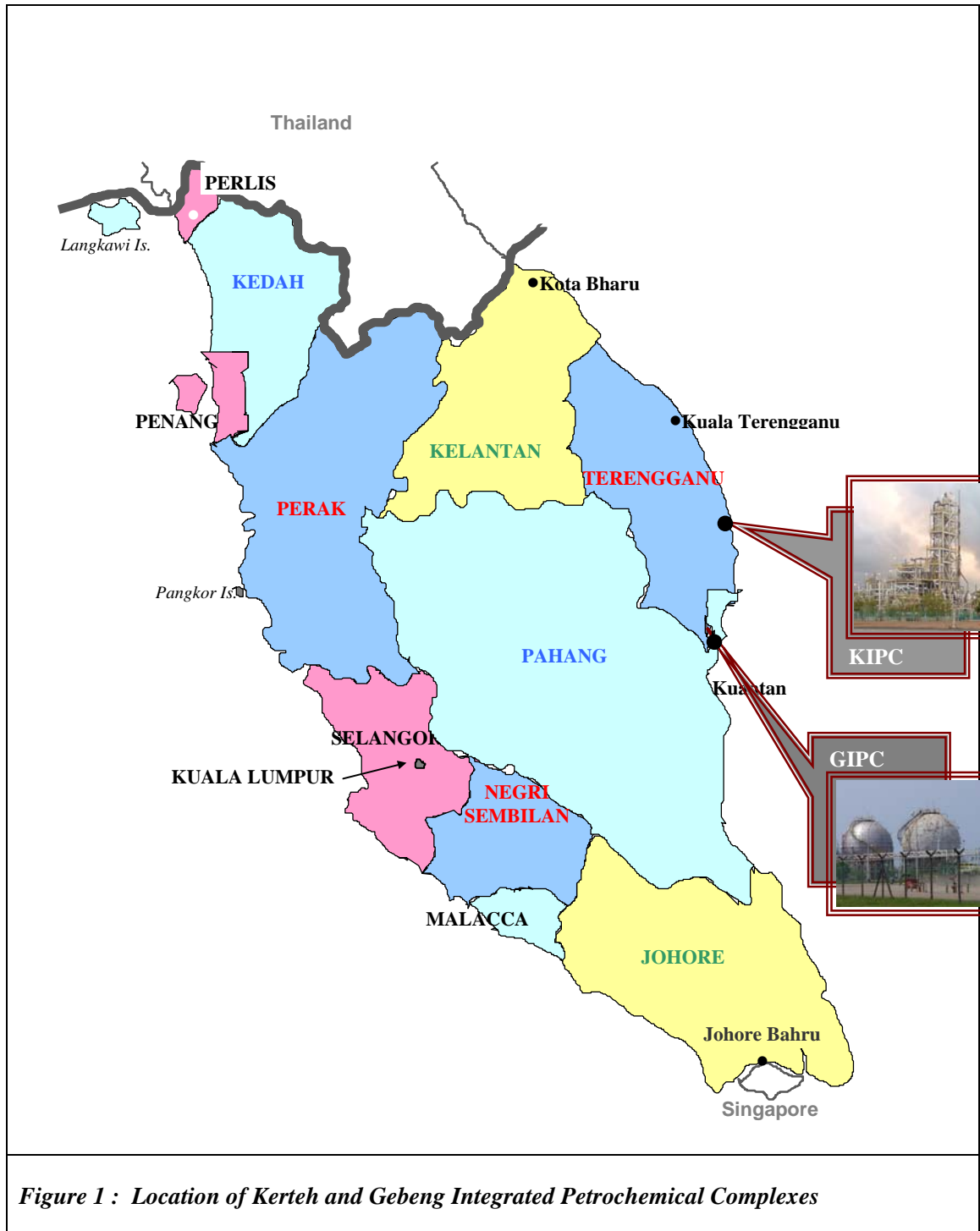
1.2.2 Development of Kerteh and Gebeng Petrochemical Complexes

Both Kerteh Integrated Petrochemical Complex (KIPC) and Gebeng Integrated Petrochemical Complex (GIPC) were initially created by State Governments and started concentrating on the petrochemical industries only in 1996. Prior to this, Kerteh, which was created by State Government of Terengganu was used only as a crude oil channel, and as a liquefied petroleum gas (LPG) refinery. KIPC channels some 400,000 barrels of crude oil (about 60% of Malaysian crude oil) and 2,200 million cubic feet of LPG (about 45% of Malaysian LPG) from off-shore rigs off Terengganu daily. In addition KIPC receives some 250 million cubic feet of LPG from Natuna Islands, Indonesia¹. Today, KIPC also produces refined oil and gas products including every day petrochemical feedstock, among which are ethylene, propylene and aromatics. The petrochemical feedstock from KIPC is exported to GIPC to produce other intermediate petrochemical products. Gebeng, in turn, was initially created by the State Government of Pahang and developed for mixed industry in 1978.

KIPC currently covers over 2,800 acres of land, and is under expansion to cover about 13,200 acres by the year 2010. With the present area of about 8,900 acres, GIPC expects to expand to about 23,700 acres by the year 2008. Both KIPC and GIPC will be self-contained modern townships, complemented by the existence of two higher learning institutions as well as a number of technical colleges and training institutions specializing in petroleum-related business, management and engineering, which are already in operation within ECIC. There are also a number of international schools and a medical college in operation within the wider area.

The following map shows the location of both industrial complexes:

¹ Based on discussion with Petronas Manager of Department of Media Relations and Information in September 2004.



1.2.3 Reasons for Choosing Kerteh and Gebeng Integrated Petrochemical Complexes as a Case Study

Although the case study areas have several similarities, they also offer important contrasts. There are four main reasons for taking KIPC and GIPC as the cases to be studied.

- (a) Both are governed by the Industrial Master Plan 2 (IMP2);
- (b) They are roughly equal in business strength in terms of natural resources, level of the physical infrastructure and institutional support. They also share common business opportunities and threats. Neighbouring countries pose competitive threats. Singapore, has a successful history in petrochemical industries, has greater expertise and is financially stronger. Indonesia is richer in oil and gas, and China as well as the Indo-China countries have abundant access to of a cheaper labour force;
- (c) KIPC and GIPC are, however, politically contrasting. In Pahang, where Gebeng is located, the state government is stable and the ruling party has not changed in nearly 50 years. Terengganu, on the other hand, has a different political scenario. Change in Terengganu's ruling party is likely at any general election and it is not unusual that the winner prevails by only a slim majority vote. Any ruling party must strive for progress in industrialisation, not only to bring about more job opportunities but more importantly, to present a better outlook for the administration at the next election. Therefore, state authorities in both Pahang and Terengganu are in a head-to-head competition to win over potential investors and engage in a robust marketing strategy to sell their states;
- (d) On top of that, the state governments are rivals in land administration. Even though the central government of Malaysia has produced an industrial plan, implementation is at the mercy of individual state authorities. This is due to the Malaysian Constitution, which distributes powers between the Central and State authorities. Under the Constitution, land development approval is entirely the prerogative of State Government. The Constitution also grants state governments

exclusive rights to the full revenue of any type of land-related taxes. As taxes on industrial land provide lucrative income, competition among state authorities to attract investors is fierce.

1.3 RESEARCH FRAMEWORK

1.3.1 Overview

The main theme of the study is this interplay between different development actors, specifically government departments and private firms. The study looks explicitly at how Malaysia's institutional framework restricts their freedom and how they develop strategies to bargain, compete and cooperate with each other within the content of institutional constraints.

1.3.2 Aim and Objectives of the Research

According to North (1990) and Eggertsson (1990a, 1990b), the creation of property rights limits uncertainty, reduces transaction costs and improves market efficiency. However, van der Krabben (1995) and Adams (2001) suggest that the behaviour of both regulatory bodies and landowners is difficult to predict. It is likely that North's (1990) and Eggertsson's (1990a, 1990b) theses are oversimplified. The present study aims to examine whether the creation of property rights merely transforms uncertainty and transaction costs into a new form, rather than diminishing them. Therefore, the study has the following objectives;

Objective No. 1:

To analyse the factors that distinguish KIPC and GIPC from other areas in Malaysia. Discussion on Page 5 suggests that taxes from industrial land provide lucrative income. Therefore, the competition among State Authorities to attract investors to their state is intense.

Presumably, land price is one attraction for investment in the petrochemical industry. Therefore, in explaining petrochemical industrial land development,

the proposed empirical study needs to examine the relationship between industrial land supply and land price. To investigate the above assumption, other factors also need to be equally examined. Therefore, a detailed analysis will be conducted on the factors of natural resources, communication systems, physical infrastructure and institutional support.

Objective No. 2:

To identify the institutional framework that controls and promotes the supply of petrochemical industrial land. Ortona and Santagata, (1983); Fothergill *et al.* (1987) and Adams *et al.* (1993) suggest that the price mechanism and existence of supply and demand flows do not guarantee an automatic exchange in industrial sites (more discussion on Page 58). Others suggest that institutional factors play a significant role in industrial land development and exchange.

The proposed empirical research therefore will examine the relationship between industrial land supply and formal institutions such as laws, regulations, and practices. The study will also investigate in depth the basis on which these institutions are created, how they are interrelated and in what ways they create transaction costs on the supply of land. The relationship between formal institutions and the institutional environment and governance system will also be examined.

Objective No. 3:

To identify the market players and define their functions and interests.

As study on the relationship between petrochemical industrial land supply and formal institutions, as discussed above, is incomplete without explaining the market players, their functions and interests.

Traditionally, in a general sense, market players can be divided into two groups of organisations – government departments and private firms. Analysis will be carried out to define the power and resources under their control – e.g.

political influence, market information, expertise and finance. The research will also examine how these organisations exploit their resources in bargaining, competing and co-operating, in order to position themselves in their struggles to attain their objectives.

Objective No. 4:

To examine government departments' power structure, domination and control of resources. Discussion on Page 3 indicates that KIPC and GIPC were created by the State Governments of Terengganu and Pahang. Therefore, a deeper examination will be undertaken on the nature of the relationship between government departments, both inter- and intra-state. The functions and actions of government departments will be explained with respect to the institutional framework at local, regional and national levels.

The discussion on Objectives No. 1, 2 and 3 above suggests that institutional factors play a substantial role in land and the development process. The discussion also indicates that research needs to include the market players, their functions and interests. Therefore, this study would not be complete without first investigating the relationship between the strategies of petrochemical firms in avoiding the risks of uncertainties and the institutional environment, particularly as it is related to governance, government power, domination and control of resources.

The four research objectives above imply that this research should investigate:

- (a) The relationship between petrochemical industrial land supply and land price;
- (b) The relationship between the supply of industrial land for the petrochemical industry and the institutional environment; and
- (c) The relationship between industrial land supply for petrochemical use and governance.

1.3.3 The Research Problem

The above three research areas suggest that this research needs to examine the roles of formal and informal institutions in the petrochemical industry, particular in the context of Malaysian petrochemical industry. Therefore, this research will address the central question:

“In what way is the supply of land for the petrochemical industry in Malaysia affected by the formal institutional framework of that country? ”

The following discussion relates this central question with the research questions that are formulated in Chapter Five, which are:

1.3.3.1 The relationship between petrochemical industrial land supply and land price

Ortona and Santagata (1983), Fothergill *et al.* (1987) and Adams *et al.* (1993), as discussed on Page 7, suggest that that the price mechanism alone cannot guarantee an automatic exchange in industrial sites. In addition, as suggested on Page 7, the proposed empirical study needs to examine the relationship between petrochemical industrial land supply and land price, as well as other factors. Therefore, the research will address the following question:

Q1: To what extent does the price of land influence ownership transfer of petrochemical industrial sites?

1.3.3.2 The relationship between industrial land supply for the petrochemical industry and the institutional environment

van der Krabben (1995) and Adams (2001) suggest that land supply is related to regulatory bodies. As discussed above, in Malaysia, State Government and the Land Office play a major role in the disposal of government land as well as in land development approval.

North (1990) and Eggertsson (1990a, 1990b) suggest that formal institutions, including laws, government and property rights are created in the institutional environment. Therefore, to find a comprehensive answer to the above research question, the following research questions need to be addressed as well.

Q2: How do government decisions and the government decision-making process affect the supply of industrial land?

Q3: How do the institutional environment, governance and market allocation of resources influence government decisions about land?

1.3.3.3 The relationship between petrochemical industrial land supply and governance

Discussion on Page 8 suggests that in order to complete an investigation on the relationship between petrochemical industrial land supply, formal institutions, the institutional environment and the governance system, the proposed study has to identify the market players, their functions and interests. The study also needs to examine the strategies of petrochemical firms in avoiding the risks associated with uncertainties, especially those that are related to government power, domination and control of resources. Accordingly, to complete the research the proposed study will answer the research question:

Q4: What is the relationship between the actions of petrochemical firms in the land development process and their strategies to avert risk and uncertainty?

The following discussion will relate the above research questions with the discussion in the subsequent chapters.

1.4 THESIS CHAPTERS

1.4.1 Chapter One

An introduction to the research.

1.4.2 Chapter Two

Chapter Two reviews the main industrial land development theories. The focus is on neoclassical and institutional economics. One of the research objectives is ‘to identify the institutional framework that controls and promotes the supply of industrial land for petrochemical use’ (see Page 7). The aim of the discussion in Chapter Two is to find a model that addresses this research objective.

1.4.3 Chapter Three

Chapter Two concludes that application of an NIE approach is the most appropriate in addressing problems in industrial development phenomenon as addressed by the Research Questions 2 and 3. As mentioned earlier, these two research questions address the institutional framework that controls and promotes the supply of industrial land. Chapter Three discusses NIE approach in depth. This chapter concludes with Williamson’s (1998) proposition on the application of an NIE approach in empirical research.

1.4.4 Chapter Four

Chapter Four reviews institutional problems in industrial land development. This chapter discusses the characteristics of the petrochemical industry, the relationship between industrial land development and the institution of the market, the relationship between industrial land development and social institutions, and the strategies petrochemical firms employ to avert risks and uncertainties. The discussion in this chapter aims to identify research problems that need to be examined.

1.4.5 Chapter Five

Chapter Five is a literature review explaining the administrative framework for Malaysian industrial development. This chapter also discusses institutional problems associated with industrial land development. This chapter begins with an introduction to the Malaysian industrial development framework and the Malaysian land administration system. The chapter concludes with problems at the supply-side (that is the Land Office)

as associated with the institutional environment, governance and market allocation of resources.

1.4.6 Chapter Six

Research methodology and method are discussed in this chapter. This chapter begins by defining the ‘methodology’, the philosophical and theoretical basis on which the empirical investigation is carried out. The chapter then defines the ‘method’, procedures for accomplishing the empirical investigation. The aim of this chapter is to propose the research method used in the empirical research. Chapter Six, which discusses in depth the differences between qualitative and quantitative research methods, emphasises the epistemological issues associated with explaining problems in petrochemical industrial land development. Data collection and analysis procedure as well as issues of validity, credibility and reliability are discussed in this chapter.

1.4.7 Chapter Seven

Chapter Seven analyses actual land development activity at the studied location. The chapter concludes with an assessment of the effect of interactions among land development actors on the development process. This chapter will:

- (a) answer the question of whether land price is a major attraction to the petrochemical firms in the studied areas; and
- (b) identify the market players and define their functions and interests.

Thus, this chapter will answer Research Question 1.

1.4.8 Chapter Eight

Chapter Eight is an analysis of the influence of institutional arrangements on the process of decision making at the supply-side. This chapter aims to:

- (a) examine government departments’ power structure, domination and control of resources; and

- (b) identify the institutional framework that controls and promotes the supply of industrial land to the petrochemical industry.

Therefore, this chapter will answer Research Questions 2 and 3.

1.4.9 Chapter Nine

Petrochemical firms' actions and strategies in the land development process are analysed in this chapter. This chapter, based on the findings in Chapter Nine, will analyse the strategies of petrochemical firms who acquire industrial sites and participate the in land development process. This chapter, therefore, will answer Research Question 4.

1.4.10 Final Chapter

This chapter reviews the major findings of this study and the research questions, especially the central research question. There is an assessment as to whether the answers to the research questions met the research objectives.

1.5 CONCLUSIONS

The proposed study, based on the premise that effective property rights in reduce uncertainty in the market, is an attempt to discover how economic and political agents cooperate continuously to lift institutional barriers and improve efficiency in the supply of petrochemical industrial land. It is anticipated that, in the development process, there will be interplay between economic agents, both firms and government departments. It is also anticipated that both parties will exploit whatever strengths they have in bargaining, competing and co-operating with each other, in their effort to control resources and their position in the market.

CHAPTER TWO – INSTITUTIONAL ECONOMICS

2.1 INTRODUCTION

As stated in the previous chapter, the empirical research will investigate petrochemical firms' investment strategies in relation to government power, domination and control of resources. This research will concentrate on the institutional environment, governance and market allocation of resources. Therefore, the focus of this study will be the institutional environment, formal institutions and governance system within Malaysia. It is suggested that application of an NIE approach is more appropriate in addressing problems in industrial land development. Therefore, this chapter will begin with the history of NIE, also discussing its main thrusts, particularly the concepts of institution, organisation, transaction costs, the problem of information and institutional change. At the end of this chapter, the application of NIE in empirical research by applying Williamson's (2000) model, will be evaluated.

2.2 HISTORY OF INSTITUTIONAL ECONOMICS

Although the term 'institutional economics' first appeared in the USA just after World War I, this discipline can be traced back to the nineteenth century in the works of Richard Ely (1854-1943) and Thorstein Veblen (1857-1929). This earlier strand of institutional economics, which is known as old institutional economics (OIE), was influenced by the German Historical School (McMaster and Watkins, 2003). The OIE, which emphasises the role of social institutions in the economy (Hodgson, 1997), appreciates other non-economic sources of knowledge in explaining economic phenomena. Commons (1937) emphasises that:

"... institutional economics, furthermore, cannot separate itself from the marvellous discoveries and insights of classical and psychological economists. It should incorporate, however, in addition, the equally important insights of communistic, anarchistic, syndilistic, coöperative, and unionistic economist." (p.648).

OIE, which has a Darwinian flavour, strongly believes that economic development is a result of social evolution (Tilman, 1999; 2002; Fuller, 2001). Since OIE treats the market as a social institution, it argues that the disciplines of economics and sociology are intertwined. OIE also argues that individual motives and preferences are greatly driven by habits. Habits, in turn, are influenced by social institutions. Learning and adaptation are therefore key processes in economic change and progression (Ibrahim and Galt, 2002). OIE, which became dominant in America just after World War I, was eclipsed after World War II (McMaster and Watkins, 2003; Hodgson, 1998). However, there are still a number of influential academic contributors associated with OIE². Among these are Geoffrey Hodgson, Richard Nelson, Sidney Winter, Michael Porter, Ash Amin, M. Storper and M. Granovetter.

In the 1980s, the term ‘new institutional economics’ (NIE) was coined by Oliver Williamson to distinguish his approach from the old strand. This new strand is removed from Darwinism, but also claims to be within neoclassical economics (Hodgson, 1990; Samuels, 1995; Tilman, 1999, 2002; Fuller, 2001). According to Samuels (1995) NIE:

“...works largely within neoclassicism, and shares its rationality, maximisation, and market or market-like orientation and likewise tends to seek, though with less formalisation, the conventional determinate, optimal, equilibrium solutions to problems” (p. 578).

Meanwhile, in Eggertsson (1990a):

“Although the NIE widens the scope of neo-classical economics, it does not constitute a new paradigm because the hard core of the neo-classical research program is left intact, particularly the rational choice model ... Instead, NIE constitutes a modification of the protective belt of the neo-classical paradigm, primarily by introducing transaction costs and the constraints of property right” (p.450).

Some earlier works associated with NIE are Knight (1921) and Coase (1937). By the mid-1990s the term ‘new institutional economics’ was in widespread use and was associated with a vast literature. Other leading names associated with the ‘new’ institutional economics are Masahiko Aoki (in game theory), Ronald Coase (transaction costs), Mancur Olson (public choice theory), Douglass North (institutions, institutional change and economic performance) and Richard Posner (relationship between formal

² Also known as evolutionary economics (EE)

institutions and economics). The NIE is now recognised as a stable discipline and a number of scholars of this school became Nobel Laureates (Evans, 2003).

2.3 THE MAIN THRUSTS OF NIE

It is essential to note that NIE is a young and growing discipline. Its basic features have so far been developed only skeletally. Based on the writings of its main proponents, NIE is incomplete without its five pillars, which are:

- (a) institutions;
- (b) organisations;
- (c) transaction costs;
- (d) the problem of information; and
- (e) institutional change.

2.3.1 Institutions

2.3.1.1 Definition of Institutions

The definition of ‘institutions’ varies greatly among proponents of NIE. It is difficult to determine which definition is the most clear and precise (Vandenberg, 2002). North (1991) defines institutions as:

‘the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conducts), and formal rules (constitutions, laws property rights)’ (p. 97).

Although North pays little attention to the three principal of modes of economic interaction (i.e. negotiation, monitoring and enforcement), Williamson regards them as key aspects of institutional analysis (Vandenberg, 2002). North’s and Williamson’s definitions also differ as to which institution is more encompassing. While Williamson’s thesis focuses on institutions that govern human interactions, North talks about “*a framework within which human interaction take place*” (North, 1990, p.4 [quoted in Vandenberg, 2002, p.219]). In this light, institutions for North (1990) refer to formal and informal social arrangements such as public policies, laws, regulatory systems, intellectual property regimes, educational systems and national culture. In Williamson’s

(2000) typology, institutions are hierarchically broken down into four layers, as shown in Figure 2:

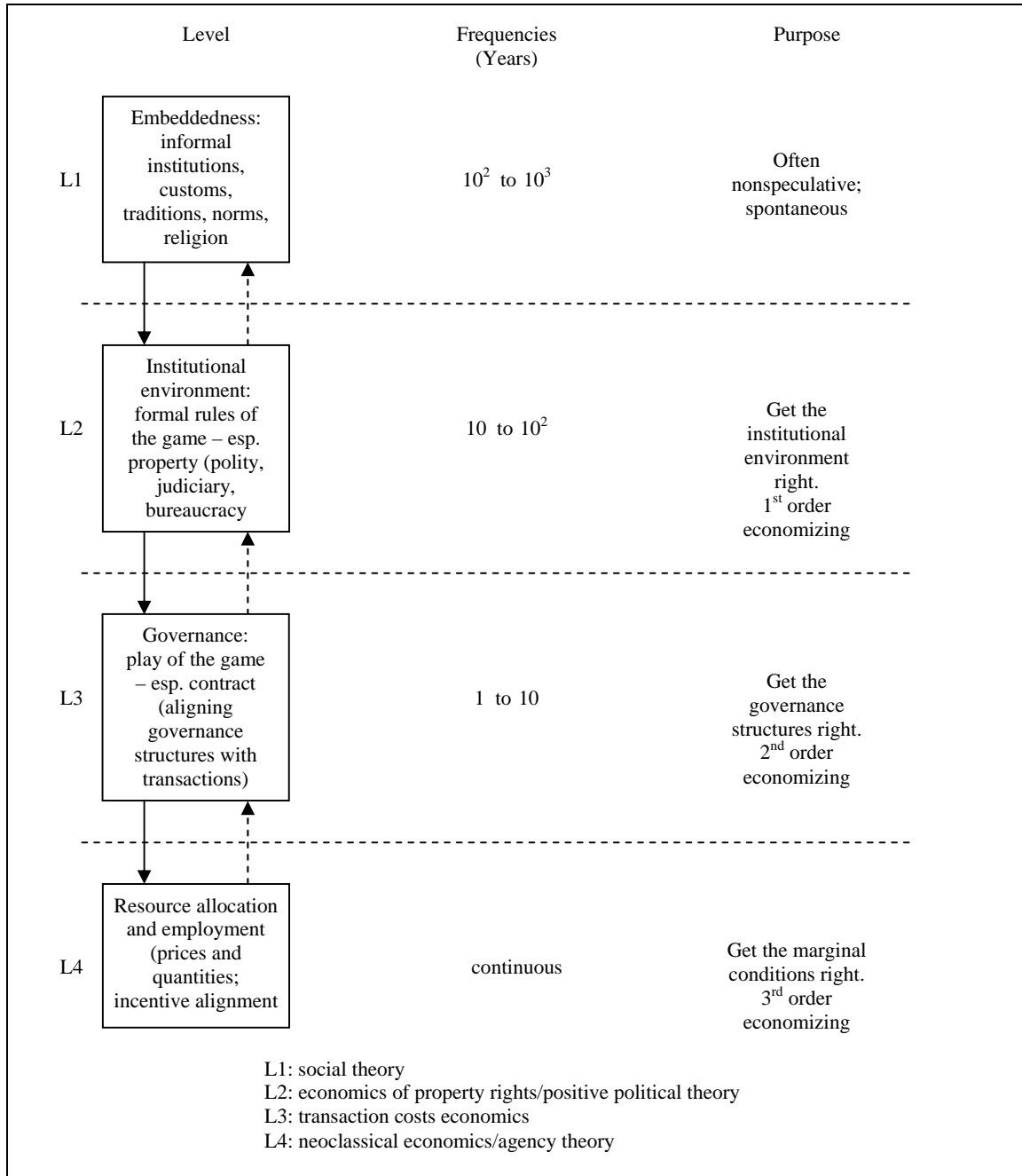


Figure 2 : Economics of Institutions.

Source : Williamson (2000, p.597)

In Williamson's (2000) typology, **Level 1** institutions are embedded informal institutions. Traditions, customs, values and religion are in this class. As they have developed spontaneously over a long period of time, changes in these institutions are very slow. **Level 2** consists of formal rules. Constitutions, laws and property rights are included in Level 2. Level 2 institutions form the basis for the existence of a governance system, within which economic actors communicate. **Level 3** is where governance is placed. At this level, the transaction takes place and contracts enter into the equation. This is where conflicts arise when players pursue different goals. Mitigation, enforcement and arbitration are among ways to resolve conflict as well as to realize mutual gains. However, none of the solutions are costless, nor simple. At this level also, transactions occur and prices are adjusted. **Level 4** is where neoclassical economics operates.

The research aims and objectives (see Page 6) assert that this study will focus on the institutional environment, governance and the market allocation of resources. Therefore, the following discussion will focussed on institutions in Levels 2 to 4 of Williamson typology.

2.3.1.2 Level 1 Institutions – Informal Institutions

For NIE, the market is merely an institution within society, interdependent with other institutions. Thus, NIE relates economic performance to other institutions such as politics, economics, culture, religion, the legal system and values (North, 1990; van der Krabben, 1995). For North (1990), perception links formal institutions and economic decisions are linked. As the question of information is central in the economy, the question of bounded rationality is crucial as well. In the same light, Simon (1961), Williamson (1998) and Vandenberg (2002) contend that human decisions, subject to cognitive constraints, arise partly from social values. However, as mentioned above, this study will not examine Level 1 institutions.

2.3.1.3 Level 2 Institutions – the Institutional Environment

Figure 2 indicates that Level 2 is where the institutional environment is placed, within which are formal rules. Therefore, Level 2 contains property rights, polity, judiciary and bureaucracy. According to Williamson (2000):

“...the design instruments at Level 2 include the executive, legislative, judicial, and bureaucratic functions of government as well as the distribution of powers across different levels of government (federalism). The definition and enforcement of property rights and contract laws are important features” (p.598).

NIE recognises that property rights and private ownership are the essence of economic development. In turn, both are dependent on the establishment of formal social institutions. Without guaranteed rights regarding resources, humans are less motivated to seek discoveries and development (North, 1990; Eggertsson, 1997). Nevertheless, the creation of property rights *per se* is not sufficient to secure economic development. Only property rights which are unambiguous, secure, freely alienable and backed by enforceable laws, rules and contracts, can secure economic development (Smyth, 1998). Findings in Adams *et al.* (2001a; 2001b; 2002), Cheung (1976) and Brookfield *et al.* (1991) show that where land is legally or physically constrained, development is difficult.

2.3.1.4 Level 3 Institutions – Governance Structure

Level 3 consists of the institutions of governance within which transactions take place. NIE does not focus on resource allocation but on human behaviour. Since human behaviour is influenced by opportunism, working through credible contract is difficult (Williamson, 2003). John R. Commons, who suggests that transaction costs are the basic unit of analysis in explaining the economy, argues that governance is an effort to craft order, thereby mitigating conflict and realizing mutual gains (Williamson, 1996; 2003). Therefore, NIE investigates the economic system in terms of contracts, or exchange relationships (Ibrahim and Galt, 2002).

Governance structure concerns contractual arrangements among parties in the economic system (Cheung, 1987; Lai, 2005). A credible contract is difficult (Williamson, 2003) because of various factors. One of these factors is opportunistic behaviour

associated with the axiom of rational maximisation behaviour (Cheung, 2002). The problem of limited information (Eggertsson, 1997) also leads to incomplete contractual arrangements whose result is shirking (Lai, 2005). Therefore, economic actors need to arrange economic organisations so as to ease information flow and increase certainty, as well as to monitor opportunistic behaviour and confine the hazards of opportunism (Williamson, 2000; 2003).

North (1990) calls the above problems ‘the problem of coordination’. He argues that no arrangement is cost-free. Transaction costs emerge from efforts to overcome market problems. As suggested by John R. Commons (as discussed above and in detail in Sub-section 2.3.3), transaction costs are fundamental in understanding NIE. Transaction costs may be divided into two categories: the cost of negotiations (*ex-ante*) and the cost of enforcement and commitment (*ex-post*). Both types of transaction costs depend on institutional arrangements. Transaction costs are often high and sometimes higher than production costs. If transaction costs continuously diminish return on investment, economic actors will try to reduce them by improving communication and changing organisation, firm structure or institutions.

2.3.1.5 Level 4 Institutions – The Market

It is important to note that within NIE, neoclassical economics’ (NCE) main principles are left intact, particularly the rational choice model (Eggertsson, 1990a; Samuels, 1990; Ibrahim and Galt, 2002). Market institutions consist of the establishment of property rights, liberalisation of exchange and the voluntary reaction of individuals and organisational structures in establishing appropriate exchange systems that minimise transaction costs (Ibrahim and Galt, 2002; Pennington, 2001; Papandreou, 2003). Market institutions are perceived as artefacts of human interaction to assist in the coordination of activity and align institutional rules with physical reality (Papandreou, 2003).

NIE constitutes a modifies of the protective belt of the neo-classical paradigm, primarily by introducing the concepts of transaction costs, constraints on property rights and the assumption that economic decisions are not necessarily rational (Coase, 1937;

1960; North, 1990). The institution of the market provides an adequate system of property rights that facilitate a 'market in externalities'. NIE acknowledge the role of government and regards government as the institution that enforces contractual bargains between private parties and provides a legal system in order to adjudicate disputed property rights in court. (Papandreou, 2003).

With respect to rationality, NIE stresses that economic decisions are subjected to two constraints, namely, incomplete and filtered information (Vandenberg, 2002; North, 1990). NIE's chief argument is that market actors are not always rational. Instead, their decisions are either based on incomplete information or guided by other non-hedonic reasons (Coase, 1937; 1960; North, 1990; Williamson, 1975). Coase, who suggests that a firm's variation in size is a consequence of its efforts to reduce transaction costs, was the first economist to draw attention to the importance of transaction costs in the economy (Smyth, 1998). This idea has been applied to the whole market system based on the argument that all solutions in the market are costly. This also challenges the equilibrium theory, which tends to assume that all transactions are cost-free (Nelson and Winter, 1982).

As a consequence of informational problems, as well as the existence of transaction costs, it can be assumed that the market is never efficient (Eggertsson, 1990a; 1990b). In essence, NIE argues that the market is an institution and its performance is influenced by transaction costs.

2.3.2 Organisations

Another important term in NIE is 'organisation', which is defined as a group of individuals bound by some common purpose to achieve a common objective (North, 1990). Olson (1965) suggests that an organisation consists of a group of individuals with a common interest. Political bodies, a legislative assembly, government departments, firms, co-operative societies, trade unions, chambers of commerce and learning institutions are among examples of organisations (North, 1990). Interaction between organisations, each with its own distinct philosophy, interests and priorities, is

complex (van der Krabben, 1995; Ball, 2003). According to North (1990), organisations may also change their behaviour if there is a continuous change in prices.

Williamson (1975), who argues that organisations emerge to ‘align transactions with governance structures, theorises that an organisation is created fundamentally in reaction to human opportunistic and self-interested behaviour. He believes that economic agents are not totally rational (boundedly rational), and, therefore tend to disclose information in a selective manner, as well as intentionally misleading, disguising and confusing. As a result, information is costly and imperfectly distributed. Since information is not cost-free, economic agents arrange themselves and create organisations to overcome the problem of information and to reduce transaction costs.

In addition to Williamson’s (1975) thesis, Smyth (1998) suggests that the form and size of an organisation are determined by the complexity of problems, the frequency of transactions and the type of uncertainty that organisation faces. If the problems are straight-forward, economic agents will only create a simple organisation. If the problems are complex, the cost of information and the degree of uncertainty high, more complex organisations will be created. Regardless of differences in explaining the organisations, most NIE scholars share Olson’s (1965; 1971) opinion that incentives are the main driving factor influencing organisational behaviour. Incentives, whether monetary or social, in Simon and Olson’s propositions, can be treated in the same way (Rowlinson, 1997).

2.3.3 Transaction Costs

Transaction costs, the costs of running the economic system (Williamson, 1985), are defined as the cost of specifying what is being exchanged and enforcing any subsequent agreements. Transaction costs are distinct from production costs which have been traditionally interpreted as costs of capital, labour, technology and natural resources (Vandenberg, 2002). Transaction costs primarily come from costs associated with information, mainly the cost of writing, executing and enforcing contracts as well as the cost of measuring performance (Coase, 1937, 1960; Williamson, 1975; North, 1990).

In business the most important information needed is the extent of commitment by the parties involved in a contract. Only by knowing the contractual parties' performance can a firm know whether the payment for a particular contract is worthwhile. Sometimes a firm has to use litigation or to hire a third party to measure this commitment. This increases the cost of information. If all parties trust each other and abide by the contracts, the cost of measurement can be reduced (Barzel, 1987; Eggertsson, 1990a, 1990b; North, 1996).

By quoting “...*the ultimate unit of activity ... must contain in itself the three principles of conflict, mutuality, and order. This unit is transaction*” (Commons, 1932 p.4 [cited in Williamson (2000, p.599)], Williamson emphasises that that NIE subscribes to John R. Common's thesis that the transaction is the basic unit of analysis (Williamson, 2000; 2003).

Barzel (1974; 2000) suggests transaction costs are measurable, and can outweigh benefits. Williamson (1975) suggests that transaction costs mainly arise from *ex-ante* and *ex-post* arrangements. *Ex-ante* arrangements include the costs of negotiations. Contract enforcement, including executing and enforcing the items agreed upon, are part of the *ex-post* arrangement. With respect to *ex-post* arrangements, Eggertsson (1990a; 1990b) indicates that there is evidence to support the proposition that sometimes the cost of law enforcement may be higher than the income from the industry for which the law is created. He quotes an example in Anderson and Sutinen (1984) in which in some countries, the government spends money on surveillance, information and manpower for protecting the interests of their fishermen. The expenditure for these actions is normally higher than the fishermen's income from the fishing areas where the protection is provided. Webster and Lai (2003), refer to these organisational costs as just elements of ‘co-operation cost’. The typology of transaction costs they devise is summarised in Table 1. Table 2 indicates which institutions are involved in the enforcement of rules, from which transaction costs are derived.

Table 1 : A Typology of Co-operation Costs

Type of co-operation cost		Definition	Includes costs of:
Exclusion costs		Costs of protecting property from third party opportunism	Physically demarcating resources Reaching agreements Policing agreements
Co-ordination costs	Transaction costs	Costs of exchange and combination when markets co-ordinate co-operative acts	Searching for exchange or combination partners Creating contracts Policing contracts Third party costs Compliance and clarification costs
	Organisation costs	Costs of exchange and combination when an organisation such as a firm or club co-ordinates	Gathering centralised information Making rules and decision about resource allocation Policing rules and decisions
	Organisation costs (government)	Costs of creating and operating rules that govern the behaviour of individuals, markets and organisations	Gathering centralised information Making rules and decision about resource allocation Policing rules and decisions

Source : Webster and Lai (2003, p.41)

Table 2 : Typology of Institutions Involved in the Enforcement of Rules

Type of rule		Sanctions
Spontaneous	Conventions	Harmed self-interest
	Internalised rules	Conscience
	Customs	Group disapproval
Organised by private contract	Informal agreements about conduct	Loss of group privileges
	Formalised private codes of conduct	Formal exclusion from group privileges
Organised by state	Public codes of conduct backed by law	Loss of rights, for example by fine or imprisonment

Source : Webster and Lai (2003, p.60)

2.3.4 The Problem of Information

Probably, the problem of information was first highlighted in Coase (1937) when he related the problem of transaction costs with Knight's (1921) concept of certainty. To secure certainty, firms invest in more accurate measurement tools and systems, such as advanced information technology, while the state usually provides a credible system of measurement and enforcement (Vandenberg, 2002). While Coase (1937; 1960) stresses only the impact of litigation on the economy, Williamson (1975) relates uncertainty and transactions to the relationship between *de facto* and *de jure* legal rights and the role of

credible commitment. He also relates them to human traits which give rise to opportunistic behaviour, self-interest, cunning and boundedly rational economic agents. Williamson (1975; 2000; 2003), who suggests that firms transform themselves as a result of actions intended to avoid unknown unintended consequences of incomplete contracts, relates the problem of information with governance structure. Simon (1961) in an earlier work also emphasised the problem of information and also suggests that it gives rise to bounded rationality.

Bounded rationality covers a wide range. It may refer to limited availability of information (Adams *et al.*, 2003), scarce data and knowledge as well as limited mental capacity to absorb data (Eggertsson, 1997). Even if full information existed, humans would be unable to consider an exhaustive list of future states of the world and possible courses of action. Thus, bounded rationality also includes limited human computation ability (Simon, 1961; Dunn, 2000). In short, bounded rationality refers to incomplete data, incomplete processing, and incomplete models for data processing (Eggertsson, 1997). It is, however, crucial to note that wider institutional factors significantly influence data processing (North, 1990).

2.3.5 Institutional Change

For firms, institutions of political, legal, educational or any other form, can be either an asset or an encumbrance (Teece *et al.*, 1997; Eggertsson, 1997). North (1990) emphasises that “*if institutions existed in the zero transaction cost framework, then history would not matter...*” (p.93). A short-term price change nevertheless does not normally affect institutions. Only a repeated change that forces economic agents to learn can result in institutional change (North, 1990; Eggertsson, 1997). North (1990) also appreciates Charles Darwin’s theory of evolution in concluding that institutional change comes about over a long period.

North (1990) suggests that institutional change comes about in order to ease the mobility of capital, to lower the cost of information and to spread out risks. He discusses the influence of prices on institutional change, ruling out prices as the primary factor in institutional change. There are three points that distinguish North’s understanding of

prices and institutional change from those of the neoclassical economics. First, North argues that prices do not change institutions instantly in order to accommodate the formation of an equilibrium point. He stresses that institutional change only takes place within an indefinite period after economic agents undergo a learning or path-dependence process. Second, institutional change is guided by bounded rationality and not driven by a profit maximisation motivation. Third, he also believes that, instead of being passively altered by changes in relative price, institutions also have some power to change the relative price themselves.

Nonetheless, the outcome of institutional change in society is sometimes an unexpected and undesired vicious circle of economic problems (Eggertsson, 1997). An institutional change requires a learning process, during which agents need time to adapt to the new environment. In some instances, people do not adapt to the change (Furubotn, 1994). This may arise from failure to gain support from other institutions; or because the change does not conform to social values and is not supported by political will (North, 1990; Eggertsson, 1997). Sometimes, a change simply replaces one inefficient bureaucratic procedure with another. Other variable that influence institutional change include collective or social efficiency, the interests of those with the bargaining power and the interests of the wider society (Keogh and D'Arcy, 1999).

As stated, changes in the institutions in Levels 1 and 2 of Figure 2 (Page 17) tend to be very slow. In his tabulation (see the 'frequency' column), Williamson suggests that a change in a Level 1 institution may take 100 to 1,000 years. The process which North (1990) calls 'path-dependence' takes place when transaction costs are high.

2.4 APPLICATION OF THE NIE IN EMPIRICAL RESEARCH

Williamson (1988) suggests that transaction cost analysis has three components. The *first component* is identification of the microanalytic factors from which the costs of transaction are derived. The *second component* is analysis of the alignment of

transactions with governance structures. The *third component* is what he calls ‘process analysis’. Details follow:

2.4.1 Identification of Microanalytic Factors

The identification of microanalytic factors has three stages. *First*, it involves making the transaction the basic unit of analysis (see Sub-section 2.3.1.4). The *second stage* involves identifying the behavioural assumptions necessary for assessing contracts. The relevant theory of behaviour is mainly based on Simon’s (1961) thesis that the rationality of human agent is bounded. Bounded rationality can be attributed to limited access to information as well as limited computational capabilities. As a result, the choices of economic agents, instead of being rational, are sometimes subjected to non-economic rationales. Williamson (1975) emphasises that, in addition to Simon’s proposition, humans are opportunistic, exhibit self-interested behaviour and are boundedly rational. The *third stage* is identifying and explaining the critical dimensions in which transactions differ. The dimensions in which transactions differ include (a) the frequency with which transactions occur, (b) the type and degree of uncertainty involved and (c) the condition of asset specificity.

2.4.2 Analysis of Types of Transactions

Brouthers and Brouthers (2002) suggest that uncertainties that create transaction costs can be divided into two categories – environmental and behavioural. As in Williamson (2000), Brouthers and Brouthers (2002) suggest that both forms of uncertainties influence changes in firms’ governance structure.

2.4.3 Process Analysis

Process analysis explains the transformation of firms with respect to transactions. It focuses on the process by which alignments are made. It is argued that a firm transforms itself through vertical integration or the creation of a bilateral monopoly based on the nature of contracts. The more complex the contract, the more incomplete the transaction may be. Since unintended consequences are unknown, firms evolve and

transform towards a more certain position. This transformation can be analysed based on changes in firms' ownership structure, inter- and intra-firm relationships, procurement and marketing strategies (Williamson, 1988).

2.5 LIMITATIONS OF NIE

Williamson (1994;1999;2003) who proposes a theoretical governance structure that affects market performance, admits that bureaucracy, and in particular government administration is still under-emphasised. Walcott and Hult (1987) suggest that even though government administration and the political system are symbiotic, they are composed of different institutions. Therefore, they deserve different treatments. Nevertheless, most NIE literature dilutes the concept of bureaucracy with the idea of political system or lumps the political system together with the general concept of bureaucracy.

Another drawback is the assumption that the process of institution change is obstacle-free. There is empirical evidence to suggest that a change is not always easy, especially in government bureaucracy. In Hong Kong, for instance, a change in the political framework in 1997 has not totally altered the bureaucracy of British legacy (Lee, 1999). Another example is in Africa. Since the late 1980s, public administration in many countries in Africa has been redesigned. However, it has been proven that World Bank-sponsored programs are still far from making significant progress in many places (Olowu, 1999). The obstacles to change government bureaucracy may also be detected within the public service of the UK, Canada, the US and France. In short, despite an ever-changing political scenario, bureaucracy has its own path (Campbell, 1988).

In addition, Williamson (1988) who has proposed a procedure on how to carry out empirical research in relation to his transaction cost theory, proposes that identifying the microanalytic factors is the most important part of NIE analysis. Nevertheless, he admits that applying his research procedure is rather difficult, mainly due to the fact that relevant data are rarely available from standard statistical sources. Dunn (2000) and Ménard (2001) who agree with Williamson's proposition and add that there is plenty of room for

improvement, in particular in discovering and beefing up models for quantitative analysis.

2.6 CONCLUSION

NIE works largely within neoclassicism and therefore does not agree with Darwinism or social rationality which are influential in the OIE or evolutionary economics. Major components of neoclassicism, especially rational choice, rationality, the maximisation model and price determination are largely intact within NIE but with some modifications to align with the problem of information and the bounded rationality concept. However, as discussed in Section 2.1, the present study research will investigate petrochemical firms' investment strategies in relation to government power, domination and control of resources. In addition, the research questions address problems related to the institutional environment, governance and the market allocation of resources in land development. Therefore the problems addressed by this research are beyond neo-classical economics.

The earlier part of this Chapter discusses OIE briefly. Tilman (1999; 2002) holds the opinion that OIE emphasises social rationality too much and gives little attention to individual choice. Human behaviour is viewed as nondeliberative (Tilman, 1999; 2002; Fuller 2001). The discussion on Page 14 suggests that OIE believes economic development is a result of social evolution and treats the market as a social institution. Therefore, OIE believes that individual motives and preferences are driven by habits which are in turn influenced by social institutions.

In addition, Amin and Thrift (1995) who are among the leading scholars in OIE industrial development theory who suggest that promoting an environment for social networking is important in promoting industrial development, pay little attention to institutions in Levels 2 and 3. In contrast, for Aschauer (1989), Ramaswamy (1992), Rasiah (2002) and McCann and Shaffer (2004), the government has significant impact on industrial development. For example, the government plays a significant role in attracting foreign investment, improving physical infrastructure and strengthening the institutional environment.

As suggested by the above two paragraphs, an OIE approach is not matched with this study's aims and objectives. Therefore, the procedure developed by Williamson will form the basis for this research. The framework explained in Section 2.4 will be developed in the subsequent chapter to encompass the development of industrial land, which in turn will be further adapted to embrace specific factors relating to development sites used for the petrochemical industry. The empirical research will explain the development of industrial land based on the five pillars of institutional economics. This research will explain the roles of institutions, organisations, transaction costs, the problem of information and institutional change with respect to the case study. More specifically, the empirical research will investigate:

- (a) Institutions and organisations that are involved in the supply of petrochemical industrial sites;
- (b) The process of releasing land for use as a petrochemical industrial site;
- (c) Information problems in the process of releasing land for industrial use;
- (d) Petrochemical firms' strategies in acquiring and developing land; and
- (e) Institutional change with respect to the land administration system.

Chapter Two argues that the institutional environment and governance play a significant role in determining market efficiency. The present study will investigate the influence of the institutional environment and governance on the development of the petrochemical industry in Malaysia. Based on the arguments in this chapter, the subsequent chapter will discuss the institutional problems associated with land development. The aim of Chapter Three is to identify the institutional problems in petrochemical industrial development, especially those that are related to the five pillars of institutional economics. After the problems have been identified, the landscape of the Malaysian institutional environment will be discussed in the following chapter (Chapter Four). The objective is to analyse the case study with respect to the identified problems.

CHAPTER THREE – INSTITUTIONAL PROBLEMS IN INDUSTRIAL LAND DEVELOPMENT

3.1 INTRODUCTION

This Chapter will identify the research areas. Chapter Two, which suggests that institutions, which according to Williamson (2000) are in a four-layer hierarchy, concludes with a procedure to carry out analysis of transaction costs. Chapter One emphasises that this study focuses on the development of petrochemical industrial land in Malaysia and stresses on the relationship between petrochemical firm actions and government behaviour. The present Chapter therefore begins with a review of the concept of government. Subsequently, the characteristics of the petrochemical industry will be discussed. The discussion is followed by an analysis of industrial land development issues that are related to institutions, using Williamson's (2000) typology. This Chapter will discuss land development problems as related to informal institutions, the institutional environment, governance and market allocation of resources. At its conclusion, this Chapter will propose research areas that need to be investigated.

3.2 THE CONCEPT OF GOVERNMENT

As discussed in Sub-section 2.3.1.4, Williamson (1996; 2003), who agrees with John R. Commons that transaction costs are the basic unit of analysis in explaining economy, emphasises the importance of relating economic performance to governance structure. Williamson (1999), emphasises the importance of understanding public bureaucracy in NIE analysis. This indicates that the concept of government deserves much attention. For that reason, this sub-section will review the concept of government. The discussion is divided into three topics:

- (a) Definitions of government;
- (b) Functions of government and motives underlying government actions; and
- (c) Government and bureaucracy.

3.2.1 Definitions of Government

In the Encyclopædia Britannica, 'government' is defined as '*the political system by which a nation or community is administered and regulated*'³. Rose (1976) defines the basic functions of government as foreign policy, weapons, justice, police and revenue. For Brynard (1995), government functions as a vehicle for political leaders in power to discharge their responsibilities or to enforce their legitimate powers, and is an extension of the political structure of the nation state.

James Buchanan, Gordon Tullock and Mancur Olson, who all subscribe to public choice theory, define government as '*modes of analysis of collective choice and democratic decision-making*' (Pennington 2000, p.3). Ostrom (1986), who draws conclusions from Buchanan (1962) and Buchanan and Tullock (1985), suggests that a democratic government's decisions reflect the will of the electorate. In other words, government decisions are the collective choice of the electorate (Pennington, 2000) or, as Buchanan and Tullock (1962) put it:

".... collective action is nothing more than, 'the actions of individuals when they choose to accomplish purposes collectively rather than individually'. Institutions such as the state, therefore, are 'nothing more than the set of process, the machine, which allow collective action to take place...' (quoted in Pennington [2000, p.3]).

3.2.2 Functions of Government and Motives Underlying Government Actions

Those associated with public choice theory, such as Olson (1965), Buchanan and Tullock (1962), believe that government is a medium for individuals to accomplish their purposes collectively. Olson (1965) defines organisations as "...*groups of individuals with common interest...*" (p.1). He understands organisational behaviour as "...*groups act to serve their interests presumably is based upon the assumption that the individuals in groups act out of self-interest...*" (Ibid). Thus, public choice theorists assume that bureaucratic actors (i.e. politicians and government officials) are self-interested agents. Based on this theory, where desire for power is politicians' main incentive, government officials continually strive for budget appropriations (Pennington, 2000).

³ "government." Encyclopædia Britannica. 2006. Encyclopædia Britannica Online. 30 Apr 2006 <<http://search.eb.com/eb/article-9106262>>.

Stoker (1991) argues that budget appropriation is not the only factor that motivates bureaucrats. He suggests that government officials are also mission-orientated with a desire to serve the public. Purely self-interested bureaucrats, on the other hand might concentrate on individual career advancement or workload reduction. Pennington (2000), whose case study focussed on British government departments involved in spatial planning by applying public choice theory and adapting Dunleavy's (1991) model, provides evidence to support public choice theory. His findings suggest that bureaucrats have interests of their own. They tend to seek various forms of satisfaction, both material and non-material, including mission accomplishment.

3.2.3 Government and Bureaucracy

Before further discussion, it will be beneficial to consider the general concept of bureaucracy. Albrow (1970) and Warwick (1974) suggest that it is difficult to give one definition which encompasses the overall meaning of bureaucracy. Warwick (1974) summarises Albrow's (1970) findings as,

"After examining a vast amount of writings in the social and political sciences where the term was used, he concludes that there is 'no element common to them all which could form part of a useful definition'" (p.1).

In his '*Dictionary of Politics*', Robertson (1984) explains that Max Weber (Maximilian Carl Emil Weber 1864 – 1920) was the first to emphasise the theory of bureaucracy in modern society. Most subsequent research on and theories about bureaucracy have discussed Weber's theory of bureaucracy, which is based on basic organizational principles. Robertson suggests further:

"The most important (principles) are: (1) that office-holders in an institution are placed in a clear hierarchy representing a chain of command; (2) that they are salaried officials whose only reward comes from the salary and not directly from their office; (3) that their authority stems entirely from their role and not from some private status, and that the authority exists only in, and as far as it is needed to carry out, that role; (4) that appointments to bureaucratic positions are determined by tests of professional skill and competence and not for considerations of status or patronage; (5) that strict rules exist on the basis of which bureaucrats make their decisions, so that personal discretion is minimised; and (6) that such institutions collect and collate detailed records and operate on the basis of technical expertise (Robertson, 1984, p.44, emphasis added).

Warwick (1974) tries to distil the meaning of bureaucracy from various opinions and suggests that the term:

- (a) is used to capture the notion of a social structure which confronts most members of an organisation and possibly prevents them from feeling able to be any more than subordinates, without any real control over the social processes that are going on within the organisation;
- (b) evokes the process whereby members have their position and degree of subordination defined, their jobs categorised, separated and changed, and the manner in which they relate to other members of the organisation regulated;
- (c) points directly to the nexus of control in an organisation, the members who make the decisions and are responsible for initiating activity, and the source of moves to retain centralised power and rigid rules. Bureaucracy in this third sense is fundamentally supported and sanctioned by a legal structure (with its apparatus of law enforcement) which is an element of the wider society in which the organisation is placed. Bureaucracy as such may, however, to some extent be able to control this legal structure, and use it as a means of negotiating with subordinated about changes in the process.

A discussion of bureaucracy is incomplete without explaining what is colloquially called 'red tape'. 'Red tape' is a fuzzy concept which has different meaning for different people. Its French equivalent is *la paperasserie* or an unsatisfactory routine. Red tape is also commonly conceived as (a) delay, indecisiveness, any action that contributes to inactivity, (b) strict routine and paper work leading to ineffectiveness, rigid application of rules, (c) bureaucratic mean-spiritedness, and (d) laws, rules, regulations, procedures and forms that are seen to be cumbersome and excessively complex. In short, 'red tape' is usually defined in the idiom of inefficiency (Brynard, 1995).

Page (2003) and Butterworth and Horne (2003) suggest that almost every single word in the bills of statutes of laws and draft of policy decisions is prepared by government official. Thus, bureaucracy, can also include the communication systems

between politicians, who are the decision makers, and the electorates (Kelly, 2004; Gajduschek, 2003).

Bureaucracy is also linked to accountability. Every public office is responsible for ensuring that its operation is financially and managerially accountable. Generally speaking, accountability means a person, or group of people, can be held to account for their conduct. There are at least four types of accountability, applicable to public administration: (a) public accountability that requires those who are responsible to draft and/or carry out policy and obliges them to give an explanation of their actions to the electorate, (b) financial accountability that requires them to abide by the regulations with which resources are entrusted to them, (c) legal accountability, which is accountability to a court of law, or the equivalent, for the powers entrusted to them, and (d) managerial accountability, by which officials are obliged to achieve defined managerial targets and meet their resource utilization objectives (Glynn and Murphy, 1996). As a result of accountability, all matters at government offices, including even the simplest service cannot be rendered without procedure being followed. This practice is related to the idiom of red tape, use of forms and observation of rigid procedures (Brynard, 1995; Cheung, 1996). Bureaucracy is then defined as a system to protect public interest.

In explaining government bureaucracy, Williamson (2000) puts it that “...(it) *remains a poorly understood condition...*” (p.611). Pennington (2000) explains bureaucracy as a means of division of power or government administration setup, referring to the British planning system, suggesting that government functions are divided into several agencies operating at both the national and local scale. Claver *et al.* (1999), who see bureaucracy as the whole public administration system, suggest that the governmental hierarchical administrative system and agencies are divided into local, provincial or regional, national and even trans-national agencies. In some cases some agencies are autonomous (Cheshire and Gordon, 1998). Thus, an important government task is to co-ordinate functions split between local or regional authorities (Cheshire and Gordon, 1998; van der Krabben and Lambooy, 1993; van der Krabben, 1995), coordinate policy and implementation (Vigar and Healey, 1999; Cheshire and Gordon, 1998), and to

coordinate between departments (McHugh, 1997) or simply between individuals in administration (Cheung, 1996).

The above issues are associated with what North (1990) terms a ‘problem of co-ordination’. In understanding the problem of public administration, it is essential to appreciate that government administration can be divided into hundreds of departments, employing a significant number of employees. As the number of departments, divisions and personnel grows, co-ordination becomes highly problematic (Brynard, 1995). Indeed, co-ordination has become more complicated with ever-expanding state responsibilities (Glynn and Murphy, 1996).

There are differing opinions as to how to explain the problem of co-ordination within the government administrative system. Cheung (1996) sees it merely as competition between the different interests of individuals. Ismail (1994) and van der Krabben (1995) see it as competition of interests between agencies. Glynn and Michael (1996) look at it in an entirely different way. They argue that every government department has a different role to play in the administrative system. Each department has different rules and standards. In an effort to provide the best service possible the differences between rules, regulations and standards in different government departments may result in decisions and actions that conflict with each other.

Niskanen (1971) notes that the term ‘bureaucracy’ is sometimes used in reference to the organisational structure, methods and behavioural characteristics of the bureau. However, he argues that the term soon became used to identify a form of government ruled by officials. However, judging from his writings, Oliver Williamson inclines more towards defining bureaucracy as a form of organising economic activity.

3.3 THE PETROCHEMICAL INDUSTRY – AN OVERVIEW

Petrochemical industries as depicted in Figure 3 have a strong relationship with other industries.

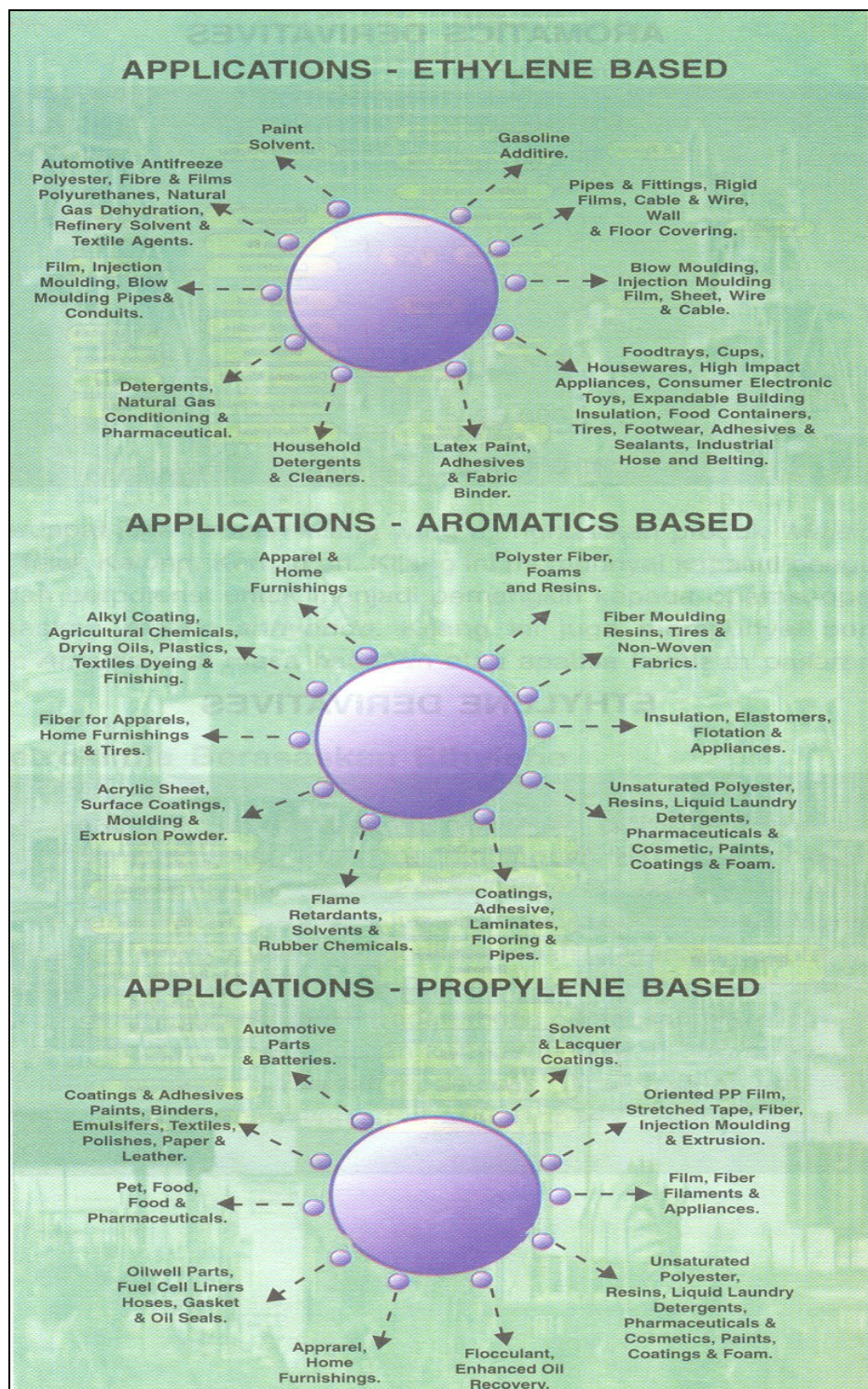


Figure 3 : Applications of Petrochemical Products

Source : Terengganu (2001, p.42)

According to a CEO and owner of a petrochemical firm, the non-technical definition of the petrochemical industry is:

“In simple term, petrochemical is about plastic industry. Plastic industry is the last stage in the petrochemical production chain. Its contribution to the world economy maybe the biggest in volume but the smallest in weight. Of course, metal is the heaviest” (A CEO).

This industry, whose products are major raw materials for other industries, contributes to approximately 11% of world production (Wang and Yeung, 2000). Petrochemical products include detergents, fertilizers, pharmaceuticals, plastics, solvents, synthetic fibres and synthetic rubbers. In simple terms, the petrochemical process begins with the isolation of ethane, butane and propane from natural gas. Ethane, butane and propane, which are gaseous energy substances, are the basic compounds used in creating a petrochemical building block (Petronas⁴; Fan, 2000). Petronas’ documents also suggest that the industry can be classified into primary, secondary, tertiary and supporting functions. A brief explanation of this system of classification is below:

- Primary :* Processing only oil or gas to produce secondary oil and gas products such as ethane and propane.
- Secondary :* Processing secondary oil and gas products (as above) to produce tertiary oil and gas products such as ethylene, methane and propylene.
- Tertiary :* Processing tertiary oil and gas products (as above) to produce other oil and gas products (but not to the extent of producing finished products). Examples – polypropylene, polyethylene, polyacetal, expanded polyethylene and expanded polypropylene.
- Supporting :* Supplying chemical substance other than the above (e.g. ammonia, carbon monoxide, water, demineralised water, oxygen and nitrogen).

The difference between this industry and others lies in its industrial inputs, commonly known as ‘feedstock’, which are mostly gaseous substances. These substances need to be stored in expensive, heavy, thick-walled tanks at very low temperatures and/or

⁴ Source: Petronas’ unpublished documents (see Page 345).

high pressures. Many of them are difficult to handle, transport or store. They can only be transported over short distances by specialised trucks, trains, or barges equipped with storage tanks. This is for safety reasons as well as to maintain the quality and quantity of the substances, which deteriorate with time and travel distance. In certain circumstances the inputs need to be stored for only a short period before they enter the production process. The fundamental characteristics of the inputs require high-tech storage and processing facilities and motivate the petrochemical industry to build plants in close proximity to each other (Fan, 2000).

Wang and Yeung (2003) contend that the petrochemical industry is usually attracted to sites that are (i) readily available, (ii) have sufficient infrastructure to support the industry and (iii) where facilities and firms within the industry can cluster together. A cluster refers to geographically close groups of interconnected firms and associated institutions in a particular field. Within a cluster, plants are normally interconnected with each other to form a production chain network.

According to Fan (2000), another characteristic of the petrochemical industry is that it requires a continuous flow of inputs. As a result, the industry runs on very high costs. The supply and price of these inputs are clearly linked to the world market for oil and gas, and are vulnerable to changes in market condition. Supply of inputs is typically arranged contracts of 1–3 year duration. However, a contract normally may be revised from time to time, to allow adjustments according to price changes. The industry is therefore characterised by:

- (a) high technology;
- (b) high costs; and
- (c) high risk.

Wang and Yeung (2000) and Fan (2000) suggest that this type of hi-tech industry is dominated by multinational companies mainly based in the USA, Japan and Western Europe. In the 1980s these companies expanded from their countries of origin. Their new destinations included Far Eastern countries, especially Taiwan, Singapore, Malaysia and the Philippines. There are different views as to why these companies set up their new

plants away from their home base despite the fact that more than 70% of world demand for petrochemical products is in their home markets (Wang and Yeung, 2000).

This situation is explained by Fan, (2000) whose study directly applies the NIE approach as in Williamson (1971; 1975; 1979) and Klein *et al.* (1978). Fan's main conclusion is that the petrochemical industry in the USA, made its decision whether to integrate vertically with other companies, shut down or move to a new place was mainly in reaction to the high transaction costs associated with acquiring gaseous industrial input. He notes further that the petrochemical industry experiences 'high asset specificity'. Thus, the choice of sites as well as the structure of the company's ownership are directly linked to transaction costs. Brouters and Brouters (2003), whose study applies a strict TCE approach, agree that the problem of asset specificity is a main contribution to high transaction costs.

Another explanation is found in Wang and Yeung (2003), who applied an evolutionary economic approach, as pioneered by Storper (1997) and Amin and Thrift (1995), to a case study that examine the development of the Singaporean petrochemical industrial. They theorise that only highly specialised and competitive petrochemical firms can survive the stiff competition in the high-tech industry. The Singaporean case study concludes that multinational petrochemical corporations come to invest, especially in Far Eastern countries, as a 'survival' strategy in order to benefit from the incentives provided by the host country governments. These incentives enable the companies to keep on learning and innovating – essential to survival.

3.4 INDUSTRIAL LAND DEVELOPMENT AND SOCIAL INSTITUTIONS

3.4.1 Industrial Land Development and Informal Institutions

One of institutional economics' main theses is that economic progression is largely dependent on the creation of property rights (North, 1990). Property rights in turn, have a direct relationship with social institutions. Some institutions, among which are property rights, are transformed into formal rules and practices (Eggertsson, 1997). Thus,

private ownership is created and maintained by social institutions not only to protect individual rights but also to respect the interests of society in general (Vandenberg, 2002, Smyth, 1998). To some extent, property rights are also an expression of social values (Guy and Henneberry, 2000).

Indeed, 'place' is associated with identity and meaning for many individuals and groups, and brings about different emotions and sentiments for different persons (Entrikin, 1976). For instance, some people, although scientifically unproven, believe in *fengshui* where a certain environment is suitable only for certain business or land use (Bruun, 1996; Teather and Chow, 2000; Teather, 2001). For other individuals, once he or she has settled down in a place, he is bound by social obligations, family or community commitments to that particular place (Evans, 1995).

Place not only reflects personal or social feelings but also a manifestation of informal business networking. For firms, location is not merely a base for a business, but rather it influences and is influenced by business outlook, networks and relationship with customers and other firms (Ortona and Santagata, 1983; Fothergill *et al.*, 1987). Rasiah (2002) suggests that informal business relationships, which are distinct between one place and another, are complex and difficult to classify. For example, some business information, such as that concerning markets and supply potentiality as well as labour and vendors, may be best obtained from business associations, old boys' associations, and past employment contacts. This type of networking, which is distinctive from place to place, has direct impact on industrial development.

However, as mentioned on Page 18, examining Level 1 institutions is not a focus of this study.

3.4.2 Industrial Land Development and the Institutional Environment

3.4.2.1 Roles of the Institutional Environment

In Williamson's (2000) typology, **Level 2** consists of the Institutional environment within which are constitutions, laws and property rights. Williamson (2000; 2002) suggests that economic development and market performance are strongly connected to formal institutions, upon which the private ownership system as well as the legal and political structure of a country are established. In principle, the creation of property rights guarantees economic agents exclusive rights to the returns from an investment (Cheung, 1976). However, once private ownership, especially land ownership, is created and subsequently traded, the exchange process involves a number of parties, some of which are explicit organisational forms, such as government departments, financial institutions of professional agents, lawyers and developers (Keogh and D'Arcy, 1999; van der Krabben and Lambooy, 1993).

Vandenberg (2002) and Smyth (1998) suggest that private ownership is created and maintained by social institutions to serve the interests of society in general. To some extent, property rights are an expression of social rationality (Guy and Henneberry, 2000). Some institutions are transformed into formal rules and practices (Eggertsson, 1997), among which are laws, regulations and policies that control land development and exchange. Property rights are also a reflection of government policy, whose implementation through various forms, directly and indirectly, affects the use and exchange of land (Keogh and D'Arcy, 1999). Some government policies use property rights as a tool to promote the economy by providing incentives for development. In other cases, property rights are used to protect the interests of certain groups. Consequently, various types of restrictions are imposed on land use and its exchange (Keogh and D'Arcy, 1999).

Discussions of Level 2 institutions indirectly underscore the importance of government roles in the land development process. Although Pennington (2000), Webster (1998) and Stoker (1991) stress the importance of understanding government roles in the

land development process, there are also critics who address the issue of ‘government failure’.

According to Pennington (2000) and Webster (1998) effectiveness in bargaining for the reallocation of resources is the key issue in land development. Formal institutions therefore function not only as regulatory bodies but also as land development promoters. Views in Kittiprapas and McCann (1999), Rasiah (2002) and Wang and Yeung (2003) suggest that in industrial development, government roles are not marginal. In Singapore, the UK and Norway, for instance, the government plays a leading role in petroleum-related industries. In the UK, state oil policy is driven by the interest of oil companies, such as BP and Shell. Similarly in Norway, the policy is in favour of its petroleum company, Statoil (Wang and Yeung, 2000; and Cumbers, 2000). The success story in those countries is the outcome of an efficient central government able to translate business opportunities into policy and co-ordinate action plans between its diverse and autonomous departments, as well as local and regional authorities (Cumbers, 2000).

Kittiprapas and McCann (1999) and Wang and Yeung (2003) underline the importance of planning. They suggest that authorities play a key role in the creation of an environment into which industries will be attracted to clusters. Wang and Yeung (2003) suggest further that the success of the Singaporean industrial complex, where petrochemical plants are built adjacent to each other, has to do with government planning and support. Between 1994 and 1995 the Singaporean government spent about S\$20 billion to provide fully serviced sites with the necessary utilities and ‘ready to use’ for the petrochemical industry. Kittiprapas and McCann (1999) also suggest that the effect of government planning is more significant than any attempt to reduce transport costs in industrial location decisions in Thailand.

3.4.2.2 Issues

In principle, the creation of property rights guarantees economic agents exclusive right to the returns from an investment (Cheung, 1976). However, once a landed property is developed or traded, it involves a number of parties, such as government departments,

financial institutions with professional agents, and developers (Keogh and D’Arcy, 1999; van der Krabben and Lambooy, 1993). Thus, each piece of land involves various bundles of organisational interests (Adams *et al.*, 2003; Evans, 1995). As a result, every deal on a parcel of land, even a simple conveyance, involves a number of organisations (Nanthakumaran *et al.*, 2000) and is governed by a number of rules and regulations (Evans, 1995; Keogh and D’Arcy, 1999). On top of that, it is essential to note that the relationship between the organisations in the land or development market is not straightforward, but rather is subject to institutional interplay and power struggles (Healey, 1991; Healey and Barrett, 1990). As a result, any transaction which involves land requires a process that takes a long time – maybe even months or years (Healey, 1991)

The following discussion, in line with the discussion on Page 19, will be divided into the following subsections related to the institutional environment:

- (a) property rights;
- (b) formal institution; and
- (c) the bureaucratic functions of government.

3.4.2.2.1 Issues Related to Property Rights

Although in principle the aim of assigning ownership rights to a piece of land is to reduce uncertainty, in many cases, the results are ambiguous (Adams *et al.*, 2001a; 2001b; 2002; 2003). This ambiguity may be related to the status of landowners, the title deed or the nature of rights on the land. As regards the:

- (a) landowner’s status, it may be that the landowner is unknown, unclear, under dispute, (Adams *et al.*, 2001a; 2002), multiple (Adams, 2001a; 2002; Omar, 1999; Ishak, 1998), unregistered (Omar, 1999) or awaiting inheritance settlement (Ishak, 1998); and as regards the
- (b) title deeds, they may be incomplete or missing (Adams *et al.*, 2001a; 2002).

Keogh and D’Arcy (1999) and Adams *et al.*(2003) suggest that the above issues are related to the problem of information and informational efficiency. For example, prices must not only be discoverable, but also ‘meaningful’. It is not strange that in many

cases, and for various reasons, land price makes little or no difference to the majority of people (Keogh and D'Arcy, 1999; Adams *et al.*, 2003; Evans, 1995). The following are some examples. First, for some people their property is intrinsically connected to emotions, especially those properties which are acquired through inheritance. This type of landowner is not primarily interested in the price offered, even though it may be very high (Adams *et al.*, 2002; Omar, 1999). Secondly, there is evidence that people often buy and sell property not because of price but because of convenience or necessity. Normally, people sell their property because they have to move to a new area. In some cases, sellers will wish to sell quickly because they need the money, or have found a new property to buy which they will lose if they do not settle the deal quickly (Evans, 1995).

The problem of information (as above), leads to the problem of individual landowner constraints (Adams, 2001a; 2002). Individual owners may obstruct the supply of land by not responding to offers from potential developers or otherwise retain land without development (Adams, 1994). Landowners' negative attitude toward markets take various forms. One of those is the unwillingness to sell at all. This may be in order to continue the current use, for control or protection (Adams, 2001a; 2002), for their own consumption or to pass the property down to children (Ishak, 1998; Omar, 1999). Another form of negative behaviour is willingness to sell land, but not on terms acceptable to potential purchasers, such as imposing restrictive terms or conditions of sale or imposing unrealistic price expectations (Adams, 2001a; 2002). In some cases, reluctant landowners are well organised (Mutale and Edwards, 2002) and in extreme cases resistance to the development takes the form of collective behaviour (Omar, 1999; Brookfield *et al.*, 1991).

3.4.2.2.2 Issues Related to Formal Institutions

van der Krabben (1995) remarks that government decisions on land development approval are sometimes uncertain and not easy to predict. Cheung (1996) points out that government decision-makers are guided more by their bureaucratic rationale than by any particular ideological or philosophical wisdom, and are not influenced by particular groups within society (Pennington, 2000; Adams, 1995). Healey (1991), van der Krabben

and Lambooy (1993) and Nanthakumaran *et al.* (2000) suggest that the long process of development approval is partially attributable to this bureaucracy.

Adams *et al.* (2001b) suggest that supply-side decisions are sometimes unpredictable. In the same token, Good (1978) contends that the Malaysian legal and administrative system is complex and complicated. This may be attributed to its historical setting. During the last 500 years, Malaysia has been under the control of the Malay Sultanates, The Portuguese, Dutch, British and Japanese. Each regime has introduced a different political, judicial and administrative system, made up of a different ethnic composition, and has left behind certain legacies (Khoo, 1966; Good, 1978; Hirschman, 1986). As to land, in particular, the historical account (see endnote), indicates that changes to the political and social framework have substantially influenced land administration.

3.4.2.2.3 Issues Related to the Bureaucratic Functions of Government

Based on the issues mentioned above, together with the issues of government bureaucracy that were discussed in the last chapter (see Pages 33 to 36), it is proposed that the central problem is at the supply side, in particular, the government. Government decision-making, especially the information processing system, is problematic. Thus, an intense investigation needs to be carried out on three issues, namely:

- (i) division of powers regarding land matters among different government functions;
- (ii) process of approving development and government land disposal; and
- (iii) duration of development approvals and government land disposal.

3.4.3 Industrial Land Development and Governance

3.4.3.1 Roles of Governance

North (1990) suggests that understanding the problem of co-ordination is vital for explaining NIE. Williamson (1975) divides the problem of co-ordination into *ex-ante* and *ex-post* stages. Since the property market and land development involve various parties

representing the interests of various institutions and organisations, the problem of co-ordination is complex (Keogh and D'Arcy, 1999, Evans, 1995; Nanthakumaran *et al.*, 2000, Adams *et al.*, 2003). Whenever a deal is underway on a piece of land, there is interplay between those parties (van der Krabben, 1995; Healey, 1991; Healey and Barrett, 1990).

Williamson (1975, 2002) suggests that governance structure is one strategy to ease the information flow and ensure certainty. There are two types of uncertainty, namely, environmental and behavioural. In addition, firms' strategies are related to the degree of asset specificity in their particular industry. Results of the interaction between these factors can especially be seen in:

- (a) business deals; and
- (b) business arrangements (such as ownership structure, inter- and intra-firm relationships, procurement and marketing).

3.4.3.2 Issues Related to Governance

Government departments, financial institutions, property development and management companies are among the key organisations that participate in the land development process (Healey, 1991; van der Krabben, 1995; Adams, 1995). During this interplay, economic agents interact in various ways, for example by negotiating, co-operating, forming alliance develops a model that shows the process of bargaining between buyers and sellers. This model, which divides the actions involved into a demand-side group at one end and a supply-side group at the other, clearly shows that within each group of actions there are number of sub-activities. At any stage of action or activity, 'decisions' have to be made. Figure 4 shows the model.

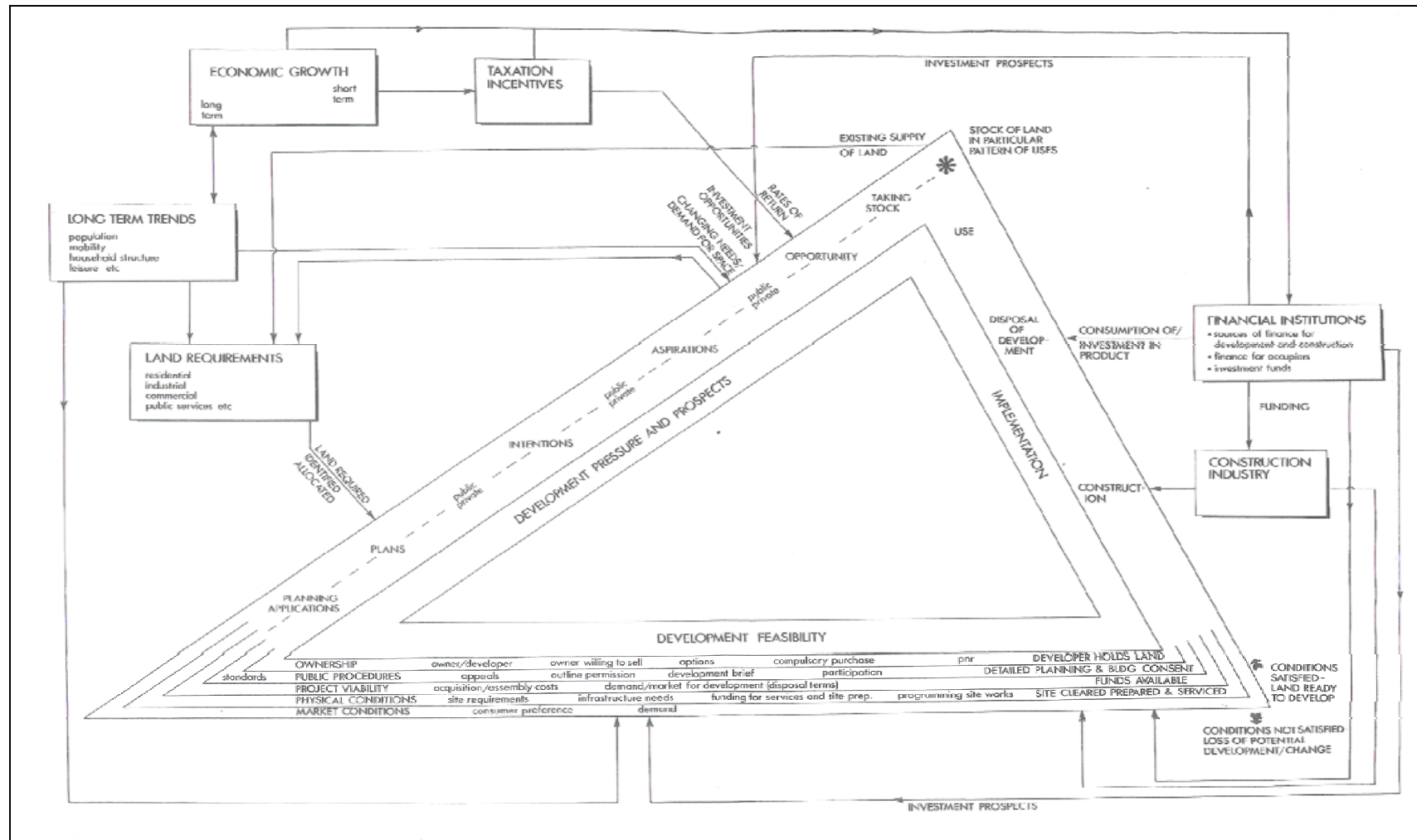


Figure 4 : The Pipeline Model of the Development Process

Source: Barrett *et al.* (1978)

The discussion above underlines the importance of information in the property market as well as the land development process. With greater access to information, some economic agents have an advantage during bargaining (Adair *et al.*, 1998), either to gain a profit (Adair *et al.*, 1998; Keogh and D'Arcy, 1999) or to strengthen their position in the power struggle (Adams *et al.*, 2003). Some of the information problems are derived from formal institutions. For example, a confidentiality clause in certain laws dictate that an organisation which is custodian to particular information is not allowed to disseminate certain type of data or records to the public (Wyatt, 1995; Adair *et al.*, 1998).

Such clauses that allow informational monopolisation are not only confined to government departments and laws. Non-governmental organisations, such as financial institutions and property agents have their own codes of conduct that enable them to monopolise precious and tradable information (Wyatt, 1995; D'Arcy and Keogh, 1999). This type of institutional protectionalism enables those who control information to obtain disproportionate bargaining strength in the market place (Adams *et al.*, 2003), increasing transaction costs and to some extent, hindering the development process (Adams *et al.*, 2003; Adair *et al.*, 1998).

As far as manufacturers' strategy to avoid risks and uncertainties is concerned, Brouthers and Brouthers (2003) suggest that it can be explained in the context of asset specificity. One of the central tenets of TCE is that the specificity of the assets employed in a transaction has a significant impact on the efficiency (transaction costs) of alternative governance structures. They also note that scholars examining the issue of international entry mode choice have proposed that the greater the specificity of the assets needed in an international investment, the greater the transaction costs created by potential opportunism. It is further proposed that as asset specificity increases, firms tend to internalize transactions and use wholly-owned modes of entry but as asset specificity decreases, joint venture modes of entry are preferred.

With regard to the relationship between environmental uncertainty and mode of entry in manufacturing, Brouthers and Brouthers (2003) suggest that high environmental uncertainty 'should lead to a need for greater flexibility and therefore to the use of lower-

control governance modes'. Therefore, a manufacturing firm should 'limit its exposure to such risk by restricting its resource commitments' and utilize joint venture entry modes. Since manufacturing FDI is typically fixed asset intensive, joint venture modes of entry provide the firm with a method to decrease exposure of fixed assets to the potential hazards of environmental uncertainty. As far as the relationship between behavioural uncertainty and mode of entry in manufacturing is concerned, behavioural uncertainty and the underlying theory of transaction costs assume that opportunism, bounded rationality and risk all help to create high costs in monitoring and/or controlling the behaviour of partner firms. For manufacturing firms, behavioural uncertainties also drive firms to seek control. Their control may be obtained at a lower cost through wholly-owned modes of entry.

The preceding discussion suggests that it is vital to examine the impact of behavioural and environmental uncertainty especially on investors' business deals and business arrangements, in particular with respect to ownership structure, inter- and intra-firm relationships, procurement and marketing.

3.4.4 Industrial Land Development and the Market Allocation of Resources

3.4.4.1 The Roles of Market Institutions

Modern industrial land models, which relate land price and use, can be traced to von Thünen's *Der Isolierte Staat* legacy (Marshall, 1898; Isard, 1956; Krugman, 1995). Following a path that has been created by von Thünen, Alfred Weber (1868-1958), Lösch (1906-1945) and Walter Isard (1956) came out with specific theories of industrial land location and use. According to Adams *et al.* (1993), there are some differences in the ideas of Weber (1954), Lösch (1906) and Isard (1956). At the same time, Paul Krugman presents what he calls 'new trade theory' to explain industrial location. By renewing Marshallian theory of (Alfred Marshall 1842-1924) agglomeration economies, Krugman (1995) theorises that industrial development is driven mainly by international trade competition and firms' objective of increasing returns and external economies. Those

associated with von Thünen expand his idea to include the impact of commuting cost on regional and local development potential.

3.4.4.1.1 von Thünen's Theory

Heirich von Thünen's (1783-1850), *Der Isolierte Staat* which was written in German is believed to be the oldest modern literature on land use theory. The work was begun in 1826 but only completed in 1863 (Alonso, 1964; Barlowe, 1986). Further explanations of von Thünen's works may also be found in the 1885 writings of Wilhelm Launhardt, a German engineer-economist (Sheih, 2003). von Thünen's model is based on the case of an isolated state (one central city surrounded by a wilderness area) which is free from the impact of outside economies and markets. von Thünen argues that land utilisation patterns would reflect geographic differences in location. In his model, except for location and distance to the market, all natural resources are assumed to be constant. In his isolated state, the zones which are the closest to the city are utilised for intensive purposes which involve highly perishable products and those which are heavy or difficult to transport (von Thünen, 1863; Alonso, 1964; Barlowe, 1986).

von Thünen's theory was primarily concerned with the role of transportation costs in determining land use. This means that differences in land use are attributed directly to variations in transportation costs. He theorised that location and transportation costs are the factors that determine the pattern of land use and land development activities. He suggested that farmers' decisions about types of crops and farming sites were only dependent on four variables: the selling prices of the crops, the labour costs, the transportation costs to the market (that is, the town centre) and the rate of land rent (von Thünen, 1863).

Under von Thünen's model, only two parties may make decisions about the land use: the landlord and the farmer. The landlords were assumed to have complete knowledge about production methods, prices and transport costs and only to be interested in getting maximum rent on the land (Richardson, 1977). As the landlords offer the land only to the highest bidder, the farmers were assumed to be willing to pay any optimal rent. The marginal profit for the farmers was the savings on transport costs against the

rent. If the savings were higher, the farmers were willing to move closer to the centre of the town (von Thünen, 1863).

Land use, according to von Thünen's model, is arranged in rings around the city centre. The nearer the land is to the city centre, the higher the rent, the more concentrated the development and the higher the return on the investment (Alonso, 1964; Krugman, 1995). This is attributed to transportation costs' increasing the marginal profit's diminishing with distance (von Thünen; 1863).

3.4.4.1.2 Alonso's Theory

Alonso (1964) explores the von Thünen theory further, explaining it by using modern economic terminology and applying it to the context of modern urban land use. He introduces a 'bid price curves' model to analyse how equilibrium is achieved in land transactions. The bid price curve model illustrates the equilibrium point at which land is transacted and decisions regarding land use are made (Shieh, 2003). The equilibrium point signifies the prices a buyer could pay for land at various distances while deriving a constant level of satisfaction (Alonso, 1964). Land transaction only takes place at the equilibrium point. It is the point where the individual is willing to pay the price offered by the seller or landlord for rental or purchase, at a location that he or she is satisfied with. The equilibrium requirements in the land market are similar to those of the market for other goods. Figures 5, 6 and 7 illustrate Alonso's bid price curves.

“ In Figure 5 a map of bid price curves for a firm is shown. According to our notation, curves BPC_1 , BPC_2 , and BPC_3 are, respectively, $p_f(t)[t_i, p_i, p_f, (t) [t_i, p'_i$, and $p_f(t)[t_i, p''_i$. From the point of view of the firm, BPC_1 is preferable to BPC_2 , which in turn is preferable to BPC_3 . The firm is faced with an existing structure of land prices $P(t)$ such as that in Figure 6. Figure 5 represents a mapping of the firm's preferences, while Figure 6 is a mapping of the opportunities available to it; preferences and opportunities are shown in the same diagram in Figure 8. The firm will locate at the point at which the price structure touches the lowest of the bid price curves with which it comes in contact. At this point, t_e in Figure 8, the profits of the firm are maximized

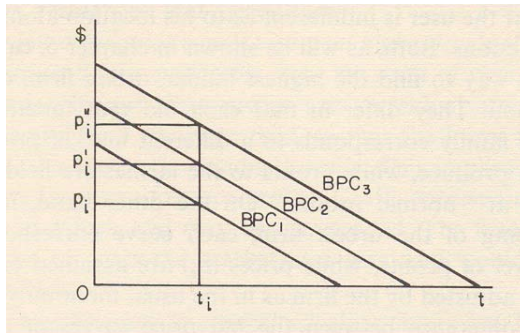


Figure 5 : Diagrammatic Mapping of Bid Price Curves

The diagram does not tell us what the optimal quantity of land at this point will be, but this is not important. The bid price curve was defined in such a way that it took into account the optimization of the quantity of land for that price and location. Once the location and the price are known, finding the quantity of land is a simple problem corresponding to Figure 7. The quantity may be computed from equations (3:1,2,3,4). Alternatively, just as we found the parametric form $p_f(t)$ [G_0 in section D, we can at the same time find the parametric form for optimal land quantities as a function of distance for that level of profits

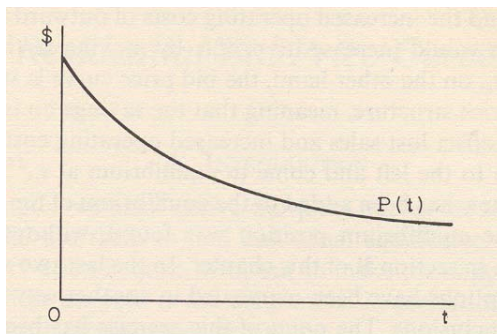
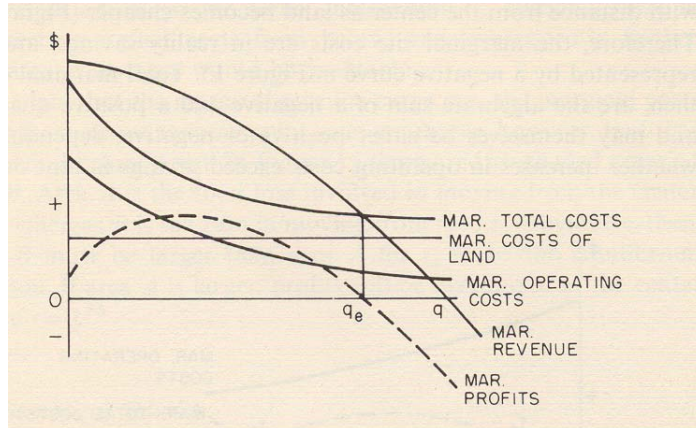


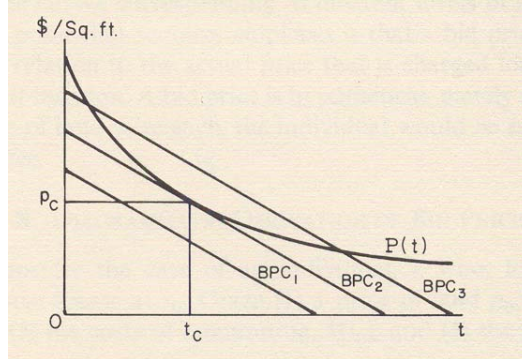
Figure 6 : Diagrammatic Price Structure



**Figure 7 : Marginal Costs and Revenue of the Firm
According to Size, at Given Location**

At this point where $P(t)$ comes in contact with BPC_2 in Figure 8, the two curves are tangent. If they were not, they would intersect, and there would exist some bid price curve below BPC_2 which would be in contact with $P(t)$ and yield a higher level of profits. In other words, at that point the slopes of the curves are equal:

$$\frac{d}{d} Pf(t_c)[t_c, p_c] = \frac{DP(t_c)}{dt}$$



**Figure 8 : Diagrammatic Bid Prices and Price Structure:
Equilibrium of the Firm**

To the left of t_c , $P(t)$ is steeper than the bid price curve. Since the slope of the bid price is the change in the price of land necessary to offset the loss in sales and the increased operating costs, where $P(t)$ is steeper the savings in land costs exceed the loss of revenue and the increased operating costs of outward movement, and the firm would increase its profits by moving farther out. To the right of t_c on the other hand, the bid price curve is steeper than the actual price structure, meaning that the savings on land are not sufficient to offset lost sales and increased operating costs. The firm would move to the left and come to equilibrium at t_c . ” (Alonso, 1964, p.56-58 [figure reference numbers are adapted to synchronise]; Figure 7 is from p.47).

Reapplying the von Thünen model, the Alonso (1964) model reaffirms the assumption that there are only two parties that make decisions regarding land use. These are the buyers and the sellers. During transactions, it is assumed:

- (a) competition is perfect;
- (b) buyers and sellers have complete information about the land market; and
- (c) buyers and sellers are rational.

‘Rational’ is key word in market decisions. It means that each party is looking to gain the highest profit possible from any given land deal. For the seller, whether a firm or an individual, the highest profit comes at the maximum selling price. For households, it means maximum utilisation (e.g. best housing services or workplaces). For individuals, the utility function represents satisfaction. (Alonso, 1964; Richardson, 1977; Mun and Sasaki, 1992). It is also understood that, when one buys a piece of land, he purchases two items in one price, the site and its location. Since firms and households have different types of satisfaction, they arrive at different points of equilibrium in transactions (Alonso, 1964). As there are two types of equilibria, the urban land use pattern is divided into residential and non-residential subsets. While the equilibrium point for the residential subset reflects the utility function, the equilibrium point for non-residential property reflects maximum profit from selling and investment (Alonso, 1964).

Based on this, the Alonso model theorises that the division of urban land into housing areas, industrial sites and shopping centres is the result of differing equilibrium points among buyers and sellers. For firms, the equilibrium point determines the location, size and types of services and products. The equilibrium point also reflects income levels and social status. Upper-income group housing is nearer offices, leisure, sports and shopping centres. Lower-income group housing, in contrast, is usually nearer to the centre of employment and manufacturing. In other words, only the market and no other parties decide on urban land use and its distribution (Alonso, 1964).

In short, Alonso’s bid price curves model shares the same determinant as the von Thünen model, that is, commuting costs. Commuting costs determine the equilibrium for

both firms and individuals. The difference in equilibrium points between and among firms and individuals determines the allocation of land for each firm or individual. Urban land use is stratified according to price. Since the land which is nearer to the city centre is assigned to the highest bidder, the nearer the land is to the city centre, the higher the rent and the more concentrated the development (Alonso, 1964).

3.4.4.1.3 Theory of Agglomeration Economies

New Trade Theory (NTT) however, revives the question of external economies (or externalities) and relates it to industrial agglomeration and industrial location. According to Wikipedia⁵:

“New Trade Theory (NTT) is the economic critique of international free trade from the perspective of increasing returns to scale and the network effect. Some economists have asked whether it might be effective for a nation to shelter infant industries until they had grown to sufficient size to compete internationally. New Trade theorists challenge the assumption of diminishing returns to scale, and some argue that using protectionist measures to build up a huge industrial base in certain industries will then allow those sectors to dominate the world market (via a Network effect)”

A theory on externalities was put forward by Marshall in the 1940's but was not really understood (Krugman, 1995) or was simply ignored until the 1970's when the urban areas began to face acute traffic and environmental problems (Richardson, 1977). Krugman (1995) summarises what Weber (1928) means by external economies as:

“... the ability of a large local market to support efficient-scale suppliers of intermediate inputs, the advantage of a thick labour market, and the information that takes place when firms in the same industry together...” (Krugman, 1995, p.50).

Externalities come from various sources. They may come from improvements in infrastructure, communication systems and facilities provided by the public sector (Richardson, 1977). However, current literature emphasises externalities from within economies more. According to Guimarães *et al.* (2000), externalities may result from the spatial concentration of existing economic activities. This happens when firms in the same industry draw on a shared pool of skilled labour and specialised input suppliers. There are two major types of externalities. First, localisation economies, which are

⁵ http://en.wikipedia.org/wiki/New_Trade_Theory

realised through the size of a particular industry in an area. Second, service agglomeration, which is related to the population of the area. Both types of externalities may potentially bolster productivity of existing firms and attract more manufacturers to invest around them. However, there may be negative externalities when circular causation take place (Lanaspa and Sanz, 2001), or excessive concentration increases transport costs as the manufacturers move away from the centres to new sites (Dymski, 1996).

Gerreau (1991) and Wheeler (2001), however, associate externalities with utility functions. They suggest that the employees' working distance from their homes is another consideration in deciding industrial locations. Thus, manufacturers choose not to operate factories in city centres areas not only to escape the costs associated the downtown businesses but also to locate their factories where they are relatively easily accessible to their workers.

Weber's agglomeration economies' in turn, explain the way in which a group of firms may locate close to each other, taking advantage of external economies. By concentrating on one centre, firms may reduce labour costs and the cost of the supply of goods and services. To a certain extent this reduces the price of land (Evans, 1985). Agglomeration is also one way firms react to the cost of transportation. When transportation costs are high, firms disperse and operate close to the demand. When transportation costs are moderate, firms agglomerate to enjoy forward-backward linkages (Dymski, 1996; Venables, 1996).

In other words, like the von Thünen and Alonso models, NTT also emphasises that decisions regarding land use and location are driven purely by the market and the main concern is still transportation costs. The only difference is, NTT is applied in the more complex land development context. While the von Thünen model is only applicable to agricultural land use and the Alonso model to urban business and residential use, NTT tries to cover all types of land use and to analyse the movement of industrial sites regionally and across the globe. Also note that the models rooted in neo-classical economics view location and transportation costs as principle elements to consider during

decision making regarding land use, as those factors affect the marginal profit. Whether involving individual farmers, house buyers or multinational manufacturing firms, decisions regarding land use and location are made only by the buyer and seller.

3.4.4.2 Issues Related to Market Institutions

Land development theories that are derived from the above scholars share the same determining factors as von Thünen, i.e. transport costs. Commuting costs determine the equilibrium for firms and individuals. Differences in the equilibrium points among the firms and individuals determine the allocation of land for each firm or individual. Urban land use is stratified according to price. Since land which is nearer to the city centre is assigned to the highest bidder, the nearer the land to the city centre, the higher the rent and the more concentrated the development (Alonso, 1964).

The concept of ‘rational choice’ in neo-classical economics suggests that there are incentives and limiting factors which influence choice of industrial location. Although the theories put the most emphasis on profit maximisation in decision making, transportation costs are regarded as imperative in calculating profit and loss. Nevertheless, the main limitation of the above theories is that they are too dependent on the assumption that competition is perfect, that the buyer and seller have complete information about the land market; and that the buyer and seller are rational.

Adams *et al.* (1993) consider that the price mechanism as well as the existence of supply and demand cannot guarantee an automatic exchange in industrial sites. Manufacturers consider many factors other than property price when deciding whether to move to a new site (Ortona and Santagata, 1983; Fothergill *et al.* 1987; Adams *et al.*, 1993). Most manufacturers decide to relocate not because they ‘*can live better elsewhere*’ but because they ‘*cannot live there anymore*’ (Ortona and Santagata, 1983 p.70). When they decide to move to new location, other questions need to be answered- whether the new site is better or at least as good as the existing one and whether suitable land is immediately available (Ortona and Santagata, 1983). In explaining the same situation, Fothergill *et al.* (1987), provides evidence that not all new manufacturing sites offered in

markets match manufacturers' needs. Relocation cost is among the most important factors that need to be calculated prior to moving to a new site (Munneke, 1996). The difficulty in deciding whether or not to relocate a factory to a new site is supported by statistics in Fothergill *et al.* (1987) which indicate that about 40% of factories in Britain date before 1945, with nearly 20% before 1919. These firms remain in their existing locations even though the present sites have deteriorated and are less productive.

Another problem is that many property market players do not have access to accurate and up-to-date information and so never have the opportunity to react spontaneously to price changes (Evans, 1995). This is in sharp contrast to the stock exchange, where every market player has access to full and complete market information and acts spontaneously to changes in share prices (Keogh and D'Arcy, 1999). Equilibrium in the property market is not instantaneous but rather based on a market-adjustment process which may evolve over decades. Today's prices may be based on information from ten years ago (Evans, 1995; Nanthakumaran *et al.*, 2000). The land exchange process is typically long (Nanthakumaran *et al.*, 2000). Sometimes it takes months (Evans, 1995) and, if it involves the construction of a building, it may even take years (Healey, 1991). As a consequence, a price may be agreed upon for a property today but the property will only change hands some time later, often months later (Evans, 1995).

North (1990) suggests that the co-ordination problem is a crucial issue in economic performance. Though Ortona and Santagata (1983), Adams *et al.* (1993) and Evans (1995) suggest that price is not the main factor in land transaction, Needham and Kam (2004) suggest that price is what is meant by the term 'co-ordination' in NIE. Thus, in the land market, whether price plays a significant or marginal role is still open to debate.

3.5 CONCLUSION

This chapter began with the premise by Williamson (2000) that the market institution is interconnected with the institutional environment, governance system and market allocation of resources. The discussion in Sub-section 3.4.4 suggested that land price plays a role in determining industrial location. However, there is evidence to suggest that the price mechanism cannot guarantee an automatic exchange in industrial sites. As per the aims of this study, as discussed on Page 6, this research will examine to what extent land price constitutes one of the attractions for investment in the petrochemical industry. To meet the research objective on Page 6, it is essential to investigate the relationship between industrial land supply and land price.

In Williamson's (2000) typology, Level 2 includes the institutional environment. In this class are formal institutions such as property rights and bureaucratic functions of government. The discussions in Section 3.2 and Sub-section 3.4.2.2.2 suggest that the government has a role in promoting petrochemical industrial development. The research objective stated on Pages 8 aims at explaining these government roles. To meet this objective, the relationship between industrial land supply and the institutional environment needs to be investigated.

The research objective on Page 7 aims at explaining the market players, their functions, interests and strategies. The discussion in Section 3.2 suggests that the petrochemical industry is characterised by high technology, high costs, and high risk. The discussion in Sub-section 3.4.3 concludes with a proposition that firms' business decisions reflect their strategies to avoid risks and uncertainties. The discussion also suggest that firms' strategies reflect the governance system, as indicated in Figure 2 and discussed in Sub-section 2.3.1.4. Therefore, in explaining the development of the Malaysian petrochemical industry, this research needs to investigate the relationship between industrial land supply and governance.

To summarise, the above discussion suggests that three research problems need to be investigated:

- (a) the relationship between industrial land supply and land price;
- (b) the relationship between industrial land supply and the institutional environment; and
- (c) the relationship between industrial land supply and governance.

The above proposition, as well as the discussion on Page 3 and the research central question (Page 9) suggest that the institutional environment, in particular government, deserves extra attention. Therefore, the subsequent chapter will discuss the administrative framework behind Malaysian industrial development.

CHAPTER FOUR – THE ADMINISTRATIVE FRAMEWORK UNDERLYING MALAYSIAN INDUSTRIAL DEVELOPMENT

4.1 INTRODUCTION

As discussed in Chapter Two, the institutional environment, in particular government, deserves extra attention. Therefore, this chapter will begin with a discussion of Malaysian economic policies, then touch on institutional frameworks that are closely related to Malaysian industrial development as well as industrial land supply. This chapter is therefore into three sections. The first section will discuss the background of Malaysian industrial development, including economic and industrial policies at the national level and the implementation of these policies at the regional level. The second part will discuss the mechanism regulating the supply of industrial land. This section will analyse the institutional and administrative framework underlying Malaysia's land administration system. The final part of this chapter will critically analyse issues related to the mechanism regulating the supply of industrial land for petrochemical industrial users and relate these issues with the central research question of this study.

4.2 MALAYSIAN INDUSTRIAL DEVELOPMENT

Peninsula Malaysia, which has eleven autonomous state governmentsⁱ, can be politically and geographically divided into two regions - the east and west coast states. Though they are interconnected by excellent infrastructure such as ports, airports, highways and other communication systems, there are clear divisions between these regions. The west coast states are more populated due to rapid industrialization since the time of the British colonial administration (Chai, 1964; Jackson, 1968; Rasiah, 2002), while states in the east coast experienced rapid industrialisation only after the discovery of off-shore oil in the 1970s.

4.2.1 The Economic Policy

Yasuda (1991), Fujimoto (1991) and Rasiah (1995; 2002) explain how current Malaysian industrial development plans and policies are part of the New Economic Policy (NEP). This policy, which commenced in 1971, was created in order to promote national integrity by reducing racial differences with respect to economy, culture and geographical location. A ‘two-fold development strategy’ aimed at (a) reducing and finally eradicating poverty by creating employment opportunities for all ethnic groups; and (b) eliminating the ethnic-economic identification.

The policy aimed to correct an imbalance in the structure of economic ownership. Table 3 shows that ‘*Bumiputras*⁶’ owned only 2% of companies in 1969 even though it accounted for 55% of the population. In contrast, 61% of corporate ownership was by foreigners. The rest was owned by non – *Bumiputras*. The initial target of the NEP was to change the ownership structure to a 30 : 40 : 30⁷ ratio by 1990 (Chopra, 1978; Yeung, 1982; Sundaram, 2004).

Table 3 : Malaysia – Ethnic Groups, Economic Ownership and Population in 1969

Ethnic Group	Percentage in the Population	Percentage in the Corporate Ownership	Average Household Income (RM)
<i>Bumiputras</i>	55.0	2	179
Chinese	34.4	22	387
Indian	9.1	15	310
Others ⁸	1.5		NA
Foreigners		61	
Total	100.0	100	

Source : Calculated from Chopra (1978) and Rasiah and Shari (2001)⁹

⁶ English translation is ‘sons of the soil’. This term refers to the natives of the Malay Peninsula and Borneo, mainly Malays, Dayaks, Iban, Kadazan and aboriginal peoples.

⁷ 30% by *Bumiputras*, 40% by non-*Bumiputra* Malaysians and 40% by foreigners.

⁸ Mainly the Portuguese, Siamese, Arabs, Pakistanis, Gujaratis and Eurasians.

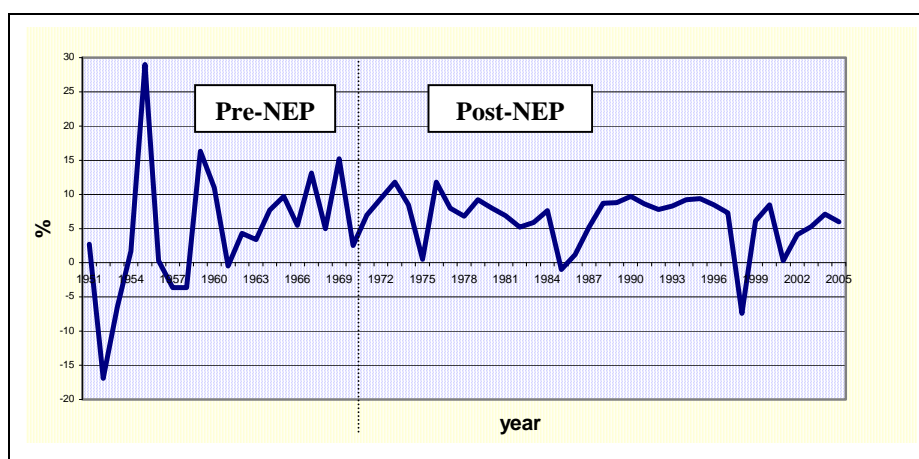
⁹ Figures in both articles as well as Sundaram (2004) have minor differences, likely because of differences in terms and references.

The NEP was formulated in 1970 following the outbreak of racial clashes in major cities of Peninsular Malaysia especially between Malay and Chinese ethnic groups. A detailed explanation of the background of the clashes is provided by Tunku Abdul Rahman (1969) and Sundaram (2004). To implement the NEP, some laws were amended and the public administrative system as a whole was adjusted. This involved, for example, substantial changes to the Federal Constitution (Hickling, 1978), industrial policies (Rasiah, 1995; 2002; Yasuda, 1991), urban as well as regional planning (Ooi, 1976; Brookfield *et al.*, 1991; Onozawa, 1991; Fujimoto, 1991) and agricultural policies (Salleh, 1991). Major changes in government administration following the inception of the policy are testimony to the fact that the NEP was much more than just an economic plan (Chopra, 1974; King, 1988).

The NEP, which ended in 1990, was implemented through four short-term economic plans, namely the 2nd Malaysia Plan (the 2nd MP [1971-75]), 3rd MP (1976-80), 4th MP (1981-85) and 5th MP (1986-90). Subsequently, the NEP was succeeded by the ‘*Second Outline Perspective Plan 1991 – 2000*’ (OPP2). Since 2001, the ‘*Third Outline Perspective Plan 2001 – 2010*’ (OPP3) has been in force. Within the OPP2 and OPP3 are the 6th MP (1991-1996), 7th MP (1996-2000), 8th MP (2001-2005) and 9th MP (2006-2010).

Rasiah and Shari (2001) suggest that the NEP, which is defined as a selective institutional intervention strategy, has brought about a positive impact on overall Malaysian economic progress. Figure 9 shows that after 1970, the annual growth in the GDP of Malaysia has been less variable. As to poverty eradication, figures in Table 4 show that percentage of the population below the poverty line fell from 42.4% in 1970 to 17.1% in 1990. It fell further to 5.1% in 2002. The percentage of *Bumiputras* below the poverty line was reduced from 65% to 20.8% in 1990. While the percentage of non-*Bumiputras* below the poverty line also drastically dropped by the end of the NEP, the urban-rural economic gap has also been markedly reduced since the inception of the policy.

Figure 9 : Malaysia – GDP Growth 1951-2005



Source: Lim (1973), Lucas and Verry (1999) Malaysia (1980-2006).

Table 4: Peninsular Malaysia – Poverty Eradication Target and Achievement, 1970, 1976 and 1990 (% of the population)

	Position in 1970	Target for 1990	Achieved in 1976	Achieved in 1990	Achieved in 1999	Achieved in 2002
<i>By location[#]</i>						
Poverty incidence	49.3	16.7	39.6	15.0	7.8	5.4
Rural	58.7	23.0	47.8	19.3	12.4	11.4
Urban	21.3	9.1	17.9	7.3	n.a	2.0
<i>By ethnicity[#]</i>						
Bumiputras	65.0	17.0	n.a	20.8	10.2	7.3
Chinese	26.0	n.a	n.a	5.7	2.6	1.5
Indian	39.0	n.a	n.a	8.0	n.a	1.9
Others	44.8	n.a	n.a	18.0	n.a	n.a
<i>Total Malaysia</i>	42.4	n.a	40.0	17.1	7.5	5.1

Source: Rasiah and Shari (2001, p. 60), Malaysia (2001,2003), Drabble (2000), Parvez (1978),Yeung (1982).

[#] Figures for Peninsular Malaysia only.

On the other hand, Table 5 suggests that the NEP has not succeeded in meeting its target in increasing *Bumiputra* corporate ownership to 30%. Nevertheless, the policy has managed to reduce the percentage of companies under foreign control.

Table 5 : Malaysia – Corporate Equity Ownership; Target and Achievement, 1970, 1976 and 1990 (% of total RM)

	Target 1990	1970	1975	1980	1985	1990	1999	2002
<i>Bumiputras</i>	30.0	2.0	9.2	12.5	19.1	19.3	19.1	18.7
Other Malaysians	40.0	37.0	37.5	34.3	35.9	46.8	40.3	43.2
Foreign	30.0	61.0	53.3	43.0	26.0	25.4	32.7	28.9
Nominee Companies				10.2	19.0	8.5	7.9	9.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total value (RM mil)						108,377	310,076	390,822

Source : Chopra (1978), Rasiah and Shari (2001, p. 74) and calculated from Malaysia (2001,2003).

4.2.2 Industrial Master Plan

Malaysian industrial progress can be divided into three periods. The first period was under the British administration until 1957. The second period was between 1957 and 1970 and the third period is after the introduction of the NEP in 1970. According to Rasiah (2002) there is strong evidence to suggest that Malaysian industrial progress proceeded rapidly following the introduction of the New Economic Policy (NEP) in 1970. This is in contrast to the first two periods, when industrial development in Malaysia was not significant, due to the absence of effective government assistance. The legislation of the Free Trade Zone Act in 1971 (FTZA) made a further positive contribution. The FTZA details statutory incentives for foreign and domestic investors.

Following the FTZA, the Industrial Master Plan was introduced in 1986. It was coupled with the Promotion of Investment Act of 1986. The objective of this act was to offer industry duty exemptions as well as other attractive incentives. To renew the commitment, the Second Industrial Master Plan (1996-2005) (IMP2) was introduced in 1996. The IMP2 is an updated industrial plan that accommodates changes in the global economy. The IMP2 also recognises that Malaysia has certain advantages in the

development of the petrochemical industry, especially the available abundance of oil and gas reserves (MITI, 1996).

4.2.3 Implementation of the Industrial Master Plan – At the Macro Level

There were over 4,000 industrial approvals in Malaysia between 1998 and 2002, most of which were for foreign direct investments (FDI). More than half of the total investment was in the electronic, electrical and machinery appliance production industries (MoF, 2003; Rasiah, 2002). As a result, 66% of Malaysian exports of manufactured goods in 2002 were in these sectors. Malaysia has been an exporter of petroleum-related products for only about 20 years, starting after the Petroleum Development Act was enacted in 1974. Subsequently, a fully government-owned company, Petronas, was incorporated to explore and exploit Malaysian on and off-shore oil and gas resources.

4.2.4 Implementation of the Industrial Master Plan in Terengganu and Pahang

To implement the NEP and IMP2, 18 locations in Pahang (about 9,900 acres) and 15 locations in Terengganu (about 12,300 acres) have been earmarked as industrial estates (Terengganu, 2001; Pahang SEDC, 2004). These areas, together with industrial sites in the state of Kelantan and the Mersing District in Johore are known as ‘the Eastern Corridor’ (MIDA, 2003a). Within the Eastern Corridor are GIPC and KIPC. The map in Figure 10 shows the locations of industrial sites in Terengganu and Pahang. These locations have been identified by the IMP2 as the nation’s petrochemical industrial axis. Figure 11 is a more detailed map showing the location of the KIPC and GIPC sites.

The state governments of Terengganu and Pahang forecast that demand for industrial sites at the KIPC and GIPC will increase rapidly until 2010, corresponding with the nation’s increasing capacity in producing natural gas. Figure 12 shows the trend of the demand as has been forecasted by these state governments.

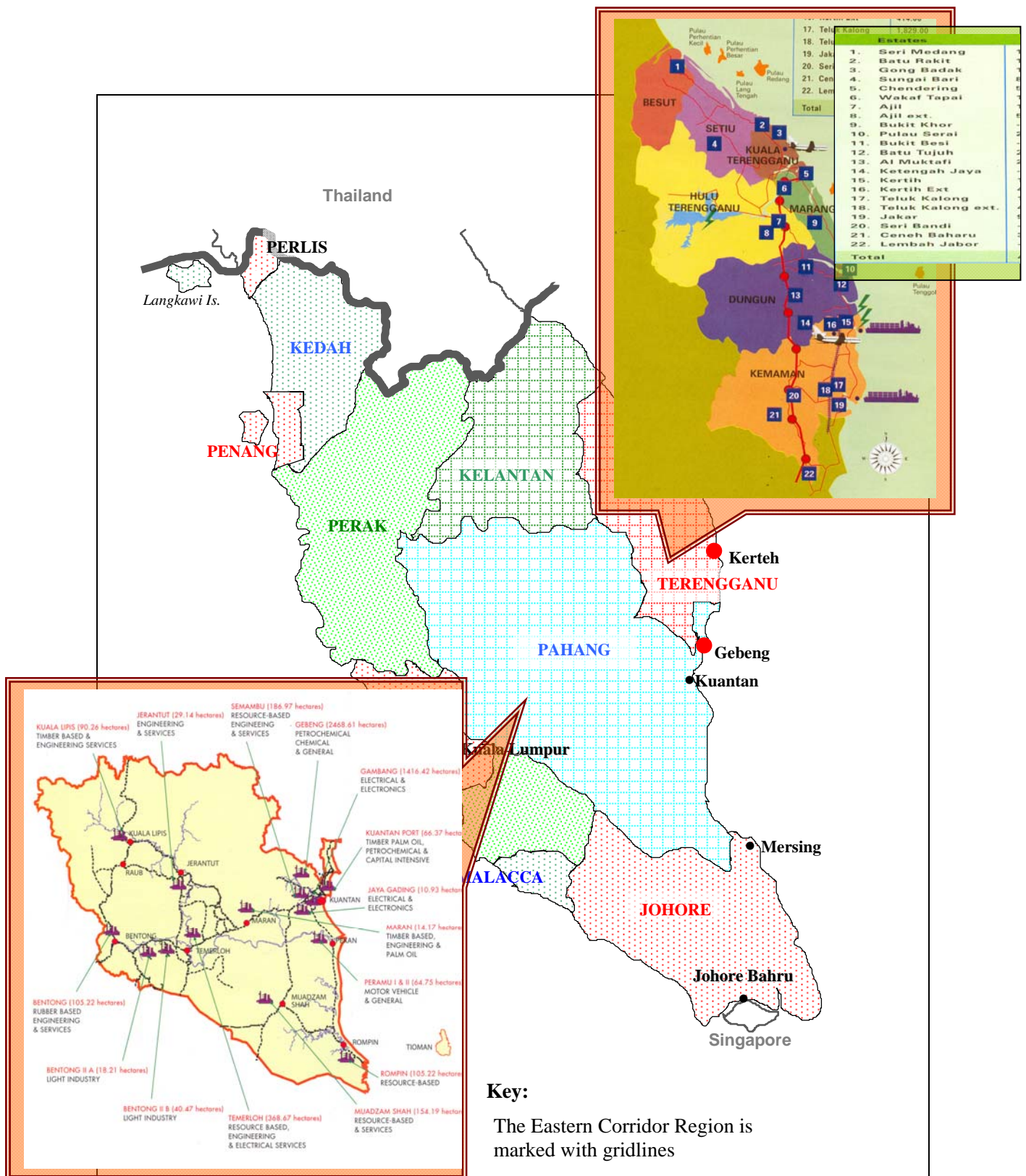


Figure 10 : Malaysia – Industrial Locations in Terengganu and Pahang

Source : Drawn by author (based on information in Terengganu (2002b, p.50), State of Pahang (undated).

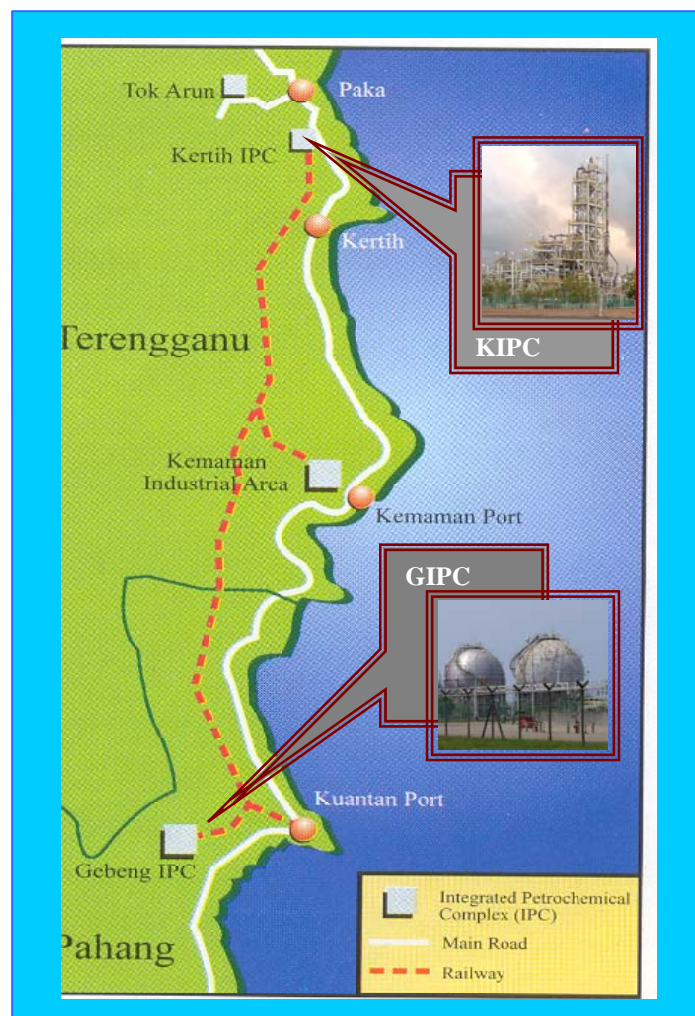


Figure 11 :Location of Kerteh and Gebeng Integrated Petrochemical Complexes

Source : Courtesy of Pahang SEDC (emphasis added).

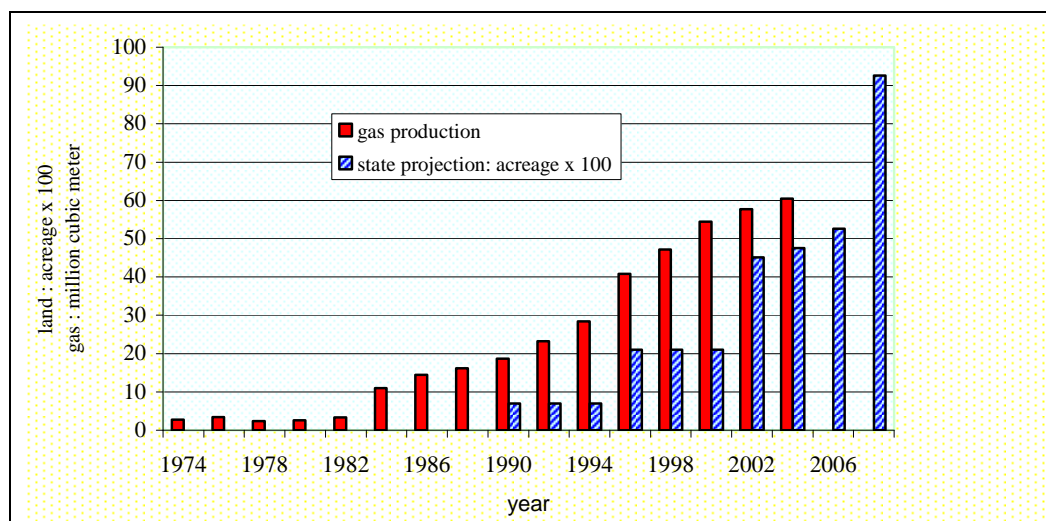


Figure 12 : Malaysia – State Projection of Government Land Takers for Petrochemical Use 1990 – 2000

Source: own analysis (from data in Appendix A)

4.3 MECHANISM REGULATING THE SUPPLY OF INDUSTRIAL LAND

In Malaysia, the Constitution provides that land disposal and land development approval are entirely the prerogative of State Government. The law divides land into two categories, the State and alienated land. This implies that the State Government initially owns all land freeholds is authorised to reserve Government land for public purposes or dispose of it by selling it to any eligible person or party.

As far as land use is concerned, private land is subject to ‘express conditions’¹⁰. It can be utilised either for agriculture, building or industry. Conversion of land use is subject to State Government approval. Private land ownership change is allowed by following conveyance procedures at the Land Office. As an aside, the compulsory land purchase law¹¹ allows the National Government or any party to force purchase of land for

¹⁰ The National Land Code provides that private land is subject to conditions of use determined by the State Government and which are written on the land title, following a local plan or land use zoning.

¹¹ Section 3 of the Land Acquisition Act 1960 allows any party either government departments, business entities, non-governmental organisations or individuals to ask State Authorities to compulsory purchase the land they require.

public or commercial use. In short, the supply of land for industrial purposes may be through:

- (a) State Government land disposal;
- (b) private land conversion; or
- (c) government or private initiative compulsory purchase.

Adams (2004), van der Krabben (1995) and Healey (1992a) argue that land supply is linked strongly to institutional factors. In Malaysia, matters related to land are the state governments' prerogative (Good, 1978). 'Land matters' are defined by Article 91¹² of the Constitution as 'rules and regulations relating to land, land-use and land administration, including for mining, agriculture and forestry'. The formal institutional framework in Malaysian land administration is divided into three categories, namely, the power structure, laws and statutes, and the administration system.

4.3.1 The Power Structure

Articles 74, 76 and 91 as well as the case of *East Union (Malaya) Sdn. Bhd. vs. Government of The State of Johore & Government of Malaysia*¹³ define the power structures applicable to the Malaysian land and tenure system. These rulings affirm that land matters are vested in the Ruler or Governor of the State and the State Legislature. The court case also emphasises that the Central Government may, by virtue of Article 76(4) of the Constitution, with consent of the National Land Council, legislate a uniform law and policy with respect to land matters for all states in the Federation (Teo and Khaw, 1987; Good, 1974).

¹² 'Article' is hereafter used to refer to clauses in the Federal Constitution. An extract of the Constitution is in Appendix B.

¹³ The company (the appellant) challenged the validity of State Government repossession of its land. The issue at hand was that the land, a 7,470 rubber estate, was in default of the quit rent. The Land Office of Kota Tinggi confiscated the estate under section 100 of the Land Code. The appellant claimed that the law which was created by the Parliament to be implemented by the State Authorities, would be inconsistent with the Constitution and so *ultra vires*. The main argument was that if the matter is a state concern, the laws should be legislated by the State Assembly. Appeal was dismissed [MLJ, 1981, 1, 151 – Federal Court].

4.3.1.1 The National Land Council

For two reasons, the National Land Council (NLC¹⁴), can be considered the highest authority in the Malaysian land and tenure system. **First**, constitutionally, no laws pertaining to ‘land matters’ shall be put before Parliament prior to the Council’s approval. **Second**, decisions made by the Council are binding on both the Federal and State governments. The Council which convenes at least once annually is chaired by a central government cabinet minister (normally the Prime Minister or Deputy Prime Minister). The Council is comprised of ten voting members representing the central government, nine of whom are central government cabinet ministers, the other being the Attorney General. The rest of the council consists of eleven voting members who are Chief Ministers of eleven states in West Malaysia and two non-voting members representing the two states in East Malaysia (Ishak, 1998). The council’s composition, constitutional backing and chairmanship indicate the importance of the Council in the Malaysian legislative system.

Records inspected at the Council Secretariat indicate that in a five-year period (between 1996 and 2000), the Council held six meetings to deliberate and adopted 41 propositions and reports on land issues¹⁵. Matters that were discussed at the Council are summarised in Table 6 and divided into five categories as shown:

Table 6 : Malaysia – Proceedings of the National Land Council 1996 – 2005

Categories	Number of papers
Allocation of land to the Central Government	17
Proposals for law amendments	9
Proposals for a uniformed land policy	6
Reports on project implementation	5
Adopting reports from subordinate councils (the National Forestry Council and National Mineral Council)	3
Proposal for a uniform Land Office Administrative Procedure	1
Total	41

Source : Own analysis (based on information in Appendix C)

¹⁴ The abbreviation: ‘NLC’ is hereafter used.

¹⁵ See summary of the resolutions in Appendix C.

The proceedings of these six meetings can be divided into the following issues:

Table 7 : Malaysia – Issues Deliberated at the National Land Council 1996 – 2005

Issues/Problems	Number of papers	Number of problems solved
Disputes between Federal and State Governments	17	9
Problems in Land Office administration	7	On-going supervision
Economic and development policies	7	7
Protection for landowners'/house buyers' rights	5	5
Law enforcement	1	1
Adopting reports from subordinate councils (the National Forestry Council and the National Mineral Council)	3	3
Updating land laws	1	1
Total	41	26

Source : Own analysis (based on information in Appendix C)

Minutes of the meetings summarised in Table 7 show that some issues failed to be resolved by the Council and are still outstanding. Most of these, as indicated by the table, were related to disputes between the Central and State Governments. It is likely that State Governments have utilised the NLC as a venue to protect their rights against the Central Government. The second most important item in the Council's agenda regards problems at the Land Office and matters related to the supply of land for economic development.

The NLC, as implied by the above discussion, is responsible for overseeing the performance of the Land Office throughout the nation, and the Central Government has commissioned the Ministry of Natural Resources and Environment to carry out projects to upgrade services at the Land Office. The projects reported to the Council are as follow:

Table 8 : Malaysia – Government Projects Supervised by the National Land Council

Project	Objectives	Project Costs (RM)
Computerisation of the land registry	To create a paperless land registry system	159,673,642 [#] 118,619,833*
National Land Information Infrastructure System	To develop a system to enable geospatial information to be accessed from any public office or other subscribed outlet	36,052,402* 55,000,000 [@]
Computerised Cadastre Database	To expedite the land information updating process at the Survey and Mapping Department by introducing a system where records in the headquarters can be updated from remote stations in real time	499,967,000*
Modernisation of the Land Office	To integrate all systems which have been developed, as above	27,230,513* 200,000,000 [@]
Total Project Costs		1,096,543,390¹⁶

Source: Ministry of Natural Resources and Environment

4.3.1.2 The State Authorities

Power to execute land laws is vested in the state authorities. State authority is defined in *Hanisah v. Tuan Mat*¹⁷ as “His Highness in Council”. “His Highness in Council” means ‘His Highness acting in accordance with the advice of the State Executive Council (EXCO)¹⁸’. The EXCO, known as the State Cabinet in Sabah and Sarawak – as it is instituted by Articles 80 and 81 of the Federal Constitution – is the

[#] Expenditure in the 7th MP (1996-2000)

* Expenditure in the 8th MP (2001-2005)

[@] Estimation for the 9th MP (2006-2010)

¹⁶ Note: for comparison, this figure is about 60% of the project cost for construction of the Petronas Twin Towers which was ca.RM1.8billion.

¹⁷ The abbreviation ‘EXCO’ is hereafter used.

¹⁸ (a) The High Court of Kota Bharu held that Hanisah (the appellant) was not Malay. Hence she was disqualified from owning land reserved for Malays. The appellant was born Chinese but was adopted by and grew up in a Malay family. She managed to secure a ‘Malay’ certificate from the Sultan of Kelantan. The Federal Court held that (a) the issuance of the Malay certificate was made by the ‘Sultan in Council’. Thus, it was constitutional and no Court can question or revise it, (b) the Sultan (Ruler) in Council means His Highness’ decision in accordance with the advice of the State Executive Council, (c) The Ruler in Council and State Executive Council are two distinctive bodies. Appeal allowed [MLJ, 1970, 2, 213 – Federal Court].

(b) The case applies only to land governed by Malay Reservation laws. Therefore the Court ruling has no implication on land transfer among non-Malays or foreigners outside the areas designated as Malay reservation. See Ishak (1998).

highest State Government executive body. In all states, the EXCO is presided over by the Chief Minister. This body consists of politicians who have been elected to the state legislature (the number varies) as well as three top state officials. The *ex-officio* members are the State Secretary, State Finance Officer and State Legal Advisor.

4.3.1.3 The Statutes of Laws

Teo and Khaw (1987), Wong (1975) and DGLM (2002) emphasise that the main system of legislation governing land matters in Malaysia is the National Land Code (the Code¹⁹). This literature and cases, suggest that the Land Code may be defined as “a uniform land and tenure law applicable to the Malay States after 1st January 1966, replacing individual states’ land and tenure legislations”. By enforcement of the Code in 1966, 43 laws and statutes which were enacted prior to 1965 were repealed²⁰. However, the land laws which are applicable to the two states in East Malaysia, the Sarawak Land Code and Sabah Land Ordinance, were not affected and are still in force²¹. Among the main characteristics of the Code are:

- (a) It is State Law but legislated by the Federal Parliament. However, no change can be proposed to the Parliament without NLC consent²²;
- (b) It has enabling clauses for the creation of subsidiary legislations or by-laws, by legislative bodies²³, the King, the Minister in charge of land and the State Authorities²⁴. There are three types of subsidiary legislations in force. These are:
 - (i) **Legislations that are separated, but shall be read together with the Code.**
Some of the statutes under this category were originally part of the Code, either the present or previous Land Code²⁵. Others were created as are

¹⁹ Act No. 56 of 1965. The term ‘the Code’ or ‘the Land Code’ are commonly used in various literature and during litigation.

²⁰ Sec. 438 and 11th Schedule of the Code.

²¹ Article 95D of the Constitution.

²² Article 91 of the Constitution.

²³ Parliament or State Assemblies.

²⁴ Sections 10, 14, 438, 439, 440 of the Code.

²⁵ FMS Cap 138.

required by the Code. Among examples are the Land Code (Penang and Malacca) Order 1965, Land Acquisition Act 1960, Strata Titles Act 1985 and National Land Code (Survey Fees) Order 1965;

- (ii) **State Land Rules** (SLR²⁶). The SLR is created by individual State Authorities and mainly contains (a) procedures for application for government land, restrictions on change of land use as well as restrictions of interest, (b) forms and types of records which are not provided by the Code and (c) rates for quit rents, land premia and other fees. A premium is a payment to the State government for government land disposal or land development application by way of change in land use restriction;
 - (iii) **Special by-laws**. This type of legislation is categorised as *generalia specialibus non derogant* law or subsidiary laws that override the parent laws. Laws related to the Malay reservations, aboriginal rights, mining, sultanate land, customary tenure as well as Land (Group Settlement Areas) Act are among the examples²⁷.
- (c) Decisions made by any authorised persons or parties by the Land Code can only be challenged, by the High Court and any Court above in the judicial hierarchy;
- (d) It contains details on:
- (i) **The powers and duties** of the NLC, the Minister in charge of land, the State Authorities, the Director General of Lands and Mines, the Director General of Survey and Mappings, the State Director Lands and Mines, the Registrar of Titles, the State Director of Survey and Mapping, the Land Administrator, the Settlement Officer and the High Court.
 - (ii) **Quit rent** (annual land tax payable to the Land Office that is based on the type of land use as approved by the State Authority. The basis of calculation of this rate varies from state to state. The Code allows the State Authorities to revise the quit rent rate every ten years).

²⁶ The abbreviation 'SLR' is hereafter used.

²⁷ Section 4 of the Code.

- (iii) **Government land disposal.** The Land Code calls this ‘land alienation’. It covers matters related to government land disposal, temporary occupation licenses, permits for the removal of rock material, imposition of land use restrictions as well as creation and revocation of public utility and reserved land.
- (iv) **Land registration.** Provisions related to land registration deal with land registration, conveyance, security of loans and mortgages, restraints on dealings and restrictions of interest.
- (v) **Land development approval.** Restrictions and conditions regarding changes of land use, land partition, subdivision and amalgamation are dealt with by this section.
- (vi) **Cadastral survey.** This section deals with land measurement, physical boundaries and preparation of final titles.
- (vii) **Offences under the Code.**
- (e) **15 schedules and 106 forms.** Schedules are supplementary provisions which form part of the Code. They include a detailed explanation on certain provisions under the Code, some special provisions about land registered before the commencement of the Code, a set of procedures for the computerised land registration system and forms to apply during execution of provisions of the Code. The forms are grouped into:

Table 9 : Malaysia – Forms in the Land Code

Groups²⁸ of Forms	Total	Description
Communication between the High Court with general public	2	These are notices of sale by Court
Communication between Survey Department with general public	4	Most of these forms are used by the Survey Department when to carry out land boundary survey and marking.
Standardised record keeping format	8	Forms within this group are used to: <ul style="list-style-type: none"> • enter additional information onto the land titles; • transfer the entries in the paper based record to the computerised land registry; • create a statutory roll book
Communication between the Land Office with general public	20	Most of which are: <ul style="list-style-type: none"> • Land Office instructions to landowners; • summons to suspect of land laws offenders; and • formats for public announcements
Proof of rights	29	This includes format of land titles, permits, licence and right of occupation.
Communication between general public with the Land Office	43	Among forms under this category are: <ul style="list-style-type: none"> • instrument of dealings (e.g. transfer of ownership); • format for a standardised agreements between financial institutions and landowners; • application forms.
Total number of forms	106	

Source: Own analysis

²⁸ The groupings are for purpose of description only. In some instances, there are no clear boundaries between matters in the groups. For example, the Form 16E which is used in communication between financial institution and landowner to notify a default in loan repayment also functions as proof of rights when a money lender apply to the Land Office or High Court to sell land by auction.

4.3.2 The Administrative System

The front-end of the Malaysian land administrative system is the Land Office. Decisions made by the NLC and EXCO are mostly passed down to be executed by the Land Office. This sub-section will describe the position of the Land Office in Malaysian public administration (MPA)²⁹. A brief description of the functions of the Land Office follows.

4.3.2.1 The Land Office and Malaysian Public Administration

Prior to further discussion, it will be beneficial to briefly describe the setup of the MPA. The root of the administrative system is Part X of the Constitution³⁰. The Constitution divides the MPA into Federal and State Services. An appointee to each service is answerable to their respective King or Ruler³¹. In other words, the responsibilities of government officials as well as the departments to which they are attached shall be in line with the Ninth Schedule of the Constitution. The system is derived from arrangements which have been observed or honoured over generations (Good, 1978)³².

Regarding hierarchy, the most senior MPA official, regardless of the type of service, be it federal or state, administrative or professional, is called a 'premier grade officer' (PGO). A key government official in Central, State and Local Governments, PGO include the Chief Secretary to the Government, Secretary Generals, Director Generals, State Secretaries and other key appointments.

²⁹ The abbreviation: 'MPA' is hereafter used.

³⁰ Articles 132-148 of the Constitution.

³¹ Articles 132(1)(c), 132(1)(g), Clause 6(c) of List I and Clause 7(a) of List II of the Constitution.

³² A brief history of the MPA is in the Endnote.

At the state level, some state officials are equivalent in rank to, if not more senior than, some heads of Central Government departments. In state administration, where the State Secretary is the highest ranking government official, the State Director of the Economic Planning Unit (SEPU) is the Deputy State Secretary. While the position of State Secretary is equivalent in rank to most Federal Ministry Secretary Generals, the Director of the Economic Planning Unit and the Director of Lands and Mines (SDLM) are equivalent in rank to some Federal department Director Generals.

Under section 11 of the Land Code, state authorities are authorised to sub-divide their territories into districts. Since British administration, the Land Office at the district level has been part of the District Office³³. This implies that the Land Administrator, who is also the District Officer, is considered the most senior official in the district (Heussler, 1981). This also signifies that the Land Office ('District and Land Office' as it is also known), is the centre of district-level government administration. Throughout the nation, there are 111 District Offices³⁴.

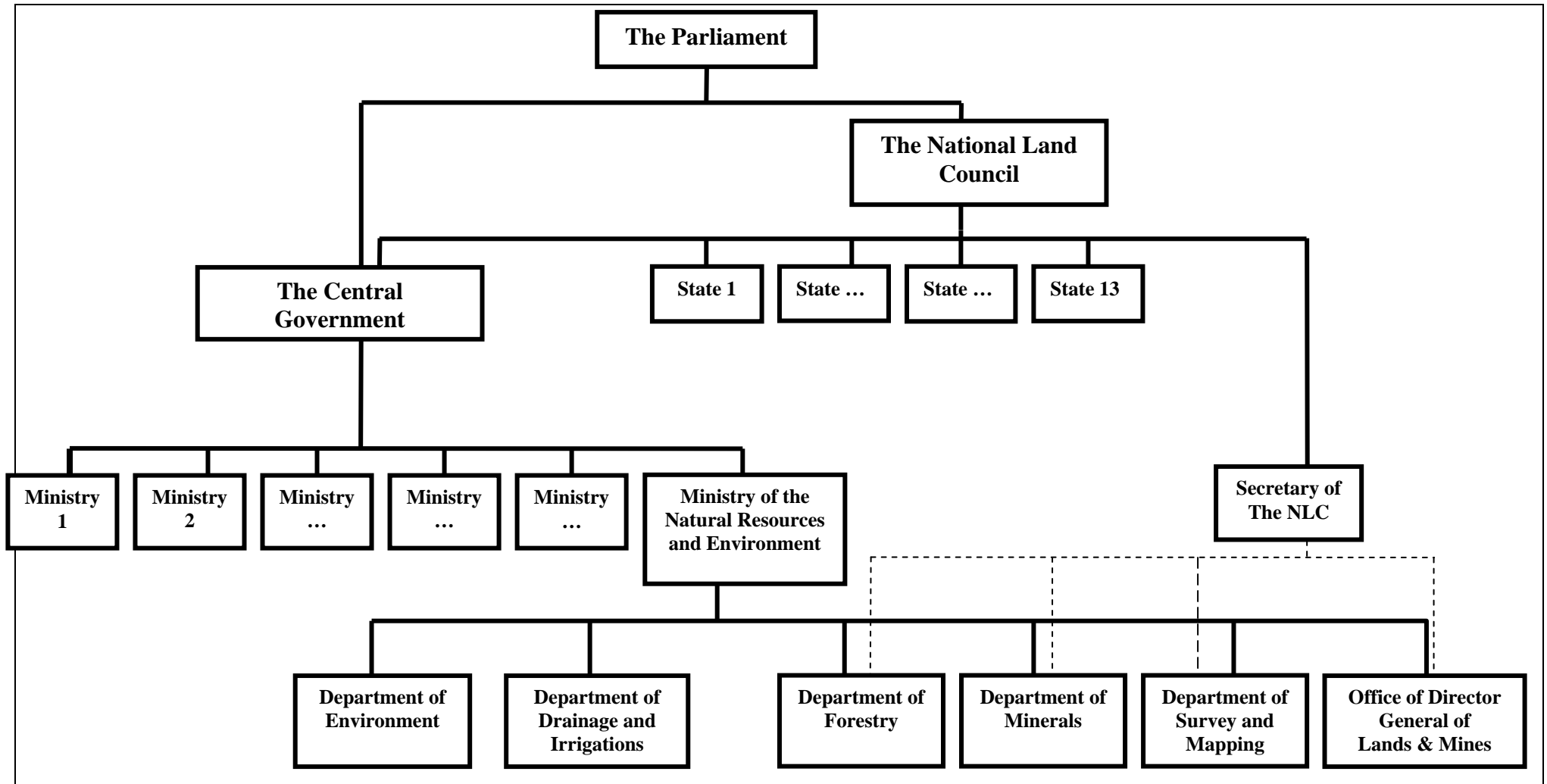
4.3.2.2 Relationship between the Land Office, NLC and Functions of the Government

Figures 13 and 14 depict the position of the Land Office in the MPA and show the relationship between the NLC and the entire legislative and administrative system at the Federal and State Government levels.

³³ Except in Johore where Land and District Offices are separated.

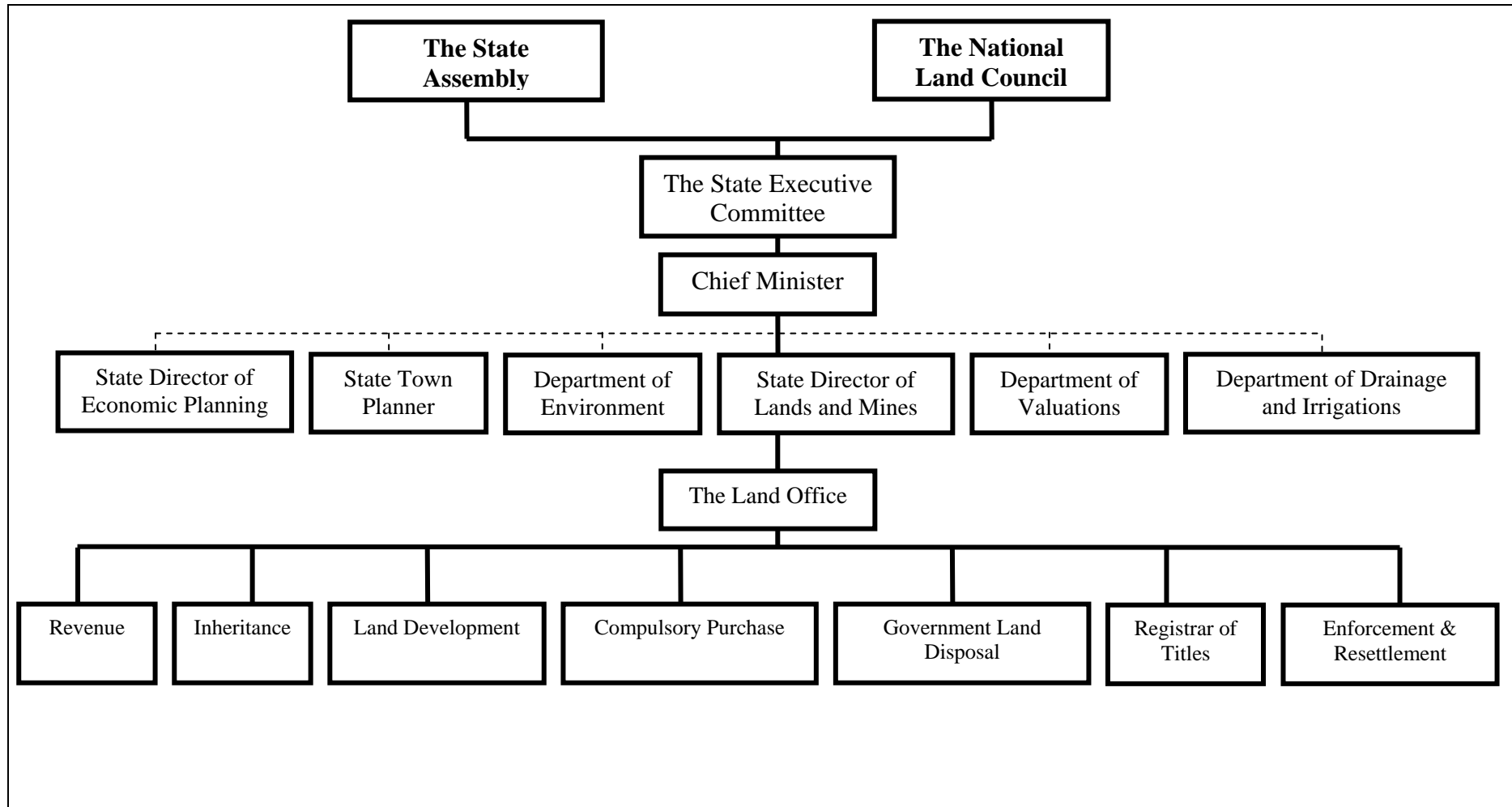
³⁴ See Endnote for the exhaustive list.

Figure 13 : Malaysia – Power Structure in Land Legislative and Administrative System at the Federal Level



Source : Own analysis

Figure 14 : Malaysia – Power Structure in Land Legislative and Administrative System at the State Level



Source : Own analysis

4.3.2.3 Functions of the Land Office

While the District Office co-ordinates district-level administration and infrastructure development, the Land Office has specific tasks that are outlined in the Land Code. DGLM (2002), Yidris (2003), Alinah (2003) and the minutes of NLC meetings³⁵ indicate that the Land Office functions to process applications, carry out investigations, and conduct hearings related to its seven main roles. These are:

- (a) agent for government land disposal;
- (b) registrar of titles;
- (c) revenue collector;
- (d) custodian of government and reserved land;
- (e) mediator between parties in the compulsory land purchase;
- (f) land law enforcer; and
- (g) inheritance distributor.

4.3.2.4 Land Office Administration

At the Land Office, day-to-day land matters are handled in accordance with the Code, SLR and various other directives. The legislation also details a procedure for how to run the Land Office administration including how to create, maintain and manage information and records. In a Land Office, records are distinguished as containing administrative or statutory information. The following table includes examples of the records maintained at the Land Office.

³⁵ NLC Proceeding Paper No. MTN.Bil.5/54/1997 (see Appendix C).

Table 10 : Records Maintained at the Land Office

Classification	Establishment under:	Description
A. Statutory		
Computerised land title database	Section 5B of the Code	This is a computer database of land titles that replaces the paper title deeds that have been used for hundreds of years. The system follows a model from Sweden. Nevertheless, for reference, official printouts are issued to landowners.
Land titles	Section 85-90 of the Code	A land title is a legal document and evidence of ownership. Each allotment is issued two identical documents. One is original and kept by the Registrar of Titles. The other is a copy and is issued to the landowner. Even though the Registry has been computerised, backup titles are maintained at the Registry in paper form.
Roll books for: (a) government land applications (b) development approval applications (land conversion, sub-division etc.)	State Land Rules	The SLR requires creating this type of record. A roll book is kept for each <i>Mukim</i> (sub-district). Information in the book is very brief. The details are kept in individual application files.
Registration of 'land dealings' roll book (defined as 'Presentation Book' in the Code)	Section 295 of the Code	This category of roll book records the details of applications for registration of property transactions (e.g. conveyances and security of loans). Verification process prior to registration is sometimes long. Thus, standard practice is that financial institutions and legal firms normally consider a registration 'done' if the details are successfully registered in the Presentation Book. Therefore, if the application concerns a loan from bank, the money can be duly released.
Maps (commonly called 'litho sheets')	Section 399 of the Code	The Code only recognises maps and plans which are produced by the Director General of Survey and Mapping (DSM). The Land Office is required to maintain three copies of the plans in the form of 'litho sheets'. These are for: (a) public inspection; (b) official reference 1 – to be updated according to changes made by the DSM; and (c) official reference 2 – to be updated according to applications or proposals for change in legal status of land.

Classification	Establishment under:	Description
General instructions on land office record maintenance	Section 375 of the Code	This provision requires the Land Office and the State Director to keep: (a) the land titles that have been created by the Land Code and previous laws; (b) all instruments for dealings (forms, etc.), other statutory forms, hearing notes, statutory record books and other documents created by the Code. No record can be removed or destroyed without a High Court order, or State Authority or State Director's instruction.
B. Administrative		
Files	Order No. 3 of the Administrative Orders 1974 Official Secret Act 1972 Archive Act 1966	These legislations contain: (a) definitions of official and classified documents; (b) procedures for creating, storing, handling, recording, maintaining, moving, transporting and disposing the official and classified documents.

Source : Interview with Mr Supuddin (Director of Research and Planning, Dept of Director General of Lands and Mines) and Mr Abu Kassim (Former State Chief Settlement Officer, Negeri Sembilan).

4.3.2.5 Work Process: A Generic Approval Process at the Land Office

Basically, there is a three-step process for securing an approval, whether for obtaining government land or, for changing land use. The first step is to file an application at the Land Office. The Land Office then submits the application to EXCO through the State Director of Lands and Mines. The final step is the EXCO consideration (Ishak, 1998). Ismail (1994) describes the industrial land development process in more detail, as follows:

- (a) **The site acquisition stage.** At this stage, one can:
 - (i) get approval to hold landed property from the Foreign Investment Committee (FIC³⁶). This stage applies only to non-residents;
 - (ii) apply for an industrial licence from Ministry of International Trade and Industry (MITI³⁷);
 - (iii) apply for land from the State Authority or acquire it by private dealing; and
 - (iv) register the property at the office of the registrar of titles.
- (b) **At the beginning of construction,** development plan approval needs to be sought and gained from local authorities.
- (c) **At the completion stage,** applicants apply for a certificate of fitness for occupation from local authorities.

In addition to these stages in land development approval, 'A Manual On Land Code', a reference handbook for use in land offices, describes in detail the procedure followed before an application is submitted to the EXCO. The following table summarises this procedure:

³⁶ The abbreviation 'FIC' is hereafter used. The FIC is a permanent committee under the Prime Minister's Department and is comprised of representatives from various Federal ministries.

³⁷ The abbreviation 'MITI' is hereafter used.

Table 11 : Malaysia – Land Application and Land Development Approval Procedure

Step No.	Procedure to Follow	Action to Take
1	Land Administrator (LA) receives an application	1. Verify whether: <ul style="list-style-type: none"> (a) it uses the forms prescribed by the law (b) a plan of the land is attached (c) all fees are paid (d) written consent from all land owners and all interested parties is attached 2. Direct a Settlement Officer (SO) to carry out an investigation – on site and by land records
2	SO reports to LA	(a) Indicates which department the application is to be referred to (b) Indicates approximate market value of the land
3	LA refers to the related departments	Among the departments to which the applicant may be referred are: <ul style="list-style-type: none"> (a) Town and Country Planning Department (b) Local Authority (c) Department of the Environment (d) Public Works Department (e) Drainage and Irrigation Department (f) Valuation Department (g) Agriculture Department (h) Health Department (i) Labour Department (j) Civil Aviation Department (k) National Electricity Co. (l) Malaysian Telecom Co. (m) Estate Land Board
4	LA prepares a paper for EXCO consideration	Among other items, if the application is recommended to be considered, the paper shall include a proposal for: <ul style="list-style-type: none"> (a) the rate of 'premium' to be paid; (b) the rate of revised rent (tax);
5	If application is approved, LA notifies the applicant	The notification of an approval shall include: <ul style="list-style-type: none"> (a) a statement of new type of land use; (b) the amount of payment due; (c) a request to return the land title to the registrar of titles.
6	If the owner agrees to the new conditions of land use, pays the dues and returns the land title, LA updates the registration.	

Source : DGLM (2002, p.91-93).

4.3.2.6 Issues at the Land Office

Proceedings of the NLC suggest that all issues regarding Land Office administration have been given considerable attention by the Council. The tabulation in Table 11 shows that decision-making at the Land Office is not straightforward. Figures on Page 74 in turn indicate that a substantial sum of money has been allocated to upgrade the Land Office information system. In fact, problems at the Land Office have been under the spotlight for years. For example, the Public Complaints Bureau received 553 complaints about the Land Office in 2000. The number increased to 805 in 2001 and as of June 2002, the Bureau had received 454 complaints. The issue was fiercely debated in Parliament on 30 and 31 October 2002 (Yidris, 2003) as well as thoroughly discussed at the Cabinet Ministers' Meeting on 5 November 2003 (Musalmiah, 2004).

Figures in Table 12 related to arrears and failure to collect quit rent may explain why special attention has been given to the Land Office. These figures demonstrate that there is cause for concern.

Table 12 : Malaysia – Arrears in Application for Land, Licences, Conversions of Land Titles and Uncollected Revenues 1992 – 2002

Arrears	1992	2002	+ / -
Application for government land (number of applications)	29,915	28,082	- 6%
Application for a temporary occupation license (number of applications)	89,687	25,896	- 71%
Application for a rock material removal license (number of applications)	1,929	1,201	- 38%
Conversion of titles ³⁸ (number of titles)	1,700,000	2,940,075	+ 73%
Uncollected quit rent (RM)	202,000,000	677,000,000	+ 235%

Source: Yidris³⁹ (2003, p.7, column '+/-' added)

³⁸ From provisional to final title after land boundaries are completely marked and computed by the Survey Dept.

³⁹ Yidris Abdullah was Director General of Lands and Mines 2001-2002 and Secretary General of Ministry of Land and Cooperative 2002-2004. He was appointed as Special Advisor to the Government on Land Matters in 2005.

4.4 SUMMARY – THE LAND SUPPLY, LAND OFFICE AND INSTITUTIONAL FACTORS

This chapter started with the argument that Malaysian economic development, including the petrochemical industry, has been driven by the NEP. The policy has a defined political and social agenda, especially aiming to tackle ethnic conflict and income disparity between regions and ethnic groups. This chapter also contended that the Malaysian political framework and public administrative system have a strong influence on land supply. The Malaysian administrative and legislative systems have also given particular attention to matters related to land. Significantly, the NLC is constitutionally created to be a body that is superior to Federal and State Authorities.

The preceding discussion suggests that the Land Office, at which application for industrial sites are processed, is possibly in a predicament. Even though the Land Office attracts high-profile attention, statistics suggests that problems remain. This justifies the proposition that the present study should give specific attention to the Land Office. Therefore, this chapter strongly suggests that the institutional environment plays a substantial role in land supply. It is apparent that the organizations which govern land supply have a strong relationship with the existing institutional environment.

In addition, the study emphasises that institutional environment is the focal point of this research. Thus, the role of government deserves much attention. The Chapter concludes that the Land Office functions as the core component in Malaysian land administration system. Therefore issues and problems related to the Land Office have been given considerable attention by various parties, including the Parliament, the Cabinet Ministers, the National Land Council and the Public Complaints Bureau. The subsequent chapter will review the application of an NIE approach in empirical research and recommend the most appropriate research methodology for explaining the development of the petrochemical industry, in particular discussing a case study which the roles of the institutional environment, governance and the Land Office are seen to be dominant.

CHAPTER FIVE – RESEARCH METHODOLOGY

5.1 INTRODUCTION

To meet the four research objectives set out in Chapter One, discussions in preceding chapters relate land development issues to institutions. Preceding chapters also discuss the relationship between industrial land supply and land price, the institutional environment and governance. The aim of this chapter is to identify which research methodology will best answer the research questions associated with these issues. For that reason, this chapter will discuss the concepts of research methodology, research method, epistemology and knowledge. Therefore, after the most appropriate methodology has been identified, a research method will be proposed.

5.2 THE CONCEPT OF RESEARCH METHODOLOGY

A fundamental problem in the field of research methodology has been the inconsistent definition of ‘methodology’ (Wynekoop and Russo, 1997). In *The Concise Oxford English Dictionary*ⁱⁱ ‘method’ is defined as “a particular procedure for accomplishing or approaching something”. According to Wynekoop and Russo (1997):

“the word [methodology] is sometimes used to refer to the methods and general approach to empirical research of a particular discipline, or even a particular large study, although the term ‘research techniques’ is perhaps more apt in this context”ⁱⁱⁱ.

The Oxford Dictionary of Philosophy^{iv} however, defines methodology as:

“The general study of method in particular fields of enquiry: science, history, mathematics, psychology, philosophy, ethics”.

In addition, *The Oxford Companion to Philosophy*^v defines methodology as:

“ The philosophical study of scientific method. The central question arising from this study is how to interpret methodological statements. There are three alternatives: description, convention, prescription. Under the first option, methodological statements are either interpreted as descriptions of scientific practice, or methodology is seen as a ‘science of science’... ”.

Based on the above definitions, this study will use the term ‘methodology’ to refer to the philosophical and theoretical basis on which an empirical investigation is carried out. The

term ‘method’, in turn, will be used to explain procedures for accomplishing an empirical investigation.

5.3 RESEARCH METHODOLOGY AND EPISTEMOLOGY

Probably the most appropriate approach when beginning a discussion on research methodology is to talk about epistemology. Encyclopædia Britannica defines it as:

“the study of the nature, origin, and limits of human knowledge. The term is derived from the Greek episteme (“knowledge”) and logos (“reason”), and accordingly the field is sometimes referred to as the theory of knowledge”^{vi}.

In ‘A Dictionary of Philosophy’, epistemology is defined as:

“The branch of philosophy concerned with the theory of knowledge. Traditionally, central issues in epistemology are the nature and derivation of knowledge, the scope of knowledge, and the reliability of claims to knowledge” (Flew, 1984, p.109).

To appreciate the above definitions, subsequent discussion will be arranged in the following sub-sections (6.2.2 to 6.2.8):

- (a) debates on the concept of knowledge; and
- (b) issues and problems in petrochemical industrial land development – an epistemological perspective.

5.3.1 Debates on the Concept of Knowledge

For hundreds of years, philosophers have been debating how a proposition can be claimed to be ‘knowledge’. Rationalists, who are associated with Plato (ca.427-348 BC), Descartes (René Descartes, 1596-1650) and Newton (Sir Isaac Newton, 1642-1727), believe that ideas and reasons that are built-in in our minds are the only source of knowledge. This school of thought believes that truth must be explicable and must be in one system. Arguments must be based on scientific evidence, variables must be observable and testable and analysis must be quantitative. In the same line of thinking, Popper (Sir Karl Raimund Popper, 1902-1994), who held the principle of the *unity of science*, believed that reliable knowledge can only come from basic observations of factual conditions (Popper, 1978). Thus, to be scientific is to be *objective, truthful and*

neutral. Therefore, being without rational foundation, sources such as religion, culture and social practice are considered untrustworthy (Flew, 1984).

For Popper, observation with a view to gaining knowledge is initiated by creating a hypothesis or set of hypotheses which can be confirmed, modified or rejected. Confirmation of a thesis requires substantial evidence (Holt-Jensen, 1988). On the process of gaining knowledge, Bacon (Francis Bacon, 1561-1626) came out with a model which is termed the ‘inductive process of knowledge’ (Figure 15):

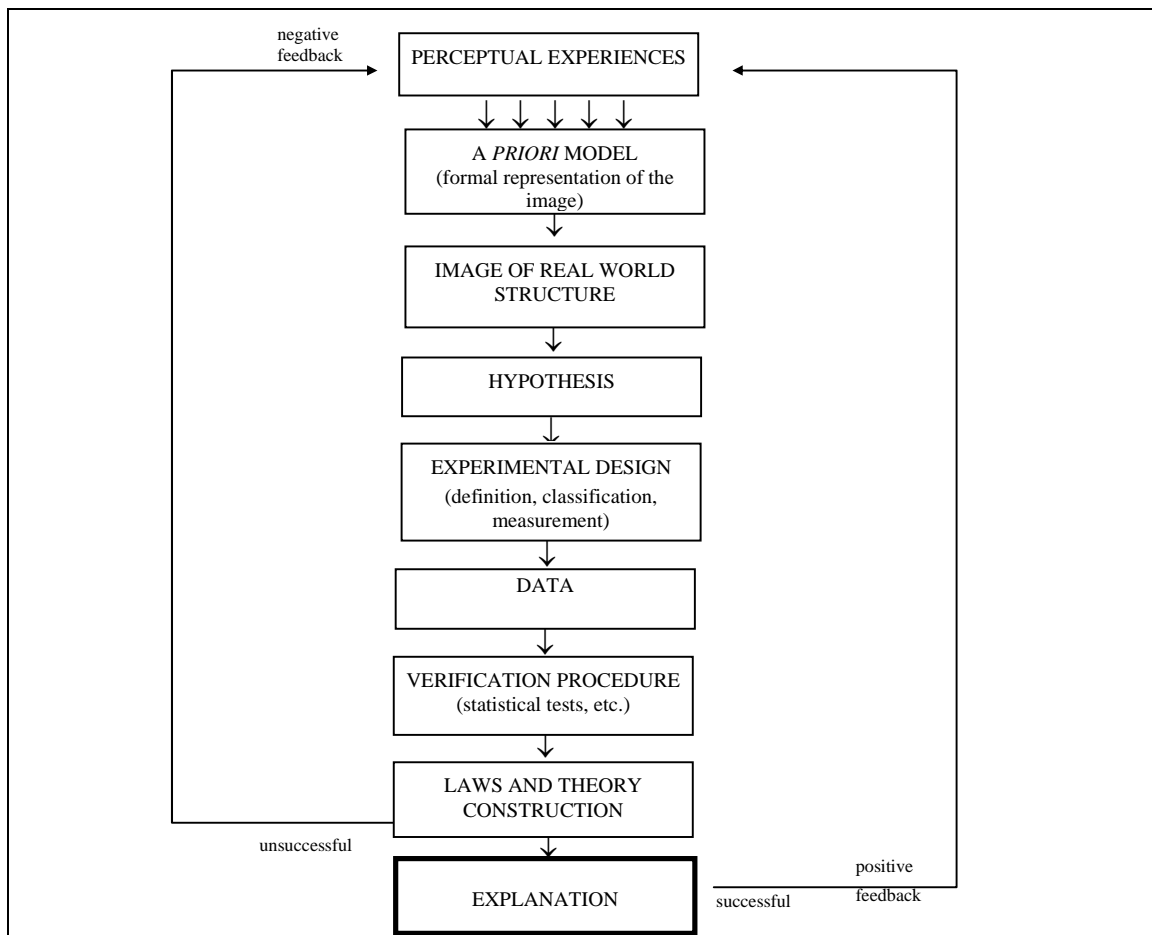
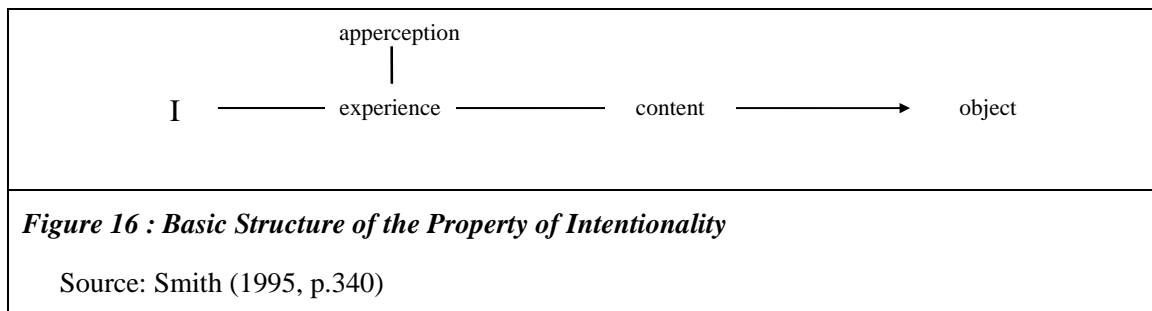


Figure 15 : Hypothetico-deductive Route.

Source: Holt-Jensen (1988, p.53)

Immanuel Kant (1724-1804) in his renowned work, *Kritik der reinen Vernunft* (Critique of Pure Reason), which is considered a turning point in epistemology, questioned the thesis that knowledge must be derived from sense experience. Kant, who believed that human experience has limitations (Roush, 2003), insisted that knowledge is not necessarily derived from experience (Flew, 1984). Dilthey (William Dilthey, 1833-1911) and Husserl (Edmund Gustav Albert Husserl, 1859-1938) are among those whose philosophies are influenced by Kant and argue that natural scientists and social scientists must employ different methodologies. In this approach, the subjective aspects of human experience, such as intentionality and human interaction are also considered a source of knowledge (Sjoberg and Nett, 1968; Holt-Jensen, 1988; Smith and Smith, 1995; Brewer, 2001).

According to Husserl, the major task of philosophy is to question the connection between the constitution of meaning which takes place within the real world and the process of objectification which takes place within science (Gregory, 1978). Since a pure science approach encounters great limitations in explaining human and organizational phenomena (Sandberg, 2005), application of non-empirical methods of study is possible. Therefore, the study of subjective matters such as social values and intentionality is taken into account in the quest for knowledge (Entrikin, 1976). One of the models for studying human action is Husserl's phenomenology. As depicted in Figure 16, this model explores the relationship between intentionality, experience and action.



5.3.2 Issues and Problems in Petrochemical Industrial Land Development – An Epistemological Perspective

Discussions in the earlier chapters conclude that there are four problem areas which directly affect petrochemical industrial land development in Malaysia. These are:

- (a) the relationship between industrial land supply and land price;
- (b) the relationship between industrial land supply and formal institutions;
- (c) the relationship between formal institutions and the institutional environment and governance system; and
- (d) the strategies of petrochemical firms seeking to avoid risks and uncertainties.

As the four themes above suggest, application of a purely science-based approach would not be sufficient to discover the true relationship between industrial land development and non-market factors, especially those related to social institutions. For example, North (1990) and Williamson (2000; 2002) suggest that economic development and market performance have strong connections with the institutional environment and formal institutions. A methodology defined by Entrikin (1976), Gregory (1978) and Flew (1984) as ‘humanist’, which is derivative of Immanuel Kant, will be more appropriate to this study. According to Alfred Schutz (1899-1959), economics is studying and understanding human actions, taking the subjectivism of human agency into account (Oakley, 2000).

Denzin and Lincoln (2005) suggest that over the past quarter century, social and policy science as well as the humanities have been becoming closer to each other in methodology, with an increasing focus on an interpretative approach. This approach, which is rooted in Husserl’s phenomenology, has been further developed by philosophers such as Merleau-Ponty (Maurice Merleau-Ponty, 1908-1961), Heidegger (Martin Heidegger, 1889-1976), and Sartre (Jean-Paul Sartre, 1905-1980) (Miller and Salkind, 2002; Sandberg, 2005). Dissatisfaction with the methods and procedures associated with positivism accounts for the growing popularity of such interpretive approaches (Sandberg, 2005; Denzin and Lincoln 2005).

5.4 QUALITATIVE VERSUS QUANTITATIVE RESEARCH METHOD

According to Denzin and Lincoln (2005), humanism has a strong relationship with constructivism. The constructivism approach believes that '*mathematical entities exist only if they can be constructed*' (Flew, 1984, p.74) or, in other words, that truth is not totally attained from a mathematical procedure or statistical analysis. The humanist approach therefore does not rely upon quantitative research methods, but subscribes to a qualitative approach. The following table compares both approaches:

Table 13 : Qualitative versus Quantitative Research

Points of Difference	Qualitative	Quantitative
The use of statistics	As a way of locating a group of subjects within a larger population.	Findings are reported in terms of the kinds of complex statistical measures or methods (e.g. path, regression, and log-linear analyses)
Capturing individuals' points of view	Can get closer to the actor's perspective through detailed interviewing and observation.	Regard empirical materials produced by interpretive methods as unreliable, impressionistic and not objective.
Examining the constraints of everyday life	See this world in action and embed their findings in it. Thus it is committed to an emic, idiographic, case-based position that directs attention to the specifics of particular cases.	Abstracts from this world and seldom studies it directly. Seeks a nomothetic or etic science based on probabilities derived from the study of large numbers of randomly selected cases.
Securing rich descriptions	Believe that rich descriptions of the social world are valuable.	Deliberately unconcerned with rich descriptions because such detail interrupts the process of developing generalizations.

Source: Extract from Denzin and Lincoln (2005, p.11-12)

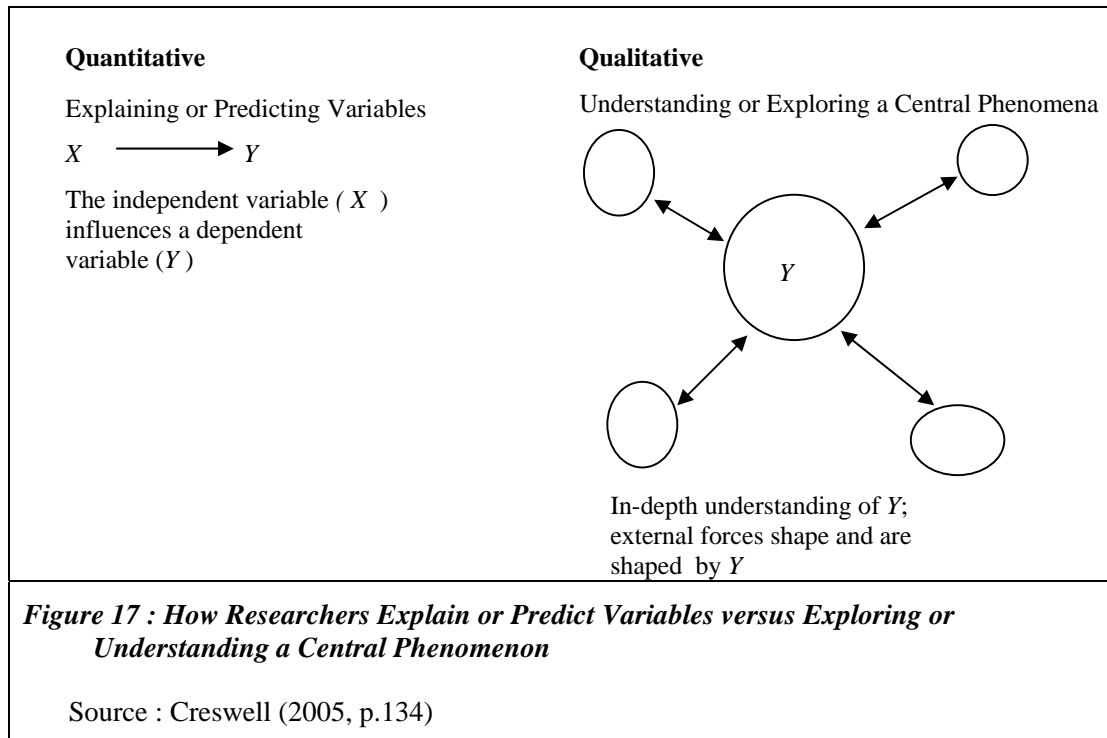
Similar to the differences between qualitative and quantitative research approaches emphasised in Table 13, Creswell (2005) suggests that there are also distinctions in research design between the two approaches. Briefly, these differences are as follow:

Table 14 : Differentiating Between Quantitative and Qualitative Purpose Statements and Research Question.

Subject/Topic	Qualitative	Quantitative
The use of hypotheses	Hypotheses are not used; instead, inquirers use only research questions. Limited statistics are used.	Hypotheses are used and rigorous statistical test are employed.
Variable	The term <i>variable</i> is not used, and instead the inquirer seeks to gather information on a single concept.	Investigator identifies multiple variables and seeks to measure them.
Test of theories	Theories are typically not tested. Instead, inquirer asks participants in a study to share ideas and build general themes based on those ideas.	Researchers often test theories, broad explanations that predict results from relating variables.
Open-ended or close-ended questions	Inquirer uses more of an open-ended stance and often changes the phenomenon being studied or at least allows it to emerge during the study. Research questions may change based on the responses of participants. Thus, qualitative research is more inductive.	Investigator employs a close-ended stance by identifying variables and selecting instruments to collect data before the study begins. Quantitative research questions and hypotheses do not change during the study. Thus, quantitative research is more deductive.
To measure or to learn from	The inquirer does not compare groups or relate variables. Instead, the researcher seeks a deep understanding of the views of one group or single individuals.	The investigator seeks to measure differences and the magnitude of those differences among two or more groups.

Source: Condensed from Creswell (2005, p. 133)

Creswell (2005) suggests that the main difference between qualitative and quantitative approaches concerns whether the researcher seeks to explain or to understand the research subject. He suggests that, while quantitative research aims to explain or predict variables, qualitative research, as proposed by Husserl, seeks to explore issues. Figure 17 illustrates the differences between these approaches.



Some literature divides social scientists into two dichotomous categories, qualitative and quantitative positivists. Moran-Ellis *et al.*, (2006) argue that this partitioning of qualitative and quantitative methods is oversimplified. The fact is, the meta-theoretical assumptions that underpin different paradigms are multiple and complex. Social science therefore embraces many ‘paradigms’ that vary along multiple dimensions, including epistemology, ontology and conceptions of the nature of human action. Thus, a simple dichotomy between qualitative and quantitative is unhelpful. Rather, the use of mixed methods within single empirical investigations is possible. Mixed-methods studies can include ‘standard’ positivistic, quantitative and interpretive-qualitative components, or a mixture of different types of qualitative data. This may include a mixture of positivistic, interpretive, phenomenological and visual data. The use of eclectic approach, applying more than one method, especially in social research, is acceptable (Greene *et al.*, 2001; Moran-Ellis *et al.*, 2006).

5.4.1 Data Collection

Husserl's thesis that was discussed on Page 94 suggests that the humanist interpretive approach is the most suitable for the present study. Locke *et al.* (1998) note that on-site observation, examination of documents and interviews are the main method of data collection in qualitative research. A detailed explanation of each strategy will be discussed below.

5.4.1.1 Observation

Observation has been characterised as “the fundamental base of all research methods” in the social and behavioural sciences and as “the mainstay of the ethnographic enterprise”. It entails a systematic noting and recording of events, behaviours and artefacts regarding objects or environments studied (Marshall and Rossman, 1995). An observer needs to be attentive to all details and take nothing for granted in the area of study. Human activities, physical setting, body language and other gestures that lend meaning to the speech of interview are examples of things to look at (Angrosino, 2005).

Angrosino (2005) suggests that observation can be undertaken in three ways – participant observation, reactive observation and unobtrusive observation. In any form of observation, a three-step procedure needs to be observed in order to increase the level of specificity of an observation.

Table 15 : Method of Observation and Procedure to Increase the Level of Observation Specificity

Method of Observation	
Way of observation	Participant to be observed
Participant observation	Grounded in the establishment of rapport between researcher and the host community and requiring the long-term immersion of researcher in the everyday life of the community.
Reactive observation	Associated with a controlled setting and based on the assumption that the people being studied are aware of being observed.
Unobtrusive observation	Conducted with people who are unaware of being studied.
Procedure to Increase the Level of Observation Specificity	
Steps	Tasks
First Step , descriptive observation	An annotation and description of all details of subject studied, eliminating all preconception and taking nothing for granted (the procedure will yield a large amount of data, some of which will be irrelevant)
Second Step , focused observation	A concentration on well-defined categories of group activity such as religious rituals and political elections.
Third Step , selective observation	A focus on one specific manifestation of a more general category (such as initiation rituals and city council elections).

Source: Summarised from Angrosino (2005, p.729-743)

5.4.1.2 Review of Documents

Review of documents, which is an unobtrusive method of observation, can help the researcher understand the values and beliefs of the observed participants (Marshall and Rossman, 1995) and is an important part of collecting ‘background material’ for ‘real’ analysis (McCulloch, 2004). There are a very wide range of possible documentary sources, including minutes of meetings, logs, announcements, formal policy statements, archival records, books, newspapers, periodicals, works of fiction, official data, proceedings, reports, diaries, letters, autobiographies, training handbooks, organisations’ plans and strategies, and organizational charts (Marshall and Rossman, 1995; Claver *et al.*, 1999; McCulloch, 2004). Documents from virtual source, such as the internet or electronic mail, are a new focus and additional to the paper-based documents (Marshall and Rossman, 1995).

McCulloch (2004) suggests that each type of document constitutes a substantial and significant set of information in its own right. However, there are connections between them. It is also important to note that different types of research may need to concentrate on different types of documents. The quality of these documents is assessed based on their authenticity, reliability and contents, as explained below:

Table 16 : Documents Quality Standards

Quality	Criteria
Authenticity	Genuine Unquestionable origin Consistent; either within the document itself or in relation to the context in which it was produced The version inspected is correct and complete
Reliability	Trustworthy Unbiased Representative
Content	Clear and comprehensive Interpretable within the researcher's theoretical framework

Source: Summarised from McCulloch's (2004, p.41-47).

5.4.1.3 In-Depth Interview

Marshall and Rossman (1995) suggest that in-depth interviewing, or "conversation with a purpose", is applied extensively by qualitative researchers. An example of an in-depth interview is an informal conversation meant to uncover a participant's understanding and perspectives. An in-depth interview is not very structured, enabling the participant to respond according to his own perspective. Various techniques may be used: an informal conversational interview, a general interview or a standardised open-ended interview. In addition to generic in-depth interviewing, there are several more specialised forms of interviews, phenomenological interviews, including ethnographic interviews, elite interviews and focus group interviewing. Characteristics of each type are as follows:

Table 17 : Characteristics of Ethnographic, Phenomenological, Élite and Focus Group Interviewing

Type of Interview	Characteristics
<i>Ethnographic</i>	Normally used by ethnographer to gather cultural data in research based on the discipline of cognitive anthropology
<i>Phenomenological</i>	Applied in a phenomenological enquiry to study experiences and the way in which people apply them to develop worldviews.
<i>Élite</i>	Interview individuals that are considered influential, prominent, and well-informed in an organization or community. Interviewees are selected for interviews on the basis of their expertise in areas relevant to the research.
<i>Focus Group</i>	Assemble participants into a group or groups of individuals (normally between 4 and 12 people) who are unfamiliar with one another. Participants are selected because they share certain characteristics that are relevant to the study. Each group is normally interviewed repeatedly, perhaps with different individuals composing the group. The advantage of this method is that the method is socially oriented and the resulting discussion is natural and mimics real life.

Source: Extract from Marshall and Rossman (1995, p.80-85).

In relation to the above typology, Lewis (2003) suggests that in-depth interviews and focus group interviews may be distinguished as shown in Table 18:

Table 18 : Applications of In-Depth Interviews and Focus Groups

	In-depth interviews	Focus groups
Nature of data	For generating in-depth personal accounts	For generating data which is shaped by group interaction
	To understand the personal context	To display a social context – exploring how people talk about an issue for creative thinking and solutions
	For exploring issues in depth and detail	To display and discuss differences within the group
Subject matter	To understand complex processes and issues e.g. motivations, decisions, impacts and outcomes	To tackle abstract and conceptual subjects where enabling or projective techniques are used, or in difficult or technical subjects where information is provided
	To explore private subjects or those involving social norms	For issues which would be illuminated by the display of social norms
	For sensitive issues	For some sensitive issues, with careful group composition and handling
Study population	For participants who are likely to be less willing or able to travel	Where participants are likely to be willing and able to travel to attend a group discussion
	Where the study population is geographically dispersed or the population is highly diverse	Where the population is geographically clustered or where there is some shared background or relationship to the research topic
	Where there are issues of power or status or people have communication difficulties	For participants who are unlikely to be inhibited by a group setting

Source: Lewis (2003, p. 60)

5.4.2 Data Analysis

Data analysis, which is messy, ambiguous and requires creativity, is the process of bringing order, structure and meaning to the mass of collected data (Marshall and Rossman, 1995). Table 14 indicates that qualitative research conclusions are not derived from testing hypotheses. As Schwartzman and Strauss (1995) put it:

“Qualitative data are exceedingly complex, and not readily convertible into standard measurable units of objects seen and heard” (quoted in Marshall and Rossman, 1995, p.112).

Based on Marshall and Rossman (1995) and Creswell (2005), procedures to follow in qualitative data analysis are:

5.4.2.1 Organizing the Data

At the early stage of analysis, qualitative data, normally collected in large amounts (Marshall and Rossman, 1995; Creswell, 2005) and in various forms, including interview tapes, field notes, documents, photographs and other visual materials, need to be compiled into file folders, cards or computer files (Marshall and Rossman, 1995; Creswell, 2005). Audiotape recordings and field notes need to be transcribed into text data. Creswell (2005) suggests that during the transcription process, the researcher, besides transcribing interviewees' responses, need also to include the interviewer's comments and observations. Interviewees' responses can also be codified. An example of how to codify interview script is in *Endnote vii*.

5.4.2.2 Generating Categories, Themes and Patterns

This procedure evaluates the data for their informational adequacy, credibility, usefulness and centrality. Here, Marshall and Rossman (1995) recommend:

- (a) Assessing the data and referencing them to the conceptual framework;
- (b) Noting regularities in the 'setting or people chosen for study' and identifying the salient, grounded categories of meaning held by participants in that setting;
- (c) Categorising responses into either 'indigenous typology' or 'analyst-constructed typologies'. Indigenous typologies are those created and expressed by participants and are generated through analysis of the local use of knowledge. Analyst-constructed typologies are those created by the researcher as reflecting certain categories. Some examples of the categorisation as in *Endnote vii*.

Creswell (2005) noted that the following categories of themes might emerge:

- (a) ordinary themes;
- (b) unexpected themes;
- (c) hard-to-classify themes; and
- (d) major and minor themes.

5.4.2.3 Layering and Interrelating Themes

Creswell (2005) suggests that the categorisation process, as above, should be followed by a procedure he calls “*layering and interrelating themes*”. This involves:

- (a) *layering themes*: Built on the idea of major and minor themes, in this process, themes are stratified into layers, beginning from basic elements and moving onto more sophisticated ones.
- (b) *interrelating themes*: The researcher connects the themes to display a chronology or sequence of events, such as generated in the researcher’s theoretical and conceptual model.

Examples of layering and interrelating themes are depicted in *Endnote vii*. As far as the epistemological issue is concerned, Ménard (2001) suggests that carrying out empirical research with an NIE approach is rather difficult. The main problem he encountered was interpreting findings from the perspective of transaction costs theory. A direct link between economic activities and transaction cost almost does not exist. Therefore, he suggests that understanding ‘a causal chain’ is imperative in NIE. Therefore Creswell (2005) attempts to demonstrate a link between transaction cost and demand-side actions in the land development process.

5.4.2.4 Representing Findings

Data and findings, are presented, typically in the form of:

- (a) a comparison table;
- (b) a hierarchical tree diagram representing the interconnection between themes;
- (c) a chain diagram demonstrating the relationship between themes;
- (d) a map depicting the physical layout of the setting; and
- (e) a demographic table describing personal or demographic information or sites visited in the research.

5.4.2.5 Interpreting

Qualitative research is interpretive research (Creswell, 2005). According to Guba (1985), “*interpretation involves making sense of the data or the lesson learned*” (quoted in Creswell, 2005). Accordingly, the next phase is to interpret the findings, drawing a more general conclusion about the studied phenomenon. Alternatively, interpretation can be accomplished by comparing the present data with past studies. Therefore, the headings ‘conclusions’, ‘interpretation’ and ‘implications’ are commonly found in qualitative research reports. Interpretation of the findings may include:

- (a) a review of the major findings and how the research questions were answered;
- (b) consistency of the present data with past studies in order to assess whether the findings support or contradict;
- (c) personal reflections about the research findings. Qualitative research believes that personal views can never be separated from interpretation. Besides, the researcher may have been to the field and visited the subject studied personally and spent a great deal of time with the respondents. The researcher is therefore in a good position to reflect and remark on the larger meaning of the data;
- (d) limitations of the study; and
- (e) suggestions for future research.

As discussed above, in humanist research, it is usually appropriate to apply an eclectic approach, collecting both qualitative and quantitative data (see Page 97). Moran-Ellis *et al.* (2006) suggest that if the data are mixed, they need first to be analysed within the parameters of their own paradigm. Thus, integration of conclusions is only possible at the point of theoretical interpretation.

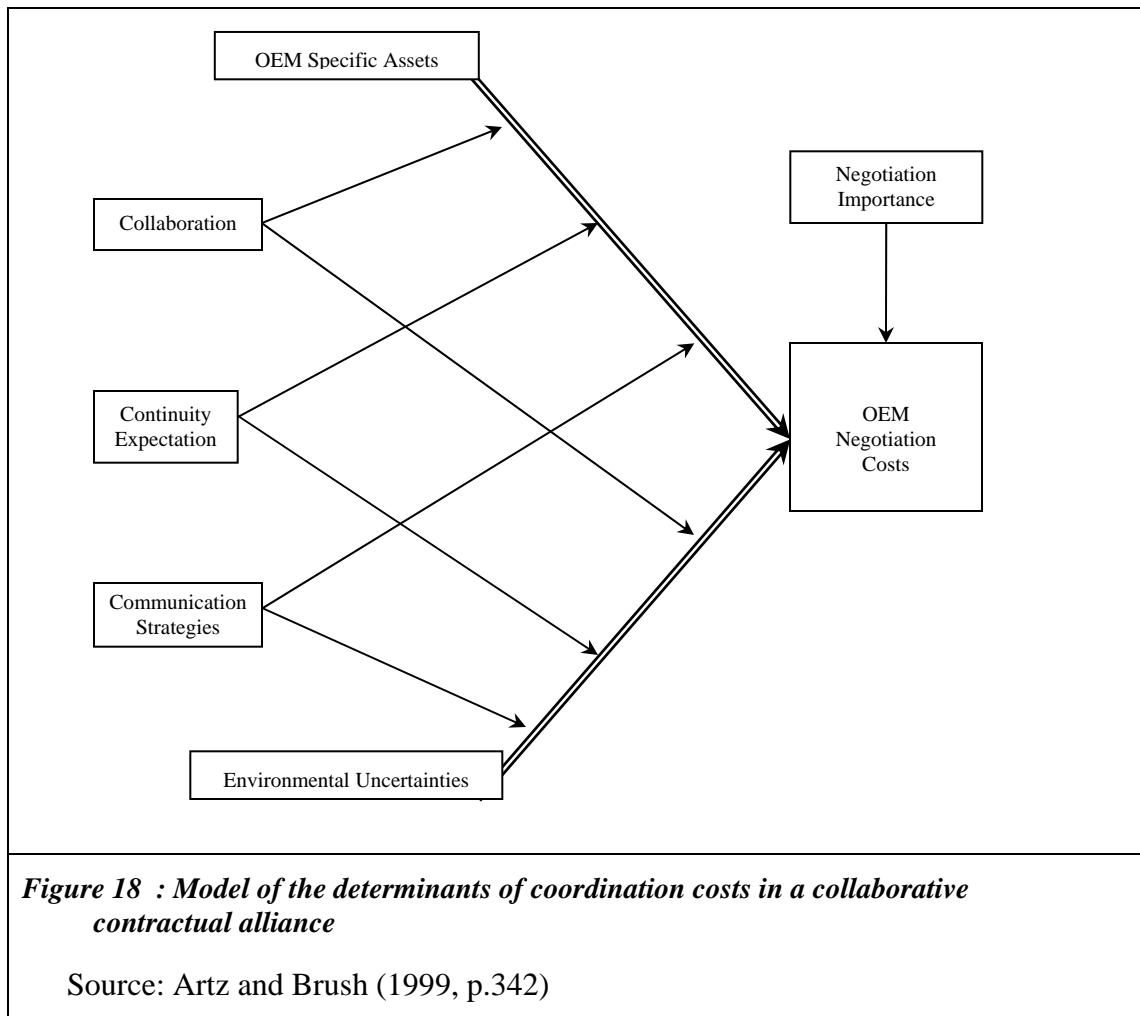
NIE emphasises that the transaction is the basic unit of analysis (Williamson, [2000; 2003] – see Pages 23 and 26). Williamson (1988) admits that the sort of analysis involved is complicated, abstract and at a ‘*high level of abstraction*’.

However, this method has been applied in empirical research by Artz and Brush (1999), Brouthers and Brouthers (2003), Fan (2000), and Brouthers and Nakos (2004). Artz and Brush (1999)⁴⁰ in particular, have come out with a schematic model, depicted in Figure 18, to analyse coordination costs in a collaborative contractual alliance.

Williamson (1988) suggests that examining a firm's transformation is important in analysing transaction costs⁴¹. As mentioned earlier, this study emphasises the relationship between petrochemical firms' actions in the land development process and their strategies to avert risk and uncertainty. Artz and Brush (1999) discuss the relationship between firms' actions and their strategies to avert risk and environmental and behavioural uncertainties. There are similarities between the problems addressed in Artz and Brush's (1999) article the problems addressed in this research. Therefore it is logical to apply Artz and Brush's (1999) model in this study.

⁴⁰ Research abstract: *'The paper draws on transaction cost and relational exchange theories to develop a model of the determinants of coordination costs in a collaborative contractual alliance. While some empirical research has examined certain dimensions of alliance performance, almost no studies have attempted to evaluate alliance performance by directly examining exchange costs. Data examining 393 original equipment manufacturer (OEM) supplier relationships that are governed by relational contracts found support for both the transaction cost and relational exchange perspectives. Asset specificity and environmental uncertainty directly increase coordination costs and, by altering the behavioral orientation of the alliance, relational norms lowered exchange costs'* (Artz and Brush, 1999, p. 337).

⁴¹ Refer to discussion on Page 27.



There are several reasons why it make sense to adopt Artz and Brush's (1999) model for this study:

- (a) Williamson (1988; 2000) contends that changes in firms' governance structure will change in response to transaction costs. Transaction costs in turn, arise from uncertainties. He emphasise that the twin problems of information access and processing are the primary source of uncertainties (see Page 27);
- (b) Artz and Brush (1999) argue that firms' strategies, including change in governance structure, are attributable to environmental and behavioural uncertainties;

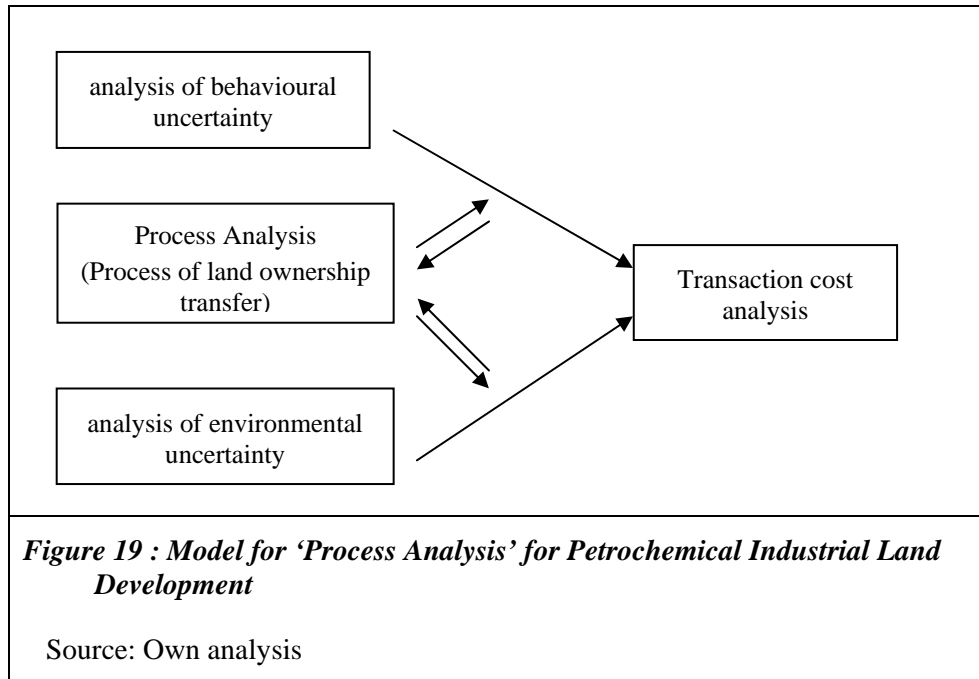
- (c) Fan (2000), as discussed on Page 39, argued that the petroleum-related industry is vulnerable to uncertainties in the price and supply of oil and gas in the world market; and
- (d) In land development, Healey and Barrett (1990), Healey (1991;1992b), Evans (1995), van der Krabben (1995), Keogh and D’Arcy (1999), Nanthakumaran *et al.* (2000) and Adams *et al.* (2003) gave particular attention to problems at the supply side. Among the key issues they investigate are the institutional factors⁴² that may create uncertainties in the timing and volume of land supply. They related the land supply problem to information constraints. Healey (1992b) and Keogh and D’Arcy (1999) added that information constraints in turn result in struggles, formation of alliances, power exercising, negotiation, and cooperation among land development agents. Any strategies adopted are subject to resource constraints, the balance of bargaining power and other factors. This suggests that the themes presented in Table 26 are interrelated.

To interpret findings in line with Artz and Brush’s (1999) proposition, the following procedure is carried out:

- (a) **analysis of behavioural uncertainty:** Relate the government approval system with its impact on the supply of industrial sites;
- (b) **analysis of environmental uncertainty:** Relate the global status petroleum and gas resources to the behaviour of firms;
- (c) **process analysis:** Analyse firms’ long-term strategies in industrial site acquisition; and
- (d) **transaction cost analysis:** Estimate risks faced by petrochemical firms where there are uncertainties.

Figure 19 is adapted from Artz and Brush (1999):

⁴² Refers to institutions in Layers 1-3 in Figure 2 (Page 17).



5.4.2.6 Write the Report

A narrative discussion is the primary form for presenting and reporting qualitative research findings (Creswell, 2005). Although Marshall and Rossman (1995) suggest that qualitative researchers often display their findings visually by using figures or picture that augment the discussion, Creswell (2005) argues that there is no standard form in a narrative discussion. However, there are some frequently-used ways of reporting research findings, including:

- (a) Presenting a chronology;
- (b) Describing events and setting;
- (c) Discussing themes;
- (d) Discussing figure;
- (e) Layering and interconnecting themes;
- (f) Incorporating past literature and research studies;
- (g) Raising questions in order to challenge accepted or hidden assumptions;
and
- (h) Discussing participants that have been empowered or have changed.

5.4.3 Validity, Credibility And Reliability

In empirical research, other than the epistemological questions highlighted on Page 90, the issues of validity, credibility and reliability are also important. Creswell and Miller (2000) argue that, although ‘validity’, ‘credibility’ and ‘reliability’ are commonly associated with quantitative research, there is a general consensus that qualitative inquirers need to demonstrate that their studies are credible. In quantitative research, sampling procedures as well as factors that jeopardise the internal and external validity are carefully observed (Miller and Salkind, 2002 [see details in *Endnote viii*]). Qualitative research that subscribes to a constructive method however, replaces these procedures with a concern for *credibility*, *transferability*, *dependability* and *conformability* (Denzin and Lincoln, 2005). Marshall and Rossman (1995 [quoted in Gracy, 2006]) suggest the following definitions:

- “ 1. **Credibility**, instead of internal validity, “in which the goal is to demonstrate that the inquiry was conducted in such a manner as to ensure that the subject was accurately identified and described. The inquiry then must be ‘credible to the constructors of the original multiple realities.’ The strength of the qualitative study that aims to explore a problem or describe a setting, a process, a social group or a pattern of interaction will be its validity. [...] Within the parameters of that setting, population, and theoretical framework, the research will be valid.”
2. **Transferability**, instead of external validity, “in which the burden of demonstrating the applicability of one set of findings to another context rests more with the investigator who would make that transfer than with the original investigator.” Although researchers more familiar with the quantitative approach view qualitative research as lacking in external validity, Marshall and Rossman point out that data collection and analysis will be guided by concepts and models which represent the theoretical parameters of the research. Those researchers working within the same parameters can determine whether or not the research in question may be generalized to their own research agenda.
3. **Dependability**, instead of reliability, “in which the researcher attempts to account for changing conditions in the phenomenon chosen for the study as well as changes in the design created by increasingly refined understanding of the setting.” This concept assumes that the social world is continually being constructed, thus replication of the study is not only impossible, but also not a practical consideration for the qualitative researcher.
4. **Confirmability** instead of objectivity, in which the researcher “remove[s] evaluation from some inherent characteristic of the researcher (objectivity) and place[s] it squarely on the data themselves.” (Gracy, 2006, p.357-358 – emphasis added).

To simplify the above explanation, Decorp (1999) suggests that explanations of credibility, transferability, dependability and conformability must answer the following questions:

- “ 1. **Credibility** (internal validity): How truthful are particular findings?

2. **Transferability** (external validity): *How applicable are the research findings to another setting or group?*
3. **Dependability** (reliability): *Are the results consistent and reproducible?*
4. **Conformability** (objectivity): *How neutral are the findings (in terms of whether they are reflective of the informants and the inquiry, and not a product of the researcher's biases and prejudices)?*" Decorp (1999, p.158 – emphasis added).

On the question of objectivity that has been emphasised by Popper (1978), Angrosino (2005) suggests that true objectivity is dependent neither on the research protocol nor procedure, but rather, on agreement between researcher and the subject studied as to what is really going on in a given situation. To attain true objectivity, a researcher needs to develop standardised procedures that:

- (a) can maximise observational efficacy;
- (b) minimise investigator bias; and
- (c) allow for replication or verification.

To secure credibility, Creswell and Miller (2000) the following methods:

- (a) **disconfirming evidence.** This is a two-step process which begins with establishing preliminary themes or categories in a study. The second step is searching for evidence that is either consistent with or disconfirms these themes. In practice, the search for disconfirming evidence is a difficult process because researchers have a tendency to find confirming rather than disconfirming evidence;
- (b) **researcher reflexivity.** To apply this method, researchers need to self-disclose their assumptions, beliefs and biases. They also need to report personal beliefs, values and biases that may influence their inquiry. This method is useful to apply in research on social and cultural matters where personal beliefs, values and biases may shape interpretation;
- (c) **member checking.** This method consists of taking data and interpretation back to participants, convening a focus group of participants and reviewing the findings;
- (d) **prolonged engagement in the field.** The strategy involves living at a research site in order to work with participants every day for a prolonged period of time. By doing so, researchers are able to build trust with participants and participants

become comfortable disclosing information in greater depth and with greater accuracy. In practice, prolonged engagement in the field with no specific end date is time-consuming;

- (e) **collaboration** is a strategy where participants are involved in the study as co-researchers. Collaboration may take a number of forms. For example, participants may help construct research questions, assist with data collection and analysis, and be involved in writing the narrative account;
- (f) **the audit trail**. This is a method of submitting data and findings to individuals, readers or auditors external to the project. To carry out an audit trail, researchers need to provide clear documentation of all research decisions and activities. They may provide evidence of the audit trail throughout their account or in the appendices;
- (g) **thick, rich description**. According to Denzin (1989), “*thick descriptions are deep, dense, detailed accounts... Thin descriptions by contrast, lack detail, and simply report facts*” (quoted in Creswell and Miller [2000, p.128]). This strategy is to provide information in as much detail as possible. For example, the data may describe a small slice of interactions, experiences, or actions; locate individuals in specific situations; or provide a detailed rendering of how people feel;
- (h) **peer debriefing** is the review of data and the research process by someone who is familiar with the research subject or the phenomenon being explored;
- (i) **triangulation**. Triangulation is a procedure by looking for convergence among multiple and different sources of information, or looking at the same phenomenon, or research question, from more than one source of data (Decorp, 1999; Creswell and Miller, 2000). By applying triangulation, personal and methodological biases are restricted (Decorp, 1999). The concept is derived from topography, was first used in the military and navigation sciences by sailors triangulating among different distant points to determine their ship’s bearing, and has been adapted to social science inquiry (Decorp, 1999; Creswell and Miller, 2000; Moran-Ellis *et al.*, 2006). Moran-Ellis *et al.* (2006) suggest that since the data are generated by different methods, they need to be analysed

within the parameters of their own paradigm and triangulation may be best used at the point of theoretical interpretation.

Creswell and Miller (2000) suggest that which of the above procedures is selected depends on whose perspective is to be considered – the researchers', study participants' or people external to the study. There are other considerations in deciding whether to use a formal audit or peer debriefer. In this case, the researchers should consider their audience, the availability of such individuals and the expenses associated with using them.

5.5 LIMITATIONS IN THE NIE AND QUALITATIVE RESEARCH APPROACH

Williamson (1988) admits that carrying out a study based on transaction cost analysis is difficult. This is mainly due to the fact that relevant data are rarely available from standard statistical sources. Dunn (2000) and Ménard (2001) are of the view that quantitative analysis and the development of a working model for analysis are potential weak spots in NIE.

In addition, the following are some warnings for those intending to undertake qualitative research:

- (a) According to McCulloch (2004), a research approach whereby information is attained from official documents frequently encounters a number of problems such as:
 - (i) contents of documents are more suitable for explaining historical accounts than present events;
 - (ii) official records are frequently designed to illuminate the official and public outlooks of the social and political élite; and
 - (iii) data and information constituting the basic raw, imperfect evidence, tends to be fragmented, scattered and difficult to use.
- (b) Some of the constraints of élite interviews are:

- (i) difficulties in finding the right person to speak with. Some people simply hesitate to cooperate. Others are under the control of those who are more powerful or influential. Sometimes researchers have only limited time to gain access to key people or individuals who potentially have critical information. Or, the key people to be interviewed are beyond reach, may be overseas or need permission to talk with the researcher (Brown, 2001).
- (ii) Interviews are highly time consuming. In an interview there are three things that highly consume a researcher's time. The first is finding a time to meet that is convenient to the interviewee. Second, since an interview is normally a one-to-one, face-to-face communication, a researcher must travel from one place to another to meet with his interviewee thus wasting time in travel. The time spent during the interview itself also adds to the intensive time requirements associated with qualitative research. During a conversation with interviewees, questions must be posed clearly and in sequence. If open-ended questions are asked, an interviewer should expect a lengthy answer (Yeung, 1995).
- (iii) Sometimes, the same scenario has different implications for different people. An example of this can be seen in Sabot's (1999) research conducted in Scotland and France. The study was about government spending on what was perceived as 'lavish'. Senior government officials in Glasgow and Motherwell in Scotland were happy to be interviewed and were willing to share whatever information that they had. Disclosing official information was perceived as being transparent and responsible. In contrast, in Saint-Etienne, France (Sabot's hometown), officials were reluctant to be interviewed and disclosed very limited information to prevent tarnishing the government's reputation.
- (iv) Catching up with the élites, as they are important figures, usually busy and working under demanding time constraints, is a difficult task (Yeung, 1995; Marshall and Rossman, 1995). In order to obtain interviews with the right people as well as to get a high response rate, Yeung (1995) suggests the following steps:

Table 19 : Procedures for Carrying Out Élite Interviews

- | |
|--|
| <p>Step 1: Obtain the name and address of potential respondents.</p> <p>Step 2: Phone individual companies to reconfirm the address and addressee and ask politely for the name of the top executive or equivalent person in the company.</p> <p>Step 3: Print individually addressed letters on letterhead supplied by some authority, either a research centre or a government department. Each cover letter should be signed by the researcher.</p> <p>Step 4: Send these letters to a manageable group of individual respondents together with business cards if available.</p> <p>Step 5: After a few days, make arrangement for interviews.</p> |
|--|

Source: Adapted from Yeung (1995)

5.6 CONCLUSION

This chapter suggests that the relationship between petrochemical industrial land supply and land price, the institutional environment and governance is best explained by applying a qualitative research approach. This chapter also suggests that the models of Denzin and Lincoln (2005) and Creswell (2005) are suitable to apply to the empirical research undertaken in this study, as the empirical research seeks to explore or understand a central phenomenon. This chapter also suggests that qualitative data collection and analysis are complex processes, as qualitative data are not readily convertible into standard measurable units such as objects seen and heard. Creswell (2005) divides qualitative data analysis into three stages. The first stage involves generating categories, themes and patterns from the raw data. The second stage involves layering the categories, themes and patterns that emerge from the first stage. The final stage involves interrelating the themes that emerge from the second stage. Interpretation of the data follows the third stage.

Denzin and Lincoln (2005) and Creswell (2005) also suggest that there are standards and measures that may be followed to insure the validity, credibility and reliability of the findings. A researcher needs to develop standardised procedures that maximise observational efficacy, minimize investigator bias and allow for replication or verification. The following chapter will discuss the research method to be applied the present study to address the objectives set out in Chapter One.

CHAPTER SIX – RESEARCH METHOD AND DATA COLLECTION

6.1 INTRODUCTION

The previous chapter announces that this study will apply a qualitative research method rooted in the work of Denzin and Lincoln (2005) and Creswell (2005). The previous chapter also proposes that Creswell's (2005) model will form the framework of the present analysis and inform the direction of the empirical investigation. This study will explore the central phenomenon proposed by Creswell (2005) by applying Denzin and Lincoln (2005) and Creswell's (2005) research method to the four research objectives. Following the suggestion in Creswell (2005), the present chapter begins by constructing the central research question. Next research questions will be developed. Data collection is also discussed here. Before the concluding section, Chapter Six will describe the data analysis procedure to be followed and also the measures adopted to ensure validity, credibility and reliability of the research findings.

6.2 EMPIRICAL RESEARCH FRAMEWORK

6.2.1 Research Aims and Objectives

In Chapter One, it was emphasised that the present study aims to investigate whether the creation of property rights merely transforms uncertainty and transaction costs into a new form. To find the answers, this study has the following research objectives:

- (a) analyse the factors that distinguish KIPC and GIPC from other areas in Malaysia.
- (b) identify the institutional framework that controls and promotes the supply of industrial land.
- (c) identify the market players and define their functions and interests.

- (d) examine government departments' power structure, domination and control of resources.

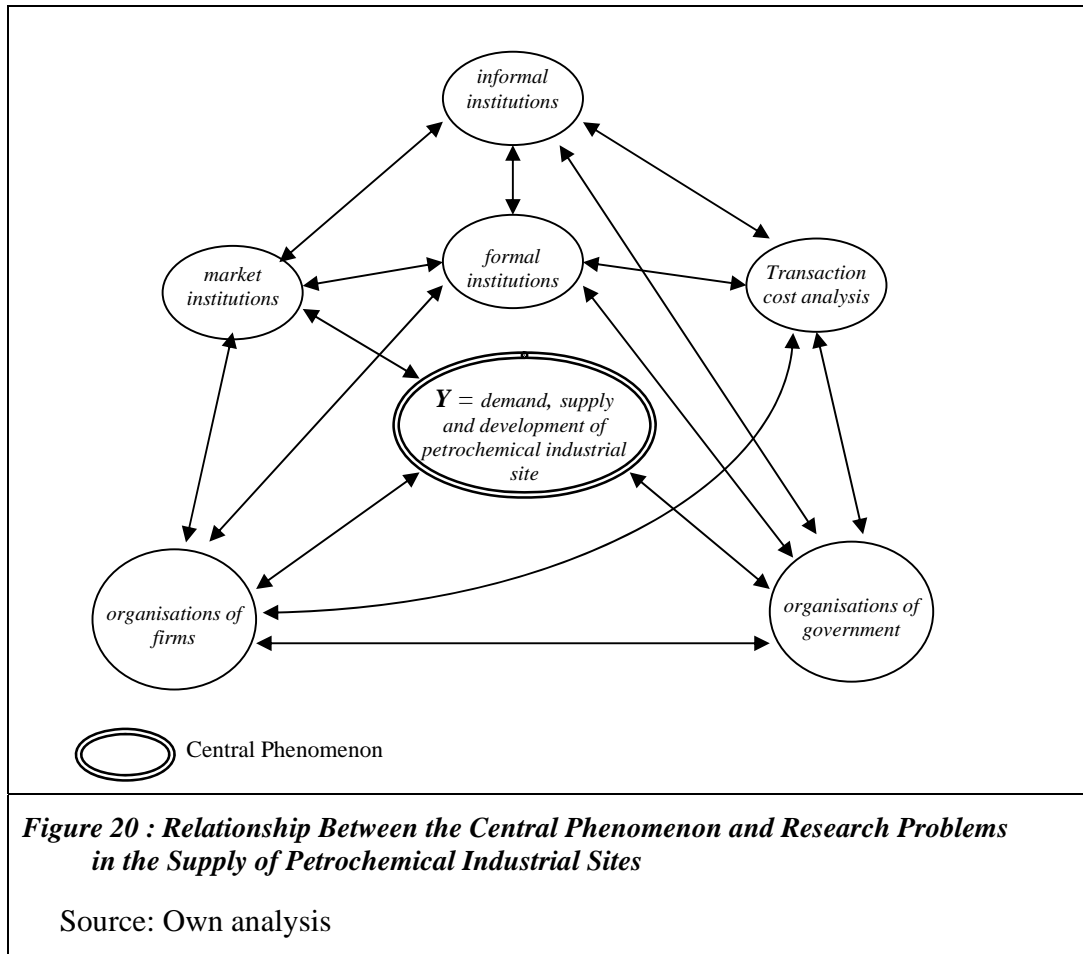
Chapter Two determines that application of an NIE approach will be the most appropriate in investigating the above questions. Discussion in Chapter Two also concludes that addressing the above questions involves exploring the four-layer institutional hierarchy in Williamson (2000). Chapter Two concludes furthermore that the institutional environment and governance system, including property rights and the bureaucratic functions of government directly impact firms' business decisions. As mentioned on Page 18, examining Level 1 institutions is not a focus. This study will explore institutions at Levels 2 to 4 only. Therefore, Chapter Three proposes investigating three research areas:

- (a) the relationship between petrochemical industrial land supply and land price;
- (b) the relationship between petrochemical industrial land supply and the institutional environment; and
- (c) the relationship between industrial land supply used for petrochemical purposes and governance.

Denzin and Lincoln (2005) and Creswell (2005) suggest that qualitative empirical research is initiated by the construction of a research question. The following discussion will describe how this study's research questions were constructed.

6.2.2 The Research Questions

Both Figure 17 and Table 14 suggest that the main task of a qualitative researcher is to explore how external forces shape and are shaped by the central phenomenon. This study's central phenomenon is the supply and development of petrochemical industrial sites. This central phenomenon is interconnected with external forces, especially the institutional arrangements and market factors on which the petrochemical industry depends. The relationship between the central phenomenon and the research problems listed on Page 61 is illustrated in Figure 20:



Applying Creswell’s (2005) qualitative research approach, the next step after identification of the central phenomenon is the creation of a research purpose statement. Following this is the construction of the central research question and the construction of the subsequent research questions. The research purpose statement is:

“ to understand the influence of institutional factors on the supply of industrial land for petrochemical industrial use”.

The central question that needs to be answered is:

“In what way is the supply of land for the petrochemical industry in Malaysia affected by the formal institutional framework of that country? ”

To investigate the three research problems mentioned on Page 117, this research will answer the four research questions discussed below:

6.2.2.1 The relationship between petrochemical industrial land supply and land price

This question is related to the research objective of explaining the factors that distinguish KIPC and GIPC from other areas in Malaysia. It is also related to the objective of identifying the market players and defining their functions and interests.

Chapter One indicates that competition among State Governments to attract investors is intense. This study will examine to what extent land price influences investment decisions in the petrochemical industry. In addition, Chapter Three notes that there is no clear evidence to support the proposition that the price mechanism cannot guarantee an automatic exchange in industrial sites. Therefore, this research will answer the question:

Q1: To what extent does the price of land influence ownership transfer of petrochemical industrial sites?

6.2.2.2 The relationship between petrochemical industrial land supply and the institutional environment

This question is related to the research objective of identifying the institutional framework that controls and promotes the supply of industrial land. It is also related the objective of examining government departments' power structure, domination and control of resources.

Williamson (2000) defines government as a formal institution and places it in Level 2 in his hierarchy of institutions, regarding its role as significant in determining market performance. The discussion in Chapter Four likewise indicates that the Land Office plays a major role in the disposal of government land as well as in land development approval.

In addition, North (1990) and Eggertsson (1990a, 1990b) suggest that formal institutions, including law, government and property rights are created within the institutional environment. Vandenberg (2002) and Smyth (1998) suggest that private ownership is created and maintained by social institutions to serve the interest of society

in general. Therefore, the discussion in Section 3.2 suggests that government behaviour, including the government bureaucracy, reflects social institutions. Therefore, this research will also answer the following two research questions:

Q2: How do government decisions and the government decision-making process affect the supply of petrochemical industrial land?

Q3: How do the institutional environment, governance and the market allocation of resources influence government decisions about land?

6.2.2.3 The relationship between petrochemical industrial land supply and governance

The discussion on Page 39 argues that the petroleum related industry is vulnerable to uncertainty in the price and supply of oil and gas in the world market. Williamson (1988; 2000) and Artz and Brush (1999) contend that changes in firms' governance structure are a response to transaction costs arising from uncertainties. They also argue that uncertainties influence other firms' business decisions. Among the key issues is uncertainties generated in the timing and volume of land supply considered by the land development approval process at the Land Office. Therefore, this study will answer the question:

Q4: What is the relationship between the actions of petrochemical firms in the land development process and their strategies to avert risk and uncertainty?

By answering this research question, the empirical study will complete its endeavour to explain the factors that distinguish KIPC and GIPC from other areas in Malaysia.

6.3 THE INQUIRY PROCESS

6.3.1 Area of Study

To find answers to the above four questions, the present study will undertake empirical research based on the following three themes:

- (a) investigation of the actual land development progress at the investigated sites;

- (b) investigation of the land supply process for industrial sites; and
- (c) investigation of petrochemical firms' strategies in land acquisition and the land development process.

6.3.1.1 Investigation of the Actual Land Development Progress at the Investigated Sites

Here, the degree of land development at the sites is assessed to justify that there is substantial basis to carry out empirical research in the studied area. According to van der Krabben (1995):

“Institutional theory (TCE) concentrates on the conditioning of decisions by institutional arrangements, regulations and the influence of power on the functioning markets. It focuses on the way in which different groups of actors and organisations that participate in urban development processes relate to each other sectors of the local economy and to regional, national and international financial and development interests. Three main themes of enquiry are central to this approach (...): (1) the identification of agents and institutions involved in urban development process, their different ideologies and relative power; (2) the nature of interaction between these diverse institutions and the kinds of constraints they impose on each other; (3) the effect of these interaction on the development process” (van der Krabben, 1995 p. 44-45).

This research's empirical investigation will begin with an investigation of the actual physical land development within the proposed studied locations. It is anticipated that interaction between agents in the development process will be observed and will provide insights into whether or not the supply of industrial sites at the studied locations meets the demand or not. Data will be gathered on:

- (a) government projections for demand for petrochemical industrial sites;
- (b) plants and installations at the sites, including into:
 - (i) natural gas processing plants;
 - (ii) petrochemical industrial plants; and
 - (iii) supporting facilities;
- (c) landowners and landownership; and
- (d) prices and actual demand.

6.3.1.2 Investigation of the Process of Supply of Land for Industrial Sites

Sub-section 3.4.2.2.3 concludes with a proposition that the supply of petrochemical industrial land has a strong link with institutional arrangements. Drawing on the conclusion from previous works in Adams (2000a; 2002; 2003) that supply-side constraints exist in the development process, the Land Office will be the focal point of this research. The research aims to relate the Land Office administrative system with the wider formal, institutional environment and governance system. The research will:

- (a) examine the duration of land development approvals. This is to test whether they are usually lengthy, as theorised by Healey (1991) and Nanthakumaran *et al.* (2000) and whether the duration is as a result of bargaining, competing and co-operating among land development actors, as theorised by Keogh and D'Arcy (1999) as well as van der Krabben and Lambooy (1993);
- (b) study problems in the Land Office decision making-process. The ideas of Barrett (1991), Evans (1995b), Keogh and D'Arcy (1999) and Adams *et al.* (2003) will be consulted in explaining the problems, especially those related to how information is acquired, processed and disseminated; and
- (c) construct a link between problems in the Land Office decision-making process and the problems of bureaucracy in public administration that have been discussed in Chapter Two.

Data will be collected on:

- (a) the process for development approvals;
- (b) the norms and practices of the Land Office;
- (c) laws, rules and procedures; and
- (d) the nature of interaction between agencies.

6.3.1.3 Investigation of Petrochemical Firms' Strategies for Land Acquisition and in the Land Development Process

Process analysis, which was discussed on Page 27, has been developed to explain the transformation of firms with respect to transaction costs. Transformations in the ownership structure of firms, inter- and intra-firm relationships, procurement and marketing strategies (Williamson, 1988) are observable. As was mentioned on Page 47, in the property market and the land development process, firms and individual players interact and bargain in various ways (van der Krabben, 1995; Healey, 1991; Healey and Barrett, 1990, Keogh and D'Arcy, 1999, Evans, 1995; Nanthakumaran *et al.*, 2000, Adams *et al.*, 2003). Analysis will examine the uncertainties faced by petrochemical industries. This study will then try to relate the issue of uncertainty with firms' transformations. The analysis will try to answer the question of whether issues of uncertainty and transformation of firms have influenced industrial land development. A thorough investigation will be carried out on:

- (a) firms' actions and strategies in the land development process;
- (b) the global market scenario as it influences petrochemical firms' decisions;
and
- (c) firms' perception of government department services.

Data will be collected on:

- (a) the history of petrochemical plant commissioning;
- (b) global changes in the petroleum and gas market;
- (c) firms' perception of government behaviour;
- (d) the history of land ownership;
- (e) the history and structure of firms' ownership; and
- (f) inter-plant production relationships.

6.3.2 Scope of the Empirical Research

Empirical research is limited to:

- (a) petrochemical industrial sites within the KIPC and GIPC; and
- (b) the development period between 1980 and 2005.

6.4 DATA COLLECTION

Chapter One suggests that the present research deals with issues related to two main problems: the government decision-making process and petrochemical firms' reactions to this process. Data and information are mostly available through official records as well as from people that are involved in the decision-making process. Therefore the present research will apply only two types of data collection. They are:

- (a) in-depth élite interviews; and
- (b) official records (paper-based and electronic).

Sub-section 4.3.1.2 indicates that government decisions on matters related to land are made by senior politicians. Sub-section 4.3.2.5 enumerates the government departments normally involved in the government decision-making process. Sub-section 4.2.3 indicates that Petronas, which is fully government-owned, is the anchor investor in the proposed studied industrial complexes. Therefore, the collection of data from interviews and a review of official documents will focus on the following organisations and individuals:

Table 20 : Proposed Research Participants for Empirical Research on Land Development at Kerteh and Gebeng Petrochemical Industrial Complexes

Categories	Research Participants
Politicians	Those who held office during the period when the approval process took place
Government Departments	The Land Office Office of the State Director of Lands and Mines State Economic Planning Unit Town and Country Planning Department Local Authority Department of the Environment Public Works Department Drainage and Irrigation Department Valuation Department Malaysian Industrial Development Authority Agriculture Department Health Department Labour Department National Electricity Co. Malaysian Telecom Co. Estate Land Board.
Investors	Petronas Petrochemical companies that are in operation in the studied locations

In terms of investors, letters were sent to all CEOs of companies operating in both complexes, asking for interviews. A full list of companies operating at KIPC and GIPC whose CEOs were approached is in Appendix F.

6.4.1 The Official Record Investigation

Official records, as indicated in the preceding chapter, were a key source of information for this study. The official records consulted for the present study were;

- (a) statutory and administrative records maintained at the Land Office as in Table 10 (Page 84);
- (b) printed material from petrochemical firms and government departments; and
- (c) electronic data from international bodies governing or related to the petroleum and gas industry.

This area may be divided into three subsections, namely:

- (a) Official record investigation at the Land Office.
- (b) Government and firms' official documents and publications.
- (c) Data from international bodies.

6.4.1.1 The Kemaman Land Office – A Brief Introduction

Kemaman, as the map in Figure 21 illustrates, is one of seven districts in Terengganu. It covers an area of 626,600 acres or nearly 20% of the state and is the third largest district in Terengganu. With about 150,000 inhabitants or 15% of the state, it is the second most populated (Terengganu, 2002a).

In the District of Kemaman, matters of land development fall under the jurisdiction of two departments – the Land Office and the Municipality of Kemaman. However, since they are concerned with only building planning, building permission and commissioning, municipality decisions depend on what is forthcoming from the Land Office⁴³. Standard practice in Malaysia is that before submitting a development plan or applying for permission to develop land with the local authorities, one must first consult the land office that has jurisdiction over government land disposal, conveyance and land use control in the area to be developed. The Kemaman Land Office, since before *Merdeka* (Independence), has been part of the District Office. The Kemaman Land and District Office, as it is also called is headed by the District Officer like the other 110 District Offices⁴⁴, and is the centre of district-level government administration in the area. As of 1 May 2005, the Kemaman Land Office employed four executive officers and 52 supporting staff of various ranks⁴⁵.

⁴³ Interview A25, paragraph 4.1 and 4.3.

⁴⁴ See Endnote for the exhaustive list.

⁴⁵ Interview A7, paragraph 7.1.

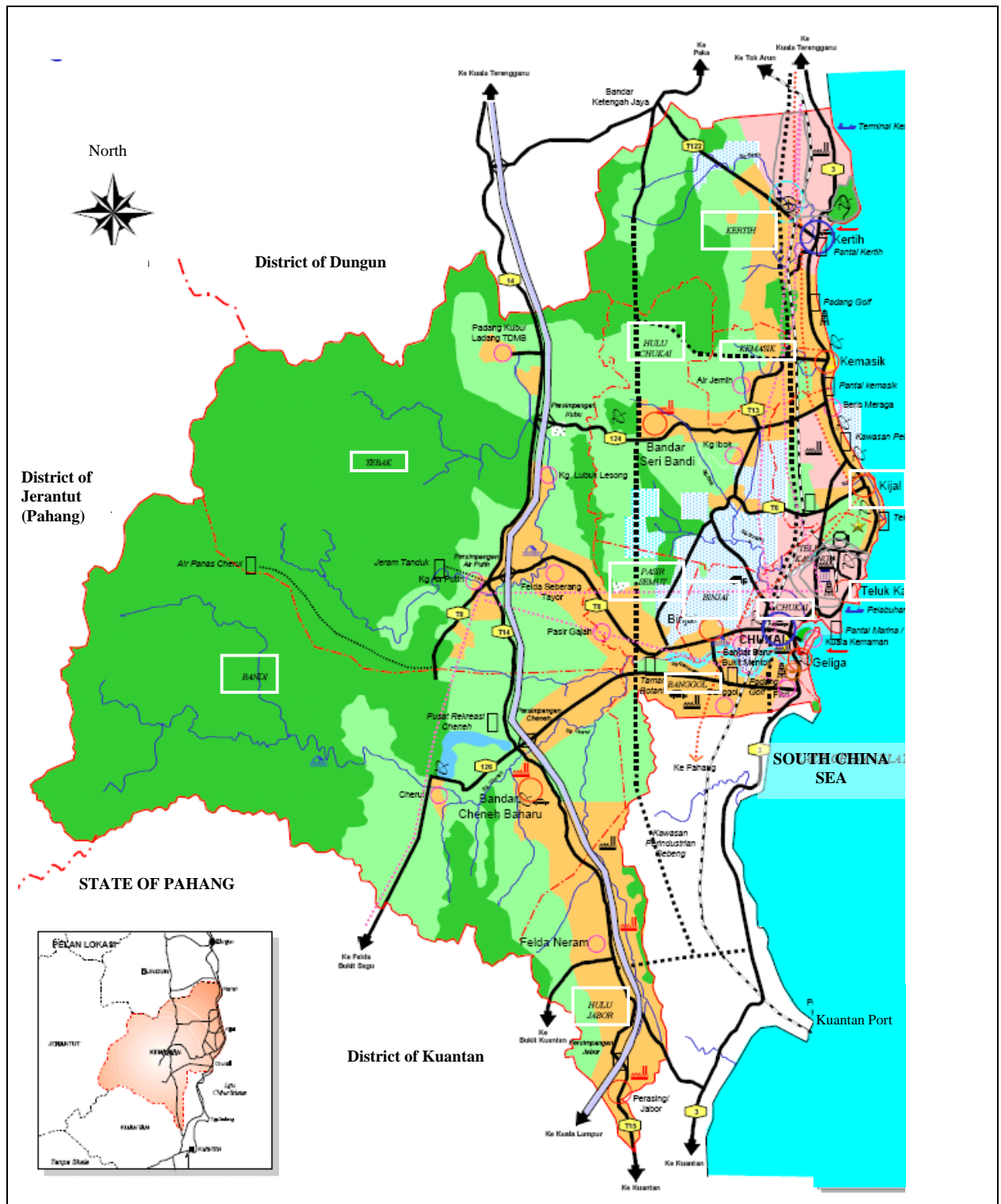


Figure 21 : Kemaman – District Map with Land Use Zoning Plan

Source : *Draf Rancangan Struktur Kemaman (Pengubahan)* (Kemaman Draft Structure Plan [Review])

As authorised by section 11 of the Code and indicated in the above map, the Kemaman district administrative area is geographically divided into twelve *mukims* (sub-districts), as follows:

Table 21 : Terengganu – Mukims in Kemaman District

Bandi (01) ⁴⁶ ; Banggol (02); Binjai (03); Chukai (04); Hulu Chukai (05); Hulu Jabor (06);	Kemasik (07); Kerteh (08); Kijal (09); Pasir Semut (10); Tebak (11); Teluk Kalong (12).
--	--

Source: Land Office of Kemaman⁴⁷

While a District Office coordinates district-level administration and infrastructure development, a Land Office has specific tasks outlined in the Code. Typically a Land Office is divided into sections as in Table 22:

Table 22 : Malaysia – A Typical Land Office Divisions

Government Land Disposal Land Titles Registration Revenue Land Law Enforcement	Land Development (for land conversions, subdivisions and amalgamations) Compulsory Purchase Inheritance Distribution
---	--

Source: Land Office of Kemaman⁴⁸

6.4.1.2 Official Records Investigation at the Kemaman Land Office

Based on the records list in Table 10 (see Page 84) after consulting with staff at the Land Office, this study decides to concentrate on records under the ‘file’⁴⁹ classification. The rationale for this was that the information sought was related to:

⁴⁶ The number in the parenthesis (x) is an official unique identification number for each mukim and will also be used in the sampling procedure discussed below.

⁴⁷ Based on minutes of the 55th National Land Council

⁴⁸ Interview A7, paragraph 7.2

- (a) information required during approval process;
- (b) places and stages through which information is handled and processed;
- (c) procedures through which information is verified; and
- (d) sources from which information is acquired.

After further discussion with the Land Office, three types of files were identified as directly related to the studied case areas and permission was granted to access these files. These files included applications for:

- (a) petrochemical industry sites;
- (b) industrial sites other than petrochemical; and
- (c) land conversion.

Entries in the land application roll book show that the total number of files opened by the Land Office for the above types of applications are as follows:

A. Applications for petrochemical industrial sites:

Total number of files opened : **11**

B. Applications for industrial sites other than petrochemical

Total number of files opened : **~500**

C. Applications for land conversion

Total number of files opened, 1998 – 2004 : **862**, as follows:

⁴⁹ A file is a folder in which papers, correspondence and other official printed information are placed.

Table 23 : Kemaman – Applications for Land Conversion 1998 – 2005

Year	Number of Files/Cases
1998	124
1999	105
2000	143
2001	146
2002	117
2003	99
2004	110
2005	18
TOTAL	862

Source : Land Office of Kemaman⁵⁰

Negotiations with officials led to agreement to release all files on petrochemical applications because of the small number involved. However, as the number of files for other types of applications was high, only a sample of records were investigated, by applying a random stratified sampling procedure. Based on staff recommendations, the basis of sampling was as follows:

- (a) The study would concentrate on the most active *mukims*. The staff, based on records and their own experiences, identified five *mukims* where development applications were more intense than others. The map in Figure 21, shows that the five *mukims* selected include urban areas or areas along the highways, the other *mukims* being interior land. Therefore, the researcher believed that this approach was justified. The files supplied contained applications from the following *mukims*:

- (i) Chukai (04);
- (ii) Kerteh (08);
- (iii) Teluk Kalong (12);
- (iv) Kijal (09); and
- (v) Kemasik (07).

⁵⁰ Information in the role book.

- (b) The study would be restricted to files opened since 1998. Files before 1998 had already been officially closed. It is important to note that law requires official records, including files, to be closed after seven years of inactivity.
- (c) The sample size represented 5 percent of the total population and was distributed proportionately according to date (file opening year) and *mukim*. The distribution of the samples agreed upon was as follows:

Table 24 : Population and Samples of Study for Applications for Land Conversion 1998 – 2005

Year	Number of Files (Population)	Number of Samples
1998	124	6
1999	105	5
2000	143	7
2001	146	7
2002	117	6
2003	99	5
2004	110	6
2005	18	1
TOTAL	862	43

- (d) The following approach was taken to select the sample of files that would be examined. In a land office, entries in the application registry book are divided and arranged according to *mukims*. After a consultation, it was agreed that the files selected would be those in sequences numbered ‘05’, ‘10’ and ‘15’ of each of the five *mukims* in the registry. To maintain anonymity of the records, a new unique identification number was created as each files call number. During the early part of the investigation it was also discovered that out of all cases, 74 cases (8.6%) were applications classified as ‘surrender and application’ cases. Under the Land Code, when applying for conversion of land use, a landowner has two alternatives. He may either maintain his *de jure* ownership over the land

throughout the approval process⁵¹ or he may temporarily give up ownership and allow the government to return land ownership to the original landowner with new conditions of land use. The latter is called ‘surrender and re-alienation’⁵². To maintain proportionate representation, six files of this category at sequence numbers ‘01, 03 and 05’ were selected.

(e) Finally, the creation of a registry of records was investigated⁵³.

6.4.1.3 A Brief Description of the Investigation Process

As mentioned in Appendix G, the attempt to access official records was initiated by a formal application sent to the state government of Terengganu, addressed to the State Economic Development Unit (SEPU) on 24 August 2004. Official approval was secured on 21 September 2004 in a letter signed by the Deputy State Secretary. Separate letters, dated 27 January 2005, were addressed to the State Director of Lands and Mines (DLMO), the Land Administrator of Kemaman as well as the State Development Corporation applying for permission to interview officials and access official records. The response was positive. A written consent was secured with an invitation for a formal meeting held on 24 February 2005, purposely for this exercise. The meeting was arranged by the DLMO at the Kemaman Land Office and chaired by the Deputy Director of Lands and Mines. Representatives from the Municipality of Kemaman and senior officials at the land office were among the attendees.

After a briefing about this research as well as the meeting, a tour of the whole office was organised. The researcher was introduced to the office set up, as well as system officials and staff, particularly those who were assigned to assist the study. The office is located in a four-story building, with the land development application section on the ground floor and the government land application section on the second floor. There are other related sections such as revenue, enforcement, compulsory acquisition,

⁵¹ Section 124 of the Code

⁵² Section 204A – 204H of the Code.

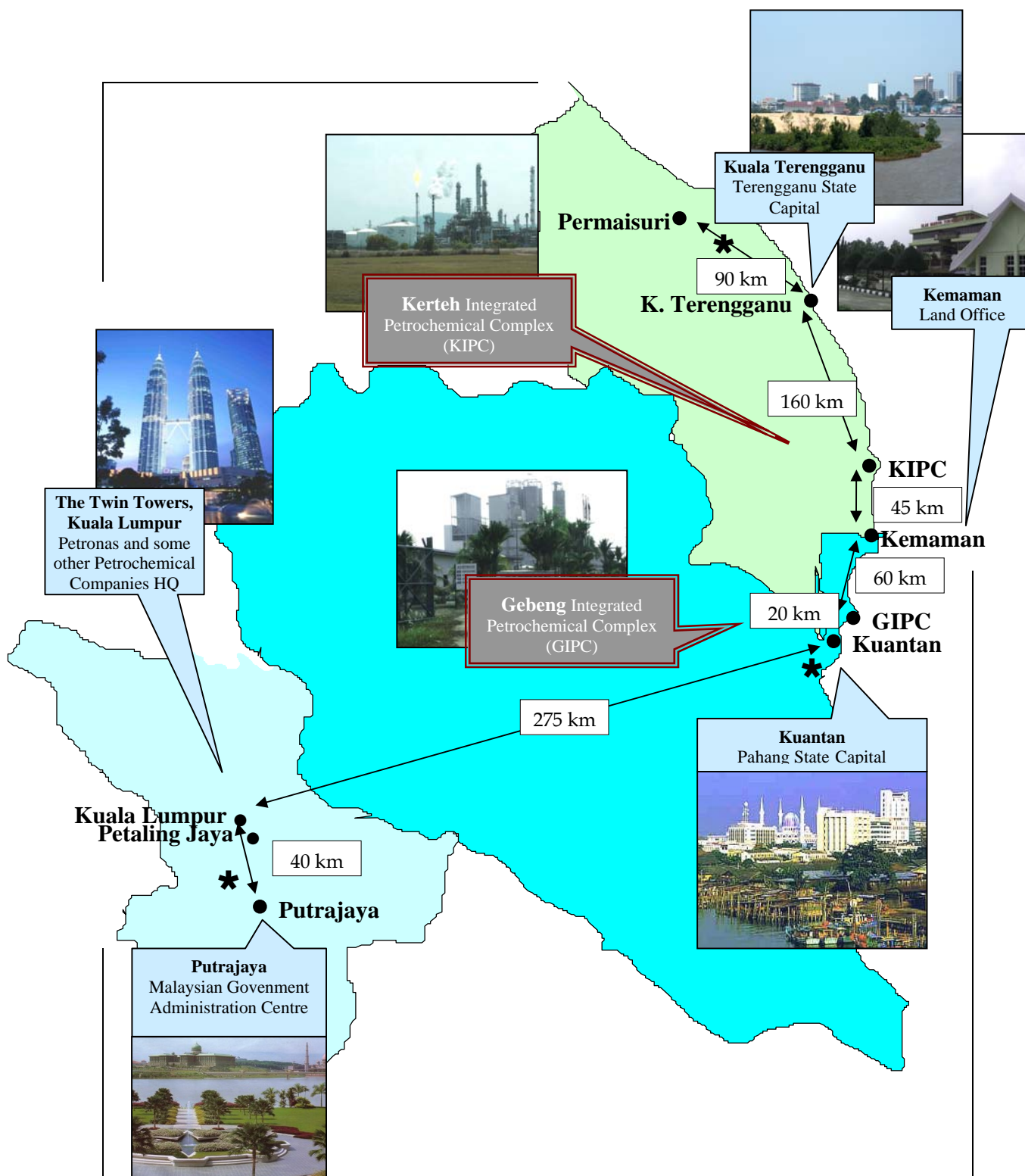
⁵³ As in Appendix H.

and inheritance as well as settlements, plans and cadastral. The Public Works Department as well as the Drainage and Irrigation Department are in an adjacent building and the office of the Municipality is across the road. The Department of Valuations is about 15 minutes walking distance. However, the Town and Country Department, Department of Environment and DLMO are 160 km away in the state capital, Kuala Terengganu.

Documents and records on land and land development applications are kept in hard copies in individual files. Each file is registered in what is called the Record of Applications roll. However, as is required by law⁵⁴, there are dozens of roll books maintained at the Land Office, according to the type of application. Each book is subdivided into *mukims* (sub-districts). During the initial days of the record investigation, as a gesture of full cooperation, the related staff presented all the roll books to choose from. It took some time to understand as well as to select the most appropriate rolls as the basis of the investigation.

As the search for evidence went on, it was noted that cooperation from officials and staff was excellent. Other than providing the necessary information, an office assistant was assigned to take orders. Nevertheless, the record investigation was not smooth sailing. It was, as shown in Appendix G, frequently interrupted by interview appointments – the dates and venues were determined by the interviewees, most of whom were either in Kuala Terengganu (160km away), Kuantan (60 km), Kuala Lumpur (335km) or KIPC (45km). Figure 22 shows places frequently visited by the researcher during data collection.

⁵⁴ See Chapter Four.



stars (*) mark locations where the researcher normally spent the night

Figure 22 : Towns and Cities where Data were Collected and Approximate Distance between the Places

Other than travelling, an even longer time was spent on:

- (a) Sorting out entries from the rolls.
- (b) After a list of required files was ready and handed to the related staff, it was a matter of waiting for the files. Normally, they needed some time, even days to obtain the files. After getting them, the files were released one by one. This was due to the following factors:
 - (i) The priority of the staff was their official duties. Most of them had to attend to clients. It is noted that there were always customers, both from the general public and consultants waiting to make inquiries about land applications or development applications. Moreover, this research was conducted just months after a change in government. There were rumours that the government policy on land had changed. Thus, people kept updating their applications. Discussions with staff were frequently delayed due to work priorities.
 - (ii) The files were circulated around the office so the researcher had to move from one table to another as well as to other floors of the building.
 - (iii) If a file had stopped circulating, it meant that it had been closed and to obtain it within a short period was nearly impossible. Closed records were placed outside the main working area together with thousands of other records.
- (c) When a file was available, it took a long time to read the entire contents. The amount of time consumed depended on the level of the complexity of each case. A simple and straight forward case, such as for land conversion with no problems at all, takes one to two hours. A complicated case, for example files on sites number 1, 3, 6 and 7, took nearly three visiting days to digest. Other than application forms, letters, appeals, EXCO Consideration Papers⁵⁵ and

⁵⁵ The term 'EXCO Paper' is hereafter used.

EXCO decisions, there were also municipality approvals, minutes of meetings, maps, buildings, site as well as machine arrangement plans, EIA detailed study reports, feasibility studies, changes in company ownership certificates and soil test reports in the files. Since some of those were more than 20 years old, some of the papers were decomposing.

6.4.2 Government and Firms' Official Documents and Publications

It was believed possible that more published and unpublished information on land development in the studied areas was available so the following organisations were approached:

- (a) MITI;
- (b) The Ministry of Natural Resources and Environment;
- (c) State Economic Planning Units of Pahang and Terengganu;
- (d) The Malaysian Industrial Development Authority (MIDA);
- (e) NAPIC;
- (f) Petronas and other companies;
- (g) State Economic Development Corporations of Pahang and Terengganu; and
- (h) Other Government Departments.

Through various means of communication, including, official letters, visits, personal contact and e-mails, the documents listed on Pages 345 to 347 were secured.

6.4.3 Data from International Bodies

The researcher felt that the secondary and primary data gathered from the organisations above, especially that obtained from government files and interviews with key decision makers, represented authentic and reliable sources of information. Nonetheless, after being gathered, the data seemed to have limitations, especially about investors' decisions. Limitation included:

- (a) Government offices only maintain information that serves their own interests, especially with regard to compliance to government requirements. Thus, government officials, official records and publications are not able to connect progress in land development with the actual market environment; and
- (b) Since the development process was initiated more than twenty years ago, only a few key personnel, either in the government or in firms have been around since the beginning. Thus, most of the interviewees had incomplete information about what had happened more than two decades ago.

These weaknesses could lead to difficulties in drawing strong and reliable conclusions about investors' decisions and strategies in land development in the 1980s. To overcome the limitations, a dataset from external sources was sought containing statistics on the global natural gas trade and manufacturing migration. The data was obtained from the Economic and Social Data Service (ESDS), through a University of Glasgow library subscription. The ESDS, based in the University of Manchester, is a channel to access to international data sets in research, learning and teaching across a range of disciplines⁵⁶.

Three data sets, as shown Table 25, related to this study were accessed and used to analyse world supply and demand of natural gas and the trend in employment in the chemical industry sector.

⁵⁶ website : <http://www.esds.ac.uk>

Table 25 : Dataset Obtained from ESDS

	Title	Data Creators
(a)	World Natural Gas Production 1960-2003	IEA ⁵⁷ and OECD ⁵⁸
(b)	Supply and demand of Natural Gas in the OECD Countries	IEA and OECD
(c)	Number Employed in the Chemical Industry Sector	OECD

6.4.4 Élite Interviews

Élite interviews were conducted to explore the relationship between actions in land development and subjective matters, especially institutional factors. An unstructured approach as in Marshall and Rossman (1995) was applied. At the initial stage, the interviewees were placed into two categories. The first category was that of key decision makers, the second involving those in the decision process as well as those believed to have information on the history of development. As there are no clear boundaries between these categories there may be overlapping functions.

6.4.4.1 Interview Questions

Marshall and Rossman (1995) suggest that in order to understand patterns in the implications of participants' actions, researchers may opt to classify data and responses

⁵⁷ The Paris-based IEA, or International Energy Agency, is a group of 26 countries (Australia , Austria , Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Hungary , Italy , Japan, Luxembourg, New Zealand, Norway, Spain, Portugal, Republic of Korea, Sweden , Switzerland, The Netherlands, Turkey, United Kingdom, United States). Formed during the oil crisis of the 1970s, the agency's initial function was to coordinate measures in times of oil supply emergencies. Today, as energy advisor to its member states, the agency focuses beyond oil crisis management to broader energy issues, including climate change policies, market reform, energy technology collaboration and outreach to the rest of the world. The body, through its publications and programmes, disseminates data and information on the latest energy research, policy analysis and recommendations. See also: <http://www.iea.org/Textbase/about/index.htm>.

⁵⁸ OECD, the Organization for Economic Co-operation and Development, was formed by a group of 30 countries (Australia, Austria , Belgium , Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Mexico, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States). Its forerunner was the Organisation for European Economic Co-operation (OEEC). The institution was created, following the Marshall Plan, to build strong economies in its member countries, improve efficiency, hone market systems, expand free trade and contribute to development in industrialised as well as developing countries. The body is known for its publications and its statistics that cover economic and social issues related to macroeconomics, trade, education, development and science and innovation. See also <http://www.oecd.org/about>.

according to an indigenous typology or create an analyst-constructed typology (see Page 103). This study will classify data and responses by adopting an analyst-constructed typology, blending ideas from Adams (2001a; 2002), Adams *et al.* (2003), Brouthers and Brouthers (2003), Brouthers and Nakos (2004), Brynard (1995), Cheung (1975;1976), Eggertsson (1997), Evans (1995b), Fan (2002), Glynn and Murphy (1996), Healey (1991), Healey and Barrett (1990), Keogh and D'Arcy (1999), Klein *et al.* (1990), Nanthakumaran *et al.* (2000), Needham and Kam (2004), North (1990), Pennington (2000), Simon (1961), Stoker (1991), van der Krabben (1995), van der Krabben and Lambooy (1993), Webster (1998) and Williamson (1975; 1979; 1985; 1991; 1998; 1999; 2003). The typology is presented in Table 26.

Table 26 : Proposed Themes and Categories of Information From Participants in the Empirical Research on Land Development at Kerteh and Gebeng Petrochemical Industrial Complexes

Themes	Main Categories
Actual land development progress	Petrochemical industrial site development
Process of land supply	Government departments involved in land development process
	Government bureaucracy
	Institutional Framework
Petrochemical firms' strategies in land acquisition and in the land development process	Land acquisition strategy
	Petrochemical industrial and business environment
Firms' perceptions of government bureaucracy	

To address the above themes, the interviewees were asked questions on the items indicated in Table 27 below:

Table 27 : Summary of Themes, Categories and Questions Asked of Élite Interviewees

Themes	Category of themes	Questions asked about:
Actual land development progress	Petrochemical industrial site development	Plant arrangement Plant ownership
Process of land supply	Government departments involved in land development process	Departments' background (including departments' core business, position in public administration and professional training of senior officials) Roles played Goals and intentions Powers and limitations
	Government bureaucracy	Forms, rules and procedures for government land and land development applications Steps and processes in government decision-making Power divisions in government administration Relationship between government departments Duration of approvals at the Land Office Communication system
	Institutional Framework	Public administration system Standards, culture, norms and values observed by government departments participating in the land development process Planning restrictions
Petrochemical firms' strategies in land acquisition and in the land development process	Land acquisition strategy	Land price Landowner (including landownership, landownership history, relationship between landowners)
	Petrochemical industrial and business environment	Firms' external factors (global and local gas market changes, government behaviour, threats) Inter-firm relationships (landowners' history, development of firms' ownership structure, plant production linkage) What does land mean for the industry?
Firms' perceptions of government bureaucracy		

6.4.4.2 Strategy

As the case studies involve areas that are believed to have received the highest amount of foreign investment in Malaysia in the 1990s, the researcher strongly believed that the potential interviewees would be very important people with high profiles and who were very busy. Thus, the advice provided by Yeung (1995) (as described on Page 115) was applied when approaching each of them.

6.4.4.3 Outcome

The strategy adopted above successfully secured appointments with key people in the development process in the studied area, both from the government sector and investors. Those who were interviewed were government decision makers, key personnel in firms that invested within the case study areas and officials involved in land development approvals.

6.4.4.3.1 Government Decision Makers

The senior politicians interviewed are believed to be three of five key decision makers involved during the development of KIPC and GIPC as well as directly involved in decision and policy making during the development of KIPC and GIPC. They are senior politicians, one of whom is still politically active. All of them want their identities disclosed. The other two who could not be contacted were the Terengganu State Chief Minister in the 1980s and the Pahang Chief Minister in 1990s. The interviewed politicians were:

(a) Mahathir Mohamed

As UMNO (United Malay National Party) President, Mahathir served as Prime Minister of Malaysia for 22 years, from 1981 to 2003. Presently (since 2003) he is Advisor to Petronas. He was Malaysian Deputy Prime Minister from 1978 to 1981. During this time, he in charge of education from 1976 to 1980 and MITI from 1980 to 1981. Prior to that he was Minister of Education from 1974 to 1976. During the interview, five specific questions were posed to him, regarding:

- (a) The vision and mission of the Federal Government in Petronas, and the petroleum and petrochemical industries.
- (b) Federal Government policy and participation in petrochemical development.
- (c) National industrial and land development policy from UMNO's perspective.
- (d) Malaysian public administration from a Prime Minister's perspective.
- (e) The history of the East Coast states' industrial development in the 1980s – 1990s.

(b) Abdul Hadi Awang

From 1999 to 2004 Abdul Hadi was Chief Minister of the State of Terengganu. During this time he was also a Member of Parliament. During that period he was elected to be the President of *Partai Islam Se-Malaysia* (Pan Malaysian Islamic Party [PAS]). He was the House of Representatives' Opposition Leader from 2002 to 2004. During the interview four specific questions were posed to him, regarding:

- (a) Terengganu government policy and participation in petrochemical development.
- (b) National industrial and land development policy from an opposition party's perspective.
- (c) Malaysian public administration from a PAS Chief Minister's perspective.
- (d) The history of the East Coast states' industrial development in the 1990s.

(c) Abdul Rahim Bakar

Abdul Rahim Bakar was Chief Minister of the State of Pahang from 1978 to 1981 during the creation of GIPC. Prior to that, he was the SEDC General Manager of Pahang for six years, from 1972 to 1978. In 1971 – 1972 Abdul Rahim was the Chairman of the Kuantan Municipality Council. The three bodies that were led by him are key institutions

in the creation and development of GIPC. Abdul Rahim was asked specific questions about:

- (a) Pahang government policy and participation in petrochemical development.
- (b) National industrial and land development policy from an UMNO Chief Minister's perspective.
- (c) Malaysian public administration from an UMNO Chief Minister's perspective.
- (d) The history of the East Coast states industrial development in the 1980s.

6.4.4.3.2 Key Investment Personnel

Key personnel in firms that invested within the case study areas were believed to have information about the investment decisions made by their organisation. In addition to the items indicated in Table 27, the interviewees were also asked about:

- (a) Malaysian and East Coast states' prospects and problems with respect to the petrochemical industry;
- (b) expectations and problems in dealing with government departments;
- (c) formal and informal relationships among industry members;
- (d) the inter-plant production chain; and
- (e) the process of industrial approval.

Letters were sent to 27 firms (including associations). 11 of them (40%) were successfully interviewed. Table 28 shows the interviewees' countries of interest, plant locations and category of industry. Table 29 presents an analysis of these 11 interviewees. It demonstrates that the sample covers a number of different types of firms from number of different countries, and is representative of the firms located within the study areas.

Table 28 : Interviewees' (Investors Side) Countries of interest, Plant Location and Category of Industry

	Interviewees	Countries of interest	Location of the Plants	Category of petroleum and gas industry
(a)	Petronas East-Coast Regional Manager	Malaysia	KIPC and GIPC	primary
(b)	President of the Malaysian Petrochemicals Association		KIPC and GIPC	
(c)	CEO of BASF Malaysia	Malaysia and Germany	GIPC	tertiary
(d)	CEO of Polyethylene (M)	Malaysia (and formerly Japan)	KIPC	secondary and tertiary
(e)	CEO of Industrial Resins (former co-owner of VCM)	Malaysia	KIPC	tertiary
(f)	CEO of MTBE (M)	Malaysia	GIPC	secondary
(g)	CEO of Cryovac (M)	The US	GIPC	tertiary
(h)	Deputy CEO of BP Asia Pacific	Malaysia, the UK and Canada	KIPC and GIPC	primary and secondary
(i)	Project Co-ordinator Dow Chemical, Asia Pacific	The US	KIPC	secondary
(j)	Managing Director, Kerteh Airport	Malaysia	KIPC	supporting
(k)	Human Resources Manager, Eastman (M)	The US	GIPC	tertiary

Table 29 : Interviewees (Investor Side) – Analysis of Interviewees' Representativeness.

Typology	Represent:	Number of Representatives	Total
Countries of interest	Malaysian companies	5	11
	European companies	2	
	US companies	3	
	Other countries	1	
Location of the Plants	KIPC only	4	11
	GIPC only	4	
	KIPC and GIPC	3	
Category of petroleum and gas industry	Primary only	1	11
	Primary and secondary	1	
	Secondary only	2	
	Secondary and tertiary	1	
	Tertiary	4	
	Supporting	1	
	Mixed	1	

6.4.4.3.3 Officials Involved In Land Development Approvals

Interviewees in this group were heads of departments that are directly involved in the government decision-making process regarding land development. From an initial investigation, 17 departments and individuals were identified as potential sources of information about the approval process for land development and government land approval. Two of these, the heads of department for MITI (East Coast Branch) and the Department of Drainage and Irrigation could not be contacted. The respondents interviewed include five heads of departments and ten other individuals:

1. State Director, Department of Safety and Health, Terengganu;
2. State Director, Malaysian Industrial Development Authority, Terengganu;
3. Deputy State Director, Office of Director Lands and Mines, Terengganu;
4. Planning and Investment, Terengganu SEDC;
5. Planning and Investment, Pahang SEDC;
6. Assistant State Secretary, Pahang State Secretariat;
7. Assistant State Secretary, Terengganu State Secretariat;
8. A senior official, Department of Town and Country Planning, Terengganu;
9. A senior official, Department of Environment, Terengganu;
10. Former Secretary General of Ministry of Land and Cooperative Development;
11. Deputy Director of Terengganu SEPU in the 1980s;
12. District Engineer, Department of Public Works;
13. Chief Staff, Land Office, Kemaman;
14. A senior official, Valuations Department, Kemaman; and
15. Town Planner (Planning Division), Kemaman Municipality.

The interviewees were asked questions about:

- (a) their roles in the government decision-making process regarding land development approval and government land disposal;
- (b) their powers and constraints;

- (c) inter-departmental relationships in the decision-making process; and
- (d) the procedures and process for industrial approval.

6.4.4.4 Summary of the Interview Process Report

To attain the best results, interviews were flexible with respect to time, location and situation. Some were very formal, others very casual. While some interviews were during business hours, other interviewees chose a more comfortable time such as during breakfast or dinner. And, while some interviews were conducted in their executive board rooms (one of those was at the level 86th of the 88 level-Petronas Twin Towers), others were conducted at the interviewee's ranch or even at a *gerai makan* (outdoor restaurant). While some interviewees communicated in fluent English, others preferred a mixture of English and Malay.

In some cases, arrangements were not fixed from the beginning but developed as the process proceeded. Fortunately, these interviewees were willing to talk. As emphasised by Yeung (1995) and Sabot (1999), interviewing high profile persons requires patience and a lot of travelling. It is also time consuming. As shown in Appendix G, since the dates and places for interviews were fixed by the interviewees, the interviewer had to travel a lot between Kuala Lumpur, Kuala Terengganu, Kuantan, KIPC and GIPC.

While three prospective interviewees regretted very much and apologised for not being able to make an interview, some interviewees, despite agreeing to participate, failed to find a convenient date. In two or three cases, after hundreds of kilometres travelling, the researcher found only apology notes. While some were happy to talk for more than two hours, some only managed to spend less than twenty minutes. Some interviewees went straight to the point, while others talked lengthily on other matters. In addition, as indicated in Yeung (1995) and Sabot (1999), interviewers are normally rewarded with extra information, even if it is not asked for. Some of the documents listed on Pages 345 to 347 were actually 'awarded' during the interviews.

In total 40 individuals were interviewed and most of these were tape-recorded and transcribed. Appendix K contains extracts from a sample of transcripts as the actual interview scripts are very long.

Table 30 summarises the types of respondents and how representative the sample is.

Table 30 : Population and Sample size of Interviewees

Group	Number of potential officials to be interviewed	Number of interviewed officials	%
Government decision makers	6	3	50
Investors	27	11	40
Government departments	17	15	88
Total	50	29	58

The findings in Tables 29 and 30 suggest that the interviewees adequately represent the total of the public and private sector population associated with the case study areas.

6.4.5 Summary of the Empirical Inquiry

A summary of the empirical inquiry procedure is in *Endnote ix*.

6.5 THE DATA

Data gathered included:

- (a) preliminary data (see Appendix A);
- (b) data from government records and official publications as in Appendix I;
- (c) supporting information from the Land Office as in Appendix J;
- (d) interview notes as in Appendix K;
- (e) data on the supply and demand of natural gas as in Appendix L;

- (f) data on world natural gas production 1960-2003 as in Appendix M; and
- (g) data on world natural gas prices 1960-2003 as in Appendix N.

6.6 DATA ANALYSIS

Chapter Five, concluded that qualitative data analysis is divided into three stages. The first stage involves generating categories, themes and patterns from the raw data. The second stage involves layering the categories, themes and patterns that emerge from the first stage. The final stage involves interrelating the themes that emerge from the second stage. This sub-section will describe the procedure used at each stage of the data analysis.

6.6.1 Raw Data Processing Stage 1 – Extraction of Themes and Categories From Interview Replies

6.6.1.1 Procedure

Creswell (2005 [see discussion on Page 103]), suggests that information from interviews need to be codified (using a format shown in *Endnote ix*) to extract themes and categories expressed by the interviewees. The themes and categories are expected to emerge from replies to interview questions as in Table 26. The analysis in Appendix K is an application of Creswell's (2005) proposition. Table 31 provides a summary of Appendix K as an example of how the analysis was carried out at this level.

Table 31 : Example of Application of Extraction of Themes and Categories from Interview Replies Procedure

<p>1. Interviewee A1 Category-Government (Terengganu SEPU) Date-20.2.2005 Position-Assistant State Secretary Place-State Secretariat, Kuala Terengganu Language-Malay</p>	
<p>1.1. Peranan UPEN ialah untuk menarik pelabur sama ada domestik atau pelabur asing ke Terengganu, oleh bertanggungjawab:</p> <ul style="list-style-type: none"> • menyediakan infrastruktur di kawasan industri; • mengadakan misi pelaburan; • 'negotiate' dengan para pelabur; • dalam pembangunan IKS dan; • ke atas SEDC. <p>1.2. Tanggungjawab UPEN hanyalah melihat dari aspek ekonomi. Aspek-aspek lain (perundangan, alam sekitar, keselamatan dll) adalah tanggungjawab jabatan lain. Dalam menarik pelaburan, Kerajaan Negeri:</p> <ul style="list-style-type: none"> • mengharapkan 'spill-over' kegiatan ekonomi; • kutipan cukai oleh Pejabat Tanah dan PBT; • memberikan perhatian yang serius kepada pembangunan Petrokimia dan menyerahkan program pembangunan di PPIC melalui Petronas; • menjangka, menjelang tahun 2008 seluas lebih daripada 5,000 hektar akan dimajukan di Kerteh dan kawasan-kawasan sekitarnya dibangunkan dengan industri berkaitan petroleum; • menyediakan tapak yang telah tersedia dan cukup luas bagi menarik pelaburan; dan • menawarkan harga tanah sehingga yang terendah di Malaysia. 	<p>Theme : Land supply (a) Category 1 : Roles (i) Sub-category 1 : Roles Played To provide physical infrastructure for industrial areas within industrial zones and to be negotiator, on behalf of the state government, with investors and to implement the Small and Medium Industrial (SMI) Plan (ii) Sub-category 2 : Goals and intention State government efforts to attract investment on its soil are in expectation of: <ul style="list-style-type: none"> • economic spill over • revenue from quit rents and local authority taxes; and (iii) Sub-category 3 : Strategy The state anticipates the industrial growth. By 2008, 5,000 hectare in Kerteh will be prepared for industrial sites, ready to be occupied at the lowest price. (b) Category 2 : Institutional-Framework (i) Sub-category 1: Powers All decisions are made by EXCO under the SIC advice. SIC's recommendations are subjected to the MIDA, District Officer, DoE, TCPD. The SIC consists of an EXCO member, State Secretary, State Financial Officer, State Legal Adviser, State Directors of SEPU and DLMO.</p>

Source : Extract from Appendix K.

6.6.1.2 Findings

The initial research findings from the extraction of themes and categories from the interview replies are summarised below but shown in full in Appendix P:

- | | | |
|-----|---------|--|
| (a) | Table C | Roles Played by Departments Involved in Land Development |
| (b) | Table D | Category of Service of Head of Government Departments and Analysis of Government Interdepartmental Communication |
| (c) | Table H | Constraints Faced by Parties Involved in Government Decision Making |
| (d) | Table I | Analysis of Government Goals, Motives and Intentions |
| (e) | Table J | Analysis of Head of Departments' Professional Training |
| (f) | Table K | Investors' Perception of Government Departments |

6.6.2 Raw Data Processing Stage 2 – Layering and Interrelating Themes

Chapter Three suggests that land development depends on various factors. Chapter Five indicates that interviews are one of the primary potential data sources. Creswell (2005) suggests that data gathered from the procedure discussed above need to be analysed through what he calls 'layering themes procedures'. The 'layering procedure' is also applied to consolidate data gathered from interviews with data from other sources. In this study, the procedure was applied mainly to identify the most significant contributing land development factors in the case studied. This procedure is depicted in Figure 23 (Page 151).

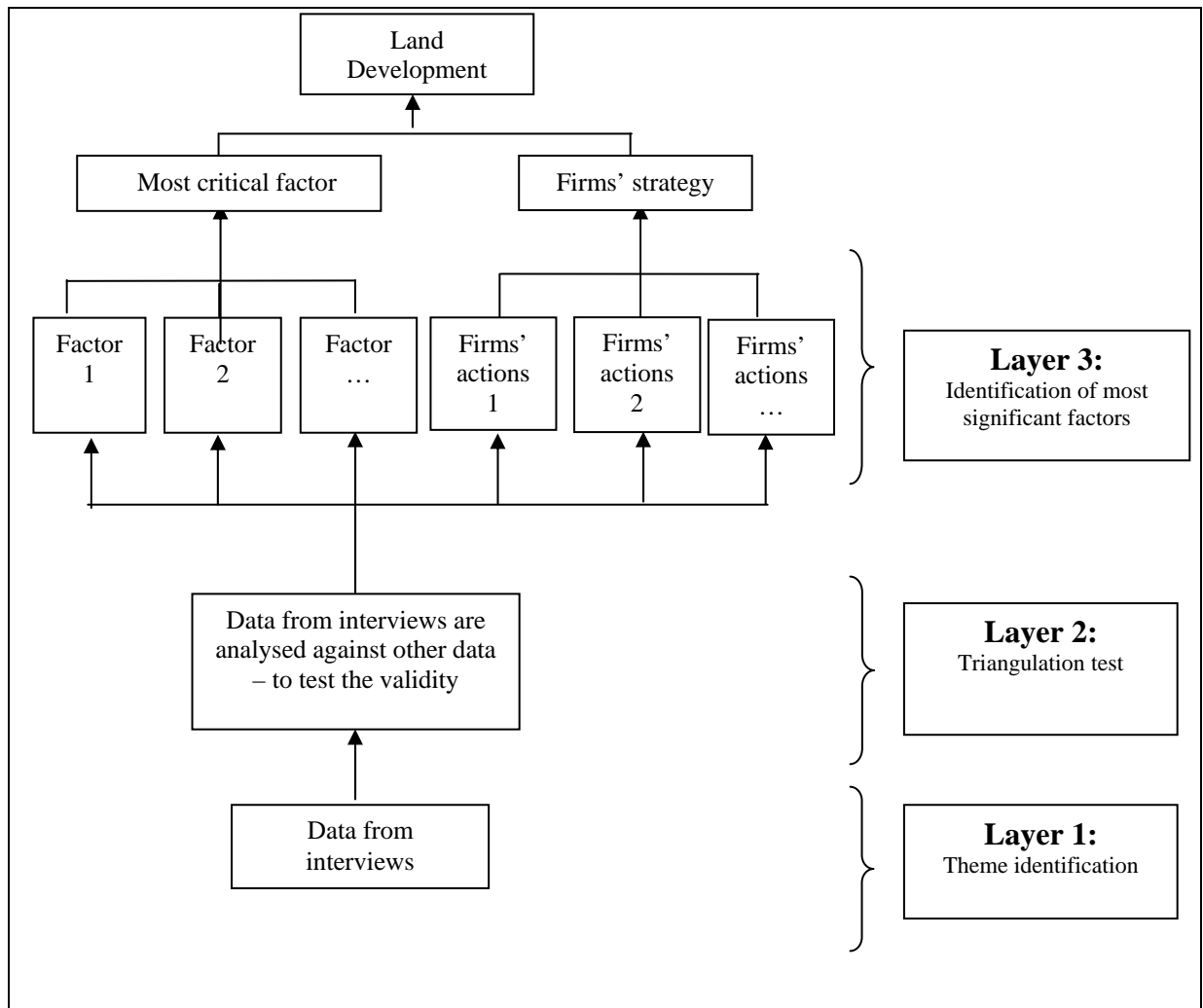


Figure 23 : Layering Themes Procedure Empirical Research on Land Development at Kerteh and Gebeng Petrochemical Industrial Complexes

Source : Own analysis

The initial research findings from this stage of analysis are shown in Appendix P, which is summarised below:

- (a) Table A Factors Attracting Investment in the East Coast Industrial Corridors (detailed findings)
- (b) Table B Factors Attracting Investment in the East Coast Industrial Corridors (summary of findings)

6.6.3 Raw Data Processing Stage 3 – Extracting of Themes and Categories from Interview Replies

This process connects the themes that are generated by Table 26. Creswell (2005), as in *Endnote vii*, gave an example of how to interrelate themes. In the present study, the ‘inter-relating procedure’ is applied to relate the findings above with land development strategies. The discussion on Page 26 states that Williamson (1988) has put forward a procedure to interrelate transaction costs with human actions and interactions. This procedure was applied in the present study, as depicted in Figure 24 (Page 153). The discussion on Page 47 notes that Barrett *et al.* (1978) suggest a model for the decision-making process in land development. During data analysis this model will be used to illustrate the sequence of actions involved in the decision making process in the case study.

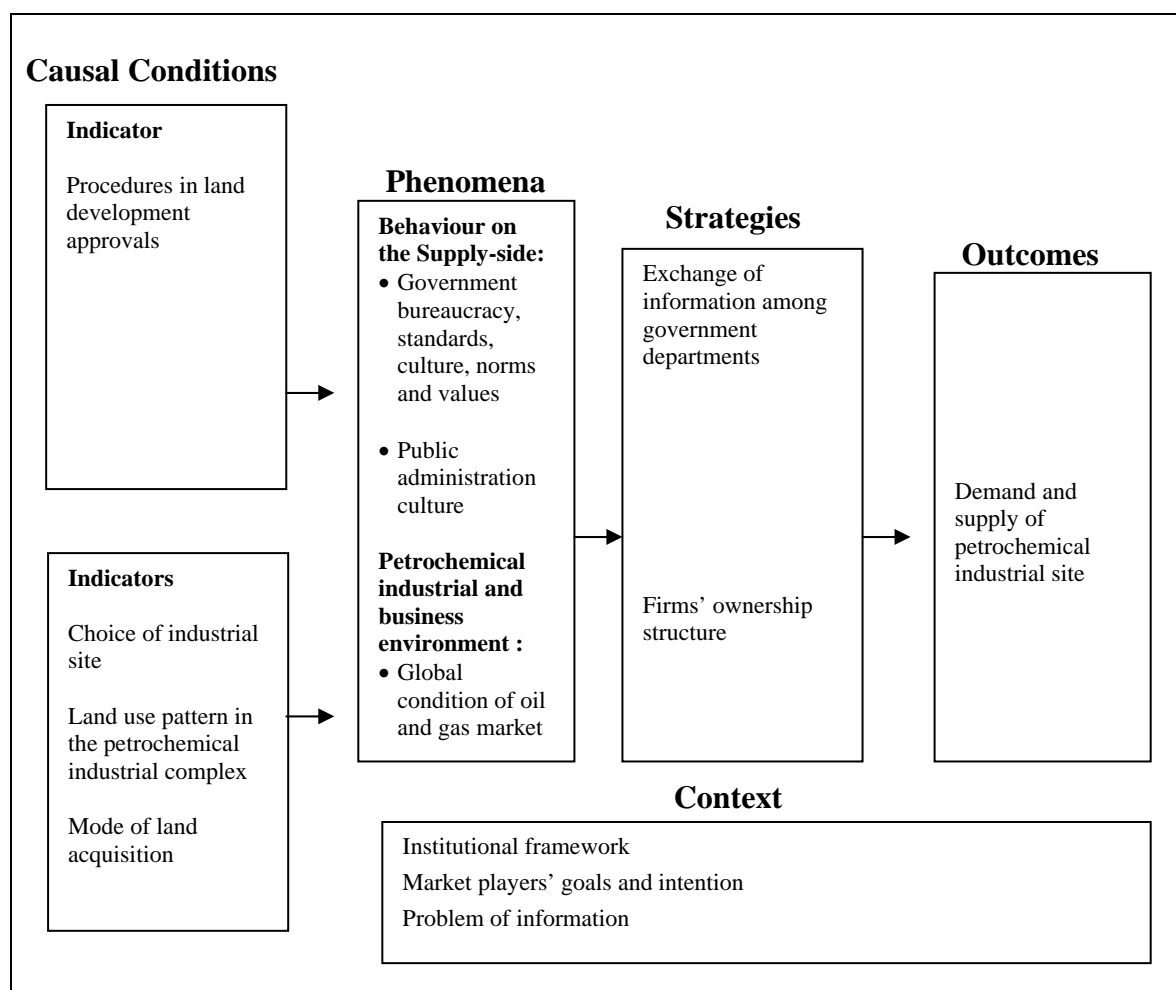


Figure 24 : Interconnecting Themes Procedure Empirical Research on Land Development at Kerteh and Gebeng Petrochemical Industrial Complexes

Source : Own analysis

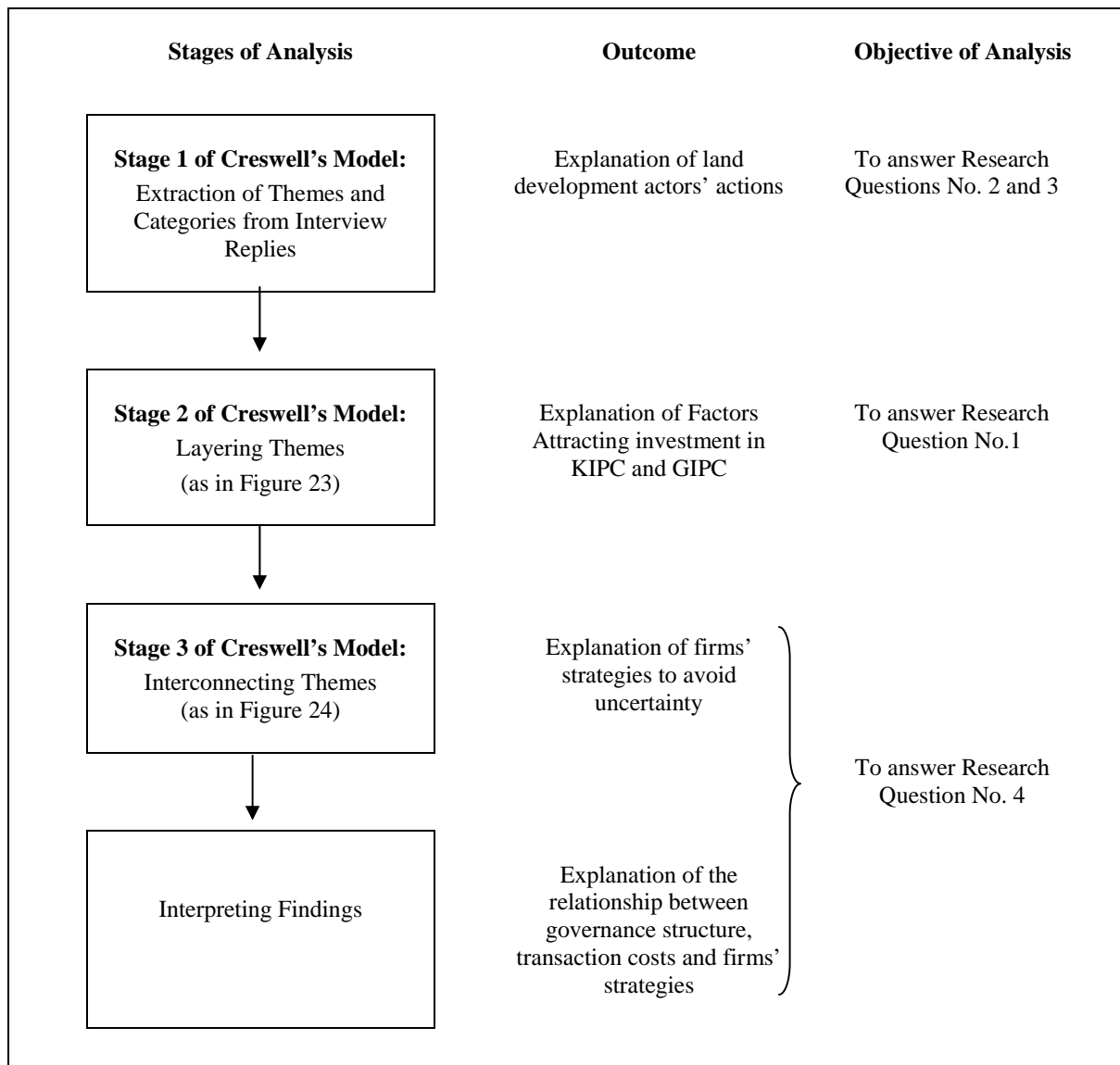


Figure 25 : Relationship Between Research Questions and Stages in Data Analysis

The results of the data analysis which uses this procedure are discussed in Chapter 9 with a summary given in Figure 61 (Page 312).

6.7 FINDINGS REPORT

During the analysis of the data, the findings will be presented in various qualitative styles, using comparison tables, hierarchical tree diagrams and chain diagrams. Chapters Seven, Eight and Nine will present an analysis of the data collected from the sources described in Chapter Six. Chapters Seven, Eight and Nine are divided according to the steps of analysis illustrated in Table 26 (Page 139). Discussions in these three chapters are mainly based on findings from analyses in Appendices O and P.

Chapter Seven will describe the actual physical land development as well as analyse the actual supply and demand flows for petrochemical industrial sites in the studied areas. Chapters Seven and Eight which aims to answer Research Question No. 1, will also analyse the actual land development activity at the studied location. The chapter concludes with an assessment of the effect of interactions among land development actors on the development process. This chapter which addresses whether land price is a major attraction in the studied areas, also identifies the market players and defines their functions and interests.

Chapter Eight will analyse the process of government decision making regarding government land disposal. Most of the issues related to the Land Office as well government bureaucracy in land administration are addressed in Chapter Eight. The objective of this chapter is to answer Research Questions No. 2 and 3. The chapter begins by analysing of the process of land and development approval at the Land Office. Within the analysis, the interaction among land development actors will be assessed. The effect of these interactions on the development process will also be analysed. Through this analysis and by answering both research questions, Chapter Eight will explain government departments' power structure, domination and control of resources. This chapter will also identify the institutional framework that controls and promotes the supply of industrial land.

Chapter Nine will analyse the strategies adopted by multinational petrochemical firms in land development. The aim of this chapter is to answer Research Question No. 4 regarding the reactions of the demand-side to uncertainty. This chapter, based on the

findings in Chapter Eight and proposition in Williamson (2000), will analyse the strategies of petrochemical firms who acquire industrial sites and participate in the land development process.

Chapter Ten, which is the concluding chapter, will summarise the key findings. This chapter contains a review of the major findings of this study and how the research questions, especially the central research question, have been answered. This chapter assesses whether the answers to the research questions met the research objectives, answer the central research question and explain the central phenomenon addressed by this research.

6.8 VALIDITY, CREDIBILITY AND RELIABILITY

Sub-section 5.4.3 indicates that procedures to verify and test validity, credibility and reliability in qualitative research vary depending on the nature of the research as well as researchers' needs and constraints. As on Page 97, Greene *et al.* (2001) and Moran-Ellis *et al.* (2006) argue that in humanist research, it is most appropriate to employ an eclectic approach. This entails relying on a mix of qualitative and quantitative data. Moran-Ellis *et al.* (2006) contend that since information comes from more than one data-gathering method, application of a triangulation technique is the most appropriate data evaluation procedure. Therefore, the data will first be analysed separately, within the parameters of its own paradigm, and then be triangulated at the point of integration, that is at the end of analysis.

To strengthen the credibility of the findings, data collection activities will be fully documented and the following records are maintained in an orderly manner. They are:

- (a) correspondence with the interviewees;
- (b) data collection log-book;
- (c) a register of participating individuals, companies and government departments in the inquiry;
- (d) a register of sources of official information; and
- (e) a register of sources of secondary data.

6.9 CONCLUSION

This research method, which includes the empirical research framework, data collection and data analysis procedure described in detail in this chapter merely illustrates one particular application of the method developed in Chapter Five. Angrosino (2005), as highlighted on Page 111, suggests that true objectivity can be attained by a standardised research procedure to (i) maximise observational efficacy, (b) minimise investigator bias; and (iii) allow for replication or verification.

By applying the basic and detailed principles that have been laid down in the previous chapter, the researcher managed to collect comprehensive data from various authentic, including official and classified sources. Élite interviews with those directly involved in the decision-making process, including senior politicians, multinational petrochemical company CEOs as well as senior government and petrochemical company officials were also successfully organised.

The data analysis procedure discussed in this chapter was created to answer the four research questions, whose ultimate aim is to address the four research objectives set out in Chapter One. Therefore, the subsequent chapters will interpret the initial findings and answer the research questions. As mentioned on Page 154, Chapter Seven will analyse the actual physical land development as well as the actual demand and supply flows for petrochemical industrial sites and will answer Question No. 1. Chapter Eight will analyse the process of government decision-making regarding government land disposal and answer Questions 2 and 3. Chapter Nine in turn will analyse strategies adopted by multinational petrochemical firms in land development and answer Question No. 4.

CHAPTER SEVEN – PHYSICAL LAND DEVELOPMENT AND ANALYSIS OF THE SUPPLY AND DEMAND OF PETROCHEMICAL FOR INDUSTRIAL SITES IN TERENGGANU AND PAHANG

7.1 INTRODUCTION

This chapter will answer Research Question No. 1, that is, whether the land price is a significant attraction for investment in the areas researched by the case study. This chapter follows the suggestion in van der Krabben (1995) that research on land development should begin by investigating of the actual physical land development. Next the actors involved the land development process will be identified. This chapter therefore, will analyse the actual supply and demand flows for petrochemical industrial sites in the studied areas. In the concluding section, the chapter will assess whether relatively low land prices are a major attraction to firms locating in the studied areas. This chapter therefore, will:

- (a) describe the physical land development within the studied area;
- (b) briefly analyse supply and demand flows of petrochemical industrial site in the studied area;
- (c) analyse the process of land transaction in the studied areas; and
- (d) present figures on state government revenue from quit rent (land tax) on industrial sites.

7.2 PHYSICAL DEVELOPMENT AT THE STUDIED SITES

In describing physical development in both KIPC and GIPC, this section will emphasise type, arrangement and ownership of the plants. This section describes:

- (a) installations and plants in the KIPC and GIPC;
- (b) plant arrangement; and
- (c) plant ownership and investors' countries of origin.

7.2.1 Installations and Plants in the KIPC and GIPC⁵⁹

As of 1st May 2005, there were 48 natural-gas-related installations within the studied area. Figures in Table 32 show that 26 installations were in the KIPC and the other 21 were in the GIPC. The following tabulation, Table 32, is the breakdown of the installations in the petrochemical complexes.

Table 32 : Malaysia – Number of Gas and Petrochemical Installations in Kerteh and Gebeng Integrated Petrochemical Complexes (supporting facilities and infrastructure not included)

A	B	C	D	E	F
Location	GPP	CCF	Petrochemical Plants		TOTAL
			In Operation	Under Construction	
KIPC	6	2	18	-	26
GIPC	-	2	19	1	22
TOTAL	6	4	36	1	48

Source : Own analysis (calculated from data in Section A of Appendix I).

The above tabulation indicates that installations at KIPC and GIPC fall within four groups:

- (a) gas processing plants (GPP);
- (b) centralised common facilities plants (CCF)
- (c) petrochemical plants; and
- (d) supporting facilities and infrastructure.

Columns C and D of Table 32 indicate that there is no substantial difference between the total number of CCF and petrochemical plants in the two complexes, although GPPs are only available in Kerteh. The tabulation also indicates that there is a plant under construction in Gebeng, which means that land development is still

⁵⁹ Discussion in this sub-section is based on information in records and documents obtained at Terengganu SEPU, Pahang SEDC, the Municipality of Kemaman, LOKM, Pahang DoE, Petronas and MPA. The documents are listed on Page 345.

progressing there. The following quotations describe the arrangement and features of the installations in KIPC and GIPC.

“To set up new plant we need to create an environment for it. If it is next to the existing plant we save a lot” (A European Company).

“It is not to say land is not important but issue of feedstock is critical. We need land, in reasonable size. We don’t want a cramped area. We need space for expansion, good infrastructure and accessibility to port. Land price is only one-off, but other costs are running” (US Company).

Petrochemical companies are looking for the most integrated site. Without which, companies run at high costs. Integrated means feedstock are supplied and processed at the same location, plus supply other industrial inputs such as water and electricity as well as common facilities such as tankage and pipelines. In an integrated complex, buyer, supplier and supporting industries are placed under one roof... Kerteh is fully integrated. There are GPP, CUF, CTF, crackers to produce ethylene, storage, dedicated port, utility companies to produce industrial water and oxygen, fire service. If investors want to move out, not to say impossible, but difficult” (MPEA).

“Here, services are integrated where facilities are shared among the investors. Therefore, costs are brought down. CTF and CUF that provide tankage facilities and produce electricity, water and hydrogen, which are the most important facilities in petrochemical complex are provided here. Without which, investors have to construct on their own. It is very costly. But, they are not free of charge. The facilities in Kerteh and Gebeng are identical. The difference between Kerteh and Gebeng is that all plants in Kerteh are under Petronas’ control... We do not quarrel with other oil companies. Yes, you can see that we are competing with each other in some countries. But, in somewhere else we are partners. That is the practice in oil industry. Not to say it is culture. But we practise that. In this industry, we do not antagonise others. Anywhere, no oil company can enter a country alone. Some companies have money. Some have technology. Others have ready market. These are the criteria when to choose a partner. So, if we have the right partner, we do not fear to venture into it. So, if we produce something here, the market is ready somewhere else. On the first day you manage to make profit.” (Petronas).

The above quotations suggest that petrochemical plants need to share facilities in order to control operation costs. Therefore, plants are usually concentrated in particular areas. By being close to each other, the plants can share the main source of raw material and also share common facilities. As a result, a petrochemical complex tends to be populated by various types of interrelated plants. This phenomenon requires petrochemical companies to acquire a great deal of land at project initiation. After project initiation, the number of plants will grow. The existence of a plant which is under construction as appears in Table 32 (Column E) supports this proposition.

Interdependence seems to be the main feature of the petrochemical plant. The quotation from Petronas on Page 159 suggests that competing petroleum companies from various countries co-operate with each other in KIPC and GIPC. The oil companies' practice is to partner with each other in exploiting oil and gas. The quote suggests that petroleum companies cannot afford to exploit oil and gas without partnering with other companies. With this strategy they reduce their exposure to high operation costs and immediately generate a market for their outputs. Thus, the partnership strategy is designed to minimise risk. Therefore firms operating in both petrochemical complexes are vertically integrated. The findings also suggest that high operation cost is the main reason why petrochemical plants are vertically integrated in KIPC and GIPC.

7.2.1.1 Gas Processing Plants

Gas processing plants (GPP) break down petroleum and natural gas into ethane, propane, butane and condensate. All these are gaseous substances with high energy properties. 70 percent of GPP products are consumed as energy. While some is bottled for domestic and industrial consumption and shipped out by land, much is transported throughout Malaysia, Singapore and Thailand by the Peninsula Gas Utility (PGU), a national gas networking system. However, the biggest volume is exported by sea mainly to destinations in Japan, Korea, the US and Europe. Only some 30 percent of the refined gas, mainly ethane, propane and butane, is channelled to the KIPC and GIPC for use as petrochemical industry feedstock. Ethane, propane and butane are basic properties in creating a petrochemical building block⁶⁰.

7.2.1.2 Centralised Common Facilities

The centralised common facilities (CCF) are divided into (a) the centralised utility facility (CUF) and (b) the centralised tankage facility (CTF). Without CCF, every individual plant would need to build its own facilities, which would be very expensive. Having individual facilities definitely increases overhead and operation costs for companies. In simple terms these facilities are:

⁶⁰ Source: Unpublished Petronas and Pahang SEDC documents (see Page 345)

- (a) **CUF**, in non-technical terms, is a complex that supplies utilities such as steam, power, oxygen, nitrogen, demineralised water, cooling water, potable water, and fire water as well as handles waste water treatment.
- (b) **CTF** is a complex for chemical storage. There are two CTFs, one at Kerteh Port and the other at Kuantan Port. Each of these has a 330,000 cubic metre capacity. Both Kuantan and Kerteh CTFs can handle 37 products at one time. The tankage includes a pipe system, forming a distribution network that connects all plants as well as port terminals.

7.2.1.3 Petrochemical Plants

There were 38 petrochemical plants in the studied areas during the period of study. These are listed in Table 33.

Table 33 : Malaysia – Petrochemical Plants in KIPC and GIPC (as of May 2005)

Petrochemical Plants in Kerteh	Petrochemical Plants in Gebeng
Ethylene Malaysia	BASF-Petronas Acrylic Acid /Acrylics Esters Plant
Optimal Butanol	BASF-Petronas Butanedols Plant
Optimal Butyl Acetate	BASF-Petronas Oxo-Alcohols Complex (1)
Optimal Ethanolamine	BASF-Petronas Oxo-Alcohols Complex (2)
Optimal Ethoxylates	BASF-Toray (under construction)
Optimal Ethylene Glycols	BP Chemicals (Formerly known as Conoco Chemicals)
Optimal Glycol Ethers	Eastman Chemicals
Optimal Glycols Ethylene Oxide	Flexyss (1)
Optimal Olefins Ethylene	Flexyss (2)
Optimal Olefins Propylene	Kaneka Malaysia
Petlin (M) Sdn. Bhd.	Kaneka Electric
Ammonia Syngas Plant	Kaneka Eperan
Aromatics Malaysia (Benzene Plant)	Kaneka Paste Polymers
Aromatics Malaysia (Paraexylene Plant)	MTBE
Petronas-BP Acetyl Acid	Polyplastics
Polyethylene Malaysia	Polypropylene
Vinyl Chloride Malaysia (VCM Plant)	Propane Dehydrogenation Plant
Vinyl Chloride Malaysia (PVC Plant)	Sealed Air (1)
	Sealed Air (2)
	WR Grace

Source: Summarised from Appendix I

7.2.1.4 Supporting Facilities And Dedicated Infrastructure

The following is a list of facilities in the two industrial complexes that were created to support the petrochemical industry as well as other petroleum and natural gas industries:

<i>Table 34 : Malaysia – Petroleum, Gas and Petrochemical Supporting Facilities</i>
Industrial Input Facilities <ul style="list-style-type: none">• Water Supply
Gas and Bulk Storage Facilities <ul style="list-style-type: none">• CTF
Transport System <ul style="list-style-type: none">• Kerteh Airport• Peninsula Gas Utility (PGU [a national grid gas pipeline networking system])• Specially designed Kerteh and Kuantan Ports• A dedicated railway system between Kerteh and Gebeng
Other Facilities <ul style="list-style-type: none">• Kuantan Industrial Training Institute, Gebeng• Staff residential and commercial areas.• Rantau Petronas Golf Club• School and staff housing

Source: Own analysis (from data in Sections E and F of Appendix I)

7.2.2 Plant Arrangement

Table 32 (Page 158) indicates that KIPC and GIPC are populated by 48 installations categorised as GPP, CCF, petrochemical plants and supporting facilities. Further investigation reveals that the installations are built in clusters on 19 sites. The following table (Table 35) shows land use concentration in KIPC and GIPC and indicates the locations of the installations and their clusters.

Table 35 : Malaysia – Land Use Concentration in KIPC and GIPC

A. PETROCHEMICAL PLANT			
Site Number	Area	Plant	Number of Plants on the Site
Site 1	24.41 acre	1C, 1B, 1C	3
Site 2	66.71 acre	2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H,2I	9
Site 3	100 acre	3A and 3B	2
Site 4	24.41 acre	4A and 4B	2
Site 5	47.44 acre	5A	1
Site 6	47 acre	6A and 6B	2
Site 7	162 acre	GPP1, GPP2, GPP3, GPP4	4
Site 8	NA	Kerteh CTF	-
Site 9	334.827 acre	9A, 9B, 9C, 9D, 9E	5
Site 10	138.4 acre	10A, 10B, 10C	5
Site 11	57.419 acre	11A	1
Site 12	149.1 acre	12A	1
Site 13	55.42 acre	13A, 13B,13C	3
Site 14	32.12 acre	14A,14B	2
Site 15	74.99 acre	15A	1
Site 16	98.00 acre	16A, 16B, 16C, 16D	4
Site 17	NA	Gebeng CTF	-
Site 18	99.14 acre	Gebeng CUF	-
Site 19	NA	GPP 5 and GPP 6	2

Source : Own analysis (calculated from data in Section A of Appendix I)

Figures 26 and 27 are maps of the KIPC and GIPC showing the locations of the studied petrochemical plants. The maps show the distribution of plants in each cluster in both industrial complexes indicating that there is no uniform population number in each cluster. Plate 2 in turn, shows a night view of the KIPC.

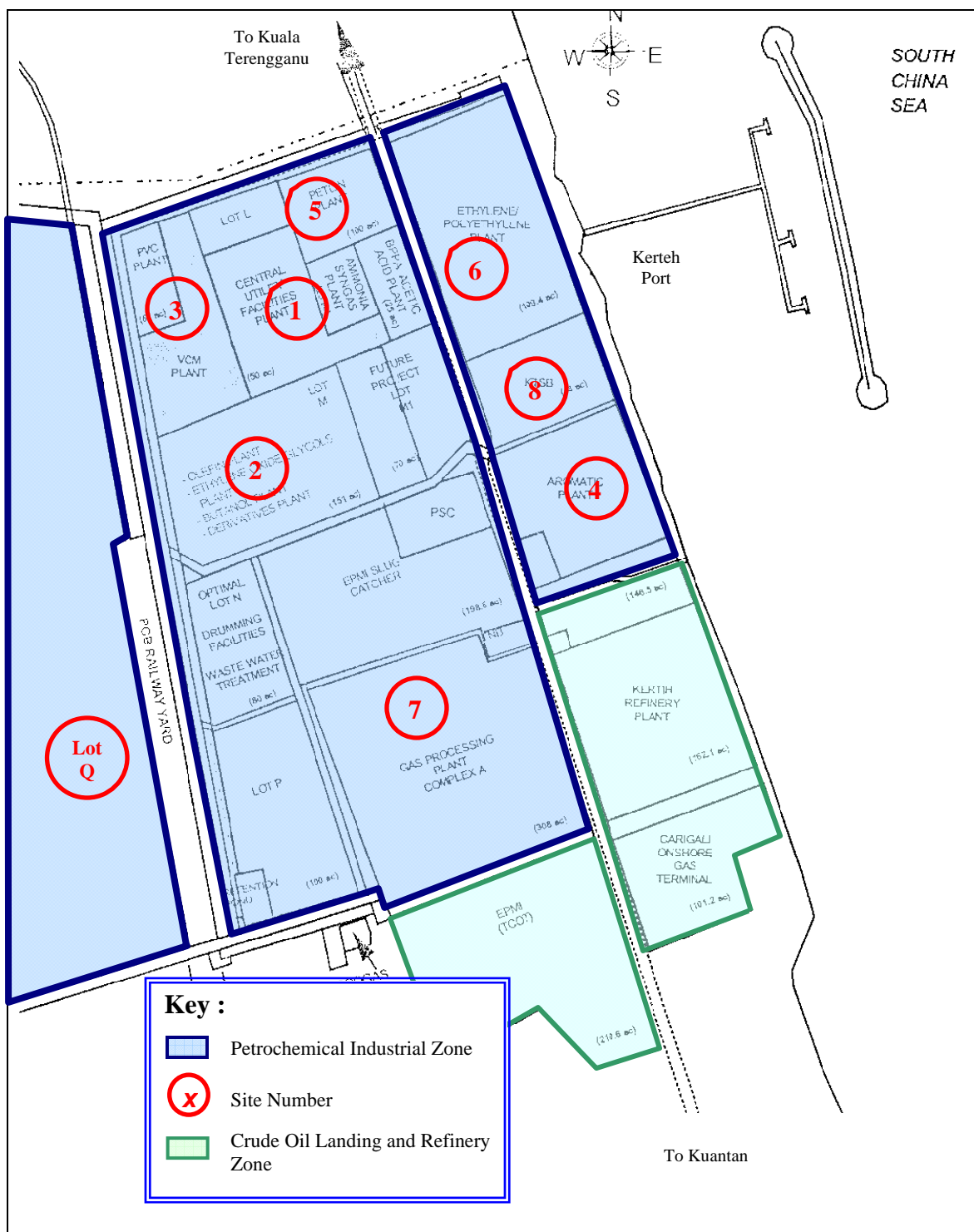


Figure 26 : Terengganu – Site Map of the KIPC

Source : Courtesy of Petronas (emphasis and site number added)

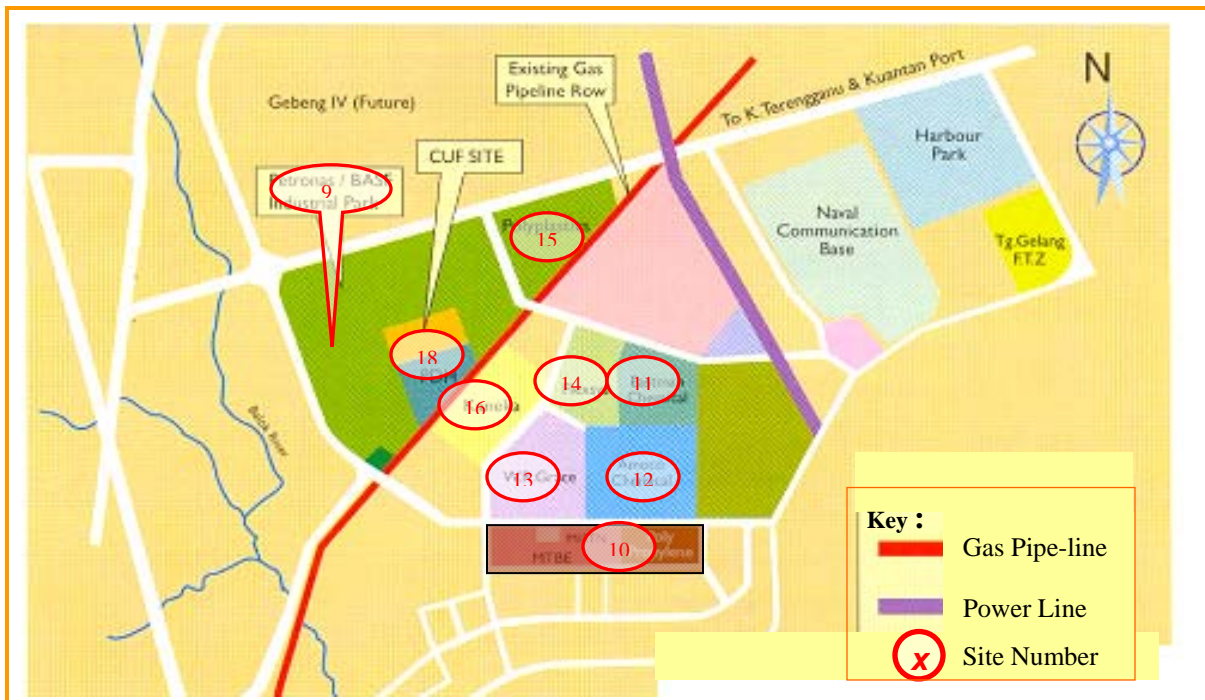


Figure 27 : Pahang – Site Map of the GIPC

Source : Courtesy of Pahang SEDC (site numbers added)



Plate 2 : Terengganu – KIPC At Sunset

Source : Courtesy of Petronas

During the interviews, investors described the plant clustering as follows:

“To set up new plant we need to create an environment for it. If it is next to the existing plant we save a lot” (A European Company).

“Kerteh is fully integrated. There are GPP, CUF, CTF, crackers to produce ethylene, storage, dedicated port, utility companies to produce industrial water and oxygen, fire service... Within a petrochemical complex there maybe rivals companies. There are competitions, rivals and quarrels but not extended to head to head war. We never bring disputes to court or arbitration. Instead, we solve it amicably because we have a common interest, i.e. feedstock” (MPEA).

“The second feature we look for is, facilities, especially for handling gaseous substance. We need a place where there are facilities for them. We need to be close to port where there are gas handling facilities. If they are not available, the location must be permissible to build the facilities. I mean pipe, vessel etc” (A CEO).

“It is typical that more than one plants are built on one site as well as sharing the same registration, raw materials and pipelines” (US Company)

The following photographs are examples of clustering:

- (a) Plate 3 is photograph of Cluster No.2, which is populated by nine plants in Kerteh. Beside Cluster No. 2 is Cluster No. 1, which is populated by three plants; and
- (b) Plate 4 is an aerial view of Cluster No. 9 in GIPC with the boundaries between the plants clearly demarcated.

The above quotations and photographs support the findings in Table 35. At this juncture, the findings suggest that the plants in the study area are not only close to each other but also interconnected and dependent on each other. The findings therefore are consistent with the findings of Fan (2000). The findings also suggest that competitors and rivals may be located within the same cluster if they share a common interest. The following discussion will explain further.

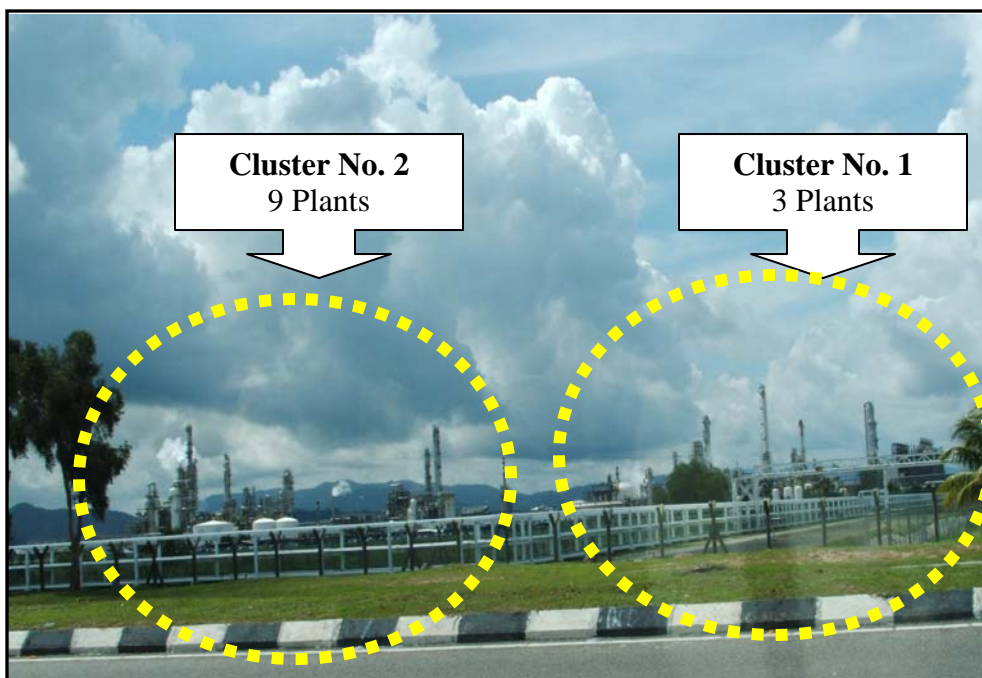


Plate 3 : Sample of Clusters in Kerteh

Source : Taken at Site



Plate 4 : An Aerial View of a Cluster in Gebeng

Source : Courtesy of Pahang SEDC

7.2.3 Plant Ownership and Investors' Countries of Origin

Appendix I shows that plants operating in the KIPC and GIPC are actually owned by 20 companies with origins in nine different countries. All of these, except Malaysia, Saudi Arabia and South Africa are members of the OECD. Following is the list of companies and their countries of origin:

Table 36 : Malaysia – Countries of Origin of Petrochemical Plants in the Eastern Corridor

Country of Origin (number of companies)	Company
Japan (6)	Mitsui MJPX (a subsidiary of Mitsubishi) Idemitsu Petrochemicals Toray Plastics Daicel Chemical Industries Kaneka
United States (6)	Dow Chemicals Eastman Cryovac WR Grace Solutia Inc. Celanese Corp
Netherlands (2)	Akzo Nobel NV DSM
Belgium (1)	Flexyss
Germany (1)	BASF
Malaysia (1)	Petronas
Saudi Arabia (1)	Sabir Europe Petrochemicals
South Africa (1)	Sasol Polymers/Polifin (Polifin is subsidiary of Sasol Polymers)
United Kingdom (1)	BP-Amoco

Source : Extract from Section A of Appendix I.

The above table (Table 36) indicates that the United States and Japan, represented by 12 companies, are dominant. According to Wang and Yeung (2000) and Fan (2000), the majority of petrochemical companies in the world are owned by US, Japanese and Western European conglomerates. They also suggest that more than 70% of the world demand for petrochemical products is in the OECD countries. Figure 28 shows the

pattern of chemical and petrochemical consumption in the OECD countries from 1995 – 2002. The pie chart indicates that Americans are the main consumers. German and British consumption is also significant. This suggests that the concentration of petrochemical companies from particular countries in Malaysia is attributable to the pattern of chemical and petrochemical product consumption in the OECD countries.

However, the number of Japanese firms petrochemical industrial sites in Malaysia is disproportionate relative to its domestic consumption. Statistics on production and consumption of natural gas in selected OECD countries in Appendix L show that Japan's production is significantly lower than other OECD countries. The statistics indicate that Japan relies more on imports and suggest Japanese petrochemical companies prefer operating outside Japan. This is possibly due to the lack of oil reserves within their home country. In addition Japan, which imports 25% of its liquefied natural gas (LNG) supply from Malaysia, buys 66% of the total amount of LNG produced annually in Malaysia (Petronas, 2003). Therefore, it implied that Malaysia is one of the most important destinations for Japanese petrochemical investors.

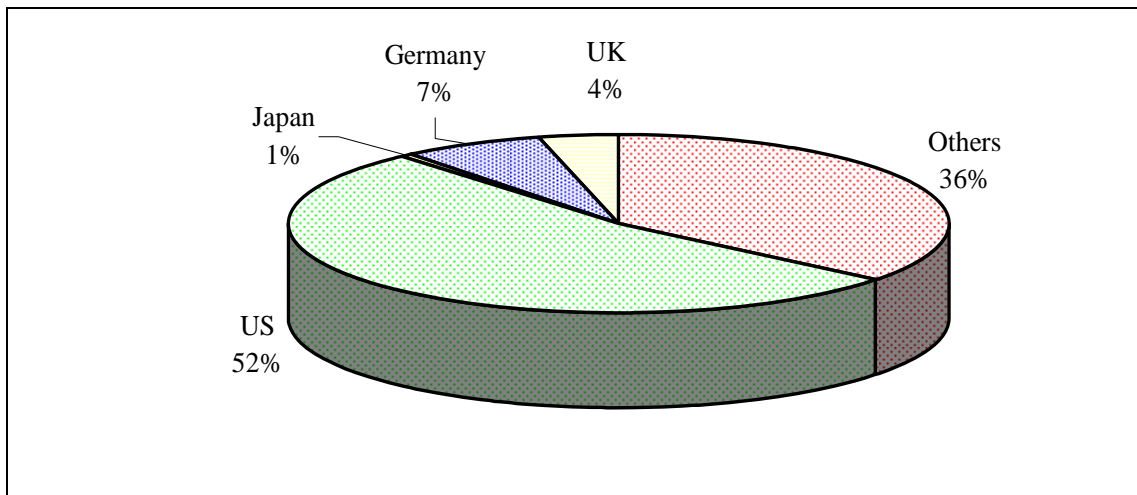


Figure 28 : World – Chemical (including Petrochemical) Consumption in OECD Countries 1995 – 2002

Source : Own Analysis.

7.3 SUPPLY AND DEMAND FOR PETROCHEMICAL INDUSTRIAL SITES

van der Krabben (1995) suggests that physical land development is the outcome of interaction between actors and institutions. This section will overview supply and demand for petrochemical industrial sites in KIPC and GIPC. The discussion will focus on three dimensions:

- (a) the volume of petrochemical industrial sites allocated by State Governments⁶¹;
- (b) the volume of land for petrochemical industrial sites allocated by the State Government versus the actual amount of land transferred to investors⁶²; and
- (c) land price and the volume of land held by investors.

7.3.1 Volume of Petrochemical Industrial Sites Released by State Governments

Figures in column 'A' of Table 37 show the volume of land (in acres) released by the states of Terengganu and Pahang for petrochemical industrial sites from 1990 to 2008. The statistics show that within a 20 year period, the volume (acreage) of petrochemical industrial sites in Terengganu and Pahang will has increased more than 10 times, from less than 1,000 acres in 1990 to more than 9,000 acres in 2008.

⁶¹ The areas are earmarked as petrochemical industrial zones but some allotments still have no takers and remain as government land.

⁶² The allotments registered under investors' ownership.

Table 37 : Malaysia – State Governments’ Projection for Demand for Petrochemical Industrial Sites 1990 – 2008 and Export of Natural Gas and Crude Oil 1992 – 2002

Year	A			B	
	Government Released Petrochemical Industrial Site (Acres)			Export of Natural Gas and Crude Oil	
	Kerteh	Gebeng	Total	Gas	Crude Oil
1990		700	700	n.a	n.a
1992		700	700	7,470,000,000	22,500,000,000
1994		700	700	8,090,000,000	19,100,000,000
1996		2,100	2,100	12,900,000,000	17,500,000,000
1998		2,100	2,100	14,600,000,000	18,100,000,000
2000		2,100	2,100	15,400,000,000	16,700,000,000
2002	3,010	1,500	4,510	15,000,000,000	16,200,000,000
2004	3,260	1,500	4,760	n.a	n.a
2006	4,260	1,000	5,260	n.a	n.a
2008	4,260	5,000	9,260	n.a	n.a

Source: Extract from figures in Appendix A.

Official documents⁶³ suggest that the State Governments of Terengganu and Pahang anticipate that this production of oil and natural gas will substantially increase over time. Government officials⁶⁴ hint that the volume of land released now for the petrochemical industry is designed to cater to future demand, which is expected to increase in line with oil and gas production. Figure 29 compares State Governments’ projections of demand for petrochemical industrial sites 1990 – 2008 with export of natural gas and crude oil 1992 – 2002.

⁶³ Digested from statements in (a) Briefing on Pahang’s industrial sector: A Focus on Gebeng Industrial Estate. A Briefing Notes to Malaysian-German Business Chambers (undated, unpublished); (b) Malaysia (1996); (c) Malaysia (1996); (d) Terengganu (2001).

⁶⁴ More information in Appendix K (Interviews A1 and A2).

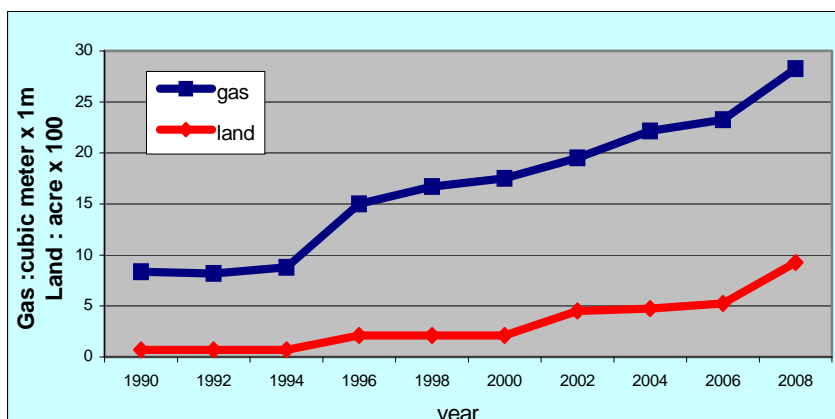


Figure 29 : Malaysia – State Governments’ Projections for Demand for Petrochemical Industrial Sites 1990 – 2008 and Export of Natural Gas and Crude Oil 1992 – 2002

Source : Own analysis (calculated from figures in Appendix A)

The following quotation supports the proposition that these State Governments anticipate that demand for land for petrochemical industrial sites will grow in accordance with the growth in natural gas production:

“The state anticipates the industrial growth. By 2008, 5,000 hectare in Kerteh will be prepared for industrial sites, ready to be occupied at the lowest price” (A Terengganu State Officer)

Based on government records, as in Appendix I, the first site transferred to investors was for the construction of GPP1 in 1983. Between 1984 and 1992, no new land was transferred to investors. In 1992, GPP2 and GPP3 in KIPC were commenced. Between 1992 and 1995 two plants at the GIPC were commissioned. During this period GPP4 was also commissioned. Following this, between 1995 and 1997, nine plants were completed in the two complexes. In 1998, the construction GPP 5 and GPP6 was completed. This was followed by the completion of 25 plants between 1998 and 2000. The following tabulation, Table 38, shows the actual statistics of the government land released for petrochemical industrial sites in Kerteh and Gebeng.

Table 38 : Malaysia – State Government Released Petrochemical Industrial Sites 1981 – 2000

Year	No. of Sites Supplied	No. of Plants on the Site(s)	Year of plants commissioning
1981	1	4	1984, 1992 (2 plants) and 1994.
1988	1	2	1995
1989	1	3	2000 and 1992 (2 plants)
1993	1	3	1997 (2 plants) and 2003
1994	3	5	1996, 1999 and 2000 (3 plants)
1995	2	5	1997 (3 plants) 1998 and 2000
1996	1	2	1998 (2 plants)
1997	1	1	2000
1998	4	8	2000, 2001 (4 plants), 2002, 2004 and 2005 (under construction)
2000	4	14	2000 (2 plants), 2001 (2 plants), 2002 (10 plants)

Source: Own analysis on figures in Appendix I.

The statistics in Table 38 show that the process of State Government land release took approximately 20 years. Each site was developed gradually. Within the period of land development, the number of plants on each site multiplied. The statistics also show that after 2000 no more land was transferred to investors. The interviewees explained:

“Gebeng I was sold out, but there is huge area of unsold land at Gebeng II, III. So, other types of industries are allowed to operate in Gebeng... even though land price offered is at its lowest, some investors take up land in Kerteh” (Pahang SEDC);

“... memang benar ada terdapat kawasan kosong sepanjang jalan arah perjalanan ke Teluk Kalong (...the existence of vacant industrial land such as along the road to Teluk Kalong is real.” [Terengganu SEDC]).

“In Pahang, land premium was extremely competitive. In the earlier stage, land premium in Kerteh was very high. However, in Terengganu the situation has been changed. Land premium rate has been consistent and fallen to 50% for the past ten years. I suggest it’s rather too late... What I mean is there is a 4,000-acre land which has been allocated by the State Government to be developed by Petronas. Of course, outside the designated area there are more vacant government lands” (Petronas).

It seems that plans to release industrial land according to growth in natural gas production are too ambitious. It is true that the number of plants has increased consistently with the increase in natural gas production. However, investors, instead of acquiring more land, opt to intensify land use on each site. Because of this, the government's target of selling lands to investors according to the growth of natural gas production as shown in Figure 29 is difficult to achieve.

7.3.2 Volume of State Government Released Petrochemical Industrial Sites Versus the Actual Level of Land Transferred to Investors

Records show that the first government release was GPP1, which was awarded by the Terengganu government to Petronas in 1983. This was followed by the release of more sites by Terengganu as well as sold by Pahang SEDC. The peak period was year 2000 when six sites were transferred or awarded to project initiators. The release of three sites for Petronas in Kerteh at the end of 2000 marked the end of the government-release era. This leads the researcher to believe that the demand for land from the government for petrochemical industries in both states was initiated, intensified and reached its climax only within a twenty year period from 1980 – 2000.

Government officials, as cited below, suggest that the demand for industrial land in the studied areas has not met expectations:

*“Memang berlaku kelembaban pembangunan sekarang ini dan memang benar ada terdapat kawasan kosong sepanjang jalan arah perjalanan ke Teluk Kalong (the economic downturn is evident right now, it is true that there are vacant industrial sites along the road [from Kerteh] to Teluk Kalong” [Terengganu SEDC])*⁶⁵.

“Semua lot industri di Gebeng I telahpun habis dijual, namun, kemasukan pelabur baru dan penjualan tanah amat perlahan. Masih lagi terdapat kawasan yang luas di Gebeng II dan III yang masih belum terjual. (Gebeng I was sold out, but there is a huge area of unsold land at Gebeng II, III” [Pahang SEDC]).

⁶⁵ Where quotations are in Malay, as shown in the interview note in Appendix K, the interviews were carried out in Malay.

The above opinions are supported by Figure 30. The graph depicts the volume of land allocated by the Governments of Terengganu and Pahang for petrochemical industrial sites against the actual volume of land taken by investors for such use from 1982 to 2005.

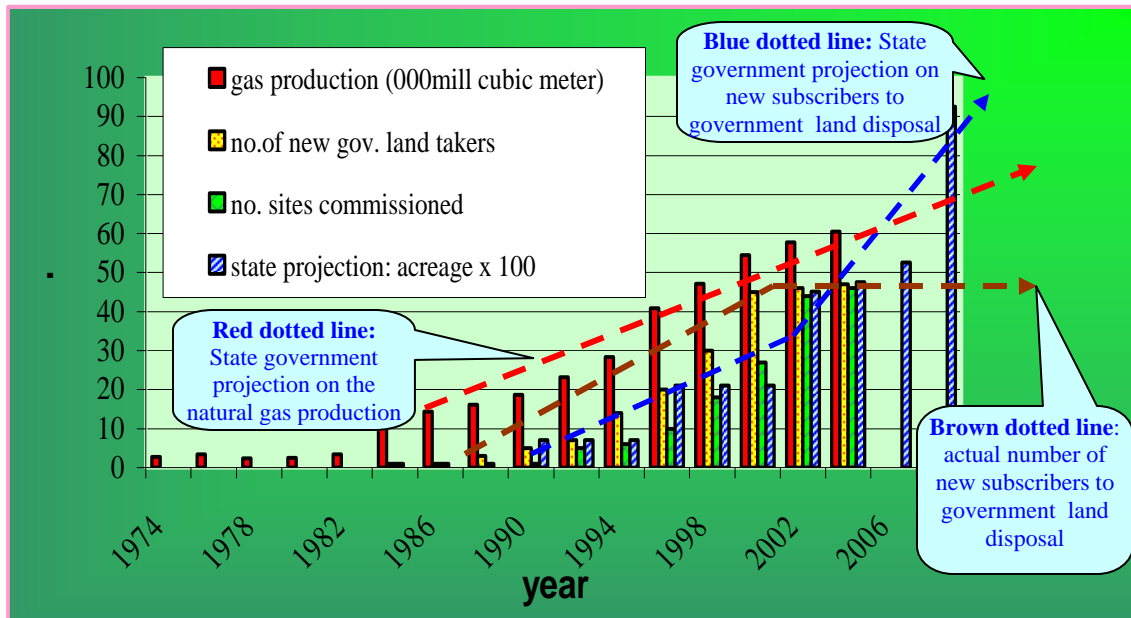


Figure 30 : Malaysia – Volume of State Government Released Petrochemical Industrial Sites Versus the Actual Number of Land Transferred to Investors in Terengganu and Pahang

Source : Own analysis

Figure 30 suggests a mismatch between supply and demand. Government officials and key investors agree there is an excess supply of petrochemical industrial sites in Pahang and Terengganu. As cited above the interviewed officials are in consensus that there have been no new investors to take ownership of petrochemical industrial sites in KIPC and GIPC since 2000. Table 39 confirms the above statements, indicating that an 800-acre allotment which is identified as ‘Lot Q’ is still unsold in the KIPC. Another 17 allotments with a total area of about 3,800 acres are still available in GIPC⁶⁶. Figure 30 is

⁶⁶ Still unregistered under investors’ ownership (see also definitions in footnotes 61 and 62).

a view of 'Lot Q', while the sketch in Figure 32 shows vacant industrial lots in Gebeng and Figure 33 is view of vacant petrochemical industrial sites in Teluk Kalong (beside KIPC and outside the studied area). Therefore, there is clearly evidence to support the conclusion that the supply of petrochemical industrial sites in Terengganu and Pahang exceeds demand.

Table 39 : Malaysia – Unsold Industrial Sites Within Petrochemical Industrial Zones in Terengganu and Pahang (as 1st May 2005)

Place		Area (acres)
Terengganu	Lot Q, Kemaman	800.00
Pahang	Gebeng I	3,118.10
	Gebeng II	0.67
	Gebeng III	696.32
Total		4,615

Source: Own analysis (based on interviews)



Figure 31 : Terengganu – Lot Q in Kerteh

Source : Drawn by author (based on information from Petronas and Terengganu SEPU)

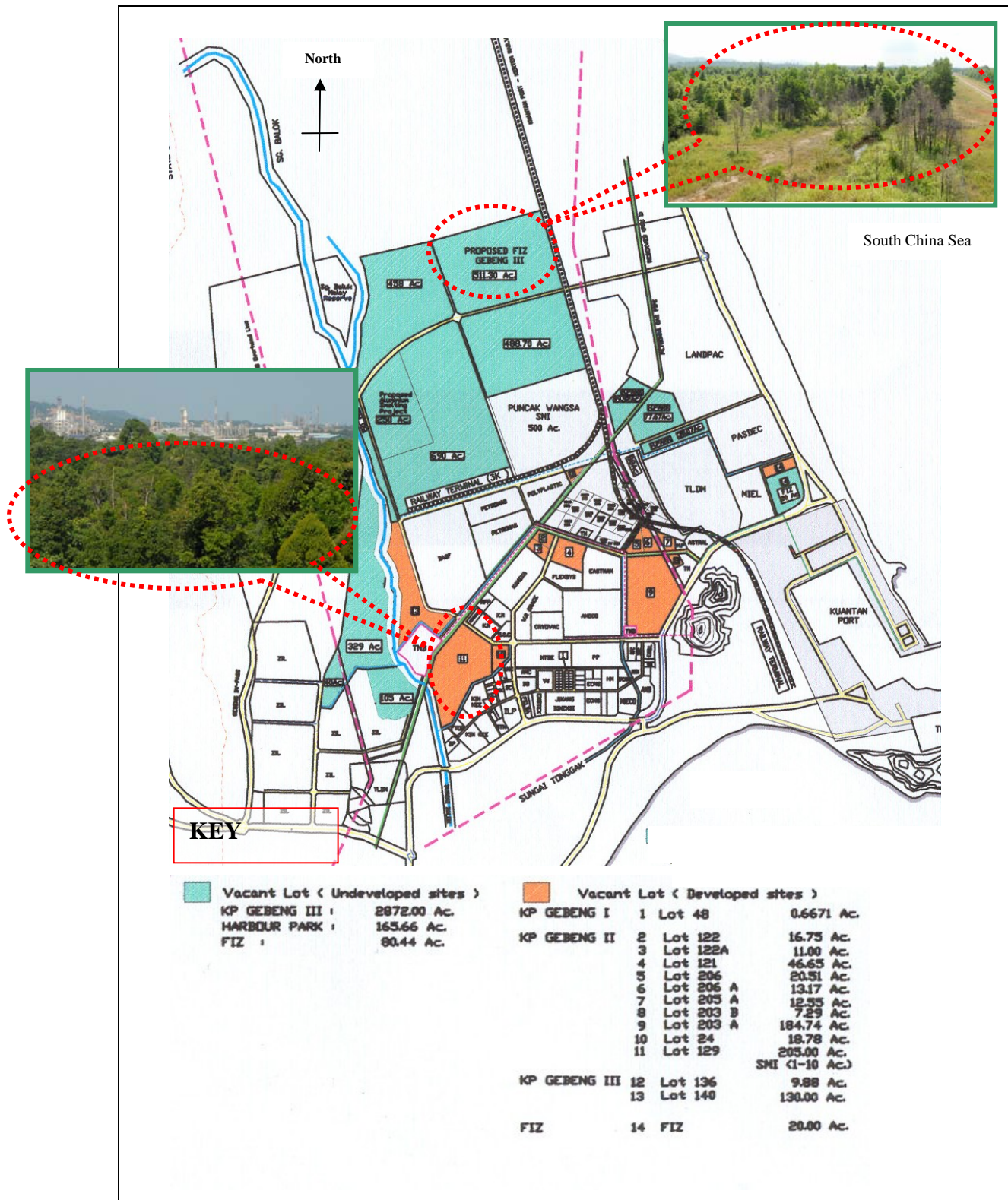


Figure 32 : Pahang – Vacant Petrochemical Industrial Allotments in Gebeng

Source : Map: Pahang SEDC; Photographs: taken at site

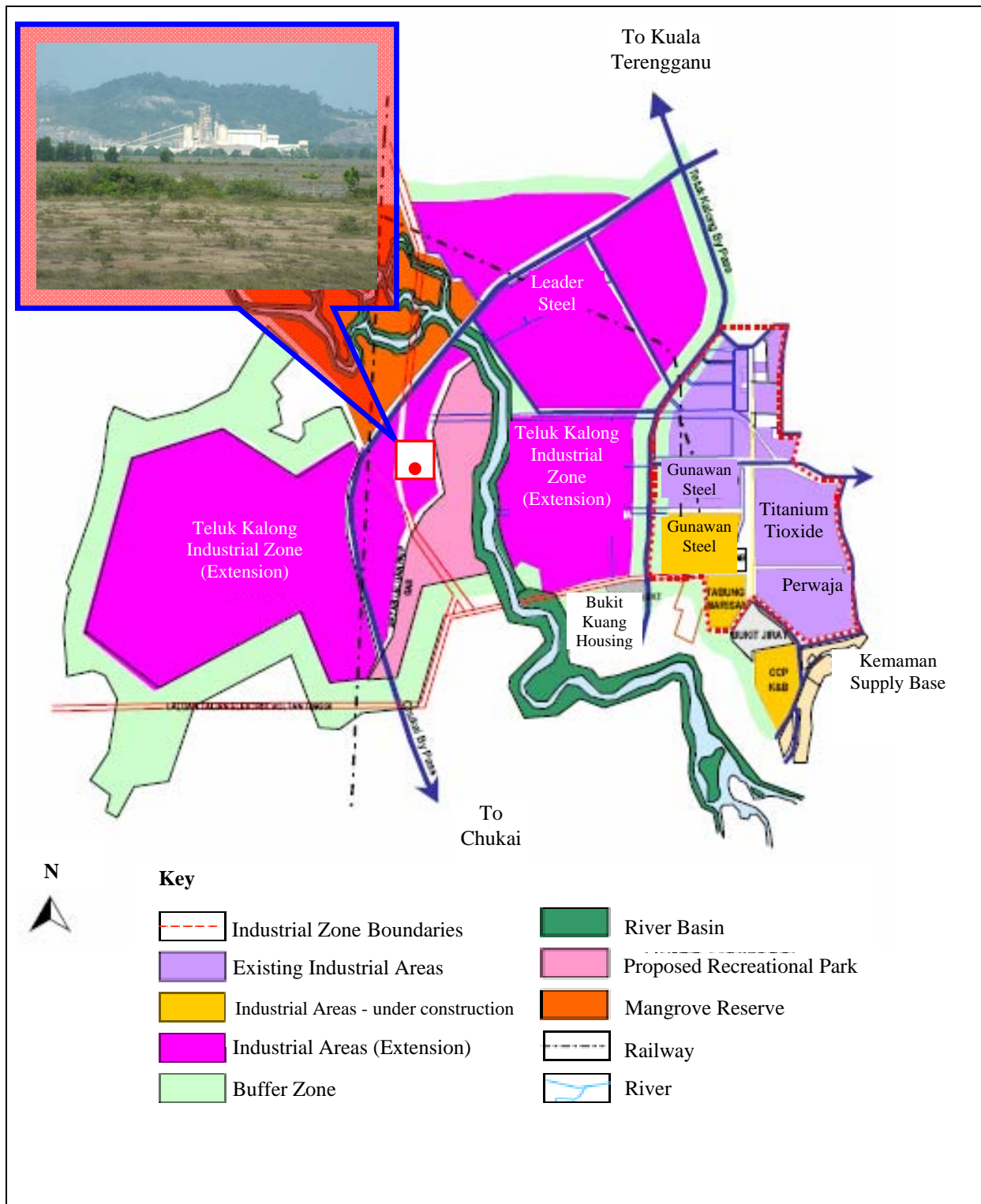


Figure 33: Terengganu – Vacant Industrial Land in Teluk Kalong, Terengganu

Source : Map: Kemaman Municipality. Photograph: taken at site

7.3.3 Land Price and Volume of Land Transferred to Investors

This section will examine to what extent land price influences investors' decisions to take up land in KIPC and GIPC. This subsection will analyse the price of land for petrochemical industrial sites against the value of investment at each site. The objective of this subsection is to analyse the influence of land price on land transfer. Table 40 shows price of land and compares site prices with the value of the initial investment at each site. Table 41 in turn, shows the price of vacant industrial land in Kerteh and Gebeng 1991 – 2005.

Table 40 : Malaysia – Vacant Industrial Land Prices and Initial Investment Value in KIPC and GIPC

A. PETROCHEMICAL PLANT						
Site Number	Area	Investment Value (RM)	Price Paid for Site (RM)	Investment vs. Land Price	Price Per Acre (RM ⁶⁷)	Date of First Land Ownership Transfer
Site 1	24.41 acre	4,124,000,000	494,000	8,384 : 1	20,237	Jul 2000
Site 2	66.71 acre	5,615,000,000	6,755,000	8,318 : 1	101,259	Jul 2000
Site 3	100 acre	182,000,000	1,400,000	130:1	14,000	Jan 1994
Site 4	24.41 acre	1,797,000,000	494,000	3,638 :1	20,234	Jan 1994
Site 5	47.44 acre	740,000,000	960,000	771 : 1	20,236	Jul 2000
Site 6	47 acre	1,716,000,000	4,668,328	368 : 1	99,326	Mar 1988
Site 7	162 acre	200,000,000	486,240	411 : 1	3,001	Jul 1981
Site 8	NA	NA	NA	NA	NA	NA
Site 9	334.827 acre	3,952,000,000	131,266,114	30 : 1	392,042	Jan 2000
Site 10	138.4 acre	NA	54,258,558	NA	392,042	Feb 1998
Site 11	57.419 acre	224,900,00	10,770,000	21 : 1	187,569	Mar 1989
Site 12	149.1 acre	1,200,000,000	18,050,000	66 : 1	121,060	1995
Site 13	55.42 acre	540,000,000	13,110,000	41 : 1	236,557	1994
Site 14	32.12 acre	280,000,000	12,593,775	22 : 1	392,085	1993
Site 15	74.99 acre	608,000,000	29,401,621	21 : 1	392,073	1998
Site 16	98.00 acre	440,000,000	38,420,701	11 : 1	392,047	1997
Site 17	NA	NA	NA	NA	NA	1995
Site 18	99.14 acre	NA	NA	NA	NA	1998
Site 19	NA	NA	NA	NA	NA	1998

Source : extract from Section A of Appendix I

⁶⁷ RM is 'ringgit', Malaysian currency. The value of the ringgit during the data collection period was pegged at RM3.80 per USD 1.00.

The investors' initial investment value, as noted in Table 40, is based on figures reported to MITI. The Industrial Co-ordination Act (1975) or ICA was enacted to encourage orderly development and growth in Malaysia's manufacturing sector. The ICA requires manufacturing companies with shareholders' funds of more than RM2.5 million or engaging more than 75 full-time employees to apply for a manufacturing licence from MITI (MIDA, 2004). According to a MITI official, an application for a manufacturing licence must include a declaration of the value of the initial investment (VoII). The detailed declaration must include the sources and purposes of the initial investment. Normally the initial investment is used for acquiring land, constructing factories, purchasing machinery and for initial working capital. Table 40 shows that the prices paid for sites are a relatively small proportion of the total value of the initial investments made by firms.

In addition, Table 40 also indicates that there was wide variation in the price of land per acre in KIPC and GIPC during the transfer of ownership from government to first land owner between 1981 and 2000. In order to determine whether the price paid was according to the fluctuating market, Table 41 compares estimated vacant industrial land prices with prices paid by investors in KIPC and GIPC from 1991 to 2005.

Table 41 : Malaysia – Vacant Industrial Land Prices (Per Acre) In Kerteh and Gebeng 1991 – 2005

A	B	C	D	E
Year	Kerteh		Gebeng	
	Estimated Market Price Per Acre	Price Paid by Investors in KIPC Per Acre	Estimated Market Price Per Acre	Price Paid by Investors in GIPC Per Acre
1991	99,107			
1992			121,408	
1993				392,085
1994	105,070	20,234	125,860	236,557
1995				121,060
1996				236,557
1997		392,042	546,338	392,073
1998			509,915	392,047
1999				
2000		101,259		
2001				
2002				
2003				
2004				
2005	219,510			

Source : Department of Valuations of Kemaman (for Column B), Table 40 (Column C and E), Department of Valuations of Kuantan and Colliers, Jordan Lee and Jaafar (Column D).

Note : Blank cells denote no transfer of industrial land reported.

Statistics in Table 40 indicate that the price of land varies between sites, not only because of inconsistency in parcel size, but also because of inconsistency in the price of land per acre. Therefore, statistics in Table 41 support the proposition that there is no uniformity in the price per acre of the sites and suggest that land prices in KIPC and GIPC do not reflect market price. In Gebeng, before 1995, vacant industrial lands were sold above market price. However, after 1996, they were consistently below market price. In Kerteh, in Table 41 shows that in 1994 market price for vacant industrial land was about RM 100,000 per acre. However, the price paid to the State Government for petroleum-related industrial land in Kerteh was about RM 20,000 per acre, which was

below market price. The price paid to the State Government increased in 1997, but, in 2005 it was lower than the market again. The reason why vacant industrial land is below market price in KIPC and GIPC is explained by the following quotations:

“menjelang tahun 2008 seluas lebih daripada 5,000 hektar akan dimajukan di Kerteh dan kawasan-kawasan sekitarnya dibangunkan dengan industri berkaitan petroleum bagi menyediakan tapak yang telah tersedia dan cukup luas bagi menarik pelaburan pada harga sehingga yang terendah di Malaysia.” (The State Government anticipates growth in the petroleum-related industry by 2008, thus, 5,000 hectare in Kerteh will be developed for that purpose at the lowest price [Terengganu SEPU]).

“Even though land price offered is at its lowest, some investors take up land in Kerteh” (Pahang SEDC);

“In Pahang, land premium was extremely competitive. In the earlier stage, land premium in Kerteh was very high. However, in Terengganu the situation has been changed. Land premium rate has been consistent and fallen to 50% for the past ten years...” (Petronas).

The above figures and quotations suggest that the State Governments of Terengganu and Pahang adopted a strategy of offering land at very low prices in order to attract petrochemical investors to KIPC and GIPC. Table 41 indicates that there is a significant difference in the price paid for land initially held by Petronas as compared to the price paid by Pahang SEDC. The quotations from Terengganu SEPU (above) and a former Pahang Chief Minister (below) suggest that both State Governments apply a different pricing system. When asked the question on land pricing, the former Pahang Chief Minister replied:

“We set a guideline. But, I gave the investment officer freedom to negotiate with buyers. If he wanted to increase the price, it was up to him. But, if he wanted to reduce he must consult me” (Abdul Rahim).

The above quotation suggests that officials in Terengganu have more freedom to negotiate land price with investors. However, as shown in Table 41, land price in KIPC and GIPC is generally lower than the market price. Even though land price in both petrochemical industrial complexes is lower than the market price, the following findings, as shown in Figure 34, suggest that land price does not directly influence the demand for petrochemical industrial sites in the two complexes.

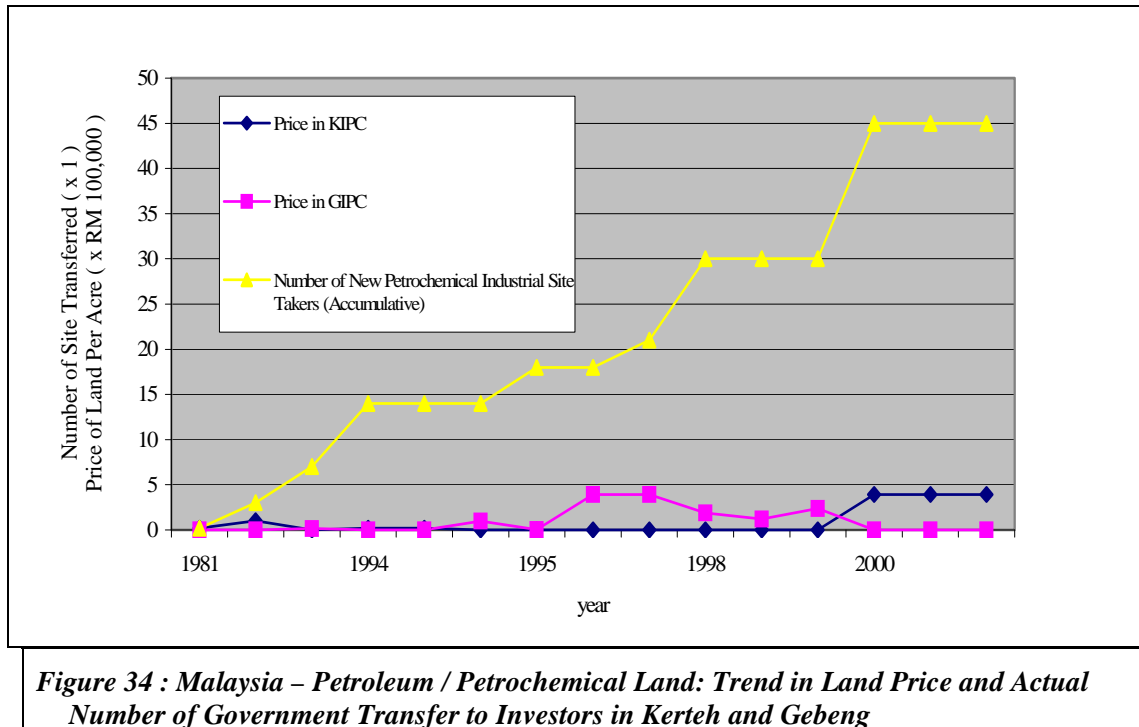


Figure 34 : Malaysia – Petroleum / Petrochemical Land: Trend in Land Price and Actual Number of Government Transfer to Investors in Kerteh and Gebeng

Source : Calculated from Appendix A and Appendix I

Figure 34 indicates that the steady growth in the volume of land sold to investors between 1990 and 2000 does not correspond to the fluctuation in land price in KIPC and GIPC in the same period. In other words, there is no strong evidence to suggest that the land price set by the state governments substantially influenced the decisions of petrochemical firms to acquire industrial sites in the studied areas. The above findings are consistent with findings from the interviews as below⁶⁸:

“Land price only one-off, but other costs are running. Thus, we talk about threat, the number one is uncertain feedstock” (US Company);

“On choice of industrial location, in the petrochemical industry we consider the type of industry it involves in. If it is upstream the location must be closer to the source of oil and gas. If it is downstream the location must be closer to the consumer. Site that is closer to the consumer may be more expensive. However, if it is recoverable later, maybe higher” (A CEO);

⁶⁸ Further analysis is in Tables A and B of Appendix P.

“I don’t think land is our major consideration. When we want to move to a new place, we don’t think finding a land is problem. We believe it is the responsibility of the government (to provide it). All our plants are on leased land. Other than our service stations and office, all our facilities are on leased land... We are not interested in investing in property. Indeed we need space for a long time, but not forever. We are moving from one place to another. By having tied up with (landed) property it is rather difficult for us (to keep on moving)” (A European Company).

The above findings suggest that for investors land issues, including land price, were not the main concerns when they decided to set up petrochemical plants in Malaysia. The findings suggest that securing feedstock is investors’ ultimate objective. This is supported by the fact that land price in KIPC and GIPC is generally lower than the market price. Therefore, as discussed previously (see Page 173), major petrochemical companies acquire much more land than they really need at the initiation of a project in order to provide for future expansion.

Although the above discussion suggests that petrochemical investors’ main concern is feedstock, some interviewees, acknowledged the importance of other incentives on the offer to attract foreign direct investment, as quoted:

“MIDA is excellent, approachable and flexible. It offers a numbers of incentives e.g. tax break, but it needs a detail proposal on what we want. Then we discussed the proposal in great details.” (US Company).

“ ... We planned to have a plant for the Asian market... Knowing this, the Malaysian and Singaporean authorities came in to offer facilities. In the first place, Singapore offered a very excellent offer with ‘irresistible’ incentives, probably, the worth was about USD50 million... we told MIDA what we got from Singapore. MIDA then offered a counter proposal which was close to the Singaporean’s with a little improvement. That was the story why we landed in the East Coast Malaysia...”(A European Company).

In addition, according to a US company executive⁶⁹, the decision to set up a plant in GIPC was made because Gebeng is designated as a petrochemical industrial zone. Moreover, incentives offered by MIDA were cost-effective and Gebeng’s infrastructure as well as port facilities are matched to hi-tech industry’s needs. This shows that the package of incentives on offer combined with the low cost of land are attractive to foreign investors and encourage them to locate in Malaysia. Chapter Nine will discuss in

⁶⁹ Interviewee No. B14.

which way land price and government incentives influence investors' decision to acquire petrochemical industrial sites in Kerteh and Gebeng.

7.4 ANALYSIS OF LAND TRANSACTIONS

Findings in Appendix I that are summarised in Table 42 show a brief history of the land ownership of petrochemical plants in Kerteh and Gebeng.

Table 42 : Malaysia – Land Ownership Change in KIPC and GIPC

Site Number	First Owner	Second Owner– Project Initiator	Present Owners
Site 1	Petronas	No change	Petronas, B7
Site 2	Petronas	No change	B1(A) – (C)
Site 3	Petronas	No change	B12(A) – (B)
Site 4	Petronas	No change	Petronas
Site 5	Petronas	No change	B3
Site 6	Petronas	No change	Petronas
Site 7	Petronas	No change	GPP 1 – 4
Site 8	Kerteh Port	No change	CTF
Site 9	Pahang SEDC	B10	B10(A) – (E), B19
Site 10	Pahang SEDC	B9	B9(A) – (C)
Site 11	Pahang SEDC	B13	B13
Site 12	Pahang SEDC	B7	B7
Site 13	Pahang SEDC	B15	B14, B15
Site 14	Pahang SEDC	B18	B18
Site 15	Pahang SEDC	B17	B17
Site 16	Pahang SEDC	B16(A)	B16(A) – B16(D)
Site 17	Pahang SEDC	Petronas	CTF
Site 18	Pahang SEDC	Petronas	CUF

Source : Extract from Appendix I

The following quotations explain further about the process of site acquisition in KIPC and GIPC.

In KIPC:

“We are working with the government to identify the most appropriate industries. Our roles in Kerteh including assisting investors in dealing with government agencies, such as getting land from the SEPU and Land Office, getting industrial licence from MIDA securing CF and other approvals from the Local Authority, DOSH, DoE, PWD, DID, Fire Department, Public Health Department, securing utilities from TNB (electricity), Water Board, telecom etc” (Petronas).

“In Kerteh, a site is negotiated through Petronas, the custodian of the KIPC. No consultant or broker service is used. After agreed upon, Petronas is the one to decide which location is suitable, depending on investors’ needs. The agreed site is then sub-let by Petronas to the investor, I believe” (MPEA).

In GIPC:

“(Our role are) to develop and sell industrial sites, commercial and housing, and to negotiate with investors, on behalf of the state government” (Pahang SEDC).

“The site was bought from Pahang SEDC” (US Company).

The above findings suggest that there is a significant difference in the method of site acquisition as well as the land ownership history between factories in the KIPC and GIPC. All sites in the KIPC are currently owned by Petronas-related companies and originally awarded by the State Government to Petronas. In contrast, all sites in the GIPC were acquired through normal sales and purchase arrangements between the Pahang SEDC and the present occupants. This sub-section will analyse the process of land transfer from State Government to present land owners.

Table 42 indicates that the industrial sites, on which groups of plants are clustered (see Table 35 and discussion on Page 163), except for three, were originally pieces of lands owned either by Petronas or Pahang SEDC. Prior to initiation of development, land ownership on each site has changed at least twice and been subdivided into smaller allotments, as indicated below:

- 1st change : The State Government awarded the sites to the first owner: Petronas in Terengganu and Pahang SEDC in Pahang;
- 2nd change : While Petronas maintains its status as a project initiator as well as a landowner, Pahang SEDC sells the land to investors. The investor becomes a project initiator as well as the new landowner;

3rd change : Both in Terengganu and Pahang, prior to project initiation, the project initiator forms new companies with new entities. The site is then subdivided into smaller allotments. Finally ownership of the subdivided allotment is transferred to newly created entities. Through this process, land ownership is changed and the clusters discussed in Sub-section 7.2.2 are created.

Records at the local authorities, SEPU and MITI show that prior to the construction of a new installation within a cluster, the existing company only needs to apply for an extension to the present plant. At the same time, a new company entity is formed to own the expanded segment. At the final stage, the two companies split into different entities⁷⁰.

Following this continuous process of clustering, figures in Table 43 suggest that the land use concentration has steadily increased in the studied areas.

Table 43 : Malaysia – Land Use Intensity in the KIPC and GIPC 1984 – 2004

Year	1984	1988	1992	1996	2000	2004
Number of plants per site	1.00	1.50	1.75	2.22	2.50	2.61

Source: Own analysis (calculated from data in Section C, Appendix I)

The figures above indicate that project initiators usually acquire a large land area, stock pile land, then release it bit by bit according to actual demand. This suggests that after 2000, supply and demand are still interacting in the studied areas. However, this interaction is not with the government, but between the newcomer and the project initiators who have stockpiled land. In other words, the project initiators have evolutionarily replaced the role of the government in supplying new sites for petrochemical industries.

⁷⁰ Based on records shown during meeting on 18.8.2004, information in MITI Reports (see page 346), interviews A2 and B14).

The following quotations are comments from government officials and investors regarding government land disposal plans:

“(Kerajaan Negeri) menjangka, menjelang tahun 2008 seluas lebih daripada 5,000 hektar akan dimajukan di Kerteh dan kawasan-kawasan sekitarnya dibangunkan dengan industri berkaitan petroleum ([The State Government] anticipates that industrial growth. By 2008, 5,000 hectares in Kerteh will be prepared for industrial sites, ready to be occupied at the lowest price” [Terengganu SEPU])

“... all potential lands have been developed ...” (Petronas);

These quotations imply that the government and investors have different plans in developing KIPC and GIPC. From SEPU’s statement above, it can be inferred that the Government perceives that investors will buy more land in conjunction with the expansion of petrochemical activities in Malaysia. However, from Petronas’ statement above, it can be inferred that during expansion, instead of buying more land, investors intensify the use of land already in their possession, adding to plant clusters. As a result of this physical agglomeration will occur in KIPC and GIPC.

7.5 REVENUES FROM INDUSTRIAL SITES IN THE STATES OF TERENGGANU AND PAHANG

The following diagrams show the contribution the Land Office makes to the income of the State Governments of Terengganu and Pahang. As far as Terengganu is concerned, Figure 35 shows that the Kemaman Land Office contributes 27% of the State revenue. The diagram also indicates that even though industrial sites cover less than 0.5% of Terengganu’s total area of 3.2 million acres, they contribute almost 40% of the total amount collected from quit rent. This indicates that both the Kemaman Land Office and industrial development are equally important in the state economy. In Pahang, industrial land contribution to State revenues is not as substantial as in Terengganu. However, the District of Kuantan, where GIPC is located, collects 70% of the State revenues of Pahang.

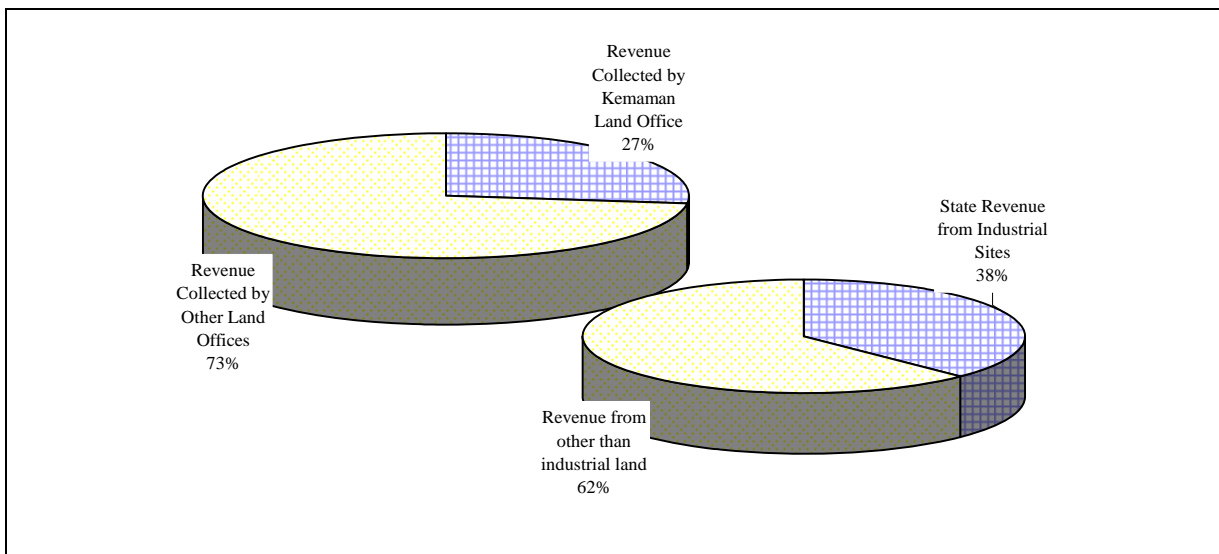


Figure 35 : Terengganu – State Revenue from Quit Rent 1999 – 2004

Source: Own analysis

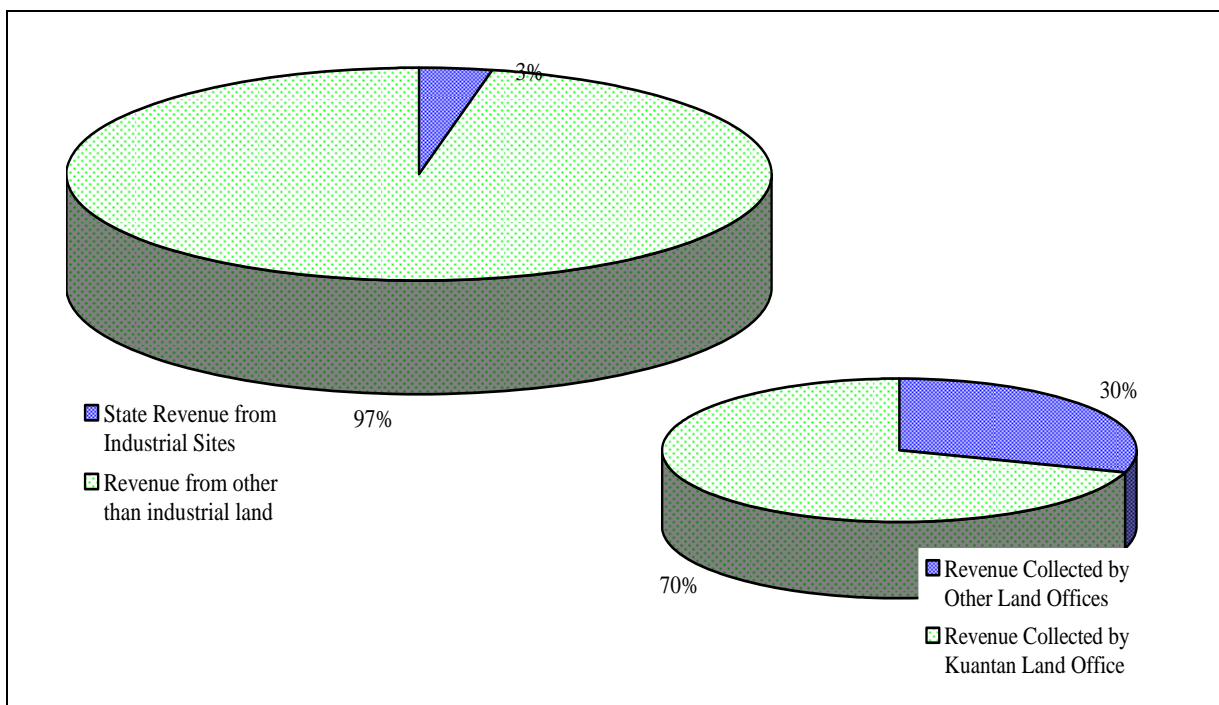


Figure 36 : Pahang – State Revenue from the Quit Rent 1999 – 2004

Source: Own analysis

The above findings suggest that State Government revenue from quit rent, especially on industrial land, is substantial. The following statement explains the relationship between the Land Office's actions and its objectives.

“Biasanya apabila semuanya telah teratur, dalam 3-4 bulan urusan di LOKM boleh selesai. Pejabat-Tanah ingin mempercepatkan segala urusan kelulusan tanah. Jika kelulusan lambat negeri kehilangan hasil (If everything is in order, normally we take only 3-4 months to complete the process on our part. The Land Office wants to expedite all approval processes, lest we lose revenue [LOKM])”;

“ Tanggungjawab UPEN hanyalah melihat dari aspek ekonomi. Aspek-aspek lain seperti (perundangan, alam sekitar dan keselamatan adalah tanggungjawab jabatan lain. Dalam menarik pelaburan, Kerajaan Negeri mengharapkan ‘spill-over’ kegiatan ekonomi dan kutipan cukai oleh Pejabat Tanah dan PBT (The State Planning Unit is only responsible for economic development. Other matters such as laws, the environment and safety are under other departments’ jurisdiction. By attracting investors, we expect an increase in revenue collection by the Land Office and Local Authorities [Terengganu SEPU])”;

The above quotations together with the findings in Sub-section 7.3.2 (Page 174) suggest that government officials are motivated by the revenue from quit rent. This proposition is consistent with a statement from a former Prime Minister who said *“we attract investors for our (national) interest. Among which is an economic development with distribution of wealth”* (Mahathir). Since State Government revenue depends largely on quit rent collected by the Land Office, government officials want to make the most of opportunities provided by the growth of the petroleum industry and desire the Land Office delivery system to be efficient. If it is not, the State Government will lose the revenue created by the land development process.

7.6 CONCLUSION

Plants and installations in the studied areas are categorised according to their functions as GPP, CCF, or petrochemical plants as well as supporting facilities. Almost all installations are built in clusters. As anticipated by Wang and Yeung (2000), countries of origin of the investors are limited to only a few nations. It is also evident that the amount of quit rent collected by State Governments from industrial sites is substantial. As the revenue created by the industry is lucrative and at the same time, there is demand for petrochemical industrial sites, State Government have plans to release more land at a competitive price for future expansions.

The findings suggest that the artificially low prices for industrial sites provided by the government creates a substantial gap between land price and the value of initial investment. Ironically, not all investors, despite low-priced land, acquired industrial sites directly from the government. Instead, evidence shows that even though there is a huge area of unsold land, investors are more interested in acquiring industrial sites from project initiators. This practice contributes to the formation of plant clustering. Findings also suggest that it is not accurate to expect demand for petrochemical industrial sites to increase in line with natural gas production.

Therefore, the answer to Research Question No. 1 is “*it is apparent that land price has little, if not no, influence on the decision for petrochemical firms to locate in the studied areas*”. The subsequent chapter will analyse the process of government land alienation and land development approval at the Land Office and answer Research Questions 2 and 3. The answers to these two research questions will explain why land price is not a major attraction to investors in the studied areas.

CHAPTER EIGHT – ANALYSIS OF INDUSTRIAL LAND SUPPLY PROCESS

8.1 INTRODUCTION

This chapter addresses Research Questions 2 and 3 which examine the relationship between problems in land supply and the institutional environment. This chapter follows the recommendation in Creswell (2005) as discussed Chapter Six. It begins with a description of the decision-making process at the Land Office. This is followed by analysis of the impact of Land Office bureaucracy on the supply of land for petrochemical industrial sites in the studied areas. To complete the enquiry and to answer Question No. 3, the chapter will analyse the relationship between Land Office bureaucracy and the institutional framework.

Figure 37 is a road map for the discussion that will now follow.

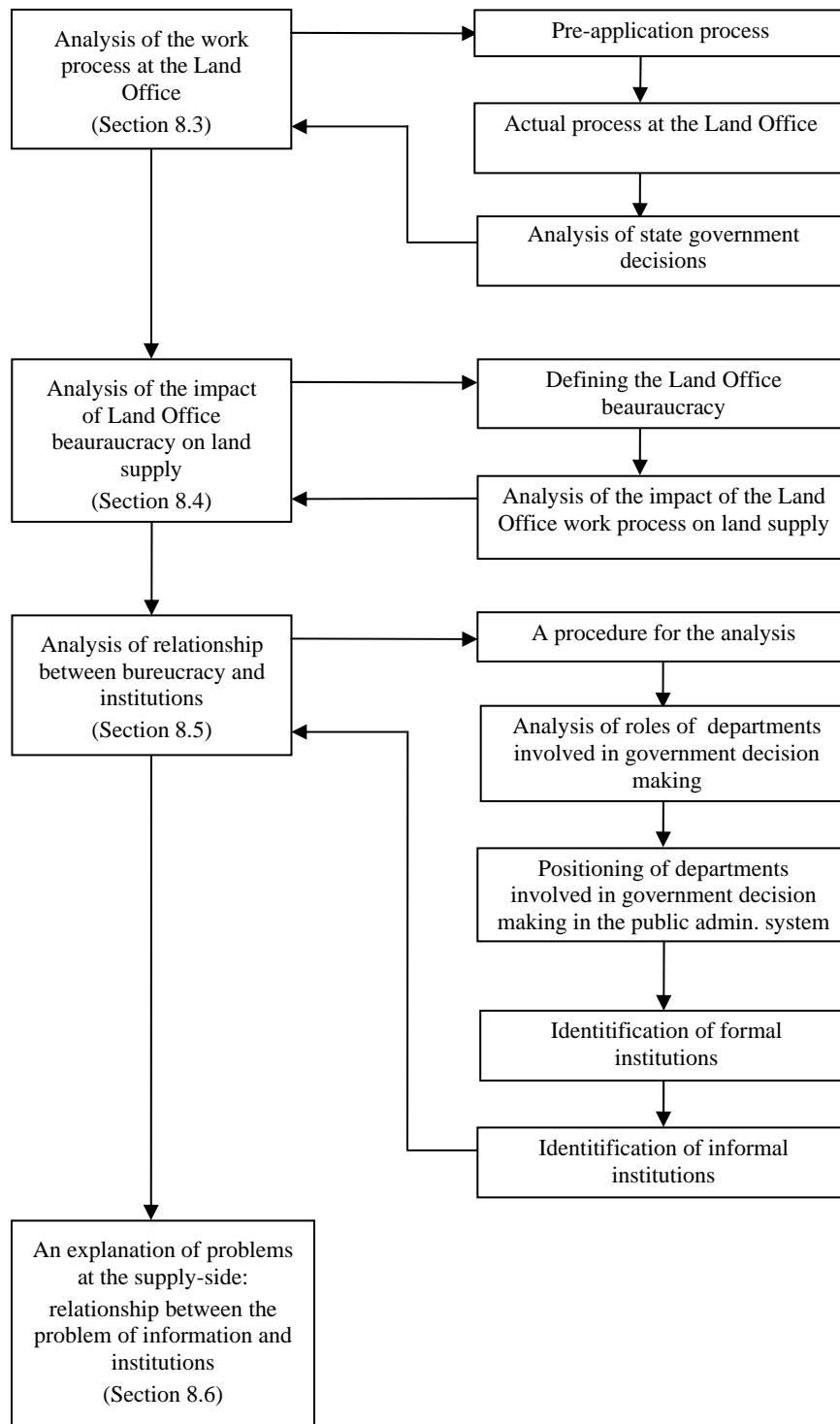


Figure 37 : Chapter Eight's Road Map

8.2 THE LAND OFFICE WORK PROCESS

To explain work process at the Land Office, an investigation of official records was carried out at Kemaman Land Office between February to May 2005, to examine applications for:

- (a) government land disposal of petrochemical industrial sites;
- (b) sites for non-petroleum-related industries; and
- (c) private land conversion.

Every application was kept in an individual file. For research purposes, 37 files, as shown in Table 44, were available for inspection, as below:

Table 44 : Kemaman – Land Office Files Investigated Feb – May 2005

Type of records	Total Number of Files ⁷¹	Number of samples	Number of files available for inspection
Applications for government land disposal of petrochemical industrial sites	11	11 (all)	9 (82% of sample)
Applications for conversion of private land for non-petroleum-related industrial use (1998 – 2004)	862	45	24 (53% of sample)
Application for government land for non-petrochemical-related industrial use	Approx. 500	Not thoroughly inspected ⁷² .	

Source: Own analysis

⁷¹ Based on discussion on Page 128

⁷² See explanation in sub-section no. 8.2.1.3.2 (Page 207).

Details of the information gathered from the Land Office records are in Appendix I. A record of the activities involved in the data collection can be found in the research log-book (Appendix G). The sampling procedure is discussed under Sub-section 6.4.1.2 (from Page 128).

During visits to the Kemaman Land Office, entries in the Land Application Roll Book indicate that 11 applications had been made for government land disposal of petrochemical industrial sites. However, as shown in Appendix I, only data on seven sites were collected and analysed. The problems were that:

- (a) only nine files were available for inspection. The other two files were not on the shelf and were believed to have been closed and stored outside the Land Office working area. The missing files were applications for 'Site No.8' (Kerteh Port and CTF facilities) and 'Site No.19' (GPP5 and GPP6);
- (b) one file was an application for a 'buffer-zone'; and
- (c) the application for 'Site No.3' occupied two files.

As far as files regarding private land conversion are concerned, out of 862 applications from 1998 to 2004, five percent (47 files) were selected as study samples. However, only 24 of those were available for viewing. Regarding applications for government land for non-petroleum industrial use, it became clear after browsing a number of files, as well as collecting information from the Land Office staff and interviews with the SEPU and Terengganu SEDC, that the Land Office has no role in the decision-making process⁷³. Thus, these applications were excluded from detailed analysis.

⁷³ Further explanation is in sub-section 8.2.2(b)(ii).

The findings from the above investigation are summarised in Figure 38 and suggest that there are differences between the routes of decision-making for the three different types of land use mentioned in Table 44. As mentioned in Appendix G, in Terengganu, industrial sites are applied from State Government through the Terengganu SEDC except within the KIPC. All sites in the KIPC were originally awarded by the State Government to Petronas. In contrast, in Pahang all industrial sites, including petrochemical industrial site in Gebeng, were acquired through normal sale and purchase arrangements between the Pahang SEDC and the present occupiers. To find more evidence on the relationship between Land Office bureaucracy and the institutional framework, this research also investigated the process of land conversions in Terengganu. Therefore, Figure 38 presents four streams of the process. Stream A is related to petrochemical sites in KIPC, Stream B is related to the land conversions process, Stream C is related to other industrial sites in Terengganu and Stream D is related to all types of industries in Pahang. In Malaysia, MITI approval is required before locating an industry. Interviews with investors indicate that applications are submitted through MIDA⁷⁴. The National Land Council in 1998 decided that the process of land acquisition that involves foreign investment⁷⁵ must be initiated by FIC's and MITI's approval. Thus, Figure 38 shows that the process of industrial land in the case study is initiated for FIC's and MITI's approval.

⁷⁴ Will be discussed in detail from Page 199.

⁷⁵ See Appendix C and discussion on Page 86.

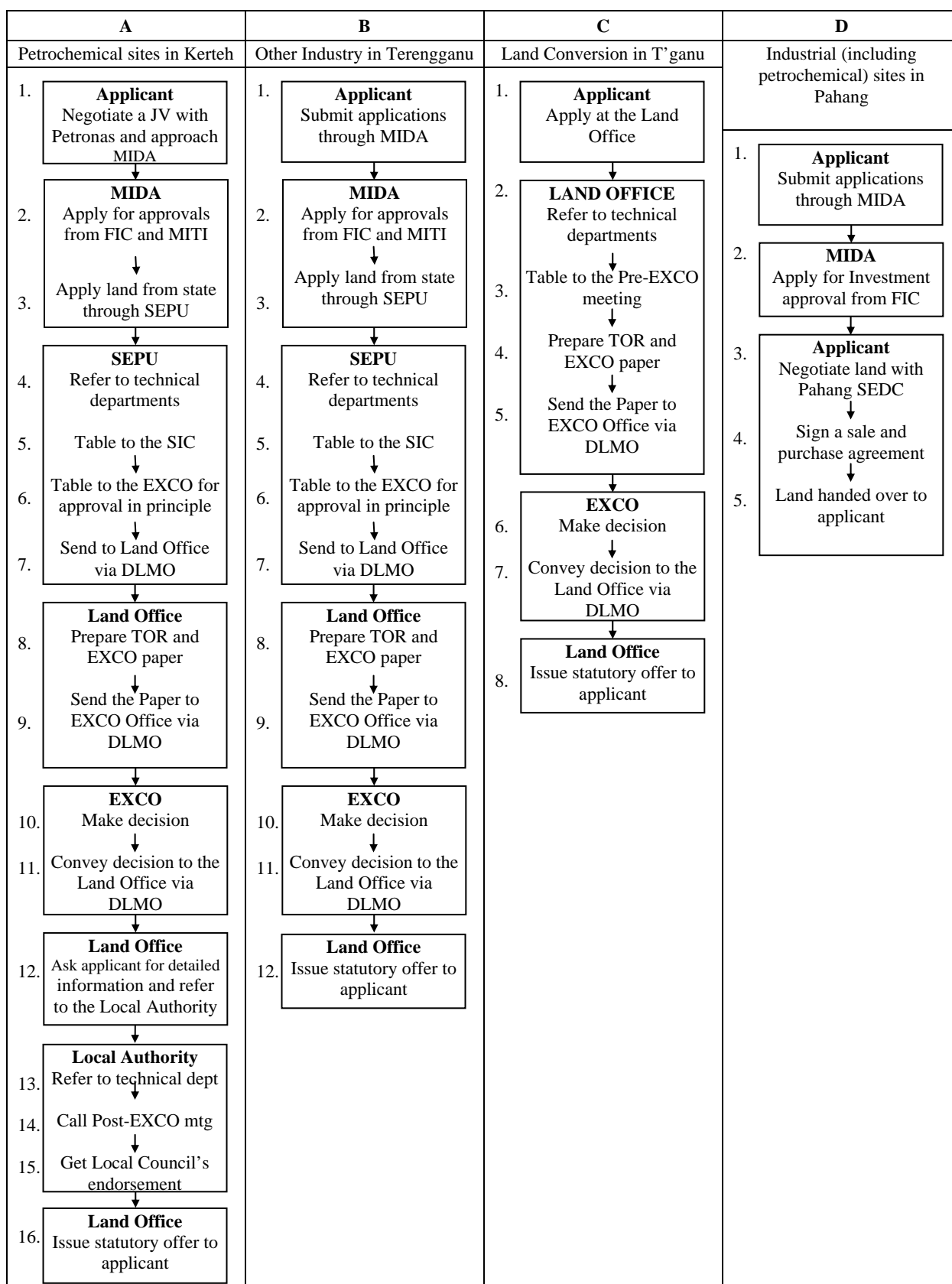


Figure 38 : Malaysia – Work Process in Releasing Land for Development in Terengganu and Pahang

Source : Own analysis, based on findings in Appendices C and P

The Land Office work process described in Figure 38 is explained by the following citations:

(a) Explanation From Project Initiator

“We develop Kerteh according to master plan. It is very much a Petronas town. Yes, the state government has identified the area surrounding the PPIC as petroleum related industries. However, we are not sure whether it is blissful Petronas or not. The state has also identified the Lot Q for small and medium petrochemical industrial zone. We are working with the government to identify the most appropriate industries. Our roles in Kerteh including assisting investors in dealing with government agencies, such as getting land from the SEPU and Land Office, getting industrial licence from MIDA, securing a CF and other approvals from the Local Authority, DOSH, DoE, PWD, DID, Fire Department, Public Health Department and securing utilities from TNB (electricity), Water Board, telecom etc.... In land development, altogether, from beginning of the process until operation, land application approximately 5-7 months, building plan approval approximately 2-3 months, construction of project approximately 1-2 years and CF approval approximately 1-2 months” (Petronas).

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(b) Explanation From Industry

“We acquire our site in Kerteh through Petronas. Petronas has set Kerteh as an integrated petrochemical complex. Petronas is also the feedstock supplier” (MPEA).

“When dealing with government department, we do not approach government department directly. We only deal with MIDA, a one stop agency for investors. We go together with Petronas. MIDA is excellent, approachable and flexible. It offers a numbers of incentives e.g. tax break, but it needs a detail proposal on what we want. Then we discussed the proposal in great details. We are happy with MIDA”(US Company).

“all matters are dealt through MIDA” (A CEO)

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(c) Explanation From the Prime Minister Level

“The central government is aware that there are complaints about development approvals by the State Authorities that are not to expectation. However, it’s beyond the limits of the central government powers to interfere with the State matters or to push the State Authorities... The central government is also aware that there are complaints regarding why the investors need to undergo a dual-system where an application has to be submitted to both Federal and State governments. In the first

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step they are required to get approvals from MITI and FIC. Then, they need to find a land from the State Government” (Mahathir). 1

(d) Explanation From the State Chief Minister Level

“Administratively, prior to approaching State Government, investors are required to get approval for investment in Malaysia from MITI and the FIC...” (Abdul Hadi) 5

(e) Explanation From the State Government Level

“Jabatan ini tidaklah terlibat secara langsung dalam proses permohonan tanah. Tanggungjawab jabatan ini adalah untuk menyelaraskan proses permohonan tanah di seluruh negeri yang boleh dibuat sama ada melalui Pejabat Tanah, UPEN atau SEDC... Permohonan tanah bagi bukan industri dan pertanian yang kurang 10 ekar dibuat di Pejabat Tanah. Bagi industri selain petroleum mesti dibeli melalui SEDC. Bagi yang berkaitan petroleum dibuat terus melalui UPEN. Walau bagaimanapun, semua permohonan adalah diluluskan oleh EXCO dan semua kertas EXCO mesti dihantar melalui PTG. Sebelum diangkat kepada EXCO, ulasan setiap jabatan akan disemak dengan teliti dan dipastikan semuanya selaras (This department is not directly involved in government land disposal. Our task is coordinate the application process for government land disposal, which can be filed in the Land Offices... Applications other than for industry are filed in the Land Office. For industrial sites that are not petroleum-related, application is made through SEDC. Applications for petroleum related sites are made at the SEPU. However all EXCO Papers are submitted through this department. We will vet the Papers before they are submitted to the EXCO” [DLMO]) 10
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“(Our duty is) to provide physical infrastructure for industrial areas within industrial zones and to be negotiator, on behalf of the state government, with investors and to implement the Small and Medium Industrial (SMI) Plan... All decisions are made by EXCO under the SIC advice. SIC’s recommendations are subjected to the MIDA, District Officer, DoE, TCPD. The SIC consists of an EXCO member, State Secretary, State Financial Officer, State Legal Adviser, State Directors of SEPU and DLMO” (Terengganu SEPU) 25
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(f) Explanation From the Land Office

“Permohonan tanah industri dibuat melalui UPEN... selepas mendapat kelulusan EXCO, UPEN akan memaklumkan jumlah premium perlu dikutip oleh LOKM. Maklumat dan fail lengkap disimpan di UPEN. Manakala permohonan pembangunan tanah individu dibuat di LOKM, mengisi borang (4 salinan), sijil carian rasmi, 35 salinan pelan – iaitu yang mesti dipersetujui oleh Majlis Perbandaran Kemaman MPK). Kemudian akan diminta ulasan MPK, Jabatan Pertanian, JPS, Jabatan Perancangan Bandar dan Desa (JPBD), JKR dan Jabatan Penilaian. Kelewatan selalunya ketika menunggu ulasan, selalunya JPBD. Paling cepat, JKR. Kemudian, Mesyuarat Jawatankuasa Teknikal (MJKT) akan diadakan. Kelulusan dibuat oleh EXCO, tetapi kertas EXCO dibuat di sini. (Applications for industrial sites are made 35
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through SEPU... we are only of informed the EXCO decisions. Details of the applications are kept at the SEPU Office. ... Applications for land developments are made here. Applicants need to fill out the statutory forms, the site plan in 35 copies – certified by the Local Authority and the official search certificate. If everything is in order, the application is referred to the technical departments – the Local Authority, Department of Agriculture, Department of Drainage and Irrigation, Town and Planning Department, Public Works Department (PWD) and Department of Valuation. The fastest reply is normally from PWD. Delays in the process are normally because of waiting for comments from the technical departments, normally the Town and Planning Department. Then the application is submitted to the Pre-EXCO Technical Committee. However, the final decision is with the EXCO. The EXCO paper is prepared by us” [LOKM]).

(g) Explanation From the Local Government

“Kemaman Municipality Council is the local authority for Kemaman District which Kerteh Petrochemical Complex is under its jurisdiction. As planning authority, the municipality’s roles are to enact and implement the Structure Plan, control land development, comment land development proposals that are submitted to the Land Office... Municipality’s roles are not limited to controlling development. It also functions to promote economic and land development according to the Structure Plan... In land development, municipality’s roles are to certify building plans and issue certificate of fitness for occupation (CFO)... Application for development approval is dependent on the Land Office. The municipality cannot process any application if a site is without ownership or an application is in contradiction with land use conditions that are set by the Land Office... In commenting land redevelopment application refers by the Land Office, we must get an endorsement from the Municipality Council... In practice, Council’s decisions are based on advice from the technical departments, mainly the DOSH, Fire Department, TCPD, Drainage and Irrigation Department, Public Health Department and PWD” (Kemaman Municipality).

Figure 38 and the quotes above can be condensed as follows (Table 45):

Table 45 : Malaysia – Summary of the Process of Releasing Land for Development in Terengganu and Pahang

	Themes	Details	References to quotations on pages 199 to 201 (Page [P] : Line [L])
1	Stages in the approval process	(a) pre-application (b) processing (c) decision making	P: 199, L: 7, 20, 32. P: 200, L: 19, 26, 43. P: 201, L: 21.
2	Applicant/investors interface with government	Generally not direct	P:199, L: 20, 27.
3	Levels of government involved	All levels (Central, State and Local Governments)	P: 199, L: 7, 33. P: 200, L: 28. P: 201, L: 5, 28.
4	Type of government departments involved	Variable, including: (a) Administrative service departments; (b) Professional service departments; (c) Federal Government departments; (d) State Government departments; (e) Local Authority.	P:199, L: 7, 33. P:199
5	Type of government decision/approval	Consultation among government departments	P: 200, L: 28. P: 201, L: 5, 28.
6	Decision making method	Formal meetings	P: 200, L: 26. P: 201, L: 10, 27.

Source : Own Analysis

A detailed discussion of the findings in Table 45 will follow. The discussion is divided into the stages of the approval process as indicated in the first row, they are:

- (a) the pre-application process;
- (b) the procedure for filing an application for government land and land conversion; and
- (c) the consent.

8.2.1 The Pre-Application Process – Prior to Approaching the State Authorities

Table 45 shows that investors have no direct interface either with the EXCO or the Land Office. Instead the investors interviewed indicated that MIDA is the foreign investors' first stop when deciding to invest in Malaysia. The minutes of the National Land Council Meetings⁷⁶ also indicate that it is a national policy that foreign investors are required to secure consent from the FIC prior to acquiring land (from the State Government or State Government agencies). The findings as in Appendix P (in Table C) are consistent with MIDA (2004) which itself suggests that the agency functions as an industrial promoter and shoulders the responsibility of facilitating investors, especially from foreign countries. MIDA does this in various ways, such as:

- (a) it provides information about industrial opportunities;
- (b) it provides information about incentives;
- (c) it facilitates investors' securing industrial licenses from the industrial licensing authority, the MITI; and
- (d) it assists investors who approach state and local authorities to apply for land for industrial sites.

As Mahathir said in his interview:

... The central government is also aware that there are complaints regarding why the investors need to undergo a dual-system where an application has to be submitted to both Federal and State governments. In the first step they are required to get approvals from MITI and FIC. Then, they need to find a land from the State Government (Mahathir).

Investors, as quoted below, agreed with Mahathir's statement:

"All matters are dealt through MIDA" (A CEO);

"We do not approach government department directly. We only deal with MIDA, a one stop agency for investors. We go together with Petronas. MIDA is excellent, approachable and flexible. It offers a numbers of incentives... We are happy with MIDA" (US Company).

"On MIDA, it is the only department that one can bank on. If you deal with government department without going through MIDA, delays are inevitable" (US Company).

⁷⁶ As in Appendix C (Proceeding No. : MTN Bil. 5/54/1998).

According to MIDA:

“The (MIDA’s) core business is to promote and co-ordinate industrial development functions. It is responsible to assist investors in approaching related authorities; to be problem shooter to solve bureaucratic problems; to advise investors on matters pertaining investment in Malaysia. MIDA is also industrial license issuer, reference to the SEPU and member of the SIC” (MIDA).

This sub-section suggests that MIDA plays a vital role in Malaysian industrial development. The agency functions as a mediator and communicator between investors and the government. It channels investors’ applications and complaints to the Government. Through it the Government’s incentives and policies are made known to investors. Chapter Four indicates that the Central Government has no jurisdiction over land matters but submission of an application through MIDA is a pre-requisite for applying for industrial land development so it is apparent that the Central Government plays a crucial role in Malaysian land matters.

8.2.1.1 The Application Filing Procedure and Decision-Making Process for Petrochemical Related Industrial Sites

The flow chart in Figure 38 demonstrates applications for government land or for land conversion can be made in one of two ways. One can apply directly to the Land Office or through the State Economic Unit (SEPU). The quotations on Page 195 and discussion below address the differences between these two application methods:

8.2.1.2 Application through the Land Office

Applications where the proposed development does not involve a change of ownership from government or government agencies; and the purpose of the application is for either agricultural or residential or commercial use are filed at the Land Office. The procedure to follow is:

- (i) The filing of a formal application usually involves the completion of the statutory application forms, preparation of land plans/sketches and payment of the application fees prior to EXCO approval.

- (ii) Employing the services of consultant (e.g., lawyer or chartered surveyor) is not compulsory. Nevertheless, a site plan, which is part of an application, must be prepared by either a chartered surveyor or qualified planner.
- (iii) If an applicant is not an individual, a copy of the company's registration certificate and a copy the 'memorandum and articles of association' (MoA) must be provided.
- (iv) After a formal application is filed, advice is sought from several government departments (so called 'technical departments'). These include:
 - The Planning Authorities (local government and the Town and Country Planning Department);
 - Valuation Department;
 - Department of Public Works;
 - Department of the Environment; and
 - Department of Drainage and Irrigation.
- (v) After written comments are gathered from the technical departments, a 'Pre-EXCO⁷⁷ meeting', hosted by the Land Office, is convened before a recommendation paper is prepared. Members of the committee are representatives from the technical departments.

8.2.1.3 Application through the State Economic Planning Unit

As a matter of state policy⁷⁸, all applications related to industrial development, including petrochemical industrial sites, must be made through the SEPU. Applications through the SEPU:

⁷⁷ Appendix P (Table C, row no.5).

⁷⁸ Appendix K (Interviewee A7, sub-heading (a)(i)).

- (a) The purpose must be for industrial or commercial use.
- (b) Must involve a change of ownership from government or government agencies. Therefore:
 - (i) Only sites where the previous owner was the government can be developed for petroleum-related industries;
 - (ii) Sites where the previous owner was Terengganu SEDC can only be developed for land use other than petroleum-related industries.
- (c) Must follow the following procedure:

8.2.1.3.1 Procedure for Processing Applications for Petroleum-Related Industrial Sites

State government approval for this type of land involves two stages. The first stage is an ‘approval in principle’ by the EXCO. A formal application is required only after the transfer is approved in principle. Prior to the ‘approval in principle’ being granted, such applications are screened by the State Investment Committee (SIC). The SIC is chaired by the Chair of the Permanent Committee for Industrial and Tourism Development, a politician, a member of the State Legislative Assembly and an EXCO member. The SIC is comprised of the top five most senior state officials. They are indicated on Page 200 as:

- (a) the State Secretary;
- (b) the State Financial Officer;
- (c) the State Legal Advisor;
- (d) the State Director of Economic Planning Unit; and
- (e) the State Director of Lands and Mines.

SIC recommendations, which form the basis for State Government decisions are based on advice from other departments, including:

- (a) MIDA;
- (b) the Town and Country Planning Department;
- (c) the Department of the Environment;

- (d) the District Office; and
- (e) the Local Authorities.

The second and final approval process has changed over time. Before 1999, final approval was made by the EXCO. By 1999, as shown in Appendix I⁷⁹, these powers had been vested in a body known as the 'Post-EXCO Committee'. The 'Post-EXCO Committee' is hosted by a Local Authority which is the Kemaman Municipality Council in case studied. A formal offer to the applicants pends until land use conditions are set by this committee (by the EXCO in applications approved before 1999). This committee's decisions are based on recommendations from:

- (a) the Department of Industrial Safety and Health;
- (b) the Fire Department;
- (c) the Health Department;
- (d) the Town and Country Planning Department; and
- (e) the Department of the Environment.

8.2.1.3.2 Application Procedure for Non-Petroleum-Related Industrial Sites

The initial process is the same as in the application for land for petroleum-related industry. Applications are made through the SEPU and vetted by the SIC (see statements on Page 195). After they are submitted to the EXCO and a consent is granted, details of the applications are then sent to the Land Office through the DLMO. Upon receiving the details, the Land Office opens a file, prepares a short paper and submits it to the EXCO. In a short time a decision is made then the Land Office collects whatever is due and registers the land. This simple procedure applies to application for industrial sites within the planned industrial areas that have been set aside for non-petroleum- and gas-related industries (see Figure 10 on Page 68).

⁷⁹ Section B of Appendix I.

8.2.2 Decisions

8.2.2.1 Power of Approval

The quotations on Page 195 suggest that the State Executive Committee (EXCO) is the only authority which can approve applications for land development and government land disposal. The investigated documents show that all decisions were made by the EXCO support this proposition (see Appendix I).

8.2.2.2 Procedure to Approach the Approving Authority

Records at the Land Office indicate that no application can be forwarded to the EXCO without a consideration paper⁸⁰. All papers, regardless of which channel the application comes through, can be signed only by the State Director of Lands and Mines, the Land Administrator and the Clerk of the Council⁸¹. Not one paper was found to be signed by their deputies. In all circumstances, the DLMO plays a role as mediator between the Land Office and SEPU as well as between the Land Office and the EXCO Secretariat. As illustrated in Figure 38 all applications enter and exit from the EXCO boardroom through the same passage.

8.2.2.3 Summary of the Decisions

The results of decisions made by EXCO in the studied samples were as follows:

- (a) All applications for industrial sites were approved⁸²;
- (b) Applications for private land conversions: out of the 24 investigated files, 19 applications were approved and five were declined⁸³. When an application was declined, the reason was always the same. The local authorities and the Town and Country Department objected to the application on the basis that the

⁸⁰ An outline of an EXCO consideration paper is in Appendix J.

⁸¹ A senior official, equivalent to most head of department, acts as secretary to the EXCO.

⁸² Section B of Appendix I.

⁸³ Section D2 of Appendix I.

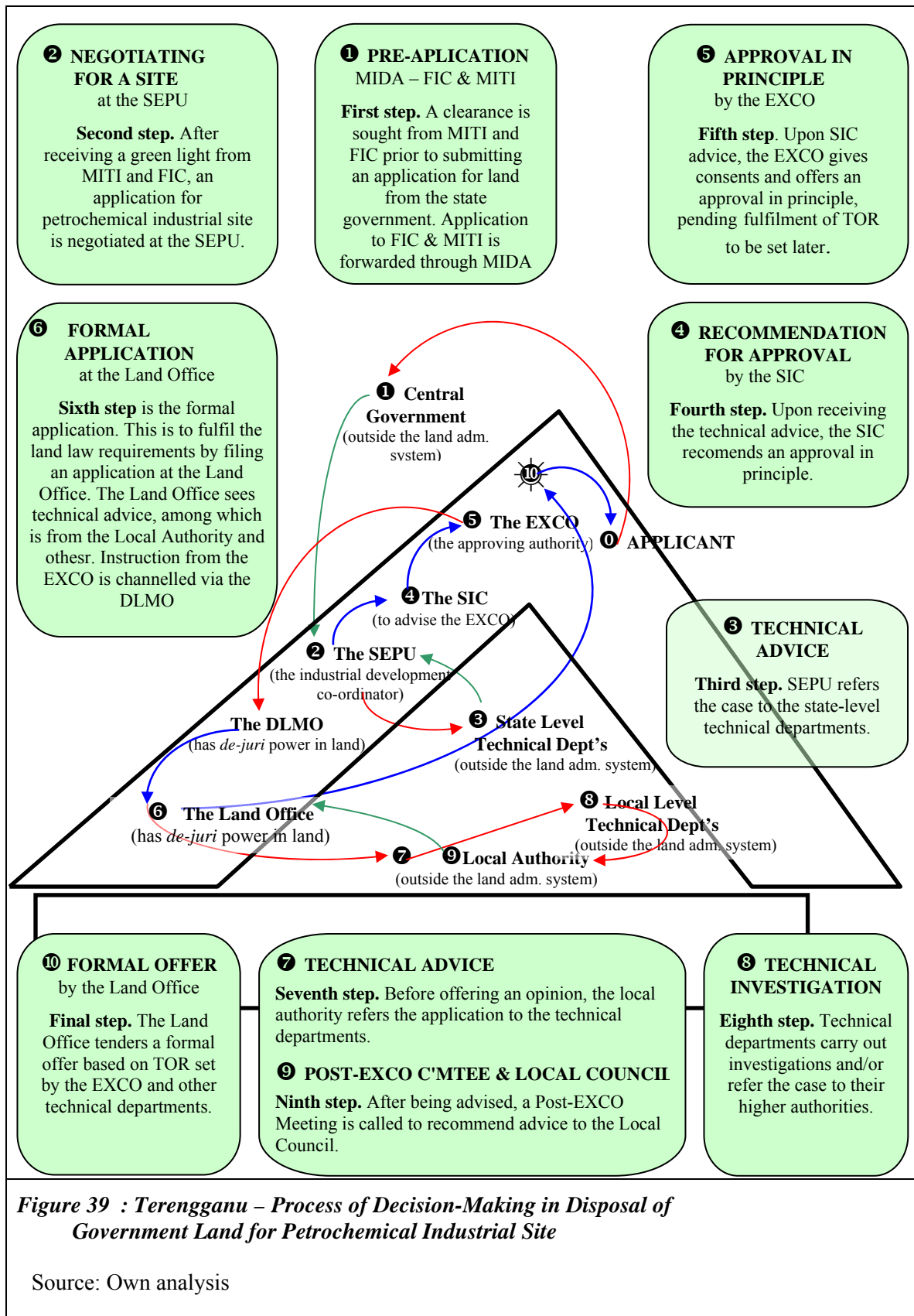
application was not consistent with the land use zoning. Characteristics of approved application were:

- (i) decisions were unanimous among all the government departments; and
- (ii) the rate of a 'further premium'⁸⁴ was calculated exactly according to the Valuations Department proposal.

8.2.3 Summary of the Process

On Page 152 it was mentioned that Barrett *et al.* (1978) propose a model to evaluate the process of work in the Land Office. The discussion on Page 152 states that the present study adopts this model to illustrate the sequence of actions in the decision-making process in the study case. The model (see Page 48) suggests that the path on which information travels to the final decision maker is a one-way traffic route. However, according to the findings, as shown in Figure 39 below, the actual decision-making process is not a straight away route as suggested in the original Barrett *et al.* (1978) model.

⁸⁴ Section 124(5) of the Land Code requires the authorities to impose a 'further premium' (the quantum is a certain percentage of the market price of the land) after a conversion is approved.



8.3 ANALYSIS OF THE IMPACT OF BUREAUCRACY ON THE SUPPLY OF LAND FOR DEVELOPMENT

The preceding sub-section concludes with a diagram showing that the Land Office decision-making process is not as straightforward as predicted by the original Barrett (1978) model. This present section will analyse the government decision-making process regarding government land disposal as well as land conversion approval. This sub-section will, firstly, define the characteristics of the Land Office bureaucracy. Secondly, it will analyse the effects of bureaucracy on Land Office performance.

8.3.1 Characteristics of the Land Office Bureaucracy

8.3.1.1 Defining the Land Office Bureaucracy

The illustrations on Pages 198 and 210 indicate that applications for government land disposal and land development approval go through all levels of the government administration system. These findings are consistent with Sub-section 3.2.3, which suggests that government bureaucracy is characterised by delays, power distributed among a number of government departments, strict routines, paper work, rigid application of rules, and observation of laws, rules, regulations and procedures.

The quotations on Pages 199 to 201 support the above proposition. The following discussion will analyse these findings in detail and address seven issues related to Land Office bureaucracy. These are:

- (a) the distribution of power among government departments;
- (b) power relations within the government;
- (c) the nature of the relationship between the Land Office with other departments;
- (d) paperwork at the Land Office;
- (e) records maintained at the Land Office; and
- (f) communication between government departments.

8.3.1.2 Distribution of Powers in the Government

Referring to the illustrations on Pages 198 and 210, there are three points to highlight. First, one of the functions of the SEPU is to supply information to the SIC, the body that advises the State Government in industrial land approval. The SIC is chaired by a senior politician and represented by all five top State Government officials. However, to make a decision, the SIC needs to seek advice from a number of government departments. Second, the EXCO is granted by the Constitution full power over land. These powers have been tested through the highest Court of law in the country. However, in the case of approvals for petroleum-related industries, participation of the planning authorities is also required⁸⁵. Third, the composition of the Post-EXCO Committee suggests that the roles of the departments responsible for public safety and health are not marginal.

The above three points imply that power over land disposal as well as land development is distributed among a number of government departments. This not only supports the proposition that in the land development process, especially at the supply side, decisions are made by many but also establishes the proposition that in government no one has absolute power. The Constitution and the Land Code grant the EXCO exclusive authority to approve any government land disposal as it wishes. Therefore, in events where government departments try to beat red tape in order to expedite certain applications, the case is not referred to the technical departments. As mentioned in paragraph (b) above, before the EXCO decision is conveyed, the Land Office needs to determine the terms and conditions for the approvals. However, the findings suggest that decisions of the technical committees as well as advice of the technical departments apply.

The planning authorities have no power at all in land matters because these are under the jurisdiction of the Land Office. However, all the studied samples reveal that the EXCO abides by any objections made by the planning authorities, possibly because of Constitutional factors. Article 95A of the Constitution provides that there must be a

⁸⁵ See also Figure 40.

National Council for Local Government (NCLG). NCLG's resolutions bind the Federal and State Governments just like the National Land Council's (see page 72). However, it is beyond the scope of this study to investigate this issue further.

To expedite approvals the DLMO issues a circular requesting the technical departments to prepare their comments and advice within 14 days (Circular 1/1993). Some departments however, as seen in Table 46, have reasons to ignore this deadline.

Table 46 : Terengganu – Reasons for Delays in Providing Comments on a Proposal for Government Land Disposal and Application for Land Conversion

A	B	C	D
	Department	Jurisdiction	Reasons of Delays
Departments whose comments are completed within 14 days	Public Work	State Government	-
	Drainage and Irrigation	State Government	-
Departments whose comments are completed beyond 14 days	Environment	Central Government	Comments on land development proposal required consultation with committees under the department as well as with the Headquarters
	Valuation	Central Government	Comments on value of land required consultation either with State Director or Headquarters
	Municipality	Local Government	Comments on land development proposal required approval of the Local Authority Council
	Town and Country Planning	State Government	Time is required to consult all related laws and policies, without which, development and planning would not be co-ordinated

Source: Own analysis

Note: Propositions in Column 'D' are based on interviewees' statements as in Appendix K (Interviews A12, A15, A16 and A25). Further discussion is on Page 228.

8.3.1.2.1 Power Relations within the Government

Problems raised in Table 46 show that government departments involved in land matters are bound by a number of limitations in decision-making. The issues also indicate that there are clear boundaries in power relations within the government. Figure 40 depicts the nature of power relations between government departments and illustrates the way in which they impose their powers on each other.

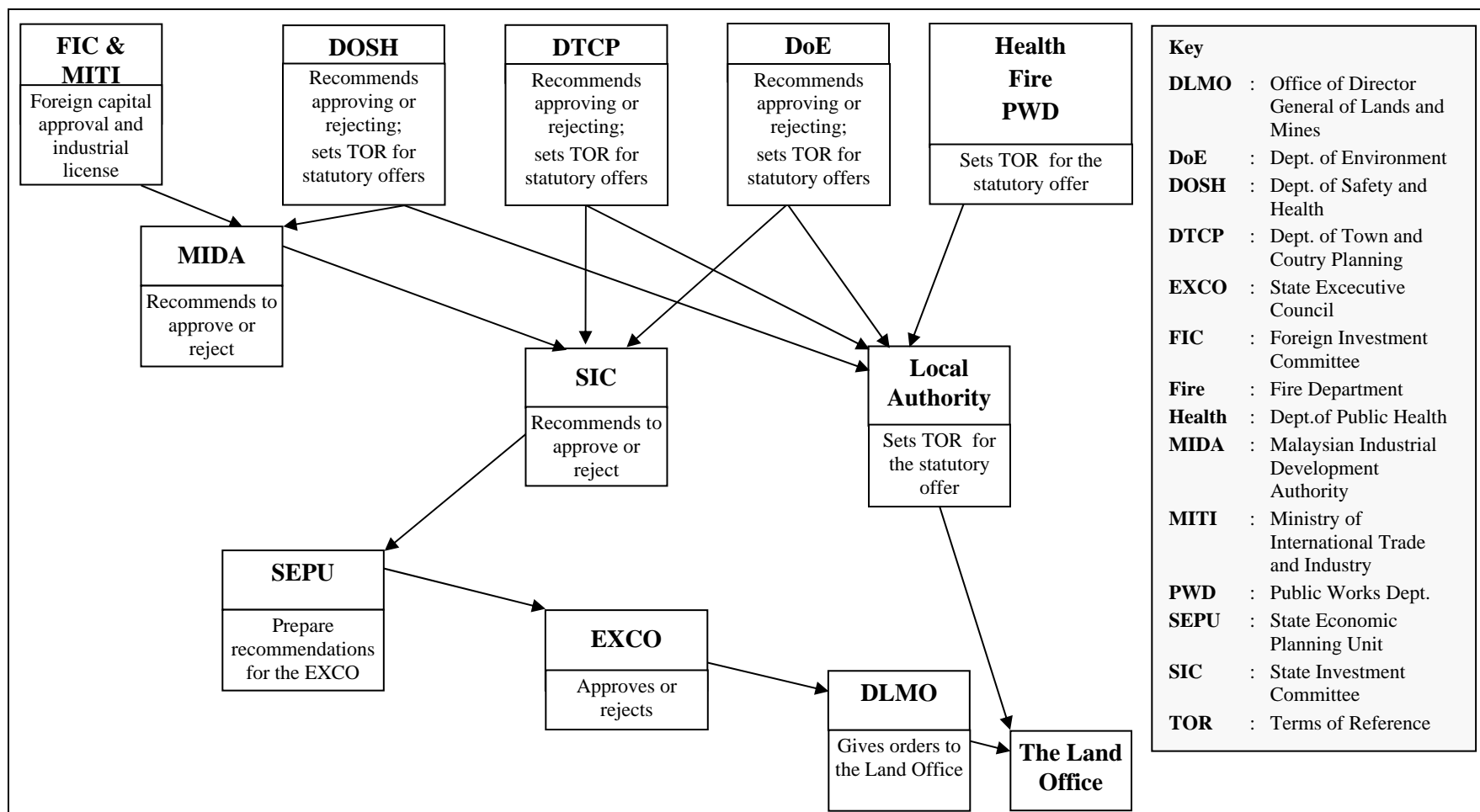


Figure 40 : Terengganu – The Nature of Power Relations between Government Departments in the Land Administration

Source : Own Analysis

Nature of Relationship between the Land Office and Other Departments

Sub-section 4.3.2.1 suggests that the Malaysian public administration (MPA) is rooted in the Federal Constitution. The MPA has been for generations divided into:

- (a) administrative and professional services; and
- (b) the administrative service has been divided into Federal and State Services (ADS and SAS).

Table 47 indicates the category of service of top state senior officials as well as departments that are involved in land matters.

Table 47 : Terengganu – Scheme of Services and Appointments of Officials Involved in Land Approval and Industrial Development

Department/Position	Category of Service	Answers to:
Municipality President	Administrative	Local Government
The State Secretary ^{# *}	Administrative	State Government
State Financial Officer ^{# *}		
State Director of Economic Planning Unit [#]		
State Director of Lands and Mines [#]		
Land Administrator [#]		
State Legal Advisor ^{# *}		
Town and Country Planning	Professional	
Public Work		
Drainage and Irrigations		
Secretary General of MITI	Administrative	Central Government
Director General of MIDA		
Chair of the FIC		
Department of Industrial Safety and Health	Professional	
Valuation Department		
Department of Environment		
Department of Health		
Fire Department		

Source: Own analysis ⁸⁶

[#] Five top State most senior officials who are members of the SIC.

^{*} Three top State most senior officials who are *Ex-Officio* members of the EXCO.

⁸⁶ Table D, Appendix P.

If the sketch in Figure 39 and the data in Table 47 are applied to the government administrative structure depicted in Figures 13 and 14, power relations in land matters may be depicted as in Figure 41 and as categorised below:

Category A: Superior to the Land Office but within the same state administration as well as within the same profession:

- DLMO
- SEPU

Category B: Same level with the Land Office, outside the state administration but within the same profession:

- Local authorities

Category C: Same level with the Land Office, within the same state administration but different in professional background:

- Public Works Department
- Drainage and Irrigations Department
- Town and Country Planning Department

Category D: Totally outside the state administrative structure as well as different in professional background:

- MITI
- MIDA
- DOSH
- Health Department
- Fire Department
- Valuations Department

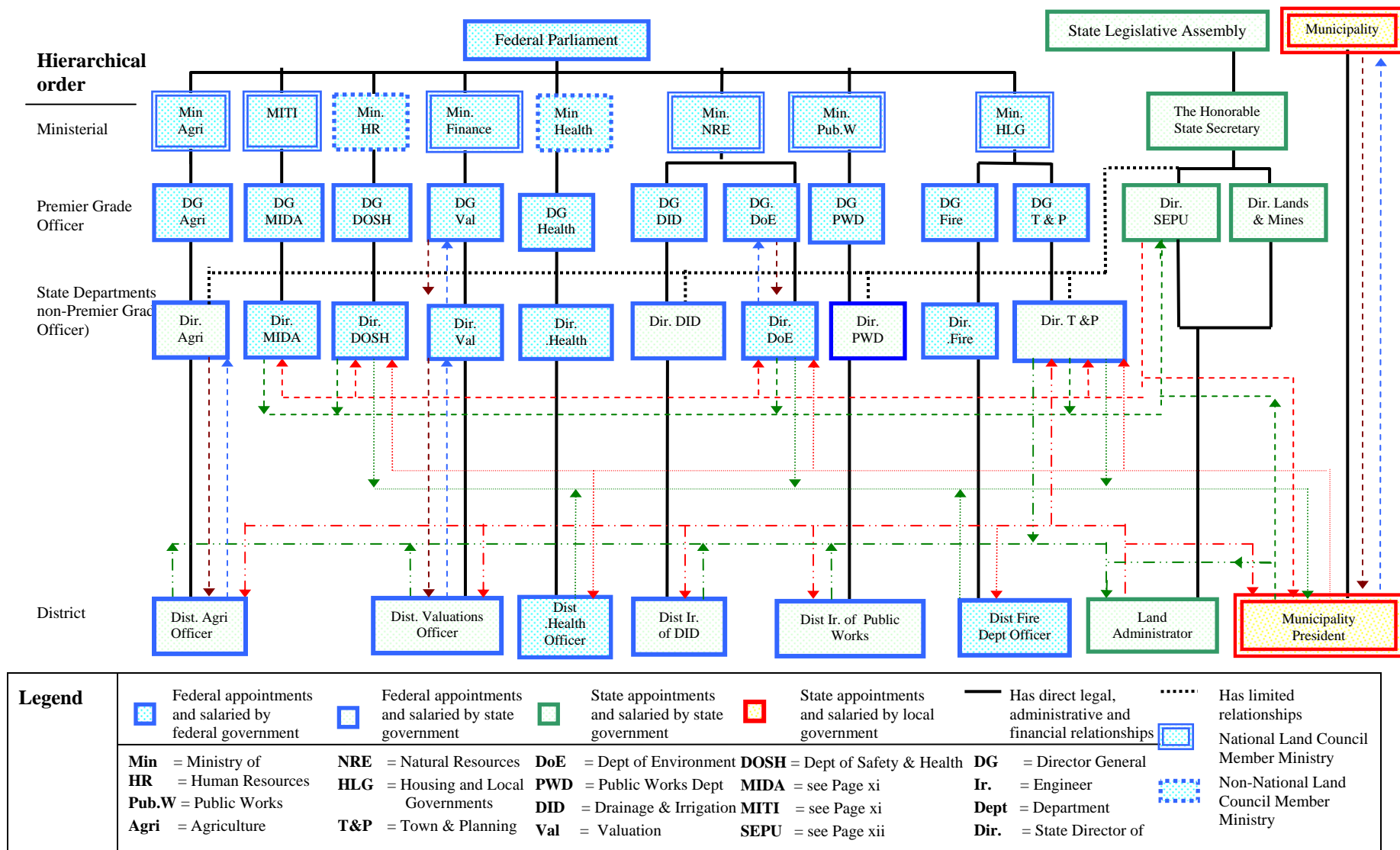


Figure 41 : Terengganu – Formal Relationships between Government Departments Involved in Industrial Land Development

Source : Own Analysis

8.3.1.2.2 Paperwork

The discussion on Page 34⁸⁷ indicates that symptoms of bureaucracy can be deduced from extensive paper work. Sub-section 8.2.1 implies that papers are an integral part of the Land Office decision-making process. The following is a list of papers that are typical of the Land Office process of decision making:

Table 48 : Terengganu – Paperwork at the Land Office

<p>LETTERS</p> <ul style="list-style-type: none">• directive from the DLMO;• directive from the SEPU;• technical department consent/objection;• consent from the planning authorities;• invitations for technical committee meetings; <p>CERTIFICATES AND CREDENTIALS</p> <ul style="list-style-type: none">• company's registration certificate;• record of company's ownership;• qualifications of the consultations (e.g. membership in chartered surveyors, board of planners, etc.)• memorandum of association (MoA); <p>STATUTORY FORMS</p> <ul style="list-style-type: none">• the statutory application form;• the statutory offering form; <p>PLANS</p> <ul style="list-style-type: none">• site plan;• machine arrangement plan;• plant lay-out; <p>REPORTS AND PAPERS</p> <ul style="list-style-type: none">• report of site investigation by Settlement Officer (Land Office);• consideration paper;• project feasibility studies;• environmental impact assessment;• property valuation report;• soil test report; <p>MINUTES OF MEETINGS</p> <ul style="list-style-type: none">• minutes of the Technical Committee meetings; and• extract from the EXCO decisions.

Source : Observed from files examined as in Section B and D2 of Appendix I

⁸⁷ See view of Brynard (1995).

The above list shows that paperwork is utilised extensively in the government decision-making system, in particular in the Land Office.

8.3.1.2.3 Records maintained at the Land Office

Table 10 (Page 84) lists the records that are obligatorily maintained at the Land Office. Based on information from the Land Office as well as DLMO staff, it is estimated that the Kemaman Land Office holds the following records:

Table 49 : Kemaman – Records Maintained at the Land Office

Record	Amount⁸⁸
Land Titles Backup	45,847
Government land application for other than agricultural use	approx.500
Application for land conversion (1998-2005)	862 ⁸⁹

Source : LOKm

To weigh the volume of the records, comparison is made between the number of documents and the number of Land Office staff. During the investigation, the Kemaman Land Office employed four executive officers and 52 supporting staff of various ranks⁹⁰. Based on figures in Table 49 alone, it is estimated that the ratio of ‘supporting staff : document’ is ‘1 : 900’. If the total number of records is accurately calculated, the ratio is likely to be even higher (see footnote no. 88).

⁸⁸ This number is not exhaustive. Some other categories of records were not collected during the investigation. Among these were applications for government land for non-industrial use, compulsory purchase orders, estate distributions, enforcements, temporary occupation licences, strata titles and permits for rock material extraction.

⁸⁹ See Page 130.

⁹⁰ Appendix K (Interview A7, paragraph 7.1).

Communication System between Departments

Illustrations in Figure 39, Figure 41 and the analysis in Appendix P highlight that many parties contribute to Land Office decisions. Official records and interviews suggest that communication among government officials is characterised by five qualities. They are:

- (a) **formal**, either in the form of formal meetings or official letters;
- (b) **in proper format**. In particular communication between the decision-making body and the administration must be through a proper, comprehensive and well-advised consideration paper;
- (c) **through a proper channel**. All documents indicate that different types of application require different process. However, each case strictly follows the route which applies to it⁹¹;
- (d) **multi-directional**. Almost all departments as shown in Figure 41 engage in a multi-directional consultation, both vertical and horizontal. As a result, information traffic between departments is massive; and
- (e) **carried out only by authorised personnel**. All correspondence must bear the signature of those who prepare it and must be within the limits of their authority.

8.3.1.3 Summary of the Characteristics of the Land Office Bureaucracy

The above discussion suggests that Malaysian government bureaucracy, particularly in land administration, is characterised by:

- (a) no party having absolute power. The laws provide that land matters are under the state authorities' jurisdiction and the State EXCO is at the apex of decision-making bodies. However, actual practice strongly suggests that EXCO decisions are bound by advice from various professional and technical departments, some which are subject to Central Government policies.

⁹¹ For example, see Figure 38 column 'A' steps no. 7, 9 and 11, column 'B' steps no. 7, 9 and 11, and column 'C' steps no. 5 and 7.

- (b) extensive paperwork;
- (c) an extensive and systematic recording system;
- (d) a massive exchange of information among parties in the decision-making process who are engaged in multi-directional communication machinery; and
- (e) a structured and rigid decision-making process.

8.3.2 Analysis of the Relationship Between Bureaucracy and Land Office Performance

8.3.2.1 Introduction

Generally, bureaucracy, red tape or *la paperasserie*, as discussed on Page 34, is seen as indecisiveness, strict routine, paperwork, effectiveness, rigid application of rules and inefficiency. Commonly, it is associated with a state of inefficiency or ineffectiveness. Consequently, bureaucracy more often than not is associated with a lack of coordination between government functions, delays and applications not being duly considered.

The preceding discussion has identified characteristics of the Land Office bureaucracy. This sub-section, will examine to what extent this Land Office bureaucracy affects the supply of industrial land. Since this study emphasises problems related to uncertainty, the focus will be on the predictability of government decisions. With this in mind, the sub-section will examine the relationship between the process and length of the time required for decision making at the Land Office. According to the interviewed investors:

“I think the government is aware of how the policy affects us. However, the government decisions and policy must go through bureaucracy – the department, the ministry and the Cabinet – making it difficult to change. I think the core problem in the government is the attitude that government service has no competition, therefore, there is no necessity for change” (MPEA).

“All matters are dealt through MIDA. If we go directly, the response, especially from the Land Office and Local Authority, are very slow. Normally, after a project is scheduled to take off, land title is yet to release” (A CEO).

“In company’s opinion, MIDA and DOSH are very understanding and excellent. Others are unsatisfactory, for example the Local Authority’s responses to complaints are slow, and the Customs Department doesn’t understand the company’s urgency. In the event of delays at Customs, the shipments of our products, there are also corrupt practice in some government departments.... However, company was aware of the problems from the beginning but didn’t distract them from doing investment in Malaysia. ... On MIDA, it is the only department that can bank on. If you deal with government department without going through MIDA, delays are inevitable” (US Company).

“On Prospects of Kuantan and Kerteh? The answer is on the management. Kerteh is under Petronas’ charge and better managed. In Kerteh we talk the same language, we are like brothers. Any problem that crops-up, we can solve it together. It’s no problem in Kerteh. But, there is no one-ness in Kuantan, we do not know our neighbour. Gebeng has limitations. When we complain, the response is dependent on government budget. For example, we complained to the State Government on the condition of the port, the state promised to improve it but until now the situation remains (A European Company).

The above statements suggest that the interviewed investors are not satisfied with delays in Land Office approvals. This sub-section will analyse the above statements based on information collected from Kemaman Land Office as in Section B and D of Appendix I and use a descriptive statistical analysis to calculate the length time required:

- (a) for the whole process of decision making, from the date applications were filed at the Land Office until applicants were formally notified;
- (b) for applications to be processed at the Land Office until decisions were made by the EXCO; and
- (c) between an EXCO decision and the time applicants were formally informed of the decision by the Land Office.

8.3.2.2 Analysis of Data from Appendix I

The results of the above are presented in Tables 50 and 51. Table 50 presents the results for applications for petrochemical industrial sites and Table 51 regarding land conversions.

Table 50 : Terengganu – Length of Time Required to Complete Application Process for Government Land for the Petrochemical Industry

	Stages of Process	Cell			
		1	2	3	4
		Time Required for Completion (Months)			
		Mean	Minimum	Maximum	Std. Deviation
A	From initial EXCO approval to formal application	1.00	1	1	.000
B	From formal application to EXCO final approval	10.29	3	25	7.740
C	From final approval to issuance of statutory offer	1.86	1	4	1.215
D	From statutory offer to registration of land ownership	9.57	3	20	5.533
E	From ownership registration to plant on-streaming	27.86	5	92	34.237
F	Total duration at the Land Office	18.71	12	34	8.420

Source: Own analysis⁹²

Table 51 : Terengganu – Time Required to Complete Processes in Processing of Application for Land Conversion (Months)

	Stages of Process	Cell			
		1	2	3	4
		Time Required for Completion (Months)			
		Mean	Minimum	Maximum	Std. Deviation
G	Consultation with technical departments (between when a case is first referred to technical departments and when the Pre-EXCO Technical Committee meeting is held. Processes in rows H to L are inclusive).	2.00	0	14	2.892
H	Preparation of the Local Authority comments	4.90	1	26	7.622
I	Preparation of Department of Drainage and Irrigation comments	1.21	1	3	.588
J	Preparation of Department of Public Works comments	1.14	1	3	.468
K	Preparation of Valuation Department comments	1.83	1	8	1.527
L	Preparation of Department of Town and Planning comments	1.25	1	4	.676
M	The writing of an EXCO Paper (between Pre-EXCO Technical Committee and submission to the DLMO)	2.70	1	20	4.118
N	Waiting for an EXCO decision	2.00	1	14	2.811
O	Total time at the Land Office before an approval (from row G to N)	6.87	1	35	7.990
P	Time at the Land Office after approval	1.42	0	4	1.018
Q	Duration of all processes	8.70	4	36	8.110

Source: Own analysis⁹³

⁹² Tables E and F of Appendix P.

At a glance, the above tabulations show that:

- (a) Decisions regarding applications for petrochemical sites require not less than one year (see cell F-2 in Table 50). A one and a half year period is common (cell F-1 in Table 50). In extreme situations, a three-year waiting period may be necessary (cell F-3 in Table 50);
- (b) An EXCO decision regarding an application for land conversion is normally made known within 8-9 months (cell Q-1 in Table 51). The results may be made available anytime between four months (cell Q-2 in Table 51) and three years (cell Q-3 in Table 51).
- (c) The large standard deviation around the time taken to complete each stage implies significant variation (see column 4 of each table, except cell A-4 in Table 50). Thus, it is very difficult to predict the timing of an EXCO decision.

Departing from the above findings, the subsequent discussion will focus on explaining problems in state government decision-making process from the perspective of:

- (a) the Land Office; and
- (b) technical departments.

8.3.2.3 Problems from the Land Office Perspective

Sub-section 8.2.2.1 indicates that no EXCO decision is made without an EXCO Paper. The flow charts in Figure 38⁹⁴ show that it is the responsibility of the Land Office to prepare this EXCO Paper. The flow chart also indicates that all procedures at the Land Office, particularly those prior to an EXCO decision, end with a submission of an EXCO Paper to the DLMO. Therefore, preparing EXCO Papers can be assumed to be the Land Offices' most significant duty in its role in the government land disposal process as well as in land conversion.

⁹³ Tables E and G of Appendix P.

⁹⁴ Column 'A' step no.4 and Column 'C' step no.8.

Tables 50 and 51 suggest that preparing an EXCO Paper is problematic. The results of the analysis show that the average time consumed in preparing the paper is about 10 months (cell B-1 in Table 50) or about 55% of the total processing time. For applications for land conversion, nearly seven months (cell O-1 in Table 51) (close to 80% of the total processing) are required to prepare the paper. Figures in Table 51⁹⁵ as well as information in Section B of Appendix I imply that the slow process of preparing a paper is significantly attributable to two factors. They are:

- (a) consultation with technical departments; and
- (b) writing an EXCO paper.

The following discusses these two problems.

8.3.2.4 Problems during Consultation with Technical Departments

Sub-section 8.2.1.1 suggests that the EXCO does not make any final decision until all relevant departments have been thoroughly consulted. Tables 52 and 53 show that the average time spent by a technical department to finalise its investigations and provide comments for the Land Office is at least one month. As on Page 213, the Land Office expects technical departments to release their comments within 14 days. The findings suggest that the Local Authority takes the longest time to prepare a report and the Public Works Department, with the lowest mean (cell J-1 in Table 51) and standard deviation (cell J-4 in Table 51), is the most efficient. Therefore, delays in preparing an EXCO Paper are partially attributable to delays in obtaining comments from technical departments.

⁹⁵ Row G to M.

Table 52 : Terengganu – Average Time Taken by Technical Departments to Prepare Comments on Applications For Land Conversion in Kemaman

Department	Average Duration for Preparing Comments (month)
1. Local Authority	4.90
2. Valuation Department	1.83
3. Town and Planning	1.25
4. Drainage and Irrigation	1.21
5. Public Works	1.14

Source : Extract from Table 51

Table 53 : Terengganu – Problems while Processing Applications for Petrochemical Industrial Sites in Kemaman

Case	Problems	Time to Solve the Problems (approx)
Site 1 Site 5	Delays in receiving EIA report from DoE	2 months
Site 2	Awaiting further comments from: <ul style="list-style-type: none"> • Department of Environment • Town and Country Department • Drainage and Irrigation Department • State Water Supply Corporation • Fire Department • Electricity Board 	2 months
Site 3	Communication between the Land Office, DLMO and SEPU to determine the rate for land premium	6 months
Site 6	Waiting for comments from the Local Authority	5 months

Source : Own analysis (from data in Section B of Appendix I)

8.3.2.5 Problems during the Writing of an EXCO Paper

Results of the research indicate that EXCO Papers can be ready within one month (cell M-2 in Table 51). However, completion within two or three months is more normal (cell M-1 in Table 51). The investigated files⁹⁶ show that an EXCO paper should contain

⁹⁶ Section B and D2 of Appendix I.

comprehensive information and be presented in an orderly manner. The standard layout of an EXCO paper suggests that prior to preparation of a paper, the following requirements are strictly observed:

- (a) A statutory application form must be filed. The form must include:
 - (i) detailed information about the applicants;
 - (ii) detailed information about the land concerned,
 - (iii) the prescribed fee and,
 - (iv) if an applicant is an organisation, a copy of its MoA.
- (b) In an application for industrial sites, including petrochemical, the following additional attachments are required:
 - (i) an EIA report; and
 - (ii) a feasibility study report.
- (c) In addition to the above list, to apply for a petrochemical or petroleum industrial site⁹⁷, the following are required:
 - (i) a detailed EIA report which is prepared by a consultant and approved by the DoE;
 - (ii) a surveyed plan (prepared by a chartered surveyor)⁹⁸;
 - (iii) a detailed plant layout (prepared by a consultant); and
 - (iv) comments from the utility agencies (water and electricity).
- (d) All communications, consultations and minutes of meetings with technical departments need to be recorded in an orderly manner in the application files. These are substantial parts of an EXCO Paper.
- (e) Once a paper is ready, it must signed by the Land Administrator, then by the DLMO and finally by the Clerk of the Council, through whom the paper is tabled at

⁹⁷ See also Page 135

⁹⁸ Can be submitted after EXCO approval but must be submitted before the land title is registered.

the EXCO meeting. As far as signatory powers are concerned, there is no delegation of authority.

- (f) Upon completion, the paper, together with the application file is despatched by the Land Office's most senior clerk to the DLMO Office. This is done by hand. Procedures for despatching classified government documents are applied, among which every movement must be accompanied by authorised personnel and recorded.

This implies that the preparation of an EXCO Paper is a huge and delicate task.

8.3.2.6 Problems from the Perspective of Technical Departments

Should technical departments be blamed for delays in State Government decisions? Interviews with head of departments and senior officials reveal that technical departments face a number of constraints in meeting Land Office deadlines, as indicated Table 54.

Table 54 : Malaysia – Constraints Faced by Parties Involved in Land Office Decision Making

Department	Constraints
Kemaman Municipality	<ul style="list-style-type: none"> • Municipality comments for the Land Office must be endorsed by the Municipality Council. • Like the Land Office, the Local Authority needs to consult technical departments before making any decision regarding land development. The departments to be consulted are the DTCP, DOSH, Fire Department, DID, Electricity Board, State Water Supply Corporation, Telecommunications, and Public Health Department.
Town & Country Planning	<ul style="list-style-type: none"> • The workforce does not match the workload. Annually, there are more than 3,000 applications referred to DTCP, to be attended to by only 3 State Planners. • Comments on applications for land conversion must be signed by the State Director. • DTCP needs consult the Town and Country Act, the Structure Plan and other 35 guidelines. • DTCP's work norm is 30 days and the procedure followed is: <div> <pre> graph TD 1[1. State Director - receives application/letter] --> 2[2. Clerk - records application/letter] 2 --> 3[3. Technician - does detail investigation, including visiting site and reports to Senior Technician] 3 --> 4[4. Senior Technician - verifies report, prepares draft of comments and submits to Assistant Director] 4 --> 5[5. Assistant Director - prepares draft of comments and directs a secretary to prepare a reply letter] 5 --> 6[6. State Director - gives consent and signs an official letter] </pre> <p>The flowchart illustrates the six-step process for handling land conversion applications. It begins with the State Director receiving the application, followed by recording by a clerk, a detailed site investigation by a technician, verification and drafting by a senior technician, preparation of a reply by an assistant director, and finally, the State Director's consent and signing of the official letter.</p> </div>

Department	Constraints
Environment	<ul style="list-style-type: none"> Before preparing comments for the Land Office or SEPU, DoE needs to: <ol style="list-style-type: none"> carry out a site investigation; and consult 17 other departments All comments need approval from Headquarters
Valuation	<ul style="list-style-type: none"> Department's work norm is 30 days and follows this process: <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <ol style="list-style-type: none"> 1. State Director - receives application/letter ↓ 2. Clerk – opens file for each case ↓ 3. Assistant Valuation Officer – undertakes a detailed investigation, including visiting site and reporting to District Valuer ↓ 4. District Valuer – verifies the report and prepares draft of comments. If value of property is within his/her limit, gives consent and signs an official letter. If not, sends to State Director. ↓ 5. State Director – If value of property is within his/her limit, gives consent and signs an official letter. If not, sends to Director General in Putrajaya. ↓ 6. Director General – gives consent and signs an official letter. </div> Need's to carry out a detail investigation, including site visit, before preparing comments for the Land Office; There are limits in signatory power (see the work process).

Source: Extract from interview note (Appendix K)⁹⁹

⁹⁹ Interviewees A12, A15, A16, A25.

In addition to the above constraints, officials indicated that¹⁰⁰:

(a) the departments that are listed in rows 1 to 3 in Table 52 are not able to meet the Land Office's 14 day deadline because:

(i) the work norm for preparing a report is set by their departments at 30 days;

(ii) heads of department at the district, and to a certain degree, at the state level, have no signatory power to provide comments on applications for certain types of land use. In such cases, they have to refer the application to the headquarters in Putrajaya, as cited:

"...selepas pelan disediakan, siasatan, termasuk lawatan ke tapak dijalankan. Kerja-kerja teknikal pegawai penilai dibuat oleh Penolong Pegawai Penilai. Norma kerja ialah 28 hari. Signatory power hanya ada pada Pegawai Penilai Daerah dan Pengarah Negeri Sahaja. Jika nilaian melebihi had yang ditetapkan, permohonan dirujuk ke Putrajaya (after a site plan is prepared, we undertake a site investigation which is completed by an Assistant District Valuer. Our work norm is 28 days. However, the report can only be approved and signed by a District Valuer. If the (land) value exceeds a certain limit the report is referred to State Director. After a certain limit, it must be referred to the Headquarters in Putrajaya)." (Valuation Department);

(iii) in some types of industrial land application, including petroleum-related ones, detailed documents need to be carefully scrutinised, as quoted:

"...untuk penyediaan laporan atau ulasan, projek proponent perlu menyediakan 17 salinan project proposal atau deraf EIA report untuk diagihkan kepada jabatan-jabatan lain. JAS juga akan membuat siasatan sendiri. Dalam tempoh sebulan, semua agensi diminta menghantar ulasan dan diadakan mesyuarat dengan agensi dan mereka diminta memberi ulasan/pandangan. Kemudiannya dikemukakan ke ibu-pejabat untuk kelulusan. Biasanya kelulusan dalam tempoh dua bulan..... Oleh sebab memerlukan maklumat terperinci, selalunya JAS kurang berpuas hati dengan sesetengah Pejabat Tanah atau PBT yang meminta ulasan JAS hanya dengan surat yang semuka surat sahaja. (... to prepare a report or comment we require 17 copies

¹⁰⁰ Table H, Appendix P.

of a project proposal or EIA report. Upon receiving these, they are then distributed to other related government departments. We need their comments within one month. Their reports together with our comments are then submitted to the Headquarters (in Putrajaya). Approval is normally available within two months... .. since we require detailed information, DoE is often not satisfied with the Land Office and the Local Authorities who ask for advice by a one-page letter only, instead of providing complete background information”) (DoE).

- (b) some departments need to consult other technical departments and agencies before comments can be prepared (in the above quotation for example). Such departments expressed dissatisfaction with the Land Offices and Local Authorities who often ask for advice without furnishing complete background information. Instead of a one-page letter, these departments such as the DoE require full documentation about the site, building and machinery layouts in order to comment on certain industrial proposals. If they do not receive this information, the departments need to look for more information themselves. This is time consuming.

8.4 SUMMARY OF THE ANALYSIS

The preceding analysis suggests that State Government approvals for industrial sites in which the Land Office functions as its agent are transparent. If the required conditions are fulfilled, an approval is almost guaranteed. However, approvals are not necessary timely. Statistics show that there are wide gaps between the maximum and minimum time required by the Land Office processes. The standard deviation of the time required for stages in the state government approval process also differed. In other words, the level of uncertainty is substantially high. It is also important to note that this uncertainty has a strong connection with the five characteristics of bureaucracy that were identified in Sub-section 8.3.1.

8.5 ANALYSIS OF THE RELATIONSHIP BETWEEN LAND OFFICE BUREAUCRACY AND INSTITUTIONAL FRAMEWORK

8.5.1 Introduction

Section 8.3 suggests that the nature of relationship between government departments results in uncertainties in Land Office decisions. This chapter (Chapter Eight) is to analyse the influence of the institutional arrangement on the process of decision making at the supply-side. In broad terms, institutions refer to formal and informal arrangements that constrain human actions (North, 1991). In Williamson's (2000) typology, as in Figure 2 (Page 17), institutions are hierarchically broken into four layers. These are **Level 1** institutions (embedded informal institutions), **Level 2** (formal rules, including constitutions, laws and property rights), **Level 3** (governance, including mitigation, enforcement and arbitration) and **Level 4** (market institutions). In Chapter Two, property rights, their importance in land development as well as their relationship with the institutional environment, formal institutions and the governance system were discussed. The findings of the preceding section illuminate that Land Office and other departments' actions have a direct impact on the supply of land for industrial sites. In relation to this, Vandenberg (2002) suggests that economic agents' behaviour has direct relationship with institutions and social structure. Indeed, in land development, the influence of the institutional environment and formal institutions is embedded within the strategies, interests, and actions of key agents (Adams, 2004). Therefore, in identifying institutions in land development, in particular in land administration, the following discussion will focus on the following aspects:

**Table 55 : Matters to be Analysed in Identifying the Institutional Environment
Components and Formal Institutions in Land Development in KIPC and GIPC**

Matters to be analysed:	To identify:
Department roles in land matters	institutional environment components
Department goals and motives	interests
Opinions of politicians	
Policies (the NEP etc.), statutes, rules and regulations.	formal institutions
Departments within the public administration system	formal institutions
Roles of legal courts	institutional environment components
Agreements and arrangements between investors	Strategies
Arrangements between government departments	

8.5.2 Findings from Interviews

8.5.2.1 Roles of Individual Departments

Interviews with heads of government departments indicate that each department has a different role and interests, and has specific matters to look into when examining an application. According to the officials interviewed:

“(Our duty is) to provide physical infrastructure for industrial areas within industrial zones and to be negotiator, on behalf of the state government, with investors and to implement the Small and Medium Industrial (SMI) Plan. Our responsibility is limited only to the economic development. Other matters such as legal, environment and safety are under other department’s jurisdiction... All decisions are made by EXCO under the SIC advice. SIC’s recommendations are subject to MIDA, District Officer, DoE, TCPD advice. The SIC consists of an EXCO member, State Secretary, State Financial Officer, State Legal Adviser, State Directors of SEPU and DLMO” (Terengganu SEPU).

“Application for development approval is dependent on the Land Office decision. Meaning which, the municipality cannot process any application if the site concerned is without ownership or the application is in contradiction with land use conditions... Municipality comments for reference by the Land Office must get an endorsement from the Municipality Council.... In practice, Council’s decisions are based on advice from the technical departments, mainly DOSH, Fire Department, TCPD, Drainage and Irrigation Department, Public Health Department and PWD” (Kemaman Municipality Council).

“Our interest is public safety. Therefore, our duty is in EIA approvals and commenting the site suitability (for industry).... We sit in various types of the State committees. We also adviser to various government departments like the Land Office, Local Authorities, DOS and PWD. DoE does not give any approval because the powers are in the EXCO” (DoE).

“The central government is aware that there are complaints regarding why the investors need to undergo a dual-system where an application has to be submitted to both Federal and State governments. In the first step they are required to get approvals from MITI and FIC. Then, they need to find a land from the State Government. We need to maintain this system because it is part of our social and political institutions and we need a dual-system for a check and balance... (You must understand that) we attract investors for our (national) interest. Among which is an economic development with distribution of wealth. We also need to ensure the inward FDI is harmonise with the national interest. We need a system to check applications and to ensure industrial approvals are consistent with the national interest... I cannot see the system being harmful to investors. Most of them can get their money back and make profit in 2-3 years” (Mahathir).

Based on the above statements those directly involved in Land Office matters may be divided into four groups as:

- (a) decision makers;
- (b) regulators;
- (c) promoters; and
- (d) facilitators.

Table 56 : Terengganu – Functions of Departments Involved in Industrial Development and Land Matters

Department/Position	Role	Function
State Executive Council (EXCO)	The State Government decision-making body	Decision maker
The State Secretary State Financial Officer State Legal Advisor	Member of the state government decision-making body (EXCO)	
FIC MITI	Industrial and investment regulator	
The Municipality Drainage and Irrigations Town and Country Planning	Land use controller	Regulator
Department of Industrial Safety and Health Department of Environment Department of Health Fire Department	Health and safety regulator	
MIDA State Economic Planning Unit	Communicator between investor and government	
State Director of Lands and Mines The Land Office	Communicator between government departments	Facilitator
Public Works Valuation Department	Technical advisor	

Source: Own analysis¹⁰¹

8.5.2.2 Departments' Goals, Motives and Interests

Heads of government suggested that government officials when attending to applications related to land investigate specific matters that relate to their interests. Based on the interviews, Table 57 endeavours to interpret government officials' goals.

¹⁰¹ Based on Table I, Appendix P.

Table 57 : Terengganu – Functions, Goals and Interests of Departments Involved in Industrial Development and Land Matters

Department / Parties	Function	Goal
MIDA State Economic Planning Unit	Promoter	To create wealth for the state
State Director of Lands and Mines The Land Office	Facilitator	To create wealth for the state and to balance wealth and social obligations
FIC MITI Department of Industrial Safety and Health Department of Environment Department of Health Fire Department	Regulator	To protect national interests, human and environmental safety and health.
Politicians	Decision Maker	To exercise political powers with political and social accountability

Source: Own analysis¹⁰²

8.5.2.3 Departments' Position in the Public Administration System

Vandenberg (2002) argues that economic agents' decisions are connected to social structure. Sub-section 4.3.2.1 showed that the Malaysian public administration is divided into professional and administrative services. Table 58 indicates the position of departments directly involved in land matters in the public administration system.

¹⁰² Table C, Appendix P.

Table 58 : Terengganu – Professional Training, Scheme of Services and Appointments of Officials Involved in Land Approval and Industrial Development

Department/Position	Profession	Category of Service	Appointment by:	Report to:	Service Establishment
Municipality President	State Administrative Service	Administrative	State Public Service Commission	Local Government	State
The State Secretary	State Administrative Service	Administrative	State Public Service Commission	State Government	
State Financial Officer					
State Director of Economic Planning Unit					
State Director of Lands and Mines					
Land Administrator					
State Legal Advisor	Legal and Judicial	Professional	Federal Legal and Judicial Service Commission	State Government	Federal
Town and Country Planning	Town Planner	Professional	Federal Public Service Commission		
Public Work	Civil Engineer				
Drainage and Irrigations					
Secretary General of MITI	Administrative and Diplomatic (Federal Administrative Service)	Administrative	Federal Public Service Commission	Central Government	
Director General of MIDA					
Chair of the FIC					
Department of Industrial Safety and Health	Mechanical Engineer	Professional			
Valuation Department	Property Valuer				
Department of Environment	Environmental Scientist				
Department of Health	Health Officer				
Fire Department	Fireman				

Source: Own analysis¹⁰³

¹⁰³ Based on Table J, Appendix P.

8.5.2.4 Policies, Statutes, Rules and Regulations Governing Industrial Land Approval

As discussed above, opinions or objections from technical departments reflect policies and standards set by laws and regulations. Based on this conclusion, as well as interviews with government departments, it seems that the whole process of petrochemical industrial land approval involves checking whether an application complies with the following legislation:

Table 59 : Malaysia – Statutes Governing Industrial Land Development

1. The National Land Code (1965);
2. The Industrial Co-ordination Act (1975);
3. The Promotion of Investment Act (1986);
4. The Income Tax (1967);
5. The Custom Act (1967);
6. The Sales Tax Act (1972) ;
8. The Excise Act (1976);
9. The Free Zones Act (1990);
10. The Companies Act (1965);
11. The Factories and Machinery Act (1967);
12. The Occupational Safety and Health Act (1994);
13. The Petroleum (Safety Measures) Act 1984;
14. The Environmental Quality Act (1974);
15. The Town and Planning Act (1972);
16. The Local Government Act (1976);
17. State Land Rules (1966);
18. Environmental Quality Regulations;
19. The Local Authority's Structure Plans;
20. The Ministry of Housing and Local Government Circulars;
21. The State Director of Lands and Mines Directives;
22. Public Works Department Codes of Conducts;
23. Valuation Department Profession Codes of Conduct.

Source: own analysis¹⁰⁴

¹⁰⁴ Many of these were mentioned explicitly during interviews. See Appendix K (Interviews A3, theme (a)(iii); A12, theme (b)(i); A13, theme (b)(iii); A16, theme (b)(iii); A25, paragraph 4.2).

8.5.3 Discussion

Chapter Seven highlighted that the process of plant clustering at KIPC and GIPC began with the creation of new entities resulting from joint ventures with project initiators. During data collection, the researcher was not given access to documents concerning arrangements between investors. Nevertheless, interviewees hinted that there are formal agreements between them regarding¹⁰⁵:

- (a) company ownership structure;
- (b) roles of shareholding companies (such as providing land, feedstock, capital and product marketing); and
- (c) guaranteed supply and price of feedstock.

Table 54 suggests that delays are caused by technical departments primarily because their actions are subject to laws, regulations and codes of conduct. Table 59 lists statutes and regulations which government officials consult when advising the Land Office, Local Authorities or SEPU. This shows that formal institutions, including not only the Constitution and the Land Code but also other laws and regulations regarding planning, industrial development, state revenues, health, safety and government procedure, are an integral part of the Malaysian land administration system.

Sub-section 4.3.1 notes that State Government decisions regarding land are open to challenge in a court of law. There is ample evidence to suggest that issues on land have on occasion reached the highest court, the Federal Court¹⁰⁶. There are also court cases questioning the legitimacy of the Land Code¹⁰⁷. It is beyond the scope of this research to address this issue in depth. The point to highlight is that a litigation process is in place and is an integral part of the Malaysian land administration system.

¹⁰⁵ Appendix K (Interview B1, paragraph 19.5, 19.9; B11, paragraph 27.4).

¹⁰⁶ Article 121(2) Federal Constitution.

¹⁰⁷ e.g., *Lim Chee Cheng & Ors vs. Pentadbir Tanah Seberang Perai* (Court of Appeal, Kuala Lumpur). The appellants appealed against the reward for a compulsory purchase of land made by a Land Administrator. The appellants also questioned the legality of the National Land Code as well as the State Authority and Land Office decisions. The Court dismissed the appeal and upheld the Land Administrator's decision. The Judge said "*The National Land Code was enacted by Parliament at the request of all states under Article 76(4) of the Federal Constitution for the sake of uniformity and therefore the question of adoption did not arise*" [reported in Current Law Journal, 3/1999].

The former Prime Minister, Dr. Mahathir stressed that government decisions regarding approval for inward investment are not only made on an economic basis, as quoted:

“The central government is also aware that there are complaints regarding why the investors need to undergo a dual-system where an application has to be submitted to both Federal and State governments. In the first step they are required to get approvals from MITI and FIC. Then, they need to find a land from the State Government. We need to maintain this system because it is part of our social and political institutions... We need a dual-system for a check and balance... we attract investors for our (national) interest. Among which is an economic development with distribution of wealth. We also need to ensure the inward FDI is harmonised with the national interest. We need a system to check applications and to ensure industrial approvals are consistent with the national interest”(Mahathir).

Abdul Hadi Awang, who was opposition leader as well as Terengganu’s Chief Minister during Mahathir’s era, expressed that:

“..On industrial development, by implementing Islamic principles, my aims were to eradicate poverty by way of creating jobs and to maximise State natural resources and economic potentials... ... When I was in office (as Chief Minister of Terengganu) there was no inconsistencies between my government industrial development plan with the IMP2”(Abdul Hadi).

Both leaders suggest that National interest is above all. Thus, there is no inconsistency between the statements made by Mahathir and Abdul Hadi Awang, who was opposition leader during Mahathir’s era. The New Economic Policy (NEP) also addresses the same question (see discussion on Page 62). The policy was created to promote national unity by reducing racial differences in economy, culture and geographical location through a ‘two-fold development strategy’. The strategy involved reducing and finally eradicating poverty by creating employment opportunities for all ethnic groups as well as by eliminating the identification of ethnicity with economic status and function. Mahathir also stressed the importance of two bodies at the Central Government level, MITI and FIC, in checking the inflow of foreign investment, to keep in balance with domestic equity in company shares¹⁰⁸. The discussion on Page 64 suggests that various laws were amended to accommodate NEP implementation. This indicates that nationalism plays an important role in government decisions in Malaysia. When translated into formal institutions, such as the government’s foremost policy, the

¹⁰⁸ See Table 5 (Page 66).

NEP, the nationalist spirit determines government direction as well as uniting divergent views of rival political parties.

Representatives of Petronas indicated that the petrochemical industry is not its core business. The company holds the view that selling and exporting natural gas as energy is more profitable. In the interview Petronas indicated that:

“Now the price of petrochemical products is very good. However, the industry is very volatile, very cyclical, very up and down. For last three years, our petrochemical plants made a lot of money. Prior to that, we were losing. If the industry grows drastically, I don’t think we can cope with it. I think our involvement in petrochemical industrial is more of a social obligation. I think if we given the freedom, we might not opt to it. In petrochemical, we have already reached our peak. I don’t think we are going to expand the petrochemical industry anymore. That’s why our overseas ventures are more focussed on where the money is – it’s at upstream – crude oil is the most profitable. Today it is around USD50 per barrel. Our Sudan production has reached 400K bpd. Now it is 400K in Terengganu, 400K in Sabah and Sarawak and Sudan has reached 400K. By the end of the year, we are targeting to produce 1 million bpd from overseas ventures – more than our domestic production... By venturing into petrochemical industry it doesn’t mean we are not in the right business. Indeed, we are in the right business. But you cannot compare us with other major players.... If we talk only commercial value, we should concentrate only on oil, ...you know it, oil price is very high.”(Petronas).

Mahathir, a former Prime Minister, agreed with Petronas’ statement, as quoted:

“Petronas management is entrusted to by the government to run the company in fully business manner”(Mahathir).

Possibly, the above statements are the reason why allocation of natural gas for petrochemical feedstock is limited. Information from Petronas as well as from government policy documents indicate that the company is obliged to develop and support the industry. As discussed in Chapter Four, the IMP2, within which the national industrial plan is outlined is a derivative of the NEP. One of the NEP aims is to reduce economic development disparities between regions.

Studies in the 1970s, during which the NEP was introduced, suggest that the East Coast states were among the poorest regions (Ishak, 1998). Petronas therefore, wholly-government owned and a key investor in the region, shouldered the government’s social responsibility by expediting the East Coast states’ economic development. This suggests that oil and gas discovery in the Malaysian East Coast states was not the only factor contributing to petrochemical industrial development. Without government policies

directing Petronas to become involved in hi-tech and heavy industries, all oil and gas output would probably have been sold as energy.

Table 58 shows how applications for government land and land development are scrutinised by the Malaysian government bureaucracy and public administration system. Table 58 also points out that all professional government officials, though some are salaried by the State Government, are under the command of their respective Director Generals at the Federal level. As briefly illustrated in the end-note, this practice has been in place for generations. Senior politicians, when interviewed expressed that they honour the present public administration system. They, as quoted below, also believe that the present system is still good and needs to be maintained.

“On public administration, there are good things in the division of public service schemes are divided into administrative and professional. At once we were thinking of considering the professionals for ministries’ Secretary General positions. After ‘fikir-masak-masak’ (much thought) the present system needs to be maintained. It’s better for the nation, if the professionals, like doctors and engineers, pay more attention on their expertise and let administrative matters like finance and human resource be taken care of by the ADS” (Mahathir);

“When I was in office there was no inconsistencies between my government industrial development plan with the IMP2. The plan was prepared by government officials, whose professionalism I trusted, (no) political pressure or interference in public administration – you may check this, (no) discrimination against officials who were not supporting my political party – they got promotions to what they were duly deserved, (and no) intention to replace the present state administration system. I was pleased with State Government officials ” (Abdul Hadi);

“...administrative system where the State Government is managed by the ADS must be maintained. I believe the ADS is the most qualified to run the State Government (Abdul Rahim).

Reasons for maintaining the present administrative system are explained in the interview notes (Appendix K) as follow;

- (a) The present system has little impact on investors’ profit.
- (b) It serves the national interest of uniting a divergent society by closing the gap between the rich and the poor.

- (c) It guarantees freedom for professional government servants to advise the government in accordance with their expertise, through which the government gets the best advice during the decision making.

It was mentioned earlier that the Land Code, State Authority and Land Office have strong constitutional backing. However, the official documents examined suggest that the State Authority, whose decisions regarding land cannot be legally questioned, still needs to follow the advice of technical departments. The representatives of government departments interviewed emphasised that their advice is bound by technical standards set by professional codes of conduct¹⁰⁹. The practice of consulting technical departments implies that, in land administration, public administrative practices which have been inherited from previous centuries prevail and are superior to the Constitution, laws and other formal institutions. This proposition is not meant to dispute the position of the Constitution as the supreme law of the Federation but it is in line with Good's (1978) view that the Constitution itself is a translation of informal arrangements which have been practiced and honoured over generations. To sum up this discussion, Table 60, summarises the findings of this analysis by listing the institutions that have been identified.

¹⁰⁹ Appendix K (Interview A15, theme (f)(i); A18, theme (a)(iii)).

Table 60 : Malaysia – Institutions Governing the Supply of Petrochemical Industrial Sites

Hierarchy of Institutions	Institutions
Level 2 (Formal institutions)	Federal Constitution
	New Economic Policy
	Industrial Master Plan
	The Land Code
	Laws regulating land development
	Public administration practice
	Land Office procedures
	Profession codes of conduct
Level 3 (Governance and Property Ownership)	Property ownership
	Courts of law
	Agreements and arrangements between firms
Level 4 (Market institutions)	Property market
	World oil and gas market

Source: Own analysis

8.6 INSTITUTIONS AND THE PROBLEM OF INFORMATION

The essence of this chapter is to explain the behaviour of the government, the key decision maker in the supply of petrochemical industrial sites. The records investigated reveal that behind the curtain are various departments and agencies that greatly influence the decisions made. Evidence strongly indicates that the departments and agencies that advise the government come from various professional backgrounds, all spectrums of the government hierarchical order and guided by dozens of statutes, rules and regulations. The findings therefore suggest that the role played by government departments, the hierarchical order and administrative practices reflect the institutional environment, formal institutions and governance system that underpin the land administration system.

Simon (1961) suggests that economic decisions more often than not are subject to bounded rationality. Williamson (2000) relates Simon's thesis with the hierarchy of social institutions. Findings in this chapter suggest that, in government bureaucracy, bounded rationality refers to the influence of the institutional environment, formal

institutions and the governance system on government decisions. Thus, the Land Office's practice of consulting a number of government departments is merely a process of filtering and interpreting information according to certain perspectives before it reaches the government decision makers. The findings suggest that since the decision makers are politicians who are answerable to the public, their judgements need to be based on accurate information and interpreted by those who are specially trained with particular expertise. In other words, government decisions are used to balance market, technical, political and institutional needs.

As a consequence of the proposition that government decisions are made by many, the amount of information is also immense. For instance applications for petroleum-related use of land include maps, building plans, machine arrangement plans, detailed EIA study reports, feasibility studies, changes in company ownership certificates and soil test reports.

Government bureaucracy is characterised by a distribution of power into dozens of government departments whose roles in the government decision making-process are unique according to their specialisations. Therefore, when an application is submitted to the Land Office, it has to be thoroughly scrutinised by a number of other departments. Since demand for land can be interpreted in various ways, the decisions that follow must comply with certain requirements. Since it has been substantiated that each department has its own goals and motives, these findings seems consistent with the proposition in Williamson (2002) that in a bureaucracy, each component is able to focus on its own sub-goal only.

Government departments involved in decision making are physically and geographically segregated. From data collecting experiences recorded in the log-book it can be seen that the government departments which directly participated in land development approvals are physically segregated. In the case of KIPC, although applications are submitted to the Land Office in Kemaman (45km away), other related offices are mostly in Kuala Terengganu (160km from Kemaman) and Kuala Lumpur

(370km from KIPC). The same is also true of the GIPC which is about 20km from Kuantan, although Kuantan is 275km away from Kuala Lumpur.

Related to the problems associated with the massive amount of information handled is the need for a good effective government recording system. The one in place is very good. During data collection it was observed that every single piece of information is recorded properly in various forms of records, either in files, roll books, maps or in a computer data base. As mentioned on Page 135 all records are not only comprehensive and orderly, but accessible for decades to come.

It is evident that all information must be written down and passed through the proper channels. These findings suggest that the nature of record-keeping and its role in the decisions-making process are created by the institutional environment, formal institutions and the governance system. As 'paper' is still the main communication medium, distance affects the timeliness of decisions. This is evident from the data¹¹⁰, which show a clear gap between two important dates: the date at which the file that contains an EXCO decision is sent out from the DLMD and the date at which the Land Office releases the decision to the applicant. There are also gaps between the date when technical departments conclude their recommendations and the date when a paper is ready to be submitted. Figure 42 illustrates how the process of land supply is related to institutional factors.

¹¹⁰ See Page 222.

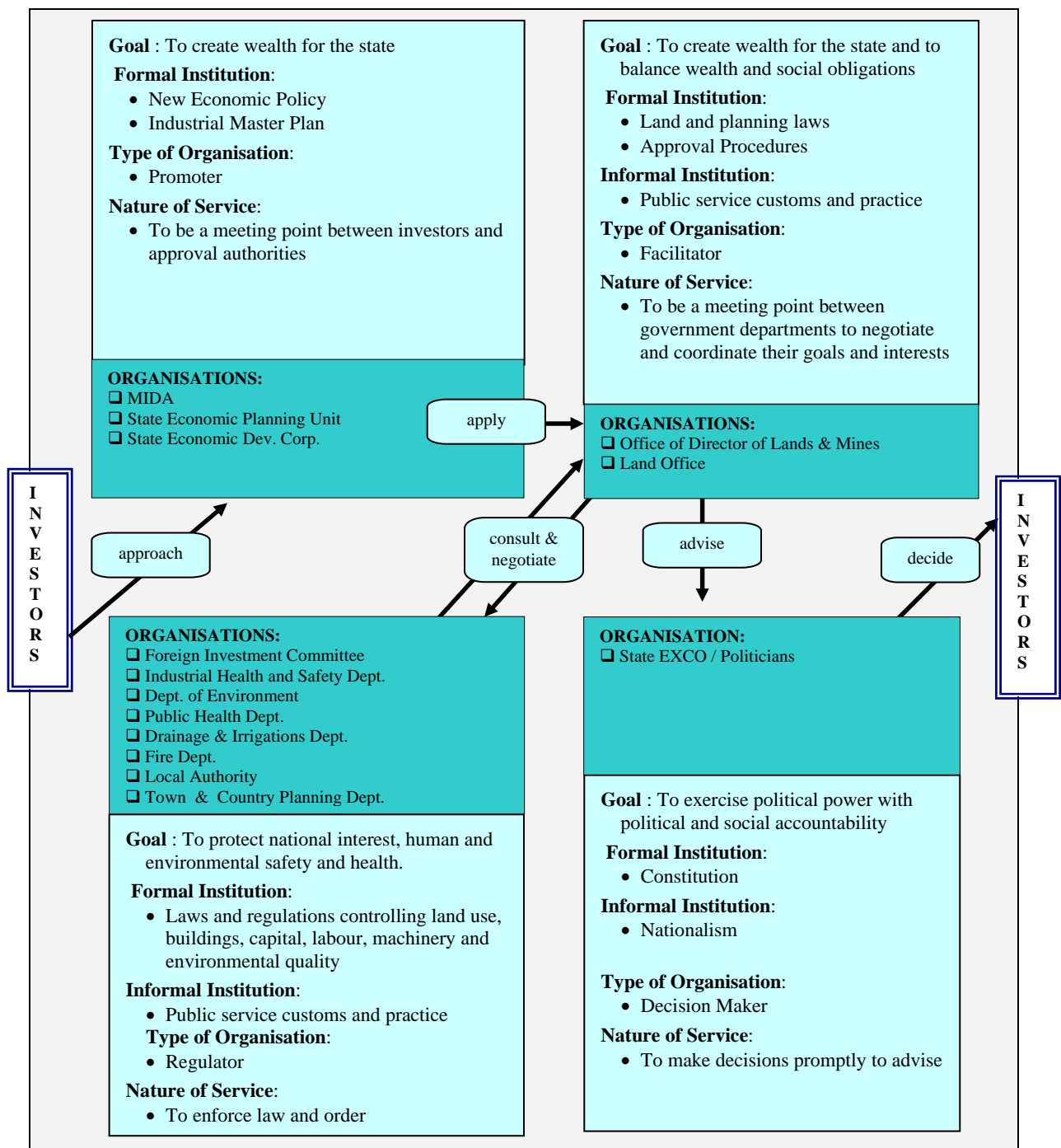


Figure 42 : Terengganu – Roles Played by Individual Government Departments in Development Approvals

Source : Own Analysis

8.7 CONCLUSION

It has been observed that government decisions are the product of an immense volume of information that is exchanged in great amounts among departments. Information reaches decision makers over a substantially long period. As a result, statistics show that, at all stages of the approval process, there are wide gaps between the maximum and minimum length of the time required as well as in the standard deviation for the completion of each step in the process. Thus, the findings suggest that the time required for a government decision to be released is relatively long, uncertain as well as unreliable. In other words, the level of uncertainty is high.

If the list of government departments in Table 58 is compared to the organisational charts in Figures 13, 14 and 42, it can be seen that the departments that participate in Land Office decision making, except for two, are under the jurisdiction of the Federal ministers who are part of the National Land Council. Findings from interviews reveal that officials' commitments, comments, objections and delays reflect the policies and standards set by the ministries which they answer to. In addition, Table 58 (Page 243) substantiates that technical departments are also under the direction of their respective Director Generals at the Federal level. This means that the National Land Council and the Federal ministries are equally responsible if the Land Office performs unsatisfactorily¹¹¹.

In conclusion, the findings are consistent with a notion in Simon (1961) that the problem of information processing is crucial with respect to economic decisions. Nevertheless, a theory in Coase (1937) that hiring an expert can improve an organisation's information processing and its decision making-process cannot be fully supported by the present research findings. The findings are more inclined towards the idea that the more experts hired, the more bureaucratic the organisation will become. The findings therefore, by applying theories of public administration studies as in Brynard (1995), Glynn and Murphy (1996), Evans and Rauch (1999), Gajduschek (2003) and

¹¹¹ Refer to issues in the land administration on Page 88.

Kelly (2004) collaborates the assertion in Adams *et al.* (2001b) that the supply side's judgement is intrinsically connected to the institutional framework. Therefore, we may infer that in the question of land development, the presence of formal institutions does not guarantee certainty. As such North's (1990, 1991) conclusion that the creation of formal institutions reduces uncertainty needs to be re-assessed with respect to land matters.

The findings note that a computerised land information system has been put in place in the Land Office. Nevertheless the findings suggest that the system has little contribution to the Land Office decision-making process. Perhaps, the practice of prioritising 'written' and 'face-to-face' consultation is still strongly intact because the 'inherited' public administrative culture is difficult to change. Therefore, the findings confirm the finding in North (1990) that institutional change requires a very long time to complete.

CHAPTER NINE – PETROCHEMICAL FIRMS’ STRATEGIES IN THE LAND ACQUISITION AND LAND DEVELOPMENT PROCESS

9.1 INTRODUCTION

This chapter investigates the relationship between firms’ strategies and governance in order to answer Research Question No 4. Chapter Seven indicates that a petrochemical complex, particularly in the studied location, is characterised by a certain style of land use as well as by a certain development process. Chapter Eight discussed the actions of and interactions between actors on the supply side, and related supply-side actions to the institutional environment. As recommended by Creswell (2005) this chapter analyses the strategies of petrochemical firms in acquiring industrial sites and participating in the land development process. It begins by extracting of the investment factors from the interview notes. Next, each factor is analysed in detail to identify the greatest attraction for investment in the case study. Finally, this chapter will explain the strategies adopted by investors from an NIE perspective.

9.2 IDENTIFICATION OF DEVELOPMENT FACTORS IN KIPC AND GIPC

9.2.1 Overview

The following is a list of factors that are perceived by politicians, government departments and investors to influence the development of the petrochemical industry in KIPC and GIPC¹¹²:

- (a) supply of feedstock;
- (b) inter-plant relationships;
- (c) land size;
- (d) role of government departments;
- (e) high quality dedicated infrastructure;

¹¹² Table A, Appendix P.

- (f) reliable supporting operators;
- (g) semi-skilled labour supply;
- (h) peace and political stability;
- (i) government support and incentives;
- (j) land availability;
- (k) central government preference;
- (l) domestic demand for chemical products;
- (m) a change in state politics;
- (n) land price; and
- (o) the state administrative system.

Further analysis¹¹³ has concluded that only eight of the above factors need to be examined further as related to investors' strategies. These are categorised in Table 61 as type A and B, indicating their level of importance.

Table 61 : Malaysia – Factors Attracting Investment in KIPC and GIPC

A	B	C1	D
Most important	Important, specifically in the petrochemical industry	Important in industrial development	Not Important
<input type="checkbox"/> Feedstock: <ul style="list-style-type: none"> • with guaranteed supply over a long period; • supplied and processed at the same location; • cheaper than in Western countries; and • priced at a negotiated rate and not subject to the world market. 	<input type="checkbox"/> Good infrastructure, facilities and services including an integrated site where supplier and supporting industries are under the same roof. These include GPP, CUF, CTF, crackers to produce secondary feedstock, storage, a dedicated port and other utilities (esp. water, electricity and oxygen). <input type="checkbox"/> Role of government departments; and <input type="checkbox"/> Land size.	<input type="checkbox"/> Peace and political stability; <input type="checkbox"/> Government supports and incentives; and <input type="checkbox"/> Land availability.	<input type="checkbox"/> Domestic demand for chemical products; <input type="checkbox"/> Central Government preference <input type="checkbox"/> A change in state politics; <input type="checkbox"/> Land prices; and <input type="checkbox"/> The state administrative system.
		C2	
		Important but not substantiated by other facts	
		<input type="checkbox"/> Reliable supporting operators; and <input type="checkbox"/> Supply of semi-skilled labour.	

Source: Own analysis¹¹⁴

¹¹³ Table B, Appendix P.

¹¹⁴ 1. Detailed analysis in Appendix P (Tables B and B1).
2. Between 'land size' and 'land availability' factors, investors are of the opinion that industrial sites are available anywhere but not necessarily of the appropriate size.

The subsequent discussion will concentrate on the significant factors listed in columns 'A' and 'B' of Table 61. The remaining ten factors, as listed in columns 'C' and 'D' of Table 61, are excluded from subsequent analysis. These are:

- (a) reliable supporting operators;
- (b) supply of semi-skilled labour;
- (c) peace and political stability;
- (d) government support and incentives;
- (e) land availability;
- (f) domestic demand for chemical products;
- (g) central government preference;
- (h) land price;
- (i) change in state politics; and
- (j) the state administrative system.

The reasons for not exploring these factors in more depth are because they either are generic land and industrial development factors and not specific to petrochemical industrial land development or cannot be substantiated (see Table 62). A fuller analysis is in Table A of Appendix P.

Table 62 : Malaysia – Eliminated Factors in Analysing Land Development in KIPC and GIPC

Factors	Reasons for Elimination
Peace and political stability	Generic factors that are also applied in other sectors of land or industrial development.
Government support and incentives	
Land availability	Majority of investors agree that land availability is not their main concern when moving to a new country. They are confident that host governments or their agents would find land for them.
Domestic demand for petrochemical products	Almost all products from KIPC and GIPC are for export.
Central Government preference	Some politicians and government officials, especially from Terengganu, suggest that the Central Government has a plan to promote Kuantan as the East Coast regional hub. However, there is other contradicting evidence that challenges this idea. In addition, a former Pahang Chief Minister argued that the idea has never worked.
A change in state politics	Some suggest that Pahang is a better place for investment because the ruling party is the same as in power in the Central Government. However, most investors stressed that the state-level political scenario has never been taken into account when choosing a site.
Land price	See Sub-section 7.3.3.
Different state administrative systems	Some government officials suggest that Gebeng is more developed because the state administration is under the Federal Administrative Service (i.e. ADS). However, investors who have experience in dealing with both State Authorities have opposite opinion.
Reliable supporting operators	These two factors were mentioned by the Association (i.e. MPEA) but during the study no other information and data were available to support the proposition.
Supply of semi-skilled labour	

Source: Own analysis¹¹⁵

Table 62 suggests that the factors listed above are either generic land and industrial development factors or unsubstantiated, inconsistent with each other or cannot be supported by other facts. A full analysis is in Table A of Appendix P.

¹¹⁵ 1. Detailed analysis in Appendix P (Tables B and B2).

2. Per the model on Page 151, the analysis has now reached the second layer.

9.2.2 Detailed Analysis of the Potential Factors – A Third Layer Analysis

The next step in the analysis is to identify the most critical factors that trigger changes in the supply and demand conditions for land in KIPC and GIPC. This stage was specified as the 3rd layer analysis in Figure 24 (Page 152).

The following discussion will focus on six factors listed in Layer 2 of Creswell's (2005) model on Page 151. These are:

- (a) supply of feedstock;
- (b) inter-plant relationships;
- (c) role of government departments;
- (d) land size; and
- (e) high quality dedicated infrastructure.

9.2.2.1 Supply of Feedstock

Evidence from interviews reveals that there is a strong relationship between the petrochemical industry and its supply of feedstock. Investors emphasised that a guaranteed supply of feedstock is a crucial consideration when deciding to move to a new country. According to investors interviewed:

“On choice of industrial location, in petrochemical industry we consider the type of industry it involves in. If it is upstream the location must be closer to the source of oil and gas. If it is downstream the location must be closer to the consumer. Site that is closer to the consumer may be more expensive. However, if it is recoverable later, maybe higher... The second feature we look for is, facilities, especially for handling gaseous substance. We need a place where there are facilities for them. We need to be close to port where there are gas handling facilities. If they are not available, the location must be permissible to build the facilities. I mean pipe, vessel, etc” (A CEO).

“The most important factor why we decided to JV with Petronas was not land, but feedstock. We need a guaranteed long-term supply... Land price only one-off, but other costs are running. It is not to say land is not important but issue of feedstock is critical. We need land, in reasonable size. We don't want a cramped area. We need space for expansion, good infrastructure and accessibility to port. Land price only one-off, but other costs are running. So, when we talk about threat, the number one is uncertain feedstock” (US Company).

“We acquire our site in Kerteh through Petronas. Petronas has set Kerteh as an integrated petrochemical complex. Petronas is also the feedstock supplier. We set up our plant in Kerteh mainly because of feedstock. Feedstock is a non-negotiable item. I think Kerteh feedstock could last for 15 years. Since Malaysia has discovered new rigs, we believe the supply would be longer... On threats, in overall investment, an uncertainty in feedstock supply is our number one threats. In Malaysia, there is no threat at all..” (A European Company).

“On raw material, yes it is important that our JV with Petronas is for raw material. Raw material alone is not important. We also have our own oil company. We need a large quantity of raw material supplied in an integrated system... Integration is our expertise. We have the concept of operating large integrated site. By integrating, a waste material of a plant can be a raw material of other plants. On one hand, it minimises waste, of course it reduces cost of processing waste. On the other hand, it cuts costs. So, you need to integrate to compete with the supply-side... when we talk global, supply of feedstock is crucial. For current need, Malaysian raw material is feasible. Current supply is fine. But, when we talk about expansion, there is a lack of raw material for the future expansion” (A CEO).

Table 63 summarises the comments made by interviewees on the importance of feedstock and the nature of Malaysian feedstock:

Table 63 : Malaysia – Investors’ Opinion of Feedstock

The importance of feedstock	In the petrochemical industry, the availability of feedstock over a long period of time is the first thing to check before considering other factors.
Relationship between investment and feedstock	Decision to invest in Malaysia mainly driven by a desire to secure feedstock.
Nature of Malaysian feedstock	Stable in supply; Abundant; Guaranteed long-term supply; Cheaper than in the US; Price is negotiated; Controlled by few big companies, including Petronas.
Strategy for securing feedstock in Malaysia	In Kerteh: joint venture with Petronas. In Gebeng: joint venture with Petronas, secure from companies operating in Terengganu or Petronas-related companies.

Source : Interview with investors¹¹⁶

¹¹⁶ See Appendix K (Interview B1, paragraph 19.1,19.5; B6, paragraph 22.2, 22.3; B15, paragraph 23.3; B10, paragraph 26.6; B12, paragraph 28.1; B13, paragraph 29.1; B14, paragraph 30.1).

For an in-depth explanation of the above opinions, data from various agencies, as in Appendices L, M and N were analysed from three standpoints:

- (a) world supply and demand;
- (b) world market price; and
- (c) Malaysian production.

9.2.2.1.1 World Supply and Demand for Natural Gas

Figure 43 shows that the world supply of natural gas has been increasing since 1971. About half of this supply is consumed in the OECD countries. However, statistics also indicate that the OECD countries, despite being the main consumers since 1977, have never been self-sufficient. The situation has worsened since the mid-1980s as the gap between the supply and demand curves has widened.

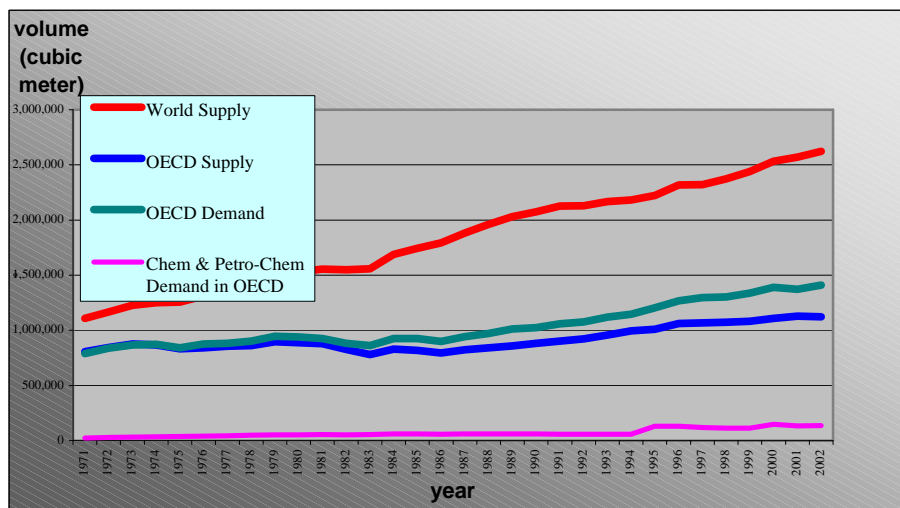


Figure 43 : World – Demand and Supply of Natural Gas 1971 – 2002

Source : Own Analysis

Detailed analysis reveals that the natural gas supply-demand crisis in the OECD can be mainly attributed to the US. As is shown in Table 65 and depicted in Figure 44 (below) the US contribution to the world supply of natural gas has declined since the mid-1990s, and this decline in supply has been more marked than in other countries. While the US is the world's foremost consumer of natural gas, its contribution to the world supply plummeted from 25% in the 1990s to 20% in 2003, while global demand for natural gas soared. This means that the gap between supply and demand of natural gas

has a strong relationship with the instability of the US supply. This also suggests that instability in the world market for natural gas is driven by US market conditions.

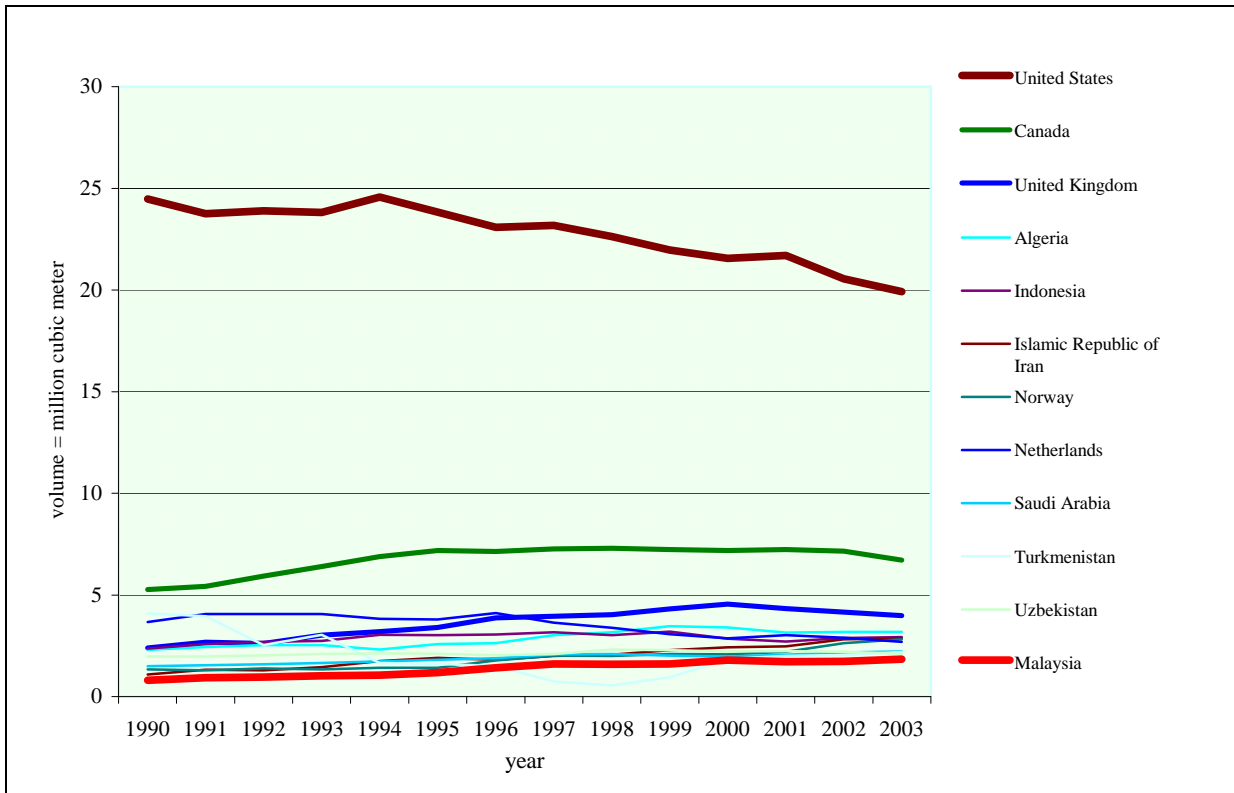


Figure 44 : World – US Contribution to World Natural Gas Market 1990 – 2003

Source : own analysis

In contrast with the US, other major natural gas producers are doing well. Figure 45, after discounting the US contribution, shows that the non-OECD countries especially Saudi Arabia, Algeria, Turkmenistan, Iran and Malaysia keep on improving their position in the world natural gas market. If we pay more attention to the graph, we may suggest that, out of this list, after discounting the OECD countries (the Netherlands and Norway), for a period of ten years, only export levels from Saudi Arabia, Iran and Malaysia have never fluctuated. Others such as Algeria, Indonesia, Uzbekistan and Turkmenistan experienced fluctuation. This means that only Saudi Arabian, Iranian and Malaysian supply of the feedstock can be guaranteed.

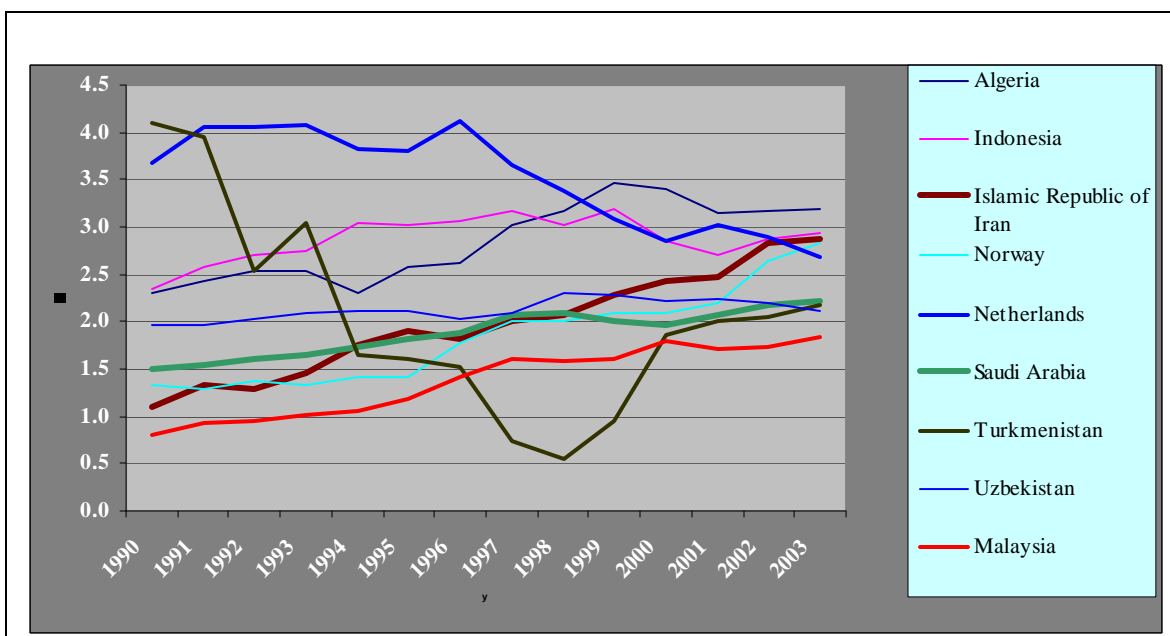


Figure 45 : World – Export of Natural Gas From the 12 Top Producing Countries Other than the USA 1990 – 2003

Source : Own Analysis

As far as the petrochemical industry is concerned, the demand for natural gas for industrial feedstock is shown in Figure 46. At less than 1% in the 1960s demand was almost negligible. However, in the late 1980s, consumption jumped to 7%, and the upward trend continued as consumption reached more than 12% by the end of 2002. With an ever-increasing aggregate demand for natural gas, Figure 46 also shows that the demand for natural gas in the OECD countries has radically changed twice. The first change was in 1994/1995 and the second was in 1999/2000.

Table 64 : OECD – Demand for Natural Gas for Petrochemical Industry 1971 – 2002

	1960	1965	1970	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002
Chemical (incl.Petro-Chemical)	0.89	1.45	2.47	4.40	5.80	7.31	6.80	12.90	12.42	11.27	10.66	10.47	13.25	11.83	12.04

Source : extract from Appendix M

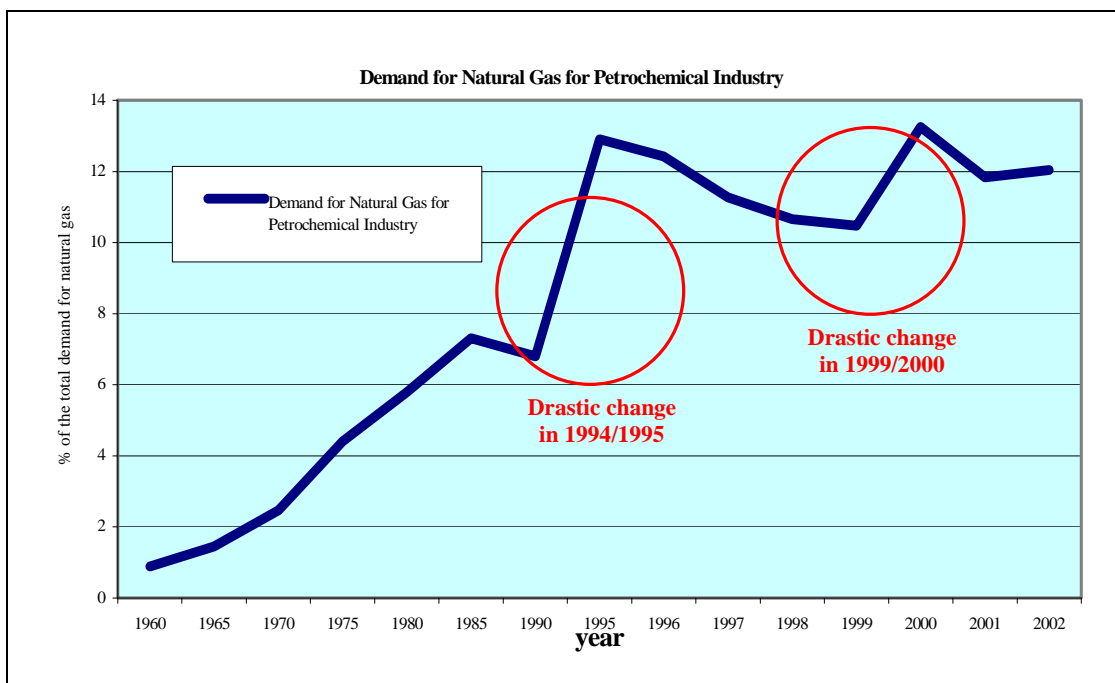


Figure 46 : World – Percentage of Demand for Natural Gas for Petrochemical Industry in OECD Countries 1960 – 2002

Source : Own Analysis

9.2.2.1.2 Price of Natural Gas

The chart in Figure 50 which is drawn from data in Appendix N shows the global price of natural gas from 1980 to 2004. Figure 46 (above) indicates that the gap between the global supply and demand of natural gas has been widening since the 1980s. Figure 47 indicates that world natural gas prices substantially slipped between 1984 to 1990. Though the price improved slightly by 1992, it plunged further till 1998. The chart also suggests that since 1998 the price has remained unstable but continues to increase.

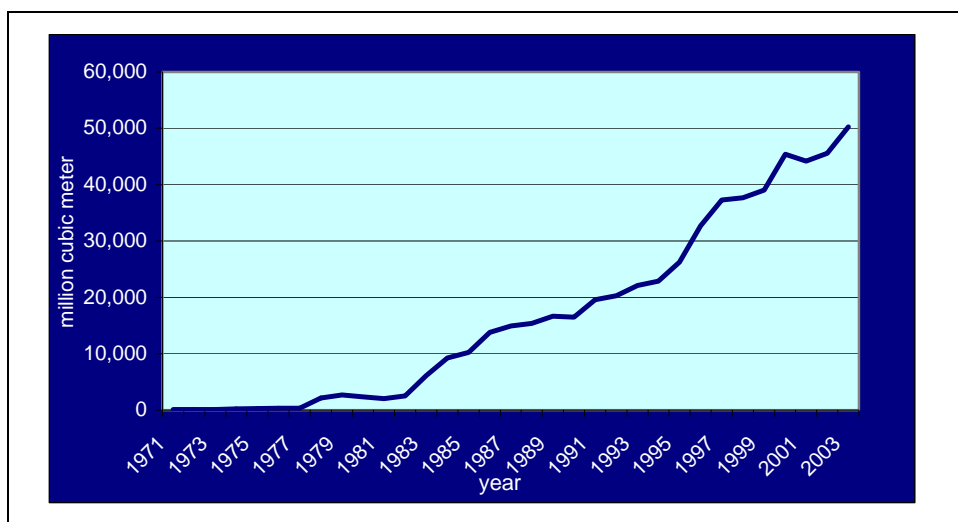


Figure 48 : Malaysia – Production of Indigenous Natural Gas 1971 – 2003

Source : Own analysis (calculated from data in Appendix M)

Table 65 : World – Contribution of 12 Producing Countries to the World Natural Gas Market (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Position in 2003
United States	24.47	23.74	23.89	23.81	24.56	23.83	23.08	23.19	22.63	21.97	21.56	21.70	20.55	19.93	1
Canada	5.25	5.41	5.93	6.40	6.88	7.18	7.14	7.25	7.30	7.22	7.18	7.24	7.15	6.70	2
U Kingdom	2.39	2.67	2.61	3.02	3.19	3.40	3.88	3.95	4.02	4.31	4.56	4.33	4.16	3.99	3
Algeria	2.30	2.44	2.54	2.53	2.31	2.58	2.63	3.03	3.16	3.46	3.40	3.15	3.18	3.18	4
Indonesia	2.35	2.58	2.70	2.74	3.03	3.02	3.06	3.17	3.02	3.19	2.85	2.71	2.88	2.93	5
Iran	1.09	1.33	1.30	1.45	1.75	1.90	1.81	2.00	2.06	2.29	2.42	2.46	2.82	2.87	6
Norway	1.33	1.29	1.38	1.33	1.42	1.41	1.78	2.01	2.00	2.09	2.09	2.20	2.63	2.83	7
Netherlands	3.67	4.06	4.07	4.07	3.83	3.80	4.12	3.64	3.39	3.07	2.86	3.03	2.89	2.69	8
Saudi Arabia	1.50	1.55	1.60	1.66	1.73	1.81	1.89	2.07	2.09	2.01	1.97	2.07	2.17	2.22	9
Turkmenistan	4.09	3.96	2.54	3.03	1.65	1.61	1.52	0.75	0.56	0.94	1.86	2.01	2.05	2.18	10
Uzbekistan	1.96	1.97	2.03	2.10	2.12	2.11	2.03	2.10	2.31	2.28	2.23	2.23	2.21	2.11	11
Malaysia	0.80	0.92	0.95	1.02	1.05	1.18	1.41	1.61	1.59	1.60	1.79	1.72	1.74	1.85	12

Source : Own analysis (calculated from data in Appendix M)

The empirical evidence has thus demonstrated that there have been substantial changes in global natural gas industry, in:

- (a) global supply and demand;
- (b) global price; and
- (c) Malaysian share in the global market.

9.2.2.2 Inter-Plant Relationships

Table 36 (Page 168) indicates that all petrochemical plants in the study area are owned by only 20 firms. Referring to Table 43 (Page 188), it is evident that land use in KIPC and GIPC has intensified from only 1.00 installations per site in 1984 to 2.61 installations per site in 2004. The evidence presented on Page 186 implies that companies on the same site are actually offshoots of the project initiators. To discover the relationship between these plants, the input and output flows of each plant were analysed. The findings, shown in Table 66, demonstrate that the main outputs of a number of plants are inputs for other plants. A schematic diagram is presented in Figure 49 depicts the lay out of pipe-lines in KIPC and GIPC and clearly indicates that the plants within the complexes are actually physically interconnected.

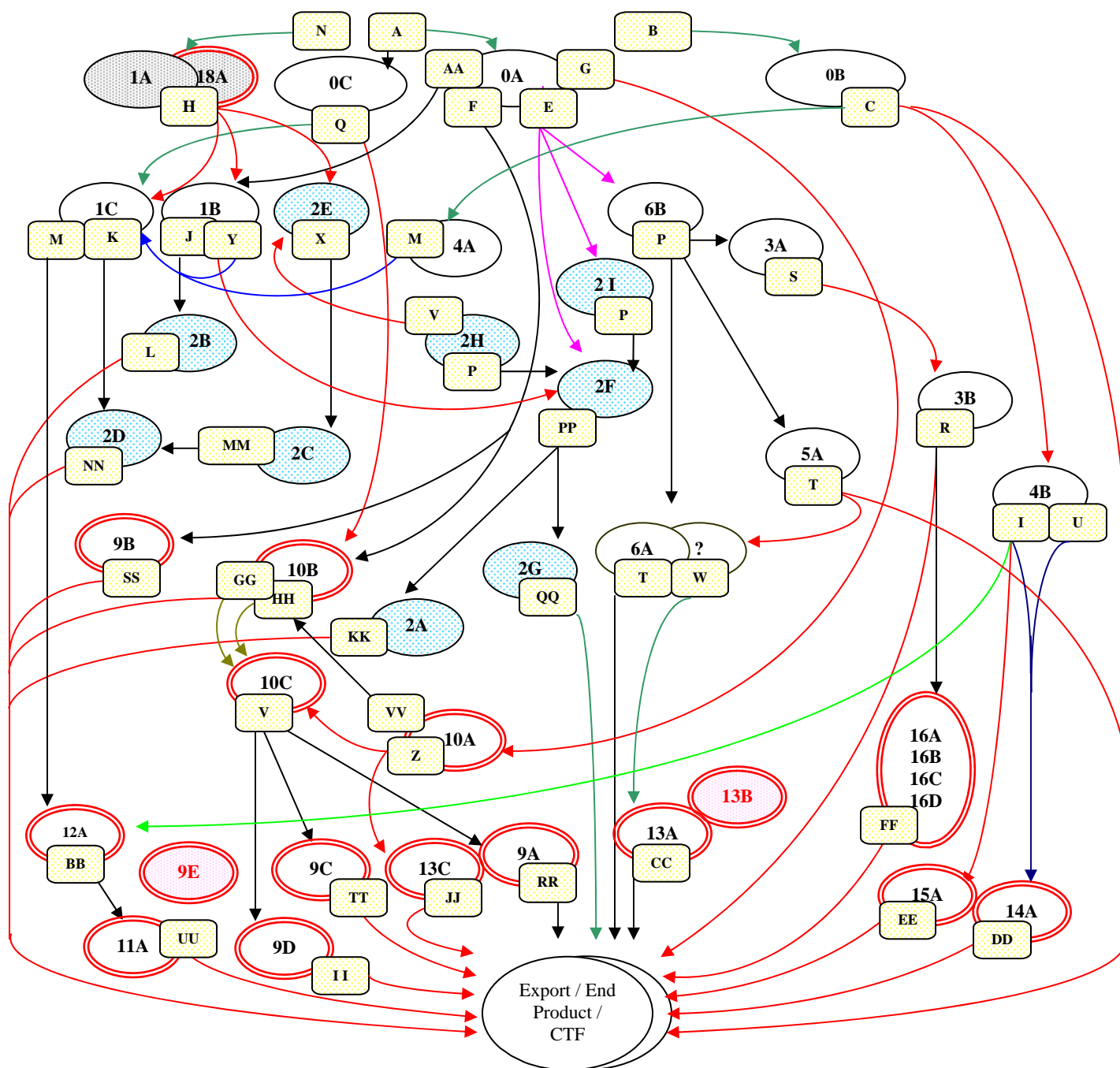
Table 66 : Malaysia – Chemical Interrelationship Between Plants within KIPC and GIPC

Site no	Plant	Chemical Substance of Main Feedstock		Chemical Substance of Main Product	
		Chemical Substance	Denoted by	Chemical Substance	Denoted by
Outside petro-chemical zone	0B	Crude oil	A	Naphtha	C
	0C	Crude natural gas	B	Methanol	Q
Site 1	1C	(a) Carbon Monoxide (b) Methanol	Y Q	(a) Acetic Acid (b) Paraxylene (c) Benzene	K M I
	1B	Residue gas from GPP	AA	(a) Ammonia (b) Carbon monoxide (c) Oxogas (d) Sythesis gas	J Y
	1A	(a) Imported chemicals (b) Natural gas (c) Water	N	(a) Syngas (b) Demineralised water (c) Oxygen (d) Nitrogen	H O
Site 2	2A	Glycols Ethylene Oxide	VV	Ethanolamine	KK
	2B	Ammonia	J	Ethoxylates	LL
	2C	Butanol	X	Glycol Ethers	MM
	2D	(a) Acetate acid (b) Butanol	CE X	Butyl Acetate	NN
	2E	(a) Syngas (b) Propylene	H V	Butanol ethylene	OO
	2F	(a) Ammonia (b) Ethylene (c) Methane	J P	Glycols ethylene oxide	PP
	2G	Glycols Ethylene Oxide	PP	Mono-ethylene glycols	QQ
	2H	(a) Ethane (b) Propane	E G	(a) Ethylene (b) Methene (c) Propylene	P D V
	2I	(a) Ethane (b) Propane	E G	(a) Ethylene (b) Methene	P D
Site 3	3A	Ethylene	P	VCM	S
	3B	VCM	S	PVC	R
Site 4	4A	Naphtha	C	Paraxylene	M
	4B	Naphtha	C	Benzene	I
Site 5	5A	Ethylene	P	LDPE / HDPE	T
Site 6	6A	Ethylene	P	Polyethylene	W
	6B	Ethane	E	Ethylene	P

Site no	Plant	Chemical Substance of Main Feedstock		Chemical Substance of Main Product	
		Chemical Substance	Denoted by	Chemical Substance	Denoted by
Site 7	0A	Crude natural gas	A	(a) Ethane (b) Butane (c) Propane	E F G
Site 8	8A				
Site 9	9A	Propylene	V	(a) Crude Acrylic Acid (b) Butyl Acrylate (c) Glycia Acrylic Acid	RR
	9B	Butane	F	Butanediol	SS
	9C	Propylene	V	(a) 2-ethyl hexanol (b) Plasticizers (c) Phthalic Anhydride	TT
	9D	Propylene	V	(a) n-butanol (b) Butyacetate	II
	9E	Not known (plant under construction)		Not known	
Site 10	10A	Propane	G	Propylene	V
	10B	(a) Dehydrogenated Propane (b) Butane (a) Methanol	VV F Q	(a) Methyl tertiary butyl ether (MTBE) (b) Monomer propylene	GG HH
	10C	Monomer propylene	HH	Polypropylene	Z
Site 11	11A	PTA	BB	(a) Modified co-polyester (b) Glycol modified polyester	UU
Site 12	12A	Paraexylene	M	Purified terephthalic acid (PTA)	BB
Site 13	13A	Polypropylene	Z	Polyolefin shrink foam	CC JJ
	13B	Polypropylene	Z	PE foam	
	13C	Polypropylene	Z	Synthetic silica	
Site 14	14A	(a) Benzene (b) Etylbenzene (c) Styrene monomer	I U	Rubber product solutions	DD
Site 15	15A	(a) Polyethylene (b) PTA (c) PVC (d) Benzene	W BB R I	(a) Polyacetal (b) Polybutylene terephthalate (c) Polyphenylene sulfide (d) Crytalline polymer	EE
Site 16	16A - 16 D	(a) Polyethylene (b) Polypropylene (c) PVC	W Z R	(a) Methacrylate-butadiene-styrene (b) Magnetic wires (c) Expanded polyethylene (d) Expanded polypropylene	FF

Source : Own analysis

Figure 49 : Malaysia – Chemical Interrelationship Between Plants within KIPC and GIPC



KEY



13A

Plant in Gebeng



4A

Plant in Kerteh



6A

Plants which have similar chemical input and output in KIPC and GIPC



13B New/under construction plants in Gebeng whose connections with other plants could not be ascertained during the investigation



Differences in the colour scheme are only to avoid overlapping or confusion



Source : Own analysis

Interviews with investors (see Table 61) suggested that they look for industrial complexes where feedstock is supplied and processed at the same site; and contain supporting services such as fire service, supply of industrial water and oxygen, storage facilities and a dedicated port. This conclusion is substantiated by the following quotations which are extracted from interview replies:

“Kerteh complex is very competitive, even if compared to Singapore. Here, services are integrated where facilities are shared among the investors. Therefore, costs are brought down. CTF and CUF that provide tankage facilities and produce electricity, water and hydrogen, which are the most important facilities in petrochemical complex are provided here. Without which, investors have to construct on their own. It is very costly.”(Petronas);

“Petrochemical companies are looking for the most integrated site. Without which, companies run at high costs. Integrated means feedstock are supplied and processed at the same location, plus supply other industrial inputs such as water and electricity as well as common facilities such as tankage and pipelines. In an integrated complex, buyer, supplier and supporting industries are placed under one roof. An integrated facilities together with an abundance of human and natural resources are Malaysian natural advantages. Kerteh is fully integrated. There are GPP, CUF, CTF, crackers to produce ethylene, storage, dedicated port, utility companies to produce industrial water and oxygen, fire service. If investors want to move out, not to say (it is) impossible, but difficult.” (MPEA President);

“On raw material, yes it is important that our JV with Petronas is for raw material. Raw material alone is not important. We also have our own oil company. We need a large quantity of raw material supplied in an integrated system... Integration is our expertise. We have the concept of operating large integrated site. By integrating, a waste material of a plant can be a raw material of other plants. On one hand, it minimises waste, of course it reduces cost of processing waste. On the other hand, it cuts costs. So, you need to integrate to compete with the supply-side (oil and gas supplier)” (A CEO).

The above findings suggest that plants are concentrated in clusters in KIPC and GIPC in order to reduce operation costs, especially the costs of acquiring industrial inputs, product shipment and industrial waste discharge. The findings suggest that petrochemical plants lower the transportation costs of their industrial inputs and products by placing their plants close to each other. This implies that by being close to each other, or in other terminology, agglomeration (see Page 56) reduces petrochemical companies' operation costs.

9.2.2.3 Roles of Government Departments as Perceived by Investors

Investors have different opinions of the authorities. The analysis of all interview replies is on Page ‘p’ of Appendix P. In summary, investors are of the opinion that the services rendered by government departments, except those mentioned in column ‘A’ of Table 67, are unsatisfactory. The main reasons are stated in column ‘B’.

Table 67 : Summary of Investors’ Perception of Government Departments

A	B
Praise	Criticism
<p>Very efficient, understanding and responsive:</p> <ul style="list-style-type: none"> • MIDA; • Terengganu state government; 	<p>Generally, government departments are perceived as:</p> <ul style="list-style-type: none"> • corrupt; • too bureaucratic; • inefficient; • non-understanding; • non-responsive

Source: Own analysis¹¹⁸

It is beyond the scope of this study to investigate the above allegations further, especially those of corrupt practices. The main issue highlighted by Table 67 is that investors are of the opinion that there are differences in the quality of service provided by different government departments. Some departments are highly regarded, others are regarded as incompetent. As in Table 67, most investors regard MIDA as highly professional, effective and understanding. Second to MIDA is the State of Terengganu. The following are quotations that support the above findings:

“..., I think the government support is very problematic; Malaysia has a decent infrastructure, but for the future, progress could be slow. In water supply, for example, the pipe is very old, the supply is limited – our production is restricted by the shortage of water supply, the road is unsafe. (And,) government bureaucracy, some are efficient, e.g. MIDA and its Minister; (however) some are very bureaucratic.... the regulations, legislations, etc , making it very restrictive in Malaysia”(A CEO);

¹¹⁸ Table K, Appendix P

“On government, all matters are dealt through MIDA. If we go directly, the response, especially from the Land Office and Local Authority, are very slow. Normally, after a project is scheduled to take off, land title is yet to release. ... On the things concerned me in business, number one is corruption, both in government and business. When it happens, and always happening, we have to pay a high costs for it... (the) political stability is not worrying me, (neither) feedstock,... I am satisfied with Petronas.”(A CEO);

“When dealing with government department, we do not approach government department directly. We only deal with MIDA, a one stop agency for investors. We go together with Petronas. MIDA is excellent, approachable and flexible. It offers a numbers of incentives e.g. tax break, but it needs a detail proposal on what we want. Then we discussed the proposal in great details. We are happy with MIDA.”(US Company); and

“On threats, in overall investment, an uncertainty in feedstock supply is our number one threats. In Malaysia, there is no threat at all, as long as UMNO is in power. However, when we complained on water supply in Kerteh, ironically, PAS government (State of Terengganu) took action swiftly. Quick and transparent.” (A European Company) .

Discussion on Page 286 will assess to what extent the quality of government service influences demand for land in the studied complexes.

9.2.2.4 Land Size

During the interviews, the need for a substantial area of land was raised by a US company, as quoted:

“It is not to say land is not important but issue of feedstock is critical. We need land, in reasonable size. We don’t want a cramped area. We need space for expansion,” (US Company).

Analysis of the data in Appendix I found that most plants need an area of at least 20 acres. Table 68 notes that most of the plants in KIPC and GIPC are built on sites that are more than 50 acres. Though this point was only highlighted by a non-representative number of respondents, the evidence in Table 68 substantiates this conclusion.

Table 68 : Malaysia – Size of Land in Clusters of Industrial Sites in Kerteh and Gebeng

Class	Cluster/Site Number	Area (Acres)	Statistics																										
More than 300 acres	Site 9	334.83	<table><tr><td>N</td><td>Valid</td><td>15</td></tr><tr><td></td><td>Missing</td><td>0</td></tr><tr><td>Mean</td><td colspan="2">94.1513</td></tr><tr><td>Median</td><td colspan="2">66.7200</td></tr><tr><td>Mode</td><td colspan="2">24.41</td></tr><tr><td>Std. Deviation</td><td colspan="2">79.95773</td></tr><tr><td>Minimum</td><td colspan="2">24.41</td></tr><tr><td>Maximum</td><td colspan="2">334.83</td></tr></table>			N	Valid	15		Missing	0	Mean	94.1513		Median	66.7200		Mode	24.41		Std. Deviation	79.95773		Minimum	24.41		Maximum	334.83	
N	Valid	15																											
	Missing	0																											
Mean	94.1513																												
Median	66.7200																												
Mode	24.41																												
Std. Deviation	79.95773																												
Minimum	24.41																												
Maximum	334.83																												
200 – 300 acres	nil																												
150 – 200 acres	Site 7	162.00																											
100 – 150 acres	Site 12	149.10																											
	Site 10	138.40																											
	Site 3	100.00																											
50 – 100 acres	Site 16	98.00																											
	Site 15	75.00																											
	Site 2	66.72																											
	Site 11	57.42																											
	Site 13	55.42																											
20 – 50 acres	Site 5	47.44																											
	Site 6	47.00																											
	Site 14	32.12																											
	Site 1	24.41																											
	Site 4	24.41																											
Less than 20 acres	nil																												

Source: Own analysis

The interviewee who raised this point emphasised that petrochemical firms, when deciding to set up a new plant, immediately think of long-term expansion. This is supported by an assertion made by a representative from a European oil company that a petrochemical company will not move to a new location without having a 15 – 20 year development plan. According to them:

“When we move to any country, we are thinking for 10 – 15 years ahead. When we set up our plant, we have already plan for expansion” (A European Company);

“We need land, in reasonable size. We don’t want a cramped area. We need space for expansion” (US Company);

“The company is eying to operate totally from outside US in five years time, there is a likelihood that the plant in Gebeng is to undergo an expansion” (US Company);

The above phenomenon is similar to U.K evidence as in Adams *et al.* (1994).

The second issue related to land size is land price. Sub-section 7.3.3 (Page 180) suggests that investors almost unanimously agreed that land availability, including land price is not a major concern when deciding to set up a petrochemical plant in Malaysia. However, the figures on Page 180 suggest that land price, if not significant, has some influence on decisions to invest in Kerteh and Gebeng as the low-priced land may encourage investors to acquire as big a site as possible. Without this, implementation of their long-term expansion plans would not be possible.

9.2.2.5 Development of Petrochemical Industry Infrastructure

Describing the petrochemical industry infrastructure, Petronas remarked:

“We develop Kerteh according to master plan. It is very much a Petronas town. ... We also spent about RM70 billion in providing Kerteh’s infrastructure, including a port, an airport, housing, a golf course... Kerteh complex is very competitive, even if compared to Singapore. Here, services are integrated where facilities are shared among the investors. Therefore, costs are brought down. CTF and CUF that provide tankage facilities and produce electricity, water and hydrogen, which are the most important facilities in petrochemical complex are provided here. The facilities in Kerteh and Gebeng are identical...”(Petronas)¹¹⁹.

“...Kerteh produces all major components of Petronas production (they are) crude oil, refined oil, natural gas, petrochemical primary feedstock (they are) ethane, butane, and propane... The Kerteh Airport which is at a strategic location, comes with precision equipment that Kuala-Terengganu-Airport doesn’t have and maintains a record of 0% unsuccessful landing attempt, functions to ferry the off-shore oil terminal workers, facilitate Petronas and KIPC personnel, most of whom stay in Kuala Lumpur, to commute to Kerteh... Kerteh complex which is more or less self-contained is equipped with housing and shopping facilities, kindergartens and schools, place(s) for worship (and) golf and social club (which) the membership is also opened for government officials and business community around Kerteh and Kemaman ...” (Petronas)¹²⁰.

Based on the above statements and Table 34 (Page 162), the following is a list of the main components of the infrastructure system and facilities that support petrochemical industrial development in the Eastern Corridor:

¹¹⁹ Appendix K (Interview B5, paragraphs 21.3 and 21.5).

¹²⁰ Appendix K (Interview B11, paragraphs 27.1, 27.6, 27.7).

- (a) GPP and oil refinery;
- (b) gas pipeline networking system (see Figure 50);
- (c) water supply system;
- (d) centralised tankage facility (Plate 5);
- (e) dedicated port and warehousing facilities (Plate 5 and Plate 6);
- (f) an airport (Plate 7); and
- (g) dedicated railways (Plate 8).

A simple typology of the installations and facilities is presented in Table 69.

Table 69 : Malaysia – Oil and Gas Production Infrastructure and Facilities in Kerteh and Gebeng

Typology	Facilities
Oil and Gas Production Infrastructure	GPP Oil refinery National gas networking system (PGU)
Oil and Gas Production Supporting Facilities	Centralised Utilities Facility Central Tankage Facility Water Supply
Transportation And Other Facilities	Airport A dedicated port Training Institute Warehouse A dedicated railway system

Source: Own analysis



Plate 5 : Malaysia – CTF Facilities in Kerteh and Gebeng (A and B : View of Kerteh CTF, C : Gebeng CTF Under Construction, D : A Piperack in Gebeng)

Source : Courtesy of Petronas and Pahang SEDC

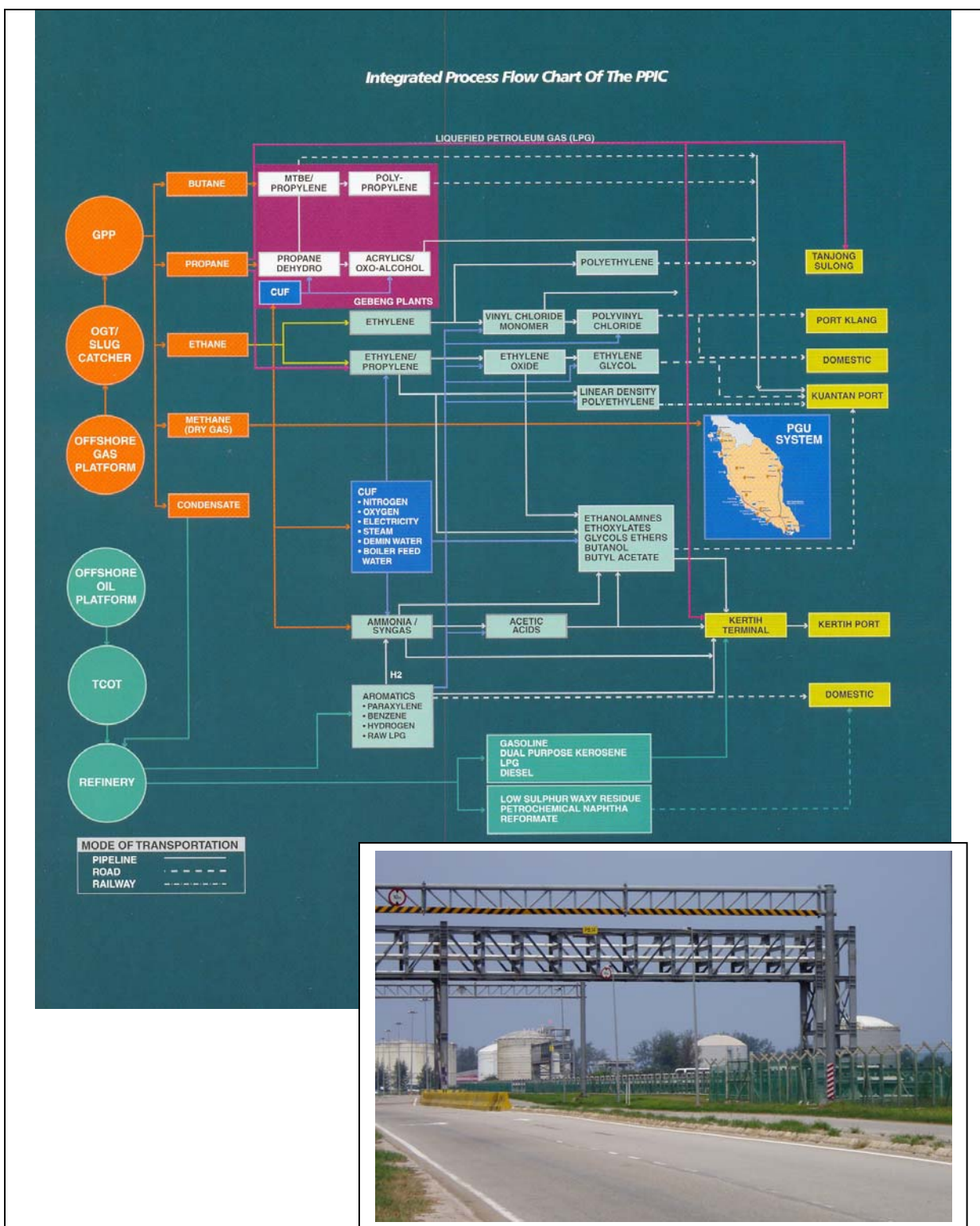


Figure 50 : Malaysia – Linkage Between Plants in KIPC and GIPC (the inset shows part of the pipe-rack to link the complexes)

Source : The diagram: Petronas; the photograph: taken at site



Plate 6 : Pahang – Kuantan Port

Source : Photographs: taken at site; map: courtesy of Pahang SEDC

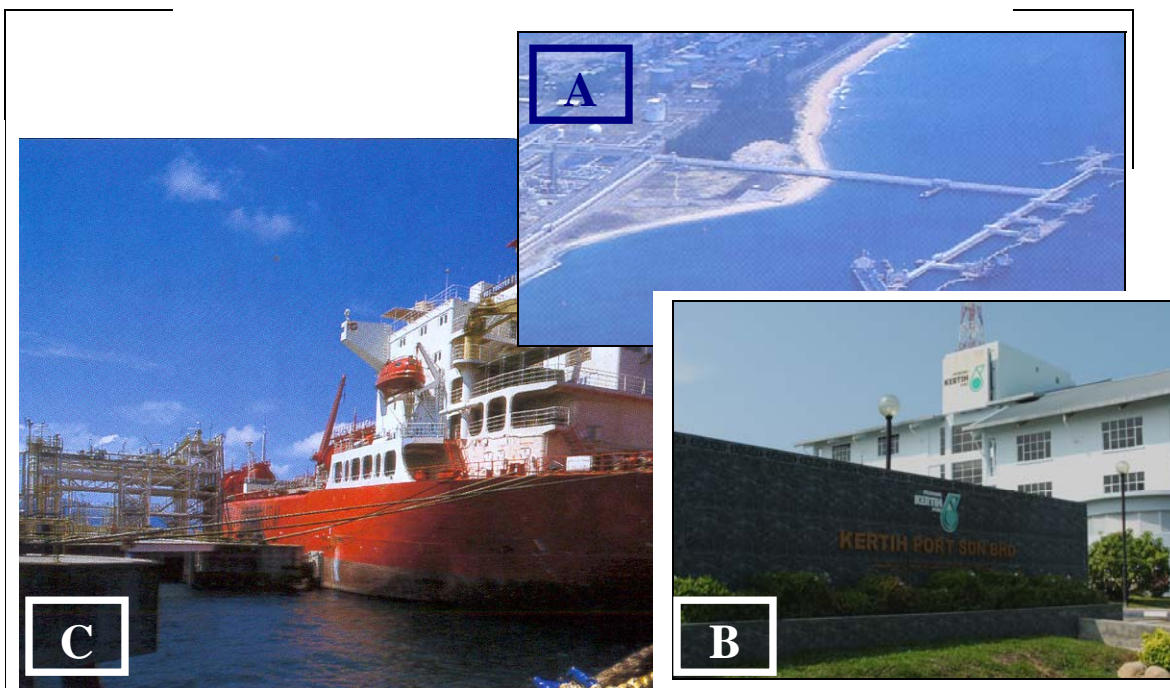


Plate 7 : Terengganu – Kerteh Port

Source : A: Courtesy of Petronas; B: taken at site; C: courtesy of Terengganu SEDC



Plate 8 : Terengganu – Kertih Airport

Source : A (Airport Terminal): taken at site; B (Helicopter Hangar):
Courtesy of Petronas



Plate 9 : Pahang – Railway and Couches to Commute between KIPC and GIPC

Source : taken at site

9.2.3 Analysis

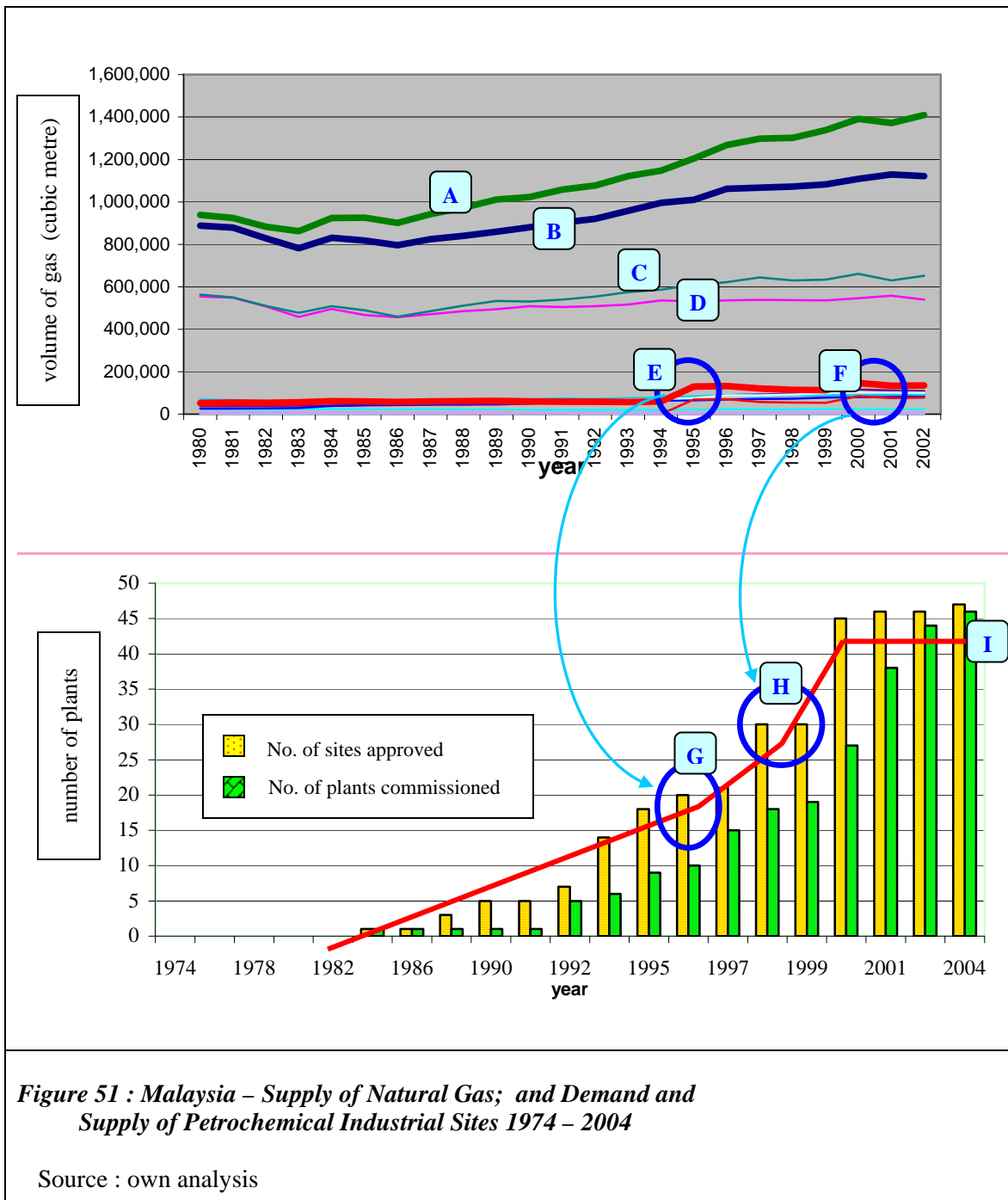
9.2.3.1 Introduction

The discussion from Page 255 suggested that since 1980 there have been significant changes in the global supply and demand of natural gas, the flow of Malaysian indigenous natural gas and the global price of natural gas. It was noted that plants and facilities in both complexes are interconnected. The preceding analysis also suggested that success in attracting foreign investors is facilitated by the efficiency of MIDA and the Terengganu State Government. It was noted that each parcel on which plants are clustered is not less than 20 acres in size. The preceding analysis also substantiated that there has been significant progress in the provision of infrastructure in Kemaman and Kuantan districts since 1980. The following discussion will investigate demand for petrochemical industrial sites in KIPC and GIPC as it relates to:

- (a) the global energy scenario;
- (b) Malaysian indigenous natural gas production;
- (c) global natural gas price;
- (d) inter-plant relationships;
- (e) quality of government services;
- (f) size of industrial parcels; and
- (g) development of dedicated infrastructure.

9.2.3.2 Relationship between the Global Energy Scenario and Demand for Petrochemical Industrial Sites in KIPC and GIPC

Figure 51 compares the findings of Figures 28 and 48 with related events in the world supply of natural gas and land development progress in KIPC and GIPC.



In the above graphs:

- (a) Lines 'A' and 'B' show an ever-widening gap between the supply and demand of natural gas in the global market;
- (b) Lines 'C' and 'D' show the trend in supply and demand of natural gas in the US;
- (c) Circles 'E' and 'F' mark where global consumption of natural gas in petrochemical industry drastically changed and demand unprecedentedly jumped in 1994/1995 and 1999/2000. Until the early 1990s consumption remained between 1% to 2% of total global consumption. However, in 1994/1995 consumption jumped to 7%. At the end of 2002 it jumped for a second time to 12%.
- (d) Circles 'G' and 'H' show a drastic jump in the number of land takers in KIPC and GIPC in 1994/1995 as well as in 2001/2002; and
- (e) Line 'I' is a flat line indicating there have been no new land takers in the studied areas although there is a continual rise in the number of plants commissioned on existing sites.

The above diagram and results of statistical tests¹²¹ suggest that:

- (a) The global and US demand for natural gas are correlated with the demand for petrochemical sites in Kerteh and Gebeng;
- (b) There is close relationship between demand for petrochemical sites in Kerteh and Gebeng and a jump in demand for natural gas for consumption in chemical industries in the middle of the 1990s and the beginning of 2000;
- (c) Government projections that demand for petrochemical industrial sites would continue to increase beyond 2002 may be erroneous.

9.2.3.3 Relationship between Malaysian Indigenous Natural Gas Production and Land Development in KIPC and GIPC

The discussion on Page 160 notes that the functions of the GPP are to produce ethane, propane and butane for energy as well as basic chemical industry feedstock. Table 70 lists the production capacity of each plant and their year of commencement. The

¹²¹ See test no. 1 in Appendix O

tabulation strongly suggests that the volume of ethane, propane and butane produced depends on the number of GPP in operation.

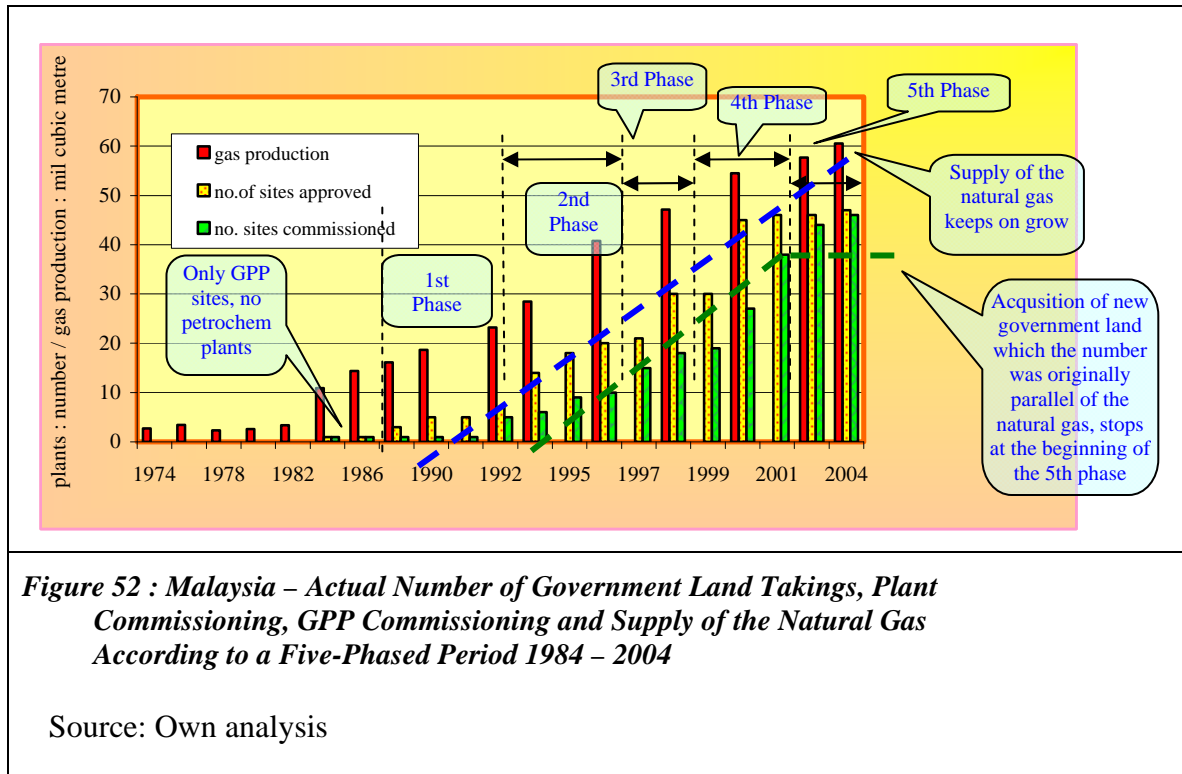
Table 70 : Malaysia – Kerteh GPPs, Commencement Years and Production Capacity

Plant	Commence- ment	SALESGAS (MMSCFD)	ETHANE (MTPD)	PROPANE (MTPD)	BUTANE (MTPD)	CONDENSATE (MTPD)
GPP 1	1984	250	0	440	470	640
GPP 2	1992	250	650	500	320	320
GPP 3	1992	250	650	500	320	320
GPP 4	1994	250	650	500	320	320
GPP 5	1998	600	1,000	1,600	950	1,000
GPP 6	1998	600	1,000	1,600	950	1,000
TOTAL	6	2,000	3,950	5,140	3,330	3,600
<p>Source : Petronas</p> <p>Note : 1. MMSCFD – million standard cubic feet per day; MTPD - metric tons per day. 2. ‘Salesgas’ = processed gas directly sold as energy (bottled or shipped out); ‘Condensate’ = processed gas converted to fuel.</p>						

If the commencement of each GPP is set as a milestone, the history of KIPC and GIPC can be divided into five periods. When milestone statistics from Table 70 and statistics on government land takers for petrochemical industrial sites are combined, a trend can be seen as in Figure 52. The diagram suggests that:

- (a) 1st period (1984 – 1992) : After GPP1 there were no additional petrochemical factories in the studied area.
- (b) 2nd period (1992 – 1995) : Two plants at the GIPC were commissioned in Gebeng after the completion of GPP2 and GPP3 in 1992.
- (b) 3rd period (1995 – 1997) : Nine plants were on-stream following the commissioning of GPP4 in 1994.
- (c) 4th period (1998 – 2000) : 25 plants were on-stream after the commissioning of GPP 5 and GPP 6 in 1998.

(e) 5th period (after- 2000) : Demand for new government land suddenly became stagnant.



The bar chart in Figure 52 also shows that there is an empty phase in the 1st period. This makes one wonder whether the supply of natural gas produced was too low to support the petrochemical industry or the necessary infrastructure was insufficiently in place to build investor confidence. It appears another ten years (1992-2002) was needed to see development activity at its full scale. Even though growth in Malaysian natural gas seems unstoppable, the demand for new government-released sites has met its ceiling since the early 2000s.

As above, GPP1 which was awarded by the Terengganu government to Petronas in 1983, became the first government-released petrochemical-related industrial site. After about ten years, more sites were released by Terengganu State as well as those sold by Pahang SEDC. The peak period was the year 2000 when a total number of six sites were transferred/awarded to project initiators. However, as is shown in Figure 52 as well as discussed in Section 7.3, the release of three sites for Petronas in Kerteh at the end of

2000 marked the end of the government-release era. This suggests that the demand for land from the government for petrochemical industries in both states was initiated, intensified and reached its climax within only a twenty year period.

At this juncture, it is beneficial to recap on the conclusions made in Sub-section 7.3.1 (Page 170). The State Government forecasted that the amount of land needed by petrochemical industry would increase along with an increase in natural gas production. Yet, evidence suggests that the government prediction that the demand for land would continue to rise was problematic. It is likely that either the government's prediction was based on incomplete information or information on market signals was misinterpreted. The findings indicate that there is no strong evidence to support a direct relationship between growth in Malaysian indigenous natural gas with demand for petrochemical sites in Kerteh and Gebeng¹²². In other words, continued growth in natural gas production is not necessarily followed by a continual rise in demand for industrial sites. The evidence indicates that the volume of natural gas produced within Malaysia has been sufficient to initiate the industry as well as to support its growth to the present stage but the intensification of existing sites has adequately handled the expansion in the output of natural gas.

¹²² As a reminder, Malaysian gas for the petrochemical industry is sold at negotiated price that is lower than the actual market price (see interview B1, paragraph 19.5; B11, paragraph 27.4)

9.2.3.4 Analysis of the Relationship Between Global Natural Gas Price and Demand for Petrochemical Industrial Sites in KIPC and GIPC

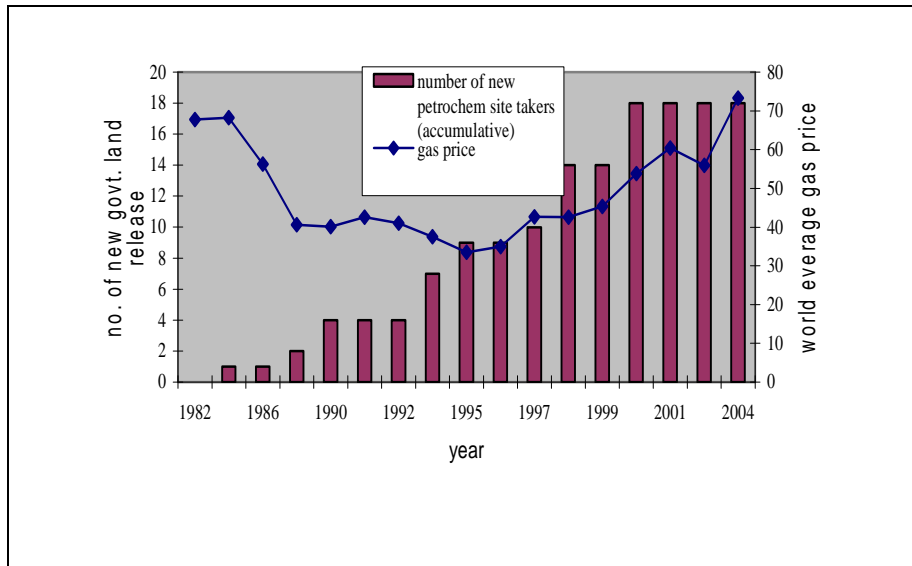


Figure 53 : Malaysia – Relationship between Natural Gas Price and Demand for Petrochemical Industrial Sites

Source : Own analysis

The graph above indicates that Kerteh and Gebeng emerged as a petrochemical hub in the early 1990s, at which time, the global price of natural gas was approaching its lowest point. With reference to Figure 47 (Page 261) and the discussion on Page 279, demand for petrochemical industrial sites in Kerteh and Gebeng began to intensify in 1994/1995. However, Figure 53 indicates that during the same period, the world price of natural gas was at its lowest since 1980. When the price picked up in 1997, demand for land picked as well until 2000. However, there has been no new demand for petrochemical land in KIPC and GIPC although the price soared until 2004. Therefore, the findings suggest that there is no clear connection between world price of natural gas and demand for industrial sites in the studied areas.

9.2.3.5 Relationship between Inter-Plant Relationships and Demand for Petrochemical Industrial Sites

The conclusion reached on Page 263 was that all plants in the studied areas, without exception, are bound to each other in chemical terms. The chemical substances considered output or affluent of some plants serves as feedstock for others. As a result plants within both Kerteh and Gebeng trade among themselves. This was the rationale behind naming both complexes “Integrated Petrochemical Complexes”. According to one CEO, in the petrochemical industry, it is essential that every player knows their ‘chemical role’ within a complex. Players also need to be highly specialised in their ‘chemical role’. In some instances producers need to create a sub-cluster within a complex. Clustering or integrated complexes means cost saving for the industry¹²³.

Looking at this from a different angle, Figure 54 examines the relationship between plants in Kerteh or Gebeng with respect to location. Figure 54 strongly suggests that the closer the plant is to the point where natural gas comes to shore, the more capable it is of handling flammable and combustible substances. Since each cluster handles only certain chemical substances, there are clear boundaries between them. For example, some groups of plants handle basic natural gas (ethane, butane and propane) base chemicals while others deal with substances with either an ethylene or propylene or polypropylene or aromatics base.

¹²³ Appendix K (Interviews B1, paragraph 19.2, 19.3, 19.4; B5, paragraph 21.5; B10, paragraph 26.6; B11, paragraph 27.4)

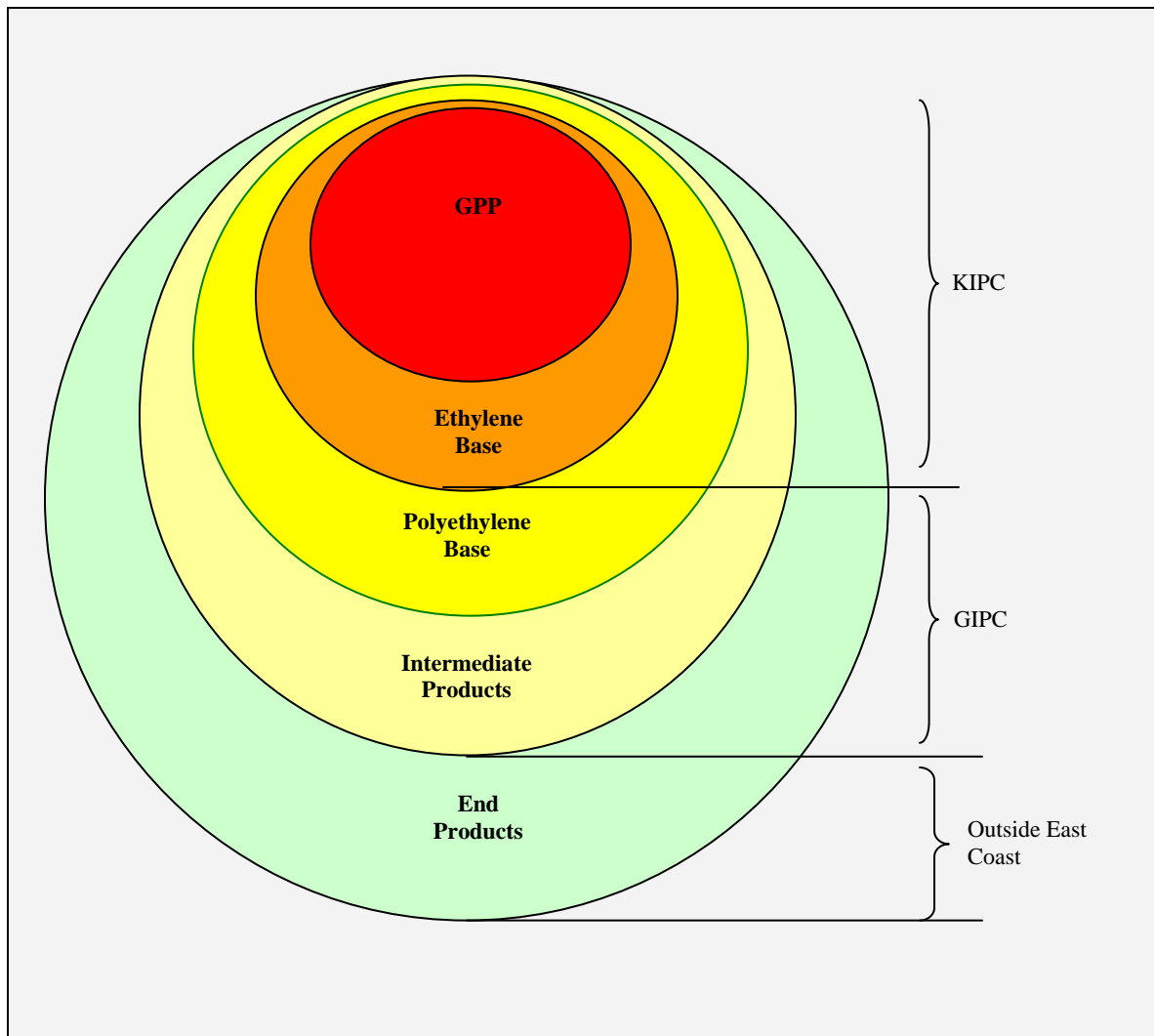


Figure 54 : Malaysia – Land Use Pattern in KIPC and GIPC

Source : Own analysis

9.2.3.6 Relationship between Quality of Government Departments' Services and Demand for Petrochemical Industrial Sites in KIPC and GIPC

Table 67 indicates that among government authorities investors are satisfied most with MIDA and the State Government of Terengganu. Both authorities have been effective in securing investment in Malaysia, in particular in Kerteh. An example that demonstrates the effectiveness of MIDA is the way it managed to change the mind of a European company that had decided to locate its plant in Singapore:

“ ... I'd like to tell a story of our plant. It was many years ago. We planned to have a plant for the Asian market. We planned to have only three plants of such type. One in the North America, one in Europe and one in Asia. Knowing this, the Malaysian and Singaporean authorities came in to offer facilities. In the first place, Singapore offered a very excellent offer with 'irresistible' incentives, probably, the worth was about USD50 million. It created a gap between Malaysian and Singaporean offer.

Singapore also offered a site which was next to our existing plant. Being next to the existing plants create synergy. To set up a new plant we need to create an environment for it. If it is next to the existing plant we save a lot.

MIDA, through my experience is very efficient, very responsive, very investor driving. So, we told MIDA what we got from Singapore. MIDA then offered a counter proposal which was close to the Singaporean's with a little improvement. That was the story why we landed in the East Coast Malaysia. That shows a competition between governments and how MIDA played a key role.”(A European Company).

The interviews generated some further quotations which reflect how excellent MIDA has been in serving foreign investors¹²⁴. The evidence also reveals that most investors are satisfied with the work of the state government of Terengganu. Yet, the results of Table K of Appendix P suggest that government department and officials' actions may still create three forms of costs for investors. These are the costs of policy interference, costs of inefficiency and costs of corrupt practices. Details are shown in Table 71.

¹²⁴ Appendix K (Interviews B7, paragraph 23.2; B8, paragraph 24.6; B10, paragraph 26.4; B13, paragraph 29.2; B14, paragraph 30.2).

Table 71 : Malaysia – Investors’ Perceptions of Costs of Bureaucracy

Costs	How Costs Affect Investors
Costs of Policy Interference	<p>(a) Costs of shut-down – each shut-down costs about USD 1 million:</p> <p><i>“...a policy that requires us to undergo a periodical inspections, which we think too frequent, concerned us. The first inspection is within the first six months, then after one year, then after 18 months. After the 18 months we can apply for two years. We are world class companies and able to be self-regulated. Even if the system is there, we cannot guarantee a disaster-free. An inspection, through which 200-300 items to be checked within about 1-month, needs a shut down. Each shut down costs a plant USD 1 million. Therefore, each inspection costs USD 25-30 million.”</i> (MPEA President);</p> <p>(b) Costs of interface – some government policies require participation of local companies. Consequently, formation of a joint-venture company is a pre-requisite:</p> <p><i>“Another concerned thing is the policy that requires foreign companies to joint-venture with local companies. There is no doubt that some local partners are excellent. Others however are not really competent, rather not functioning at all. Thus, the partnership rather creates ‘costs of interface’. Why shouldn’t we investors deal directly with the government? So, the operational costs would be lowered”</i> (MPEA President)</p> <p>Both types of costs create additional operating costs. As these costs are substantial, firms would become competitive in the global market.</p>
Costs of Inefficiency	<p>(a) Low water supply pressure limits factories’ production;</p> <p>(b) In the event of a water supply shortage, factories have to buy raw water in big volumes and at high costs:</p> <p><i>“Walaupun jumlah kilang (di Gebeng) bertambah lebih sepuluh kali ganda dalam tempoh 15 tahun, loji bekalan dan paip air tidak dinaik-taraf. Bila bekalan air kritikal, kilang terpaksa menyewa lori-lori tangki untuk mencukupkan bekalan. Kosnya tinggi (Even though number of factories (in Gebeng) has increased 10-fold in the last 15 years, water supply facilities have never been upgraded. In the event of critically low water pressure, we have to hire oil tanker trucks to bring water to our plants. The cost is very high)”</i> (A CEO);</p> <p>(c) Delays in the shipment of factory products:</p> <p><i>“MIDA and DOSH are very understanding and excellent. Others are unsatisfactory, for example the Local Authority’s response to complaints are slow, the Customs Department doesn’t understand the company’s urgency. In the event of delays at Customs, the shipment of our products is delayed as well. It affects us”</i> (US company).</p>

Costs	How Costs Affect Investors
Costs of Corrupt Practices	<p>(a) Firms have to bear the cost of fulfilling unrealistic demands from certain government departments:</p> <p><i>“...some government departments are very understanding and excellent in their service, e.g. MIDA, DoE and DOSH. Others are unsatisfactory, for example,... ... corrupt practice in some government departments... ... occasionally, we have to fulfil ‘unrealistic’ government departments demands – it affects our financial performance” (US Company).</i></p>

Source : Own analysis (full analysis is in Table K of Appendix P)

On the weaknesses and corrupt practices in the government, it can be inferred from the interview with a senior politician that the issue is significant, as quoted:

Q: “Were you happy with the performance of government officials?”

A: “No. The reason is corruption (he cited examples that he asked not to be disclosed). You know what the risk of corruption is to a country? Investors would come only for a very short period. They put their money there, maybe for one year, or less. They find ways to make profit as fast as possible. Then they leave the country”.

Yet, the key question is to what extent does excellent service tendered by a government department guarantee investment by private firms? The answer may partly lie in the following incidents:

- (a) In the state of Terengganu there are also unsold petrochemical sites despite the fact that investors are very satisfied with the state government.
- (b) There are complaints that the state government of Pahang provides insufficient support for investors. However, during the investigation it was found that there were new plants in Gebeng. One was in the initial stage of construction on Site 9 (identified as plant 9E – see Plate 10) and the other was in the initial stage of operation (plant 13B);



Plate 10 : Construction Works on Site 9E

Source : taken at site

- (c) According to a former Chief Minister of Terengganu, there is at least one incident where an investor from Germany abandoned his plan to invest in Terengganu because of unsuccessful negotiating with Petronas to secure oil and natural gas, as cited below:

“There was a case where an investor from Germany was keen to bring an investment worth about USD4 billion, after failing in securing fuel at the right price from Petronas, the firm withdrew and went to another ASEAN country. We believe, Petronas stand was influenced by the Federal government” (Abdul Hadi);

- (d) A US company claimed that when they came to Malaysia years ago, they had a plan to fully operate in Gebeng. However, they too failed in their negotiations with Petronas to secure feedstock and moved part of their operation to Singapore, as quoted:

“In the earlier stage, (the company) planned to fully operate in Gebeng. Failing in securing a guaranteed feedstock with Petronas, a major part of operation was shifted to Singapore” (US Company). 12-01pm 18.5.2008

In summary, excellent government department service to investors cannot guarantee FDI. At the same time, complaints about quality of government service do not necessarily keep investors away. Results of interviews suggest that an excellent government may attract investors but investors' decisions ultimately depend on the availability of feedstock.

9.2.3.7 Relationship between Area of Land and Demand for Petrochemical Industrial Sites

In addition to the quotations on Page 270, the interviewed investors indicated that firms in Kerteh and Gebeng have expansion plans for 5 – 10 years ahead:

Although some companies, e.g. BP-Amoco, MTBE and BASF, are carrying out a plant expansion, Gebeng would face a stiff competition, especially from Shanghai. Reason, operating in newly industrial zones, especially in China, is more cost-effective... now market is good, there are signs that the plant in Gebeng will undergo an expansion in 10 years time (US Company).

The above statement imply that some investors, when they acquired land in Kerteh or Gebeng, anticipated the need for a huge area of land, so they can put their expansion plans into operation. Table 43 (Page 188), as illustrated in Figure 56, supports this view as land use has intensified since the 1980s. Table 68 indicates that in the petroleum, gas and petrochemical industry, the project initiator desires a huge area of land when moving in to new areas. Figure 55 is a line graph based on data in Table 68 correlating the size of parcels with the number of plants on each parcel. The graph suggests that there is a positive relationship¹²⁵ between size of land and number of plants on each allotment.

¹²⁵ See test no. 2 in Appendix O

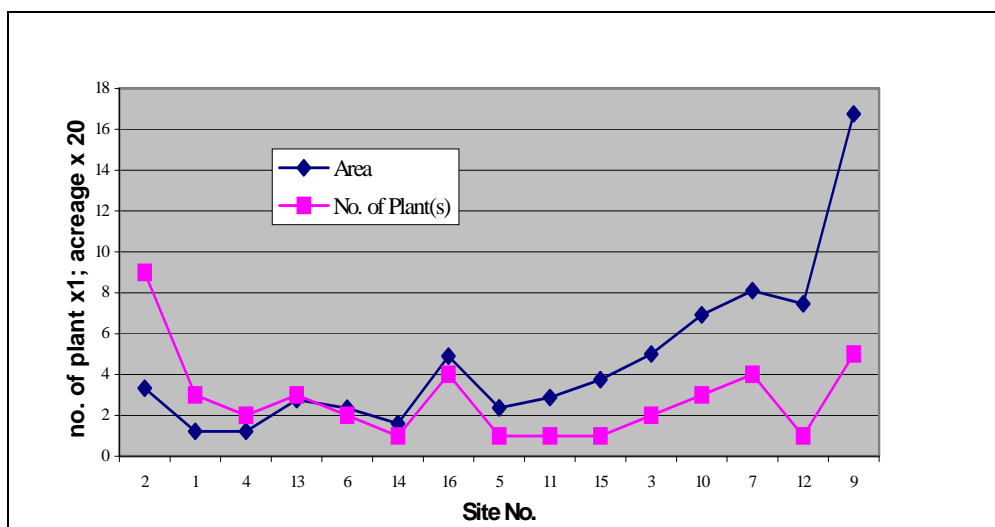


Figure 55 : Malaysia – Correlation Between Size of Land and Number of Plants in KIPC and GIPC

Source: Own analysis

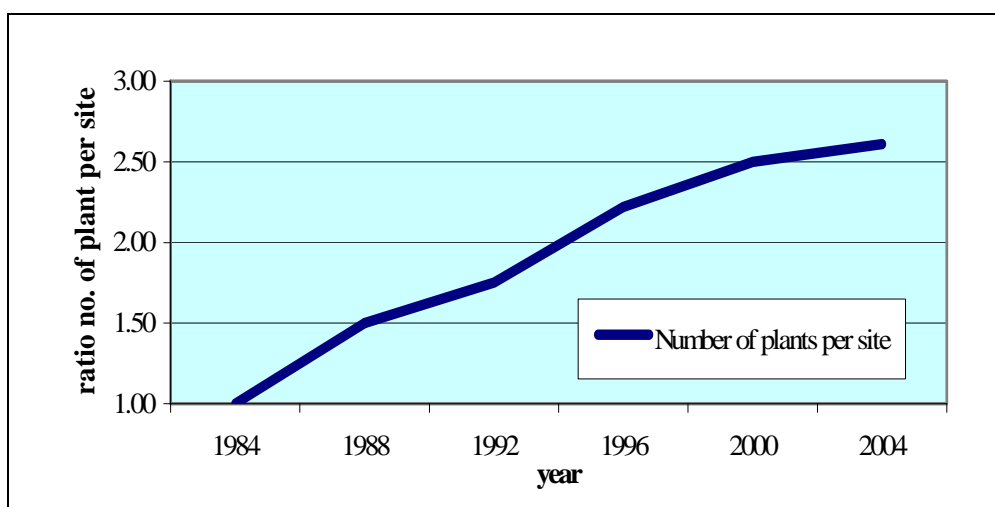


Figure 56 : Malaysia – Land Use Intensity in the KIPC and GIPC 1984 – 2004

Source: Own analysis

9.2.3.8 Relationship between Infrastructure Development and Demand for Petrochemical Industrial Sites

Data on the history of the construction of basic infrastructure and facilities for KIPC and GIPC¹²⁶ are arranged into chronological order in Table 72. Figure 57 relates these stages in the development areas with the number of new petrochemical industrial site takers in both complexes.

Table 72 : Malaysia – Stages in Major Infrastructural Development in Kerteh and Kuantan 1980 - 2005

PERIOD	INFRASTRUCTURE AND FACILITIES
1980 – 1985	Construction and commencement of first oil refinery, GPP, followed by initial production of oil and gas.
1985 – 1990	Completion of other supporting facilities, i.e. Kerteh Airport and introduction national gas networking system (PGU).
1990 – 1995	1. Expansion of gas production facilities, i.e. GPP 2, GPP 3 and GPP 4. 2. Completion of gas handling facilities (upgrading of Kerteh Port) and petrochemical industrial support facilities (CUF).
1995 – 2000	1. Expansion of gas production facilities, i.e. GPP 5 and 6 2. Expansion of supporting facilities, i.e.: <ul style="list-style-type: none"> • Kerteh and Gebeng Centralised Utilities Facility; • Kerteh and Gebeng Central Tankage Facility; • Upgrading of Kuantan Port; • Kuantan Industrial Training Institute, Gebeng; • Kerteh Port Phase 2; • Kerteh Warehouse.
2000 – 2005	1. Expansion of crude gas production with commencement of the Petronas-ExxonMobil Angsi Field 2. Expansion of other dedicated and generic infrastructure and supporting services: <ul style="list-style-type: none"> • Upgrading of liquid chemical berth, Kuantan Port; • Launching of Gebeng Township; • Dedicated Water Supply System; • Completion of Kerteh-Kuantan Railway; • Completion of the national gas networking system (PGU); • Completion of 1st Phase of new East Coast Highway (Kuala Lumpur – Kuantan).

Source: Own analysis

¹²⁶ The list is in section F of Appendix I.

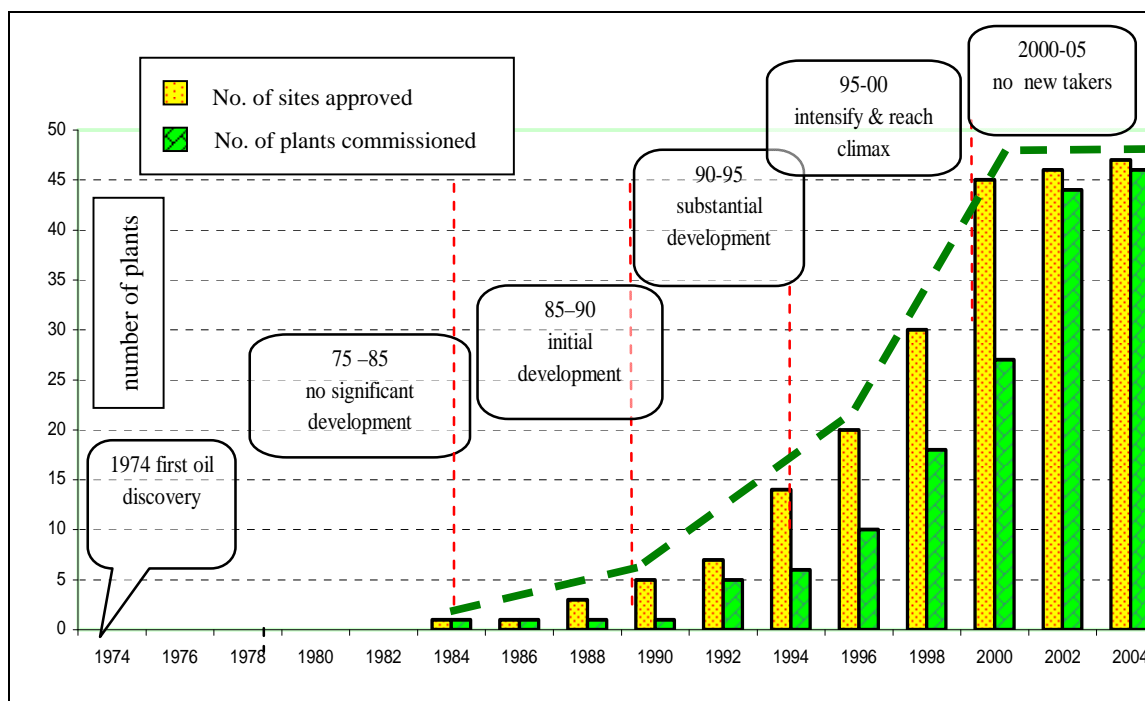


Figure 57 : Malaysia – Relationship between Petrochemical Industrial Infrastructure Development, Production of the Natural Gas and Supply of Petrochemical Industrial Land 1975-2005

Source: Own analysis (from data in Appendix I)

Figure 57 implies that in 1980 – 1985, the petrochemical industry was not initiated until ten years after the first natural gas landed in Terengganu. In 1985 – 1990, the initial stage of the development of petrochemical industrial sites is seen following the completion of the first three GPPs, Kerteh Airport and the PGU Phase 1. In 1990 – 1995, development was intensified after 1994, particularly after the completion of an extension to Kerteh port, the CUF and CTF in both GIPC and KIPC and water supply system. Post 2000 there has been no significant progress in the registration of new land ownership for petrochemical firms despite the fact that the supply of natural gas keeps on growing, particularly after the commissioning of the new gas fields, Petronas Resak and Petronas-ExxonMobil Angsi and the completion of supporting infrastructure facilities.

In summary, an improvement in the supporting infrastructure and facilities obviously boosted the demand for sites for petrochemical firms. However, there is no

strong evidence to suggest that continuous progress in the infrastructure and facilities will guarantee continuity of demand for new government-released land within the industry.

9.2.4 Summary

Sub-section 9.2.1 lists factors that may attract investment in KIPC and GIPC. This chapter has analysed those factors from perspective of investors. A summary of the analysis is in Table 73 which arranges the factors according to the degree of importance placed on them by the interviewed investors.

Table 73 : Malaysia – Factors Attracting Investment in KIPC and GIPC

Factors	Degree of Importance	Demand or Supply Side?
Volume of indigenous natural gas	Regarded as ‘non-negotiable factor’ but weak when production passes certain point	S
Global demand for natural gas for consumption in chemical industry	Highly important and very crucial	D
Nature of industrial complex where sources of feedstock, petrochemical plants and supporting facilities are integrated	Highly important	S
Size of land	Highly important	S
Roles played by MIDA and state government	Important but depend on above factors	S
Dedicated infrastructure (e.g. GPP, CCF, dedicated port and airport)	Highly important at a certain level but weak when the progress passes certain point	S
Global scenario in supply and demand of natural gas	Has strong connection but overshadowed by factor of demand for natural gas for consumption in chemical industry	D
Global price of natural gas	No clear connection	D
Price of land	No direct connection but may have some connection with factor of land size	S
Housing and shopping facilities	Weak connection	S
Supply of semi-skilled labour	No data but has some indication	S
Performance of supporting operators	No data	S

Source: Own analysis (see details in Tables A and B of Appendix P)

9.3 PETROCHEMICAL FIRMS' ACTIONS AND STRATEGIES IN LAND ACQUISITION AND DEVELOPMENT

9.3.1 Actions and Strategies

Adams (2004) argues that the influence of the institutional environment and formal institutions is embedded within the strategies, interests, and actions of key agents. Results of the empirical study, as set out in Chapter Eight, suggest that problems in the supply of industrial sites are attributable to Land Office practices that have direct connection with the institutional environment, formal institutions and governance system underpinning land administration. Therefore, the following section will examine the strategies adopted by the demand side in land acquisition and development. The objective is to explain theoretically the actions and strategies adopted, especially in reaction to institutional problems that were discussed in the preceding chapter.

9.3.2 Strategies in Land Acquisition

The quotations below are from interviews where the respondents indicate that the only reason firms form a joint-venture company with Petronas is to secure feedstock.

“The price of Malaysian feedstock which is 3 or 5 times cheaper than the American, is negotiable and not subject to global gas price. It is negotiated from time to time and not subjected to long-term contract. During a JV negotiation with Petronas, the feedstock pricing is discussed altogether. So, as long as natural gas price in the US is high, and as long as Malaysian feedstock is cheaper, there is no reason for companies operating in Malaysia to return to their home countries” (MPEA).

“The most important reason why we decided to JV with Petronas was not land, but feedstock. We need a guaranteed long-term supply” (US Company).

“We acquire our site in Kerteh through Petronas. Petronas has set Kerteh as an integrated petrochemical complex. Petronas is also the feedstock supplier. We set up our plant in Kerteh mainly because of feedstock. Feedstock is a non-negotiable item. I think Kerteh feedstock could last for 15 years. Since Malaysia has discovered new rigs, we believe the supply would be longer” (A European Company).

“... supply of feedstock is crucial. For current need, Malaysian raw material is feasible. Current supply is fine” (A European Company).

“When investors are deciding to move to any country, they must ensure that there is no question at all of uncertainty in the supply of feedstock. In Malaysia, gas can be found in abundance and the price is cheap. In the Middle East region the supply, even though cheap, the countries are unstable...” (A Petronas JV Company).

The above statements suggest the main investment attraction in the studied areas is certainty in the supply of feedstock. Therefore, the following discussion, based on the findings in Table 74, will examine the importance of feedstock in the case study.

Table 74 shows the relationship between the type of feedstock required and the form a company takes as well as its choice of industrial site. Therefore, Tables 66 and 74 suggest that there is no strong evidence to reject the above interviewees' statements. The findings also suggest that Kerteh is only populated with those in need of primary feedstock. In contrast, the majority of investors in Gebeng are not dependent on a primary or secondary feedstock supply. Therefore, all firms in Kerteh, including those in need of primary or secondary feedstock, have a direct relationship with Petronas. In contrast, most of the companies in Gebeng, who only need secondary or tertiary feedstock, get a supply from Petronas-related companies.

Table 74 : Malaysia – Plants in KIPC and GIPC, Ownership and Type of Feedstock

Company	Corporate Shareholders (country of origin)	JV with Petronas	Complex of choice	Requires either primary or secondary feedstock
Petronas Gas	Petronas (Malaysia)	Petronas owned	Kerteh	Produces primary feedstock
Petronas Ammonia	Petronas (Malaysia)	Petronas owned	Kerteh	Yes
MTBE-Polypropylene	Petronas (Malaysia), originally JV with Idemitsu (Japan)	Petronas owned	Gebeng	Yes
Petronas-BP Acetyl	BP-Amoco [originally BP (UK)] Petronas (Malaysia)	Yes	Kerteh	Yes
Optimal Chemicals Malaysia Sdn Bhd	Dow Chemicals (US) Petronas (Malaysia)	Yes	Kerteh	Yes
Optimal Olefins Malaysia	Dow Chemicals (US) Petronas (Malaysia) Sasol Polymers (South Africa)	Yes	Kerteh	Yes
Vinyl Chloride Malaysia	Petronas (Malaysia) Mitsui (Japan)	Yes	Kerteh	Yes
Aromatics Malaysia	Petronas (Malaysia) MJPX (Japan)	Yes	Kerteh	Yes
Petlin	Petronas (Malaysia) Sabic Europe (Saudi Arabia) Sasol Polymers (South Africa)	Yes	Kerteh	Yes
Polyethylene	BP-Amoco [originally BP (UK)] Petronas (Malaysia)	Yes	Kerteh	Yes
Ethylene	Petronas (Malaysia) Idemitsu Petrochemicals (Japan)	Yes	Kerteh	Yes
BASF-Petronas Chemicals	BASF (Germany) Petronas (Malaysia)	Yes	Gebeng	Yes
BP-Amoco	BP-Amoco(originally Amoco, Canada)	No	Gebeng	No
BASF-Toray	BASF (Germany) Toray Plastics (Japan)	No	Gebeng	No
Eastman	Eastman (US)	No	Gebeng	No
Cryovac	Cryovac (US)	No	Gebeng	No
WR Grace	WR Grace (US)	No	Gebeng	No
Sealed Air	Sealed Air (US)	No	Gebeng	No
Flexyss	Akzo Nobel NV (Netherlands) Solutia Inc (US)	No	Gebeng	No
Polyplastics	Celanese Corp (US) Daicel Chemical Industries (Japan)	No	Gebeng	No
Kaneka	Kaneka (Japan)	No	Gebeng	No

Source: Own analysis¹²⁷

¹²⁷ A classification of primary, secondary and tertiary feedstock is in Table 66.

The findings suggest that companies that need to secure feedstock were best advised to enter into a joint-venture with Petronas, acquiring land not directly from the government but through Petronas in Kerteh. This strategy is likely institutionally related to the Petroleum Act (1974), as Petronas is the sole proprietor of all Malaysian oil and gas. Petronas is designated as the sole authorised body for exploration, and for upstream and downstream production. With this monopoly power Petronas is in a position to control the bargaining with the state and local government, define land use at the local level, and decide the most appropriate joint-venture partners and eventual co-owners of land.

9.3.3 Strategy in Site Acquisition

Table 50 (Page 223) which shows the length of time required to attain government approval for petrochemical sites also indicates that there is a wide gap between the dates on which land titles are registered and the date when a plant comes on-stream. Table 75 which is an extract of Table 50 shows that the length of time a site was unproductive after it was handed over to the applicant was longer than the delays at the Land Office (compare the figures in cells E1 and F1).

Table 75 : Terengganu – Time Required to Complete Application Process for Government Land for the Petrochemical Industry

	Stages of Process	Cell			
		1	2	3	4
		Time Required for Completion (Months)			
		Mean	Minimum	Maximum	Std. Deviation
E	From ownership registration to plant on-streaming	27.86	5	92	34.237
F	Total duration at the Land Office	18.71	12	34	8.420

Source: Own analysis (based on data in Appendix I)

The time required is partially explained by files in the Land Office¹²⁸. These government records show that long development periods are mainly attributable to two

¹²⁸ Appendix I (file numbers 2, 3, 4 and 7 in section B)

factors. Firstly, lengthy bargaining between factory owners and regulatory bodies on the terms and conditions of land development. Secondly, appeals by landowners to reduce land prices. Records at the Land Office indicate that where development took less than two years, there was consent from the authorities for landowners to commence projects in advance of formal government approval.

9.3.4 Summary of Firms' Actions and Strategies

To conclude, the preceding analysis suggests that petrochemical firms typically adopt two strategies in their participation in the land development process. Firstly, they negotiate industrial sites with project initiators according to the type of feedstock they need and locating themselves according to their chemical functions. Secondly, they bank their secured site and start their operations at some date in the future.

9.4 AN INSIGHT FROM THE PETROCHEMICAL DEVELOPMENT PROCESS

Sub-section 5.4.2.5 suggests that qualitative research is interpretive research where findings are interpreted as a reflection of a larger conclusion about the studied phenomenon. The section also suggests that firms' decisions, including business strategies and changes in governance structure are reactions to transaction costs. The discussion recommends applying Artz and Brush's (1999) model to explain petrochemical firms' strategies in the case study. The present sub-section will discuss the findings that result by applying Williamson's (1988) recommendation and Artz and Brush's (1999) model. We will begin with an illustration in Figure 58, below:

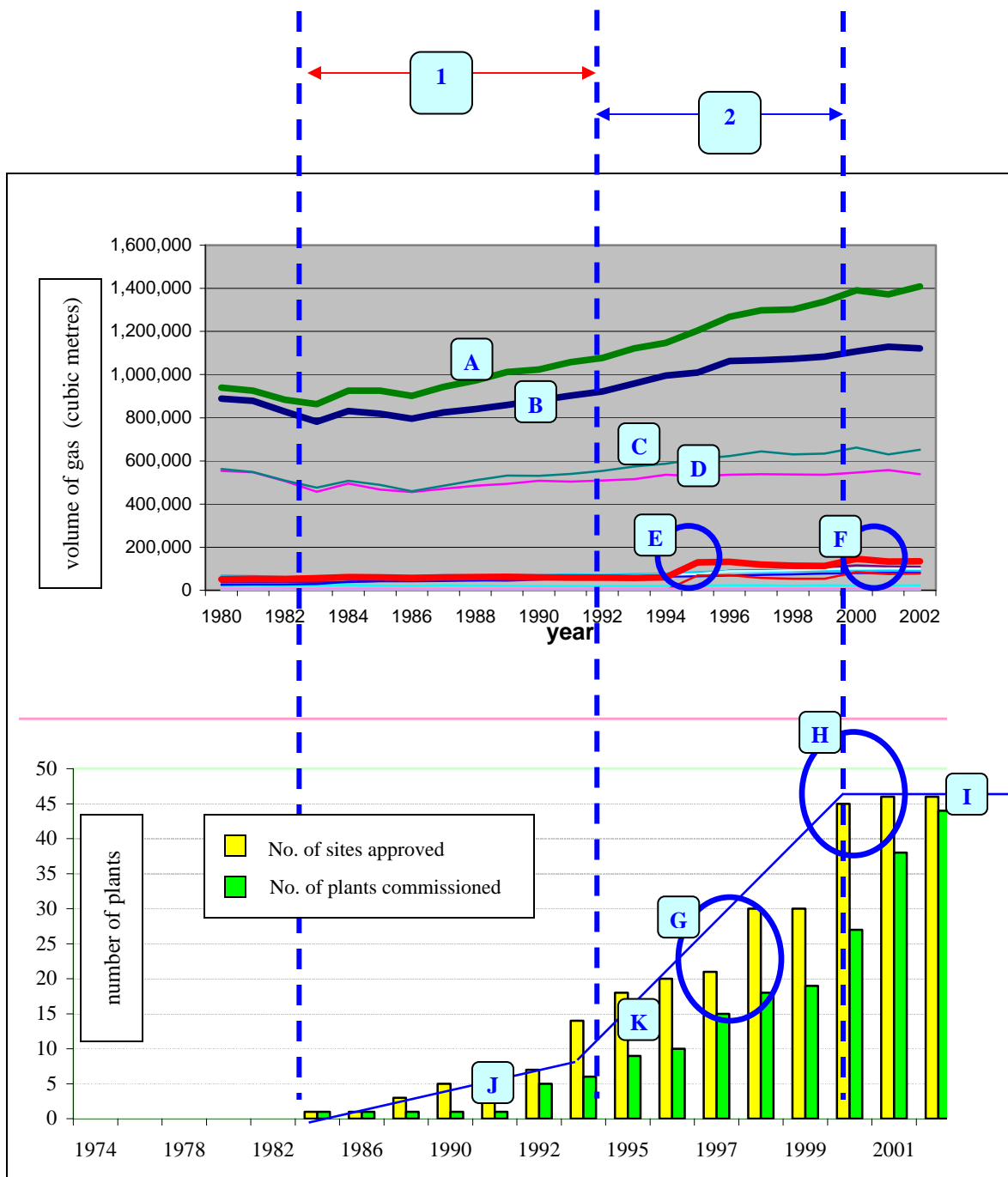


Figure 58 : Malaysia – Relationship Between Supply of Natural Gas and Supply and Demand for Petrochemical Industrial Sites 1974 – 2004

Source : Own Analysis

In Figure 58:

- (a) It can be seen that development in KIPC and GIPC went through two distinct phases, denoted by number '1' and '2';
 - (b) Period '1' is between the mid-1980s and mid-1990s. The events within period 1 were:
 - (i) The gap in the world supply and demand of natural gas started widening (see line 'A' and 'B');
 - (ii) As indicated in Appendix I, relatively few applications for land in Kerteh were filed at the Land Office during this period. Although there is evidence in the official records that applicants were allowed to initiate land development before land ownership was registered, line 'J' in the graph denotes that only a very small number of plants were on-stream during this period.
- The graphs suggest that the process of site acquisition in the studied areas intensified after the OECD countries failed to close the gap between the supply and demand of natural gas. In the same period, some petrochemical plants in the KIPC and GIPC started operating. The proposition in paragraph b(ii) above, together with the findings of Table 75, suggest that at this period (period 1) investors were securing and stocking up land, analysing the market scenario and preparing to move from their countries of origin should the global shortage worsen;
- (c) Period '2' (denoted by line '2') is between the mid-1990s and early 2000s. This period started with a surge in global demand for natural gas in the petrochemical industry (see circle 'E') and ended with another surge between 2000 and 2001 (circle 'F'). Between these dates, most plants in Kerteh and Gebeng were in operation (line 'K');
 - (d) Since the era marked by turbulence (periods 1 and 2) was over, there has been no significant increase in demand for industrial land in the region (line 'I').

Findings from Figure 58 suggest that a change in world demand for petrochemical products began in the 1970s. At the same time, new producing nations, including Malaysia were emerging. Investors from multi-national corporations (MNC) were aware of the global change. Accordingly, their production lines in the West moved slowly to other parts of the world.

What do the above findings tell us? Fan (2000), in his study in the US found that an interrupted feedstock supply which resulted in a plant shutdown may cost the manufacturers up to one million US Dollars each day. The President of the Malaysian Petrochemical Association agrees with this calculation¹²⁹. Company CEOs and other senior officials even though they used different terminology, also expressed similar views¹³⁰. There are indications that risk avoidance has been the firms' strategy at their every move before and during their participation in the land development process. Fan's (2000) thesis is supported by empirical evidence in this study which strongly suggests that:

- (a) the decision of a petrochemical firm to move to Malaysia related to the uncertainty in the global supply of natural gas;
- (b) company ownership in Kerteh and Gebeng is linked to the type of feedstock they require. See the following tabulation (Table 76):

Table 76 : Malaysia – Typology of Investors in Kerteh and Gebeng

Type of Company Ownership	Class of Feedstock Needed	Complex of Choice
Petronas owned	Primary feedstock producer (needs only oil and gas)	Kerteh only
JV with Petronas	Primary and secondary	Majority in Kerteh
Without JV with Petronas	Tertiary	All in Gebeng

Source: Own analysis (based on Table 74)

¹²⁹ Appendix K (Interview B1, paragraph 19.12).

¹³⁰ Appendix K (Interviews B9, theme (b)(ii); B14, paragraph 30.8).

Information from interviews and investigated documents suggests the above arrangement is not simply typological distinguishing the nature of plants in Kerteh and Gebeng. As in Adams (2004), land development agents' strategies reflect the institutional arrangement. Thus, the following description interprets Table 76 as part of the strategy adopted by investors to react to institutional constraints:

- (i) Healey and Barrett (1990), Healey (1991;1992b), Evans (1995), van der Krabben (1995), Keogh and D'Arcy (1999), Nanthakumaran *et al.*(2000) and Adams *et al.* (2003) all suggest that in land development, particular attention should be paid to problems at the supply side. Among the key research findings is uncertainty in the timing of land supplied by the government. The findings therefore suggest that the 'red-tape' phenomenon at the Land Office is institutionally derived.
- (ii) The findings suggest that in facing constraints in land development, key actors strategise by forming alliances, exercising power, negotiating or cooperating (see Table 77). The tabulation suggests that the studied case supports conclusions of Healey (1992b), Keogh and D'Arcy (1999) and (Adams *et al.*, 2003) that partnership in land development is actually a process of matching key investors' strengths. The tabulation suggests that Petronas' strengths and advantages are institutionally derived;

Table 77 : Malaysia – Roles Played in Partnership in the Petrochemical Industry

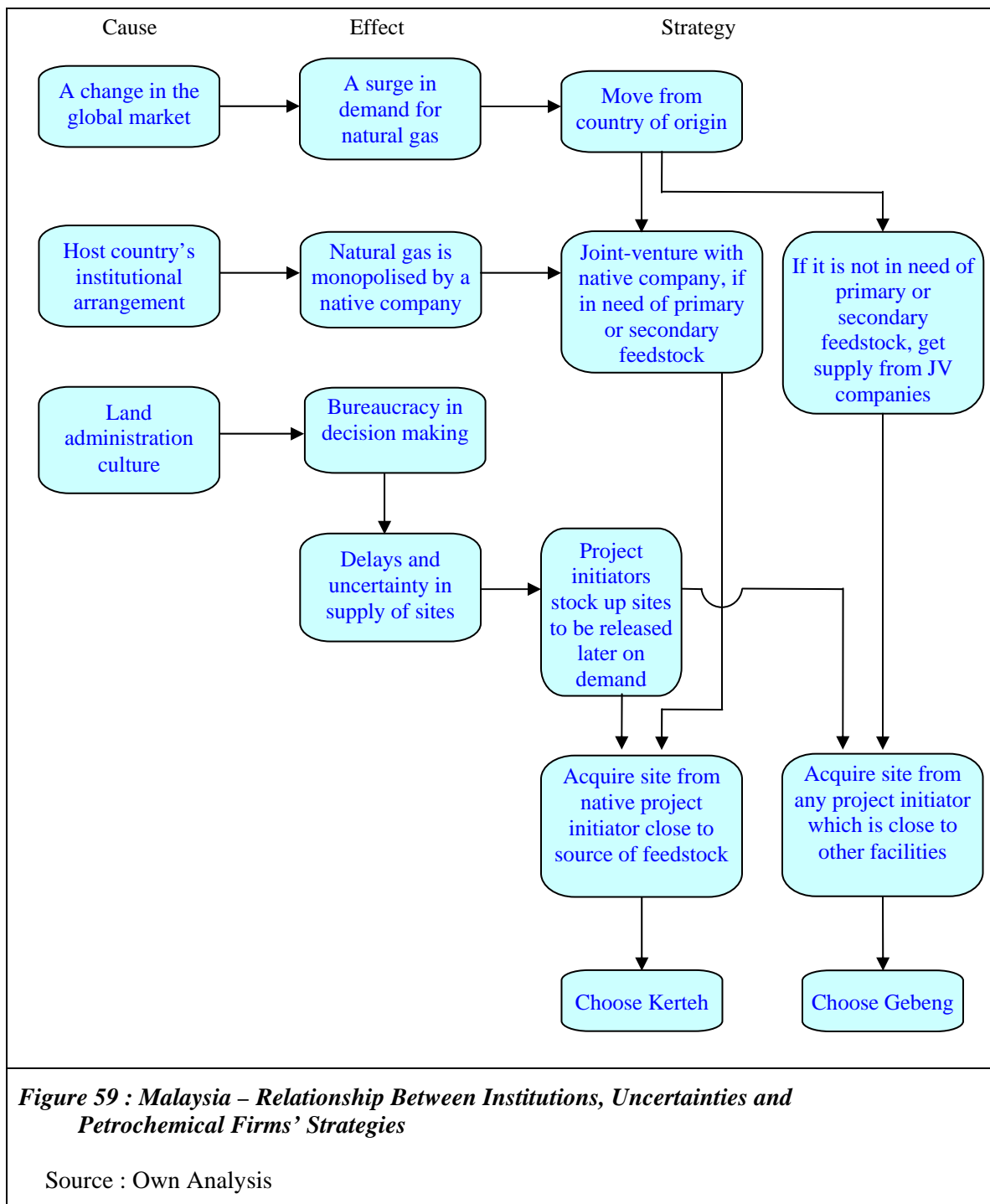
Firms	Main Tasks	Detailed Tasks	Strengths	Weaknesses
Petronas	To supply primary feedstock	<ul style="list-style-type: none"> • To construct and run GPP. • To guarantee supply of ethane, butane and propane at a negotiated price. 	Law makes Petronas sole owner of Malaysian oil and gas	Very young (less than 30 years old), weak in global market networking and inferior in expertise and advanced technology
	To supply land	<ul style="list-style-type: none"> • To deal with the Land Office, MIDA, SEPU, Local Authorities etc. • To create subsidiary entities and transfer shares to the new entities. • To deal with regulatory bodies. 	As a local company and native to Malaysia, Petronas knows how deal with the authorities	
	To act as property manager	<ul style="list-style-type: none"> • To provide supporting facilities (e.g. CUF, CTF, airport, port etc.). • To undertake site maintenance tasks. • To deal with the authorities. 	As project initiator and land developer, Petronas has the best knowledge in co-ordinating the activities within the complex	
BASF BP-Amoco Dow Exxon-Mobil Idemitsu Mitsui MJPX Mitsubishi Sabic Sasol	Bring in technology and expertise		Most JV companies are more than 50 years old, some, e.g. BP is already around 100 years old. They are well known for their superiority in technology.	<ul style="list-style-type: none"> • Too dependent on primary feedstock. Thus, very sensitive to change in global price and supply of natural gas. • Global market change is very fast. • At the mercy of delays by government bureaucracy, especially when needing to build new plants. • Insufficient knowledge of host country government bureaucracy
	Product Marketing		JV companies have strong global market networks, ready buyers and are superior in brand name.	

Source: Own analysis

Note : Exxon-Mobil is an operator in extracting crude oil and gas. BP-Amoco was originally two entities, BP plc (UK) and Amoco Ltd. (Canada).

- (c) Williamson (1988; 2000) contends that changes in firms' governance structure are a response to transaction costs. Transaction costs in turn, arise because of uncertainty. As discussed on Page 302, an insecure supply of feedstock is a deadly threat and as indicated in Table 61, a guaranteed supply of feedstock is non-negotiable. Artz and Brush (1999) suggest that firms' strategies, including change in the governance structure, are attributable to environmental and behavioural uncertainty.

Figure 59 illustrates the relationship between institutions, uncertainties and petrochemical firms' strategies.



Based on the illustration in Figure 59, Tables 74 and 77 suggest that:

- (a) For foreign investors, the advantage of partnership with Petronas is to avoid two risks: (1) the risks of uncertainty in finding a stable supply of feedstock and (2) the risk of delays in getting land and development approvals from state authorities in the event of an immediate need to construct new plants when the global chemical market changes dramatically. Risk no. 1 may refer to environmental uncertainty and risk no. 2 may refer to behavioural uncertainty as defined by Williamson (1988; 2000).
- (b) For Petronas, partnership with foreign investors is a short cut to access the global market as well as to access the latest technology and expertise.
- (c) Since they are not dependent on primary and secondary feedstock, investors in Gebeng are not directly impacted by problems in the global natural gas market. Therefore there is no need to partner with Petronas. Since the feedstock is classified as tertiary and poses lesser risk of combustibility, there is no need to set up a plant in Kerteh.

The discussion on Page 267 suggests that by being close to each other, or by agglomerating, petrochemical companies save on operation costs. However, the findings in this section suggest that clustering is an outcome of efforts to avoid environmental and behavioural uncertainty. Thus, clustering is a result of vertical integration among petrochemical firms. Therefore this study suggests that the main impetus behind vertical integration was to avoid uncertainty. By being vertically integrated, the plants are physically clustered or agglomerated. Because of this, both operation costs and the risk of uncertainty are reduced. A summary of key research findings are presented using Artz and Brush's (1999) model in Figure 60:

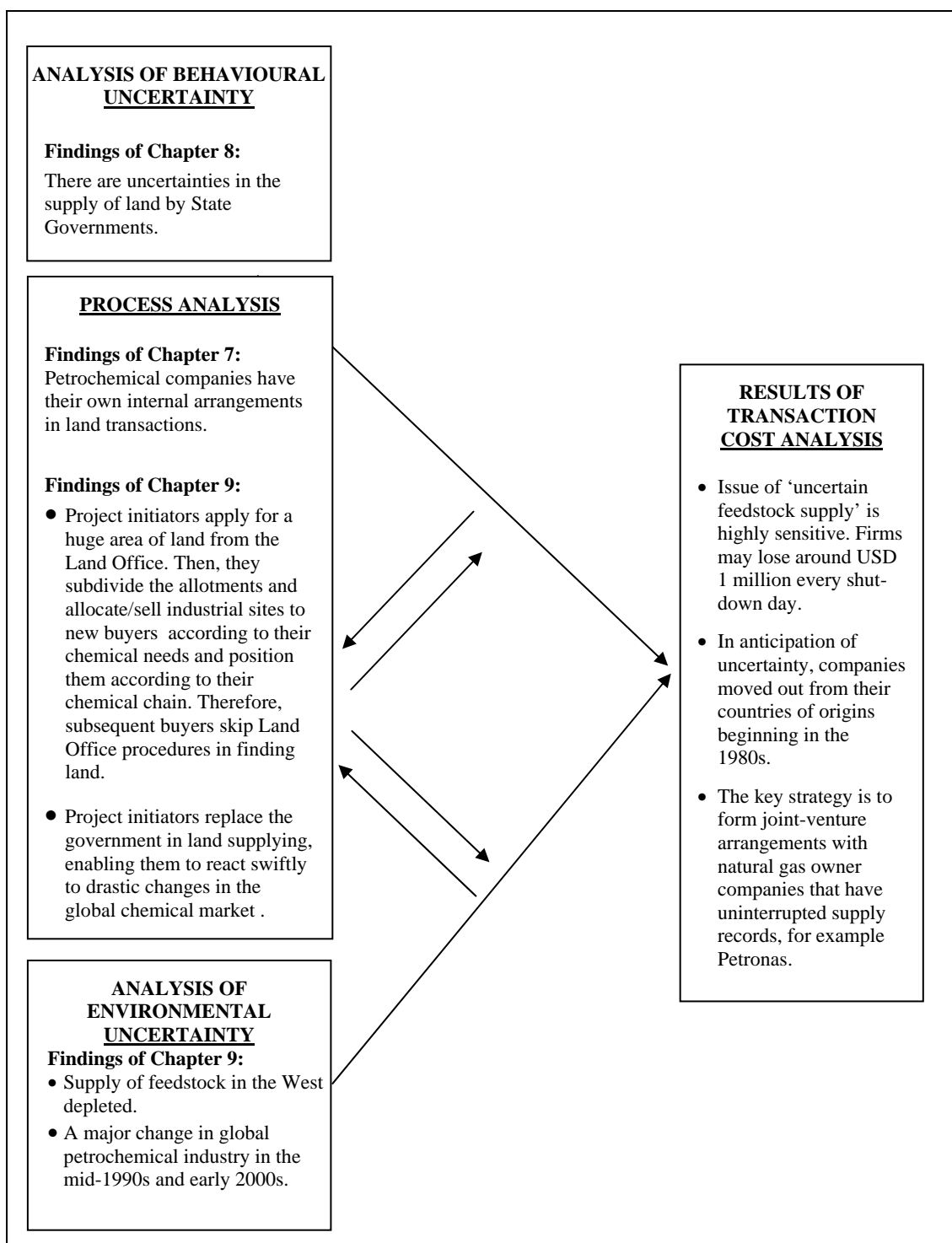


Figure 60 : Transaction Costs in Investment for Petrochemical Industries

Source : Own Analysis

9.5 CONCLUSION

Keogh and D'Arcy (1999), Nanthakumaran *et al.* (2000), van der Krabben (1995) and Healey (1992a) indicate that the land development process is a result of bargaining between development agents. The findings of this study suggest that the decision whether to locate a plant at the KIPC or GIPC depends on which strategy most avoids uncertainty. Superficially, the findings suggest that those companies that need to acquire raw natural gas products such as ethane, butane and propane may have to operate in KIPC. As a result, they are required to become Petronas partners and cluster around Petronas installations. On the other hand, those in need of tertiary feedstock (e.g. propylene, polyethylene and polypropylene), do not need to have direct contact with Petronas. Their plants can therefore be distant from the natural gas source. This group may settle in GIPC.

The Kerteh and Gebeng cases therefore suggest that in the petroleum and gas industries relationships between land buyers and sellers are of a long-term nature. Interviews with companies strongly suggest that although competition is stiff, especially in the retail sector, 'market wars' are not really a practice among oil companies. Thus, firms, especially those upstream, cannot afford to fall out with each other. To support this proposition, one interviewee reported that, *'if we look at the nature of the petroleum business, we can find that in one country we are competing with each other but in different places we are partners'* (Petronas).

Previous research has discussed the nature of the interaction among key market players [for example, Fan (2000), Wang and Yeung (2000) and Cumbers (2000)]. The key market players in this lucrative business sector in Malaysia would appear to be the MNCs. It is noted that every player is specialised in its field or 'chemical function'. They do not acquire land just for its own sake but to position themselves appropriately according to their business activities and chemical interest. The arrangement of each plant according to its 'chemical role' is reflected in the landscape of a petrochemical

complex. As a result, both KIPC and GIPC, which are populated by dozens of companies from various nations, actually function like an integrated production unit in a factory.

The findings also suggest that other parties have advantages which Petronas does not have. For example, most of Petronas' co-landowners are those with superior brand names (e.g. BP-Amoco, Dow, BASF, Mitsui and Mitsubishi) and with immediate access to the global market. There are a number of companies in the GIPC which could survive without a J-V with Petronas (e.g. W.R. Grace, Eastman, Flexys and Kaneka). Records of appeals from Petronas to Kemaman Land Office with regard to certain matters show that Petronas also has to follow rules and regulations and has only limited access to government decision-making. Therefore, every player is in possession of certain advantages which are not necessarily redeployable. Any advantage is capitalised in the bargaining process to control resources, namely, space and raw material.

The above highlights the importance of information in the land development process as emphasised by Wyatt (1995), Evans (1995b), Adair *et al.* (1998), Keogh and D'Arcy (1999) and Adams *et al.* (2003). In the case studied, it is evident that different players are in possession of different types of information and have different roles in the land development process. Access to different types of information, such as global market and government bureaucracy is an asset in bargaining. By having information on the global natural gas market as well as access to government decision making, project initiators adopt strategies to protect themselves from anticipated government failure. They do this by stocking up land, increasing the intensity of land use and releasing sites according to demand. This is supported by statistics which show that all plants in Malaysia were on-stream between 2000-2003 during a drastic jump in the demand for gas as well as a gradual drop in the number of workers in the chemical and petrochemical sector in the US and the UK. This indicates that project initiators were well-informed on what was happening outside of Malaysia.

The findings suggest that the project initiators, the larger firms, adopted the strategy of stocking up land and becoming suppliers of industrial land in each cluster, especially to smaller firms. Therefore the project initiators since the 1980s have slowly

replaced the role of the government in supplying new sites for petrochemical industries. The strategy of replacing the government's role in supplying land indicates that the government and investors use different sets of information when interpreting market signals. A sudden halt in government land takers in the midst of a continued rise in oil and gas production in the early 2000s is evidence that the States of Terengganu and Pahang, by banking only on a forecast of oil and gas production have over-estimated the demand for land for petroleum and gas industries.

Above all, the case study suggests that the salient factor in the success of demand-supply interaction in the KIPC and GIPC is that the supply side has managed to release land on time when it has been needed. This is attributable the fact that there has been 'a change of guard' of land administration, from public office to business entity. Without this, evidence suggests that the timing would not have been suitable for industrial development. As has been emphasised, there is very strong evidence that in the midst of the energy crisis in the OECD, particularly in the US, industrial sites were already in the hands of project initiators (larger firms) who later became land suppliers especially to smaller companies¹³¹. These were not only successful in replacing the government in supplying land efficiently but also accurately understood the needs of new land buyers. This phenomenon is possibly best explained by what is termed by Williamson in his various writings as 'change in governance structure'.

In conclusion, by exploiting their differing strengths, petrochemical industrial land development players bargain within a modified institutional arrangement. Once again, applying a model of Creswell (2005), Figure 61 illustrates the key findings of this study. The findings suggest that strategies are formulated to avoid uncertainty.

¹³¹ See discussion on Page 188.

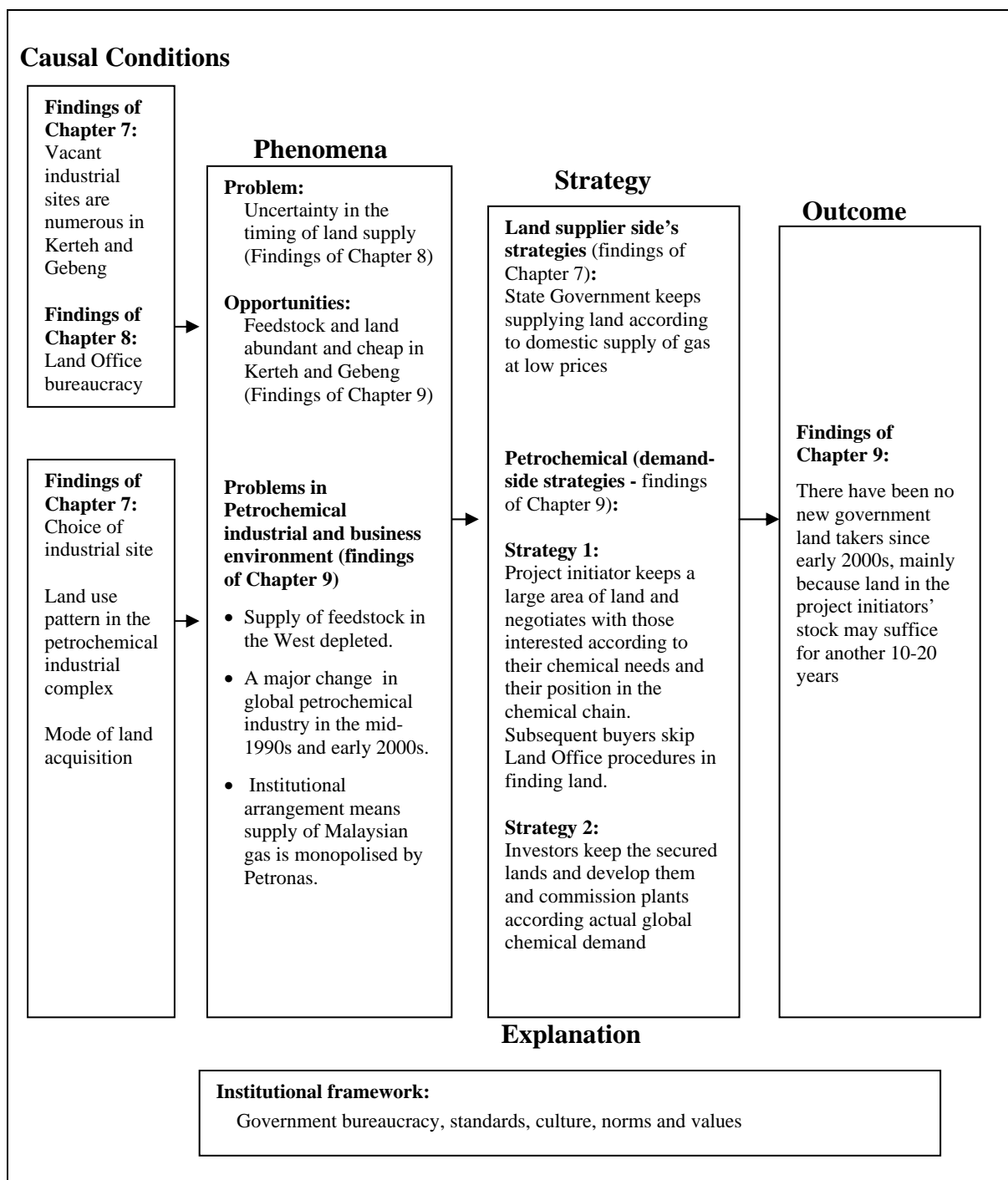


Figure 61 : Uncertainty and Transaction Costs of Investment in Petrochemical Industries

Source : Own analysis

CHAPTER TEN – CONCLUSIONS AND RECOMMENDATIONS

10.1 INTRODUCTION

The present study has presented on government projections for the demand for petrochemical industrial land. After the collected data were analysed, the results show that until recently¹³² the supply of land exceeded demand. The study has been based on an NIE approach, which strongly contends that information problems are the main barrier in the land market, resulting in inefficiency. Market signals are either misinterpreted, delayed or ignored by the market players. The following discussion will interpret the research findings and assess whether there is a match between the findings and theories discussed in earlier chapters. Discussion in this chapter will be divided into three sections. They are:

- (a) Review of key findings in Section 10.2. This section will highlight the process of land development, emphasising the roles of the land development agents and institutions in the process.
- (b) Review of the research aims in Section 10.3. The research findings will be assessed under this section to see whether they have met the research objectives.
- (c) Concluding remarks in Section 10.4. Recommendations for policy implications and future research will be put forward in this final part.

10.2 REVIEW OF KEY FINDINGS

This section will revisit key research findings and follow up on the results discussed in previous chapters in further depth. Emphasis will be on a critique of land development

¹³² December 2006.

theories which were discussed previously, especially in Chapter Three. Discussion will focus on two main issues. These are:

- (a) the process of land development; and
- (b) the institutions and organisations involved in the land development process.

10.2.1 Land Development Process

10.2.1.1 Process

To begin with, generally, the findings reinforce three main NIE assertions. First, development of petrochemical industrial sites resembles other generic land development processes that a change in landownership is a prerequisite to development. Second, like other land development processes, it involves many people from various parties. Therefore, the process of bargaining about changes in landownership and government approvals is not straightforward. Third, decisions in the land development process directly involve organisations as well as a variety of institutions and institutional factors.

The findings are also consistent with the proposition in Healey (1992a), Evans (1995), Nanthakumaran *et al.* (2000) and Keogh and D'Arcy (1999) that market players do not react to market signals spontaneously but rather over many years. The research showed that the first petrochemical installation only began operating in the study area ten years after the finding of natural gas in Terengganu. The potential land was fully transferred to the present operator only in 2000, almost 20 years after the first gas discovery.

This study, which was based on interviews and statistics on the global supply and consumption of natural gas, throws more light on 'lagged' market interactions. One of the explanations this study offers is that manufacturers need a certain amount of time to move from one premises to another. Figures show that, despite the fact that firms in the industry were aware that the supply of petrochemical feedstock in the West has been shrinking over several decades, the migration of chemical industries from the US and the

UK to South-East Asia has taken a considerably long period, with business factors as the main reasons.

10.2.1.2 Market Players

In the studied cases, it emerged that the main players in supply and demand of petrochemical industrial land are not individual persons or individual firms. Play involves negotiation between groups of chemical companies on the demand side and a group of government departments at the other end.

On the supply side are authorities from various spectrums. The Malaysian Constitution vests land and planning matters in the State and Local Governments. However, from government records, it appears that there is direct participation by Central Government agencies especially MIDA, MITI and FIC in industrial land development. This indicates that the process of acquisition of industrial sites in Malaysia is beyond the realm of State Government alone. Although a formal application is filed at the lowest level of public administration, the Land Office, an approval process involves sending the application through the most senior officials of the State Administration. In addition, the requirement of securing consent from the FIC means that the actual process of acquisition involves even the highest level of office, the Prime Minister's Department. Thus, the land acquisition process involves all three levels of the public administrative system: Central, State and Local Governments.

On the demand-side, companies operating at the ECIC match the characteristics listed in Cumbers (2000 [a study undertaken in Scotland and Norway]), Wang and Yeung (2003 [a Singapore case study]) and Fan (2002 [US]). Briefly, they are multinational, with multi-billion US dollar capital and specialise in certain products. At the ECIC, plants are built in clusters and clusters are side-by-side. Therefore, the production of each plant is linked to the production of the surrounding plants. At the global market level, the production of each plant is connected to other similar or related plants, especially in the US, Europe, Japan and China.

10.2.1.3 Demand-Side Actors' Behaviour

Even though the petrochemical giants are superior in brand name with immediate access to the global market, they are vulnerable to even a slight change in either the price or quantity of feedstock supply. All companies interviewed agree that feedstock is a non-negotiable factor. Before even considering a move elsewhere, there must be an assurance that feedstock will be guaranteed to be available and uninterrupted for a long period of time.

The findings also show that project initiators function as 'the first movers' into each cluster and adopt a strategy of acquiring a vast area of land, which is saved and then released bit by bit to newcomers. One example at GIPC is that of a US company which acquired about 80 acres of land but occupies only a quarter of it. A European company also operates in KIPC but holds a huge area of vacant land at GIPC. Since the price of land and the holding cost of each site are relatively cheap, the companies are not bothered by paying extra to maintain vacant land. The trend shows that plant commissioning has influenced drastic changes in the supply and demand of natural gas in industrialised countries. If what is theorised in Coase (1937; 1960) is applied in the present study, it means that the strategy of stocking up on land is merely to avoid the risk of 'uncertainty in finding a piece of land when there is a sudden demand for it'.

The preceding discussion implies that low-priced land attracts petrochemical investors. With low-priced land which is affordable for all rich firms, a strategy of stockpiling enough land for 15 – 20 expansions is possible. Nevertheless, land price does not constitute a major attraction for petrochemical companies. This study contends that if price were the main attraction, then the KIPC would be fully occupied before any company opted to buy a piece of land at the GIPC. However, there are some 800 acres of land at the KIPC still unsold. On the other hand, the occupation rate at the GIPC is quite high, though the land price is relatively more expensive.

For petrochemical companies, the choice of location is a matter of positioning themselves within the wider scope of chemical relationships between plants (see Figure 54). It can be deduced that land price is useful for attracting petrochemical land buyers

because they need a huge area for long term expansion. However, uncertainty and risk are major considerations. Certainty refers to assurance of an uninterrupted supply of chemical feedstock as well as availability of sites if there is a sudden demand. Risk, in turn, refers to the capability on site to safely handle combustible and flammable products. The costs associated with the creation and maintenance of adequate 'low risk' facilities are high.

10.2.1.4 Supply-Side Actors' Behaviour

The studied case provides firm ground to support the proposition that in land development whether it is for the generic market (Adams *et al.*, 2003) or for the industrial sub-market (Adams *et al.*, 1993), supply is problematic. Evidence demonstrates that the initial land supplier, which is the government, has two main problems. First, it takes too long to release land. Secondly, when there is a great demand for certain a use, it miscalculates market indications.

As suggested in McHugh (1997) and Claver *et al.* (1999), public administration is, by nature, segregated and unavoidably divided into various departments. This gives rise to problems. Cheshire and Gordon (1998), van der Krabben and Lambooy (1993) and van der Krabben (1995) relate these problems to 'territorial competition' between local or regional authorities. Vigar and Healey (1999) and Cheshire and Gordon (1998) see it as conflict between policy and implementation. If we look closely, there are hundreds of powers vested in the government as listed in the Federal Constitution. These powers are exercised by various departments and agencies. The Constitution also recognises that some parties are superior to others. For example, *de jure*, at the State level, no other department is superior to the EXCO and *de facto* there is no other department above the Prime Minister's Department.

Another problem is the concentration of power in few individuals. This is partially related to the above issue. Cheung (1975) highlighted this phenomenon and suggested that delays in government decisions are sometimes attributable to problems with certain individuals. In addressing similar problem in different contexts, Adams *et al.*

(2003), Adair *et al.* (1998) and Eggertsson (1997) suggest that some parties in the development process are in control of vital and tradable information. From the empirical investigation, it has been found that in most cases, important decisions or critical advice cannot be made except by authorised key personnel. In some cases, this is mandated by law, in others it is simply departmental practice. For example, EXCO papers can be signed only by authorised senior officials. In addition, departmental assessments, comments and counter-proposals regarding certain types of industrial applications cannot be released without support from certain Director Generals.

Other than problems in decision making, government departments use a different set of information in interpreting market signals. The discussion on Page 171 suggests that government projections for future demand for lands were based on simple calculations. Both the State and Central Governments perceived that the growth in demand for petrochemical industrial sites would correspond with the growth in natural gas production.

Findings of this study reveal that significant indicators are missing in the government industrial plan, especially in predicting the demand for chemical industrial sites. These include:

- (a) the maximum amount of natural gas that can be utilised for non-energy use;
- (b) trends in drastic changes in global energy;
- (c) market cycle of petrochemical industrial land; and
- (d) clustering strategy among the players at the demand side.

An inaccurate interpretation of market signals which resulted in inaccurate projections for demand for petrochemical industrial land is another example of mistakes made by policy makers. The effects are far reaching. Based on the preceding illustrations, it is believed that the National Industrial Plan and other related documents are prepared by well trained and experienced professional officials. Therefore, before commencement, the draft of the policy was thoroughly verified by various levels of the administration. The findings therefore are in line with the suggestion made by Cheung (1975; 1976) and

Eggertsson (1997) that an erroneous policy is the manifestation of the limitations of human computational capability as suggested in Simon (1955;1986).

Up to this point, the conclusion about government behaviour has been that it is not easy for the government to approve land conversion or dispose of land quickly when applications are made or there is drastic increase in demand for certain uses. This is attributable to the complexity of the government decision making process. Indeed, a number of people representing dozens of interests contribute to any decision. The presence of these actors is an institutionally-created phenomenon. They are segregated physically and legally. They are also distributed among various ranks and positions as well as among dozens of government departments at central, regional, district and local levels. To come to a decision, these actors have to exchange information within a rigid communication system.

With regards to government behaviour, some suggest it is a result of the competition of powers within government agencies. This could be portrayed as a Hegelian, Marxian or Structural opinion. Others see the system simply as a negative bureaucracy. However, in the studied case government behaviour better fits Glynn and Murphy's (1996) opinion in that it is a side-effect of a spirit of accountability. Human beings regardless of culture have principles and values. As every unit of the governance system believes in trustworthiness, Williamson (2002) suggests that each unit is able to concentrate only on its own sub-goals. Thus, they are not able to access the information beyond the powers vested in them.

10.2.2 Institutions and Organisations Involved in the Land Development Process

10.2.2.1 Institutional Framework

The preceding section shows that supply-side decisions and actions are largely determined by the institutional framework. The influence of written laws such as the Constitution and the Code is clear throughout the studied case. The case studied also shows that decisions regarding land development approvals depend on government

discretion. The data collected also strongly indicate that land development approvals, especially for the petrochemical industry, by virtue of those statutes, have to be checked by all levels of governments – Central, State and Local.

Besides the written laws, there are a number of unwritten institutional procedures that govern government decisions. Some of these are administrative practices inherited from the British administration. A culture of 360° consultation, consensus decisions, written orders, authorised signatures and consideration papers has never changed since it was introduced a couple of centuries ago. This administrative culture plays a pivotal role in decision making in Malaysia.

The government administrative set up is another critical point to look into. As highlighted in Chapter Four the public administrative system is partitioned in two ways: (a) administrative and professional services; and (b) Federal (ADS) and State Administrative Services (SAS). Division into administrative and professional services was established during the beginning of the British administrative system in the 1880s. Division into the ADS and the SAS, is rooted in agreements negotiated during the formation of the Federation. As mentioned in Good (1978), both arrangements reflect a desire to harmonise the British-introduced governing system with the traditional Malay Sultanate system. Indeed, the partition discussed here is only a simple division of power. However, as a result of this simple arrangement, information needed by decision makers has to be checked against dozens of standards and pass through multiple levels of the administrative system. Thus, land development approvals are influenced by ancient practices. The proposition by Ayres (1951) that the current system retains residue of ancient institutions is plausible.

On paper the Constitution leaves matters related to land and planning to State Governments. However in practice, as is evident in this study that this is not the case. As discussed in Chapter Eight, objections and obstacles from Central Government agencies often influence land decisions. There are, therefore, reasons to support the observation made by Osborne (1996) that in the government decision-making process some superior departments can overrule subordinate departments.

In short, on the supply side decisions and actions are guided by the institutional framework. Throughout the case study, it has been substantiated that written laws, inherited public administrative practices, values, ancient institutions, the political system and government policies drive official government behaviour. As a result, the government, which is the key industrial land supplier, is less than flexible in reacting to changes in the property market.

10.2.2.2 Institutional Change

10.2.2.2.1 Changes Within Government

As noted above, there has been little change of substance in the Malaysian public administrative system since a century ago. A division in decision-making power between politicians and the professionals who advise them with administrative officers as mediators between the two parties, has been intact for more than a hundred years. This also means institutional change is very difficult under the Malaysian public administrative system.

There are some points to note in relation to the above issue. Although speculative and beyond the scope of this study, they are worth mentioning. First, the governing Federal political party has not changed since independence about half a century ago. Second, the Malaysian public administration seems to have a 'special relationship' with the ruling party. All six past Prime Ministers, the present Prime Minister and his deputy are ex-government officials. Out of the six, three are former members of ADS. Of the other three, one was a former SAS official, one was an army officer and another was a government medical officer¹³³.

Although there has been no major institutional change in the Malaysian public administrative system, there are indications that some organisational changes have taken place. The formation of 'the Pre-EXCO Technical Committee' is one example of how the State Government has tried to cope with difficulties in information sharing among departments.

¹³³ See Malaysian Premier website at: <http://www.perdana.org.my>

These findings raise a couple of questions: (a) why after more than a century has there been no significant change in the Malaysian public administrative systems, and (b) why have only limited organisational changes been made within the government? Both questions create doubt as to whether changes in the Malaysian government follow an evolutionary process. If it were evolutionary, the process of change would presumably be ongoing. However, it has not been. Thus, the process of change within the Malaysian public administrative system, especially in land administration, institutionally or organisationally, is best explained through the TCE lens. In short, only if there is pressure, especially when the cost of acquiring or sharing information is high, will change occur.

10.2.2.2.2 Changes Within Firms

In contrast, change can be seen within the business community. Indicators of change are apparent in three areas. The first is the relationship between the occupants of each plant cluster. The second is changes in land use intensity. The third is the history of ownership in each cluster. Superficially, the relationship between the occupants of each plant cluster as seen in Figure 49 is merely a reflection of the ‘chemical interaction’ between plants. Each plant in a cluster is interconnected with all the other plants. Each cluster in turn is connected to other clusters. On a wider scale, the KIPC and the GIPC also complement each other. In global terms, the ECIC is interconnected with other complexes worldwide.

There is clear evidence to suggest that companies which operate in the ECIC have strong links with the American, European, Japanese and Chinese markets. Changes in these markets, as seen in Figure 51, are sometimes drastic and unexpected. Thus, chemical companies choose to acquire much more land than they need at the beginning of a project. Through this practice, the industry is much better positioned to respond to changing world demand by having the freedom to expand without further government approval.

By locating their plants near existing landowners who have access to large amounts of land and control the supply of feedstock, new firms can secure both land and

chemical feedstock. How does this relate to the institutional problem? The firms, in order to circumvent the problem of complicated development approvals organise themselves to 'cheat the system' in a legal manner. The strategy used to get round the law is simple. Records at the local authorities, SEPU and MITI show that prior to the construction of a new installation within a cluster, an existing company only needs to apply for an extension to a pre-existing plant.

10.3 RESEARCH AIMS REVISITED

At the end of the literature review (Chapter Five), four research questions were posed. The questions were tailored to address the research objectives which set out at the outset (Chapter One). This section will revisit those research objectives and offer suggestions regarding policy implications and areas of further research.

10.3.1 Research Questions

Q1: To what extent does the price of land influence ownership transfer of petrochemical industrial sites?

This study has not uncovered substantial evidence that land price has a great influence on investors' decisions to acquire sites in a petrochemical industrial complex. The low price for industrial sites offered by the government means that land prices account for only a small part of the value of the initial investment. In addition, ironically, not all investors, despite low-priced land, acquire industrial sites directly from the government. Instead, evidence shows that even though there is a vast amount of unsold land, investors are more likely to acquire industrial sites from other companies than from the government. Nevertheless, there are indications that low-priced land benefits certain investors. Since land is available cheaply, some investors' strategy has been to buy a large area of land in order to provide for future expansion.

Q2: *How do government decisions and the government decision-making process affect the supply of industrial land for petrochemical use?*

The findings strongly suggest that the government decision-making process is complex. Especially in land development and government land disposal, decision makers (senior politicians together with top government officials) have to consult with numerous government departments. Among these are departments related to planning, the environment, property valuations, legal, health, industrial safety and foreign investments. Public decision making involves collecting information, undertaking lengthy consultations and exchanging information.

During the decision-making process, each department looks at an application from a different angle, requiring a different set of information, making judgements on a different basis and applying different investigative methodologies. As a result, the total amount of information required before a decision can be made is massive and complex. In addition, tedious records and files are maintained, including paper-based documents. Highly formal decision-making procedures are also common.

Public records show applications must be submitted together with a range of supporting documents. These documents are then passed to various government branches according to their expertise for further investigation. This arrangement has not only existed for decades but is also backed by the laws. The length of time required for the investigation depends on a number of factors, especially legal requirements as well as the complexity of the case.

The case study shows the government decision-making process, including the process of gathering and assessing information is highly bureaucratic. As such, there are often substantial delays in gaining approval for the development of land. The study's finding confirm that the timing of government approvals is often uncertain, as noted by Adams *et al.* (2001b).

Q3: *How do the institutional environment, governance and market allocation of resources influence government decisions about land?*

This question concerns the institutional environment of government administration. The preceding discussion (on Q2) concluded that the government decision-making process is complex. There is a division between administrators and professionals in the civil service. There are also partitions between Central, State, and District Offices and Local Governments. Moreover, the Administrative Service, within which are top government officials and policy makers, is split into the Federal Service and State Services.

Certain divisions are easily understandable. Within the government there are different tasks that need to be carried out by persons who are specialised in those particular areas. However, in the Malaysian public administration, the main divisions of government are entirely dictated by the Federal Constitution. Looking back at the history of the Constitution as well as the Malaysian public administration system, practice and culture, it is apparent that the present arrangement reflects a system that was originally established more than a century ago. In other words, divisions within the government which slow down the decision-making process are essentially derived from various forms of written and unwritten institutions.

Simon (1961) suggests that economic decisions more often than not are subject to bounded rationality. Williamson (2000) relates Simon's thesis with a hierarchy of social institutions. Findings in this study suggest that, in government bureaucracy, bounded rationality refers to the influence of the institutional environment and formal institutions on government decisions. Thus, the Land Office practice of consulting a number of government departments is merely a process of filtering and interpreting information according to certain perspectives before it reaches the decision makers. The finding suggest that since the decision makers are politicians who are answerable to the public, their judgements need to be based on accurate information and interpreted by those who have expertise in particular areas.

In essence, to answer Q3, the unpredictability in government decision making is the result of the information filtering process as required by the formal institutions. As demonstrated in Chapter Eight, the actions of Land Office and other departments that cause delays in land and development approvals are essentially derived from institutional factors. Fundamentally, the environment within which the government operates has been static for decades. The complexity of the government information flow as well as the government decision-making process has direct relationship with this institutional framework. As on Page 250 (on the issue of path-dependency), the findings suggest that there is a limit to what can be done by land development actors to change the administrative system.

Q4: What is the relationship between the actions of petrochemical firms in the land development process and their strategies to avert risk and uncertainty?

It was found that petrochemical companies at the ECIC have very definite interests. For them, land is not just a space for production. Neither is it an important tradable asset. Land must be secured together with the chemical feedstock. Land prices do not constitute a major consideration at the ECIC. When choosing a site, chemical firms position themselves according to the chemical substance they produce. Above all, the findings reveal that the ECIC functions as a viable source of both industrial inputs as well as manufacturing sites when there is a shortage of these in the West.

Facing institutional constraints, petrochemical companies have found ways to evade the risks associated with uncertainty in finding land when global demand for their products changes. The process of plant clustering at the ECIC reflects the firms' strategy for securing industrial sites and industrial feedstock. The 'first movers' apply to acquire a large area of land from the government. When there is demand for land, these companies apply to the Central Government agency for permission to expand their plants. Simultaneously, applications for land development permission are submitted to the State and Local Authorities.

Since the applications are made by the same companies who already own land, the approval is already fast process. At the same time, a new company entity who will own the expanded segment is formed. Lastly, the two companies split into different entities¹³⁴.

Organisational change in the KIPC and GIPC seems to comply with what is advocated by Coase (1937) that firms tend to reorganise or resize themselves in order to overcome the uncertainty of supply. The findings also suggest that the studied case cannot substantiate OIE opinions such as in Wang and Yeung (2000) and Raco (1999) that firms organise themselves into clusters as part of an evolutionary process where learning and adaptation are the main drivers of change.

By answering the four auxiliary research questions outlined above, the central research question of this study has been answered as well. The question is:

“In what way is the supply of land for the petrochemical industry in Malaysia affected by the formal institutional framework of that country? ”

The findings conclude that due to institutional constraints, State Governments who are the key players at the supply-side are unable to approve land conversion or dispose of government land quickly in response to demand. As a result of institutional arrangements, government authority over land matters is divided among a number of government departments whose decision makers are legally and physically segregated into various ranks and positions in dozens of government departments at Central, Regional, District and Local levels. Before arriving at a decision, government officials must exchange information within a rigid communication system. Their opinions and decisions, regardless of their training, expertise and experience, are limited by the institutional framework.

¹³⁴ See discussion under sub-section 7.5 (Page 186 to 188).

10.3.2 Research Objectives

RESEARCH OBJECTIVE NO. 1:

‘To analyse the factors that distinguish KIPC and GIPC from other areas in Malaysia’.

Research Objective No. 1 was to identify the major attractions that induce industrial nations, particularly the US, the UK, Japan and Germany to invest many billions of dollars in the ECIC. Indeed, this tiny territory has received the highest concentration of FDI in the nation. The study substantiates that the availability of natural resources with a guaranteed continuous supply for a period of more than 20 years was the major attraction. This strength was coupled with the availability of a huge area of industrial land at an affordable price. These findings suggest that a critical characteristic of the petrochemical industrial relates to the demand side. The demand side needs a flexible supply of land to accommodate unexpected changes in the global market. Petrochemical firms need to stockpile land to allow for expansion of factories if the demand for petrochemicals increases.

More importantly, the ECIC was attractive because, even though there were delays in government approvals, everything necessary for the industry was available when needed, particularly at a time when there was a shortage in chemical feedstock in the West. The answers to Research Questions 2 and 3 show that this strength arose from three main ECIC characteristics. Characteristic number one is landownership connected with a guaranteed long term supply of chemical feedstock. The second characteristic is that land has been stockpiled by petrochemical companies. Thus, it is available when it is needed for constructing a new plant or expanding an existing one. Characteristic number three compliments the first two. The infrastructure at ECIC is ideal for the petrochemical industry. Characteristics one and three are generic and must be true of other locations. The unique strength of the ECIC is characteristic number two. By strategically acquiring much more land than they really need, companies ensure that petrochemical industrial sites are available when they are needed.

RESEARCH OBJECTIVE NO. 2:

‘To identify the institutional framework that control and promote the supply of industrial land’.

Objective No.2 is to examine the impact of institutional arrangements on land development. First of all, the findings are consistent with the views of most major NIE scholars that unambiguous property rights is necessary for land development. In the studied case it is evident that institutional arrangements, especially landownership, agreements and laws that guarantee investors’ rights are imperative for promoting petrochemical industrial land development. However, some institutional arrangements¹³⁵ which are also designed to protect other parties can bring about a slow down in the development process. As discussed on earlier, the approval process is characterised by red tape and bureaucracy. Indeed, it reflects of the strong institutional arrangements that dictate decision makers’ ideas and actions.

RESEARCH OBJECTIVE NO. 3:

‘To identify the market players and define their functions and interests’.

Objective No. 3 has been met by answering Research Questions 2 and 4 regarding key players in industrial development in the studied area as well as their interests and strategies in the development process. The study has identified that the main market players in the petrochemical industrial land are grouped into two camps.

On the supply side is the government. Despite being diverse and divided in various ways, when it comes to decisions these parties share common goals. However, responsibility is divided between the Central Government and the States of Pahang and Terengganu. Within the government departments, experts and professionals have a diverse range of expertise. Senior officials who are directly involved in decision making contribute only according to their expertise. The way they collect, share and exchange information creates what is commonly known as ‘red tape’.

¹³⁵ For example, Layer 2 institutions in Figure 2 (Page 17).

On the demand side are groups of multinational petroleum and chemical companies. These firms operate in clusters according to their main chemical products. Each group is led by a project initiator who is the first landowner as well as the main supplier of feedstock in the cluster. These companies who represent only 20 nations specialise in certain products, control specific sub-markets and have global connections. They seemed uninterested in having ‘serious’ investments in real estate. Real estate is seen by them as only an input for their production process. Therefore, they are not interested in real estate investment beyond their needs.

RESEARCH OBJECTIVE NO. 4:

‘To examine government departments’ power structure, domination and control of resources’.

Research Objective No. 4 focuses on inter-departmental relationships. It has been seen that numerous government departments work along common lines, to assist in decision making. Even though each department is directed by a different set of directives and standards, during the process of decision making, officials generally communicate well with each other. However, the size of the system makes decision-making complicated and problematic.

The findings suggest that in the Land Office where institutions such as laws, regulations and practices are strictly observed, freedom of interpretation is limited. The findings also suggest that, individuals departments that are involved in Land Office decisions are governed by particular rules and regulations which are limited to specific department tasks. Since different departments are governed by different rules and regulations, each department can concentrate only on its own mission and objectives. This is consistent with Williamson’s (2000) thesis, that in bureaucracy, each compartment can concentrate only on its own sub-goals.

The scenario above, as is evident in the studied case, affects land development approvals and government land disposal. Even though senior government officials are experienced and well-trained, they often misunderstand investors’ behaviour, and are

unable to synchronise their actions with the inter-state industrial land plan. As a result, at least two major mistakes have occurred in petrochemical industrial planning. Firstly, both land development approvals and government land disposal tend to be slow processes. Data suggest that the length of time required is also highly inconsistent. For industries like the petrochemical industry which is highly vulnerable to external threats, this presents great risks. Secondly, projections for future land takers have been inaccurate. Thus, thousands of acres of land allocated for petroleum-based industries remained underutilised or unsold.

It is obvious that both states studied are administered in different ways. While in Pahang, senior officials are Federal appointees, in Terengganu they are within the State Administrative Service. The States have different political backgrounds. Evidence suggests that the lack coordination between these territories has grown over time¹³⁶. This problem arises from limitations inherent in the Federal Constitution as well as other unwritten institutional factors that have been inherited over generations. The immediate impact of the conflicting interest of the two states is that information is not freely exchanged between them. Since each investor has specific reasons to choose a site, uncoordinated industrial planning benefits neither the government nor the investors.

This study has found little evidence to define the relationship between departments as ‘competition’, ‘bargaining’ and ‘co-operating’ through the lens of a ‘Dialectical’ approach such as that of the Hegelian, Marxian and Structuralists. Instead, their relationship is more suitably described, following North (1990), as a problem of co-ordination.

¹³⁶ Regardless of the political changes in Terengganu (see Pages 5 and 135[sub-paragraph (b)(i)]).

10.4 CONCLUDING REMARKS

10.4.1 Submissions

To sum up, this study began with the question of whether the creation of the property rights *per se* is an available solution to uncertainty in business. This study has concluded that the wider institutional framework that creates property rights also creates other forms of uncertainty. Constrained by the institutional environment, laws, rules and regulations, the main supplier of petrochemical industrial sites (the government) is not able to release land in a timely manner.

This study which applies the NIE approach finds that the information flow in the government administrative system is complex and problematic. Although the government has tried to overcome the problem of information in public sector decision making, there is no sign of significant improvement at the Land Office. This is attributable to an institutional framework that has been static for generations, and which has shown no sign of real change in decades. The main investors, at the demand-side, are multinational petroleum, gas and chemical companies that face various risks, especially with regard to drastic changes in chemical feedstock prices and supply. Uncertainty in the timeliness of government decisions creates additional risks for these firms. This study has found clear evidence to suggest that the demand-side has found ways to ‘trick’ the system in a legal manner by replacing the government as the primary supplier of industrial land. As a result, the supply of the property in this market can react to market changes in a timely manner.

It has been seen, then, that as in Malaysia, where government decision-making processes are highly bureaucratic and create high transaction costs for manufacturing companies, those companies adapt their procedures to protect themselves and reduce such costs. This can be seen in the case study in the way major petrochemical companies acquire much more land than they really need at the initiation of a project so that the industry can respond to changing world demand by expanding without further government approval.

10.4.2 Recommendations

Based on findings of the present study, this study puts forward the following recommendations for the future:

10.4.2.1 Policy Implications

The present study concludes that investors have already adapted to bureaucracy. They know how to enter a game with the government. However, on the supply side, this business trick appears not to be understood by government officials. Supply and demand of industrial land therefore rarely match. This study recommends to government policy makers, especially in promoting industrialisation, to learn how to make accurate judgements regarding the government's capabilities. A transparent industrial plan document and an integrated promotional strategy where all State Governments work together with key investors may help. Otherwise, thousands of acres of highly potential lands will remain vacant.

10.4.2.2 Subsequent Researches

(a) Calculating the Tangible Costs of Transactions

NIE is heavily dependent on a theory that transaction costs are the main factor affecting economic performance. At the outset, this study hoped to quantify these costs. In the middle of data collection, it was found that explicit data were not available, either from government offices or from firms. Such figures are not maintained by public offices. Also, most of current officials, both in government departments and firms were not involved in the development process which took place more than two decades ago. Lastly, even though it is believed that some information still exists in company records, none of the officials in the private sector were willing to release them. Efforts were made to track down consultant firms that were involved with development twenty years ago. The problem was the same: most of the individuals directly involved are no longer in service. An estimate of tangible transaction costs is crucial to strengthen the position of

the NIE. Therefore, it is hoped that future research will find a way to acquire these figures as well as means by which to calculate tangible transaction costs.

(b) The Red Tape Phenomenon

This study also looked closely at government behaviour, which has thought to have direct impact on the land development process. One may call this problem red tape. Alternatively, it may be referred to as competition of powers or legal problems. Literature other than that related to the public administrative discipline places little emphasis on this problem. Presumably, it is assumed to be given, especially as some literature suggests that it is the natural state of public office. Based on this phenomenon, Williamson states that '*public bureaucracy is a puzzle*' (Williamson, 1999, p.306), or '*...remains a poorly understood condition...*' (Williamson, 2000, p. 611). This study suggests as theorised in North (1990) that institutional change takes place over a long period or does not take place at all. Perhaps only legal or organisation change occurs. Perhaps, future research will be able to redefine and widen the scope and meaning of what is called 'shirking' in North (1990) or what is called the 'free-rider' phenomenon in Williamson (1975), especially in relation to public decision-making.

(c) Study On the Petroleum, Gas and Chemical Industrial Site Market

Findings from this research suggest that the supply and demand for petroleum, gas and chemical industrial sites have certain characteristics which may need particular attention. Since this market segment is a niche one, it attracts less attention than others. The data show that the investment in this industrial sector involves billions of US dollars of capital. The industry contributes significantly to enhancing local land development as well as stimulating the regional property market. The scope of this study precluded further investigation on this issue. However, it is understood that multinational companies are only interested in industrial sites for a period of between 25 and 35 years. This phenomenon may be of interest to those who are interested in urban renewal or in the impact of the closing down of short stay industries.

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END-NOTE

ⁱ ABOUT MALAYSIA

(A) Basic Information

- **Population:** 25.3 million (UN, 2005)
- **Capital:** Kuala Lumpur
- **Area:** 329,847 sq km (127,355 sq miles)
- **Major languages:** Malay (official), English, Chinese dialects, Tamil, Telugu, Malayalam
- **Major religions:** Islam, Buddhism, Taoism, Hinduism, Christianity, Sikhism
- **Life expectancy:** 71 years (men), 75 years (women)
- **Monetary unit:** 1 ringgit = 100 sen
- **Main exports:** Electronic equipment, petroleum and liquefied natural gas, chemicals, palm oil, wood and wood products, rubber, textiles
- **GNI per capita:** US \$4,650 (World Bank, 2005)
- **Internet domain:** .my
- **International dialling code:** +60

Source : <http://news.bbc.co.uk/1/hi/world/asia-pacific> (as on 28 Feb 2006)

(B) Legislative System

Malaysia practices a-bicameral parliamentary system. The components of the House are, (a) the King, (b) the Senate (the Upper House) where the Senators are state government representatives and the King's appointees, and (c) the House of Representative (the Lower House) where the Member of Parliaments are elected through direct elections.

(C) The Federation

The Federation of Malaysia is made of thirteen limited-autonomous States and three Federal Territories, namely, Selangor, Perak, Negeri Sembilan, Pahang, Johore, Kedah, Perlis, Kelantan, Terengganu, Penang, Malacca, Sarawak and Sabah, and the Federal Territories of Kuala Lumpur, Labuan and Putrajaya. Under Malaysia's constitutional monarchy, Head of the State is the King which the position is rotated every five years among the state Sultans. There are various terms to address to what Malaysia has been. Different terms refer to different stages in its history. However, sometimes they are used indiscriminately. The names that are used are; (a) 'Malaysia', when it refers to it for the period after the formation of the Federation of Malaysia in 1963; (b) 'Peninsula(r) Malaysia' or 'Malay Peninsula' or 'Malay States' when to exclude a couple of states in the East Malaysia, that is, Sabah and Sarawak. However, when it is called 'Peninsula(r) Malaysia' or 'Malay Peninsula' it is only to explain its geographical location. Whereas, the term 'Malay States' has legal and historical meanings; (c) 'Malaya' when to refer to the federation of all territories within the Malay State after 1948. The term 'Malaya' had been used even after its independence in 1957. When Sabah (including Labuan), Sarawak and Singapore were independent and subsequently joined the federation in 1963, the name 'Malaya' was changed into Malaysia; (d) the 'Malay States' when to refer to the group all territories within the Federated Malay States, Straits Settlements and Un-federated Malay States; (e) the 'Federated Malay States' (FMS) in turn, was a grouping of the Sultanates of Perak, Selangor, Negeri Sembilan and Pahang that was formed in 1896. These sultanates was put under British administration; (f) the 'Straits Settlements' which was formed in 1826 was a combination of Penang (formally the Prince of Wales Island and Province Wellesley), Malacca and Singapore. Before it was incorporated into Sabah (formally North Borneo), Labuan was of the Straits Settlements; and (g) the 'Un-federated Malay States' (UFMS) refers the British Protectorates of the Sultanates of Johore, Kedah (including Perlis), Terengganu and Kelantan (Simandjuntak, 1969; Wong, 1975; Good, 1978; Heussler, 1981).

(D) States and Territories in the Federation

States:

1. Johore
2. Kedah
3. Kelantan
4. Malacca
5. Negeri Sembilan
6. Pahang
7. Penang
8. Perak
9. Perlis
10. Sabah
11. Sarawak
12. Selangor
13. Terengganu

Federal Territories:

1. Kuala Lumpur
2. Labuan
3. Putrajaya

(E) District Offices within the States

JOHORE

1. Batu Pahat
2. Johor Bahru
3. Kluang
4. Kota Tinggi
5. Muar
6. Pontian
7. Segamat

KEDAH

8. Baling
9. Bandar Baru
10. Jerlun
11. Kota Setar
12. Kuala Kertil
13. Kuala Muda
14. Kubang Pasu
15. Kulim
16. Langkawi
17. Merbok
18. Padang Terap
19. Pendang
20. Pokok Sena
21. Sik
22. Yan

KELANTAN

23. Bachok
24. Gua Musang
25. Jeli
26. Kota Bharu
27. Kuala Krai
28. Machang
29. Pasir Mas
30. Pasir Puteh
31. Tanah Merah
32. Tumpat

MALACCA

33. Alor Gajah
34. Jasin
35. Melaka Tengah

NEGERI SEMBILAN

36. Jelevu
37. Jempol
38. Kuala Pilah
39. Port Dickson
40. Rembau
41. Seremban
42. Tampin

PAHANG

43. Bentong
44. Bera
45. Cameron Highlands
46. Jerantut
47. Kuantan
48. Lipis
49. Maran
50. Pekan
51. Raub
52. Rompin
53. Temerloh

PENANG

54. Central Seberang Perai
55. North East
56. Northern Seberang Perai
57. South West
58. Southern Seberang Perai

PERAK

59. Hilir Perak
60. Hulu Perak
61. Kerian
62. Kinta
63. Kuala Kangsar
64. Larut Matang and Selama
65. Manjong
66. Perak Tengah

PERLIS

(No District Office)

SELANGOR

67. Slim River
68. Gombak
69. Hulu Langat
70. Hulu Selangor
71. Klang
72. Kuala Langat
73. Kuala Selangor
74. Petaling
75. Sabak Bernam
76. Sepang

TERENGANU

77. Besut
78. Dungun
79. Hulu Terengganu
80. Kemaman
81. Kuala Terengganu
82. Marang
83. Setiu

SABAH

84. Beaufort
85. Beluran
86. Keningau
87. Kinabatangan
88. Kota Belud
89. Kota Marudu
90. Kuala Penyu
91. Kudat
92. Kunak
93. Lahat Datu
94. Nabawan
95. Papar
96. Penampang
97. Ranau
98. Sipitang
99. Tambunan
100. Tenom

SARAWAK

101. Kuching
102. Sri Aman
103. Sibiu
104. Miri
105. Limbang
106. Sarikei
107. Kapit
108. Kota Samarahan
109. Bintulu
110. Mukah
111. Betong.

(F) Origin of the Land and Tenure System

Until the end of the 1800's, the tenure system was based on simple and traditional system. During which, land and tenure system was under various of forms traditional system (Wong, 1964, Teo and Khaw, 1987). There is also an opinion that during which, where a formal landownership system was absent, landed property was defined as either *tanah hidup* (live land) or *tanah mati* (dead land). According to Maxwell [as quoted in Hill (1977)],

Tanah mati is that land on which there is no sign or token that has been appropriated by any one, or any grove or fruit trees in respect of which a proprietor can demand a payment. Regarding such land it is certain that there can be no question. If any person proceeds to plant upland or wet paddy on such land, no one has any right to dispute it with him for it has been abandoned voluntarily by its former owner..

Land which is known as tanah hidup is (that) which is appropriated by some one, either by living on it or by planting timber of fruit trees or by laying out a garden or enclosure. This cannot be taken by anyone and is called tanah hidup. This rule applies also to persons who settle on the lands or plantations of others. As long as they live there, they must obey the orders of the owners ...

There are evidences to suggest that the British has influenced the Malay States public administrative system since the late 1700's (Stephens, 1899). Nevertheless, until 1874, there has been no indication to suggest that the British appearance influenced the land and tenure system (Wong, 1975). In 1874, the Pangkor Treaty was signed to end a tri-partied bloodshed disputes in Perak, a state in northern region of the Malay States. The disputes as well as the treaty involved the claimants of the succession of the Sultan of Perak as well as a prominent Malay chieftain. The clash turned to civil war when Chinese tin miners who were divided into *kongsis*¹, took side to back the confronting parties (Stephens, 1899; Smith, 1933; Maxwell and Gibson, 1924; Chai, 1964).

The treaty which was signed on 20 January 1874 denoted the beginning of the British intervention in the politics of the Malay States (Stephens, 1899; Maxwell and Gibson, 1924; Smith, 1933) as well as significant changes in the Malay States' land tenure system (Kratoska, 1982; Ghee, 1977; Ishak, 1998). Among others the parties agreed to the appointment of a Land Commission to settle the mining disputes in Larut (Stephens, 1899; Maxwell and Gibson, 1924). Following which was the inception of the General Land Regulations in 1879 which became the first written land laws in the Malay States (Wong, 1964; Wong, 1975; Sihombing, 1992). Subsequently, land offices were set up in major towns to register landownership, maintain land records, execute land conveyances and collect state revenues (Wong, 1975).

(G) History of the Public Administrative System

A modern public administrative system began with an enactment of separate legislation for administration of the Straits Settlements (SS) in 1826. SS refers to States of Singapore, Malacca and Penang. However, the move from Calcutta to Singapore was only completed in 1866. The initiation to move from India to the Malay Peninsula is seen as a response from London to complaints from business community in the British South-East Asia that Calcutta neglected the fast growing economic potential in the Malay States (Stephens, 1899).

On Frank Swettenham's initiative, the Straits Settlements Civil Service (SSCS) was established in 1871. Prior to this was the legislation of the Act 29 and 30, Victoria cap 115, to enable the formation of the SS government. The government was on a model that a governor who was aided by the civil service led the executive council (Stephens, 1899). Under which, Resident, who was an administrative officer led the office. He was advised and assisted by number of officials from various type of services. A Clergymen, legal officer, engineers, military commanders and wardens were among those (Stephens, 1899; Heussler, 1991). With the inception of the Pangkor Treaty together with treaties with other Malay States, the British colonial model public administrative system was expanded to other Federated Malay States (FMS) (Stephens, 1899; Heussler, 1991). Following which, in 1904, the Malayan Civil Service (MCS) was established. In 1966 the scheme was renamed as 'Malayan Home and Foreign Service' (MHFS). In 1971 the name of the scheme was changed into 'Administrative and Diplomatic Service' (ADS).

After the *Merdeka* (independence) in 1957, when the political system in Malaya was over-nightly changed, the MPA has not, even until today. Today's Malaysia as well as state public administration, is identical with what it was during under the British Administration. The MPA currently is led by administrative officers and assisted by the professionals. Where at the central government the renamed MCS, that is the ADS, is still in charge, some state administration is under the care of the State Administrative Service (SAS) (Heussler, 1981).

Again, the division between the ADS and SAS tells a history. Currently, those under the care of the ADS are the former states where the administration was directly by the British officials. Territories which are formerly under the SS (Penang, Malacca) as well as territories which are formerly within the FMS (Perak, Selangor, Negeri Sembilan and Pahang) are under this group. The other group which is currently under the SAS is divided into two. The first are those had no direct influence of the British administration that are Kedah, Kelantan, Terengganu and Johore. Perlis which is used to be in this group, joined the ADS group in the past few years. The last group comprises of Sabah and Sarawak, the late-comer members of the federation.

(H) Early Development of the Modern Planning System

A modern system of local government in Malaysia stem from 'Committee of Assessors' set up by the British in 1801 in Penang. The committee took responsibility of planning and implementing urban development. The first legislations on the local authorities were called the East India Company's Charter. These were followed by the Indian Legislation Act and the Municipal Rates Act in 1848. Following which, municipal committees in the areas of Penang, Malacca and Singapore were established (Tayib and Ameen, 1999).

The planning system was modified and restructured after the Parliament adopted the Nahappan Report 1970. Following the report was the passage of the Local Government (Temporary Provisions) Act 1973. It is to redefine the basic laws that regulated the powers, duties, responsibilities and functions of local authorities. Following which, three legislations were introduced, namely, the Street, Drainage and Building Act (1974), the Local Government Act (1976) and the Town and Country Planning Act 1976 (Tayib and Ameen, 1999).

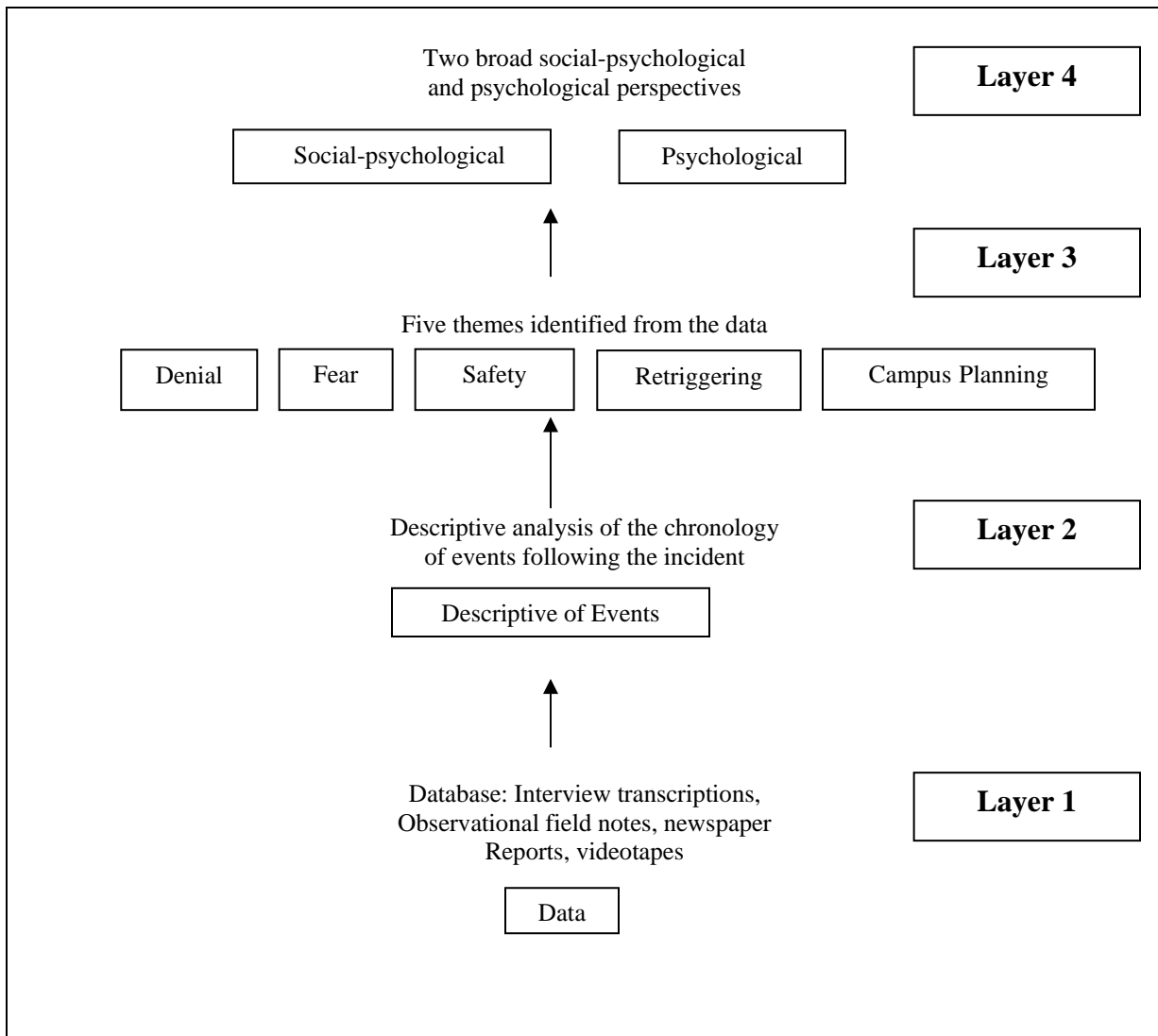
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- v Prof. Nancy Cartwright, Timothy Childers, Robin Findlay Hendry "methodology" *The Oxford Companion to Philosophy*. Oxford University Press 2005. *Oxford Reference Online*. Oxford University Press (on-line from Glasgow University on 19 July 2006).
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Table I : Coding a Page from a sample Interview Transcript – The Process of Reconstructing Curriculum in a Rural High School Setting

Codes Here		Themes (and Other Ideas) Here
Close-knit community	<p>JJ : One thing, Lucy, that I've heard talked about was the fact that schools reflect the strengths of communities. What do you perceive as strengths of Greenfield as a community and how that relates to schools?</p> <p>Lu: Well, I think Greenfield is a fairly <u>close-knit community</u>. I think people are interested in what goes on. And because of that, they have a sense of ownership in the schools. We like to keep track of what our kids are doing and feel a connection to them because of that. The downside of that perhaps is that kids can feel that we are looking TOO close. But most of the time, that is the nurturing environment that we do provide an atmosphere of concern and care. To back up, you said the <u>health of the community</u> itself is reflected in schools. A lot of times communities look at schools and say they are not doing this or they aren't doing that, or we're missing something in our schools. I think perhaps we look at the school and see, this is probably a pretty conservative community overall, and look to make sure that what is being talked about in the schools really carries out the <u>community's values</u>. There is a little bit of an idealization I think, perhaps in terms of what we thought of "basic education," [And I think there might be a tendency to hold back a little bit too much because of that idealization of "you know, we learned the basics, the reading, the writing and the arithmetic."] So you know, any <u>changes is threatening</u>. And I think that goes for the community as well as what we see reflected at the school. Sometimes that can get in the way of trying to do different things. I think, again, idealization, older members of the community forget some of the immaturity that they experienced when they were in school and forgetting that kids are kids. So there is a little bit too much of that mental attitude. But for the most part, I think there is a sense of we're all in this together, and concern for the kids.</p>	<p>Potential theme: The community</p> <p>Idea: getting a good sense here for the community and its values</p> <p>A good quote</p>
Health of community of community values	<p>JJ: In terms of looking at leadership strengths in the community, where does Greenfield set in a continuum there with planning process, understanding the need to plan, forward-thinking, visionary people, you talked about that a little bit before.</p>	<p>Potential theme: Leaders</p>
Change is threatening	<p>LU: I think there are people that have wonderful <u>visionary skills</u>. I would say that the community as a whole would be..would not reflect that. I think there are people who are driving the process, but the rest of the community may be lagging behind a little bit. I think we have some incredibly talented people who become frustrated when they try to implement what they see as their...</p>	<p>Ideas: returns to description of community again</p>
Visionary skills of talented people		

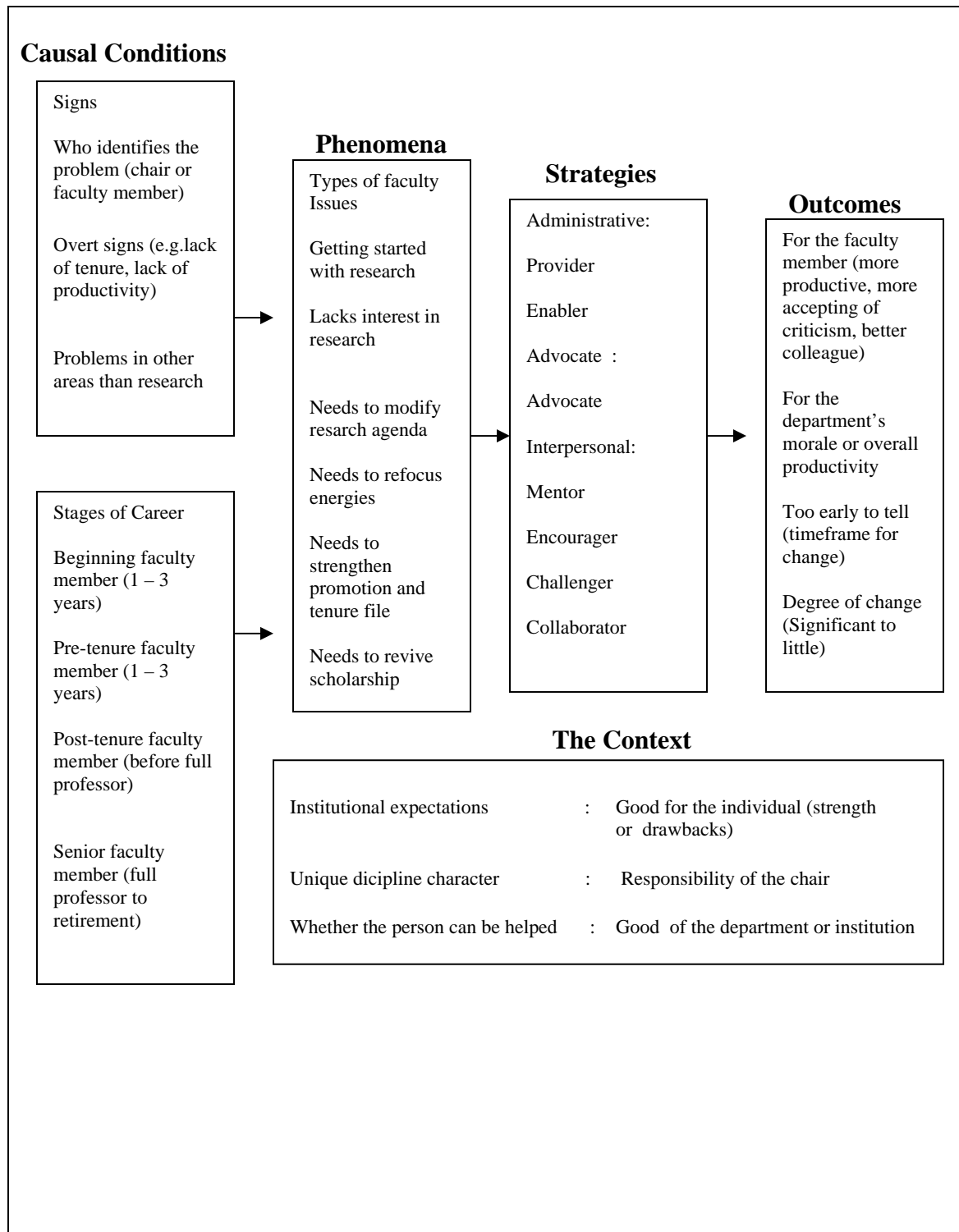
Source: Creswell (2005).

Figure I : Layers in the Qualitative Gunman Incident Study



Source: Creswell (2005).

Figure II : Interconnecting Themes or Categories in a Qualitative Study



Source: Creswell (2005).

viii **FACTORS JEOPARDIZING INTERNAL AND EXTERNAL
VALIDITY OF RESEARCH DESIGNS**

... 'Perhaps the most important publication in the past 50 years relative to understanding research design and planning experiments is that of Donald T. Campbell and Julian C. Stanley, excerpted below. Their conceptualisation of internal and external validity as critical evaluative constructs and associated threats opened the door to efficient and concise assessment of experimental designs.

Internal validity is the quality of an experimental design such that any outcomes or effects can be attributed to the manipulation of the independent variable. *External validity* is the quality of an experimental design such that the results are generalizable to different settings. As might already be obvious, there is a trade –off between the two. For example, it is impossible to have a very high degree of internal validity and have much generalizability, just as it is very difficult to have little control (or low internal validity) and be able to generalize to other samples. The balance between the two depends most upon the experimental question being asked (expressed as a hypothesis) and the risk that the researcher is willing to take.

Experimental and Quasi-Experimental Design for Research

Fundamental to this listing is a distinction between internal validity and external validity. Internal validity is the basic minimum without which any experiment is un-interpretable: Did in fact the experimental treatments make a difference in this specific experimental instance? External validity asks the question of generalizability: To what populations, settings, treatments variables, and measurement variables can this effect be generalized? Both types of criteria are obviously important even though they are frequently at odds in that features increasing one may jeopardize the other. While internal validity is the *since qua non*, and while the question of external validity, like the question of inductive inference, is never completely answerable, the selection of designs strong in both types of validity is obviously our ideal.

Relevant to internal validity, eight different classes of extraneous variables will be presented; these variables if not controlled in the experimental design, might produce effects confounded with the effect of the experimental stimulus. They represent the effect of:

1. History, the specific events occurring between the first and second measurement in addition to the experimental variable.
2. Maturation, processes within the respondents operating as a function of the passage of time per se (not specific to the particular events), including growing older, growing hungrier, growing more tired, and the like.
3. Testing, the effects of taking a test upon the scores of a second testing.
4. Instrumentation, in which changes in the calibration of a measuring instrument or changes in the observer or scores used may reduce changes in the obtained measurements.
5. Statistical regression, operating where group has been selected on the basis of their extreme scores.
6. Biases resulting in differential selection of respondents for the comparison groups.
7. Experimental mortality, or differential loss of respondents from the comparison groups.
8. Selection-maturation interaction, etc., which in certain of the multiple-group quasi-experimental designs is confounded with, i.e., might be mistaken for, the effect of the experimental variable.

The factors jeopardizing external validity or representativeness are;

9. The reactive or interaction effect of testing, in which a pre-test might increase or decrease the respondent's sensitivity or responsiveness to the experimental variable and thus make the results obtained for a pre-tested population unrepresentative of the effect of the experimental variable for the un-pretested universe from which the experimental respondents were selected.
10. The interaction effects of selection biases and the experimental variable.
11. Reactive effects of experimental arrangements, which would preclude generalization about the effect of the experimental variable upon persons being exposed to it in non-experimental settings.

The value of such a list is that it gives the researcher some cautions before finalizing a design. To increase the degree of accuracy desired, these factors cannot be ignored. What is put into a research design directs what will come out after the data are collected and analysed.

Source : From Donald T. Campbell and Julian C. Stanley (1966), *Experimental and Quasi-Experiment Designs for Research* (Chicago: Rand McNally), pp. 5-6.

Source : Miller and Salkind (2002, p.50-51).

Table II : Summary of Empirical Inquiry Procedure

	Themes of Analysis	Rationale and Aims of the Investigation	Data Collected	Source of Information	
				Primary Data	Secondary Data
1	An investigation on actual land development progress on the investigated site	<p>Adams (2001(a);2002), Evans (1995) and Keogh and D'Arcy (1999) suggest that price is not the main factor in land transaction. (b) Needham and Kam (2004) suggest that price is meant by the term 'co-ordination' in NIE. (c) Eggertsson (1997) and Cheung (1975;1976) suggest that some of government policies are based on inaccurate and unreliable information. Therefore the test is to find answers whether:</p> <p>(a) the pricing mechanism is functioning effectively in the studied case; and</p> <p>(b) government pricing policies and predictions on demand for petrochemical industrial site have been on a correct basis.</p>	<p>(a) Land: prices, acquisition process, land use, intensity land use and planning restrictions</p> <p>(b) Landowner: landownership, landownership history, relationship between landowners</p> <p>(c) Land supply: trend in demand and supply, government projection.</p> <p>(d) On-site development: actual plant, installations and facilities.</p>	Official records	government and investors publications

	Themes of Analysis	Rationale and Aims of the Investigation	Data Collected	Source of Information	
				Primary Data	Secondary Data
2	An investigation on land supplying process for industrial sites	<p>To apply the NIE main line argument that is information problem is the main question in economic performance as in Simon (1961), North (1990) and Williamson (1975;1979; 1985;1991;1998;1999;2003).</p> <p>To apply a suggestion that inquiry of land development problem should emphasis on three themes, how information is acquired, processed and disseminated as in Evans (1995[b]), Keogh and D'Arcy (1999) and Adams <i>et al.</i> (2003)</p> <p>To find explanations for government department actions and to relate a suggestion in Keogh and D'Arcy (1999) and van der Krabben and Lambooy (1993) that 'bargaining, competing and co-operating' between agencies as a part of land development process.</p> <p>To construct a link between theories of land supply with the public choice theory as in Webster (1998), Pennington (2000), Stoker (1991), Brynard (1995), Glynn and Murphy (1996).</p> <p>To establish a link between formal institutions with informal institutions</p>	<p>(a) Malaysian public administration system</p> <p>(b) Roles of individual government department in 'land matters'</p> <p>(c) Standards, culture, norms and values observed by government departments participating in the land development process</p> <p>(d) Forms, rules and procedures in government land and in land development application</p> <p>(e) Steps and processes in government decision making</p> <p>(f) Division of powers in government administration</p> <p>(g) Durations of an approval at the Land Office</p>	<p>Official records</p> <p>Interview with government officials</p>	<p>statutes of law, regulations and directives</p>

	Themes of Analysis	Rationale and Aims of the Investigation	Data Collected	Source of Information	
				Primary Data	Secondary Data
3	An investigation on petrochemical firms' strategies in land acquisition and in land development process	<p>To apply the 'process analysis' step as suggested by Williamson (1991;1985; 2003), and to identify:</p> <p>(a) whether risk really matter in petrochemical industry (to re-evaluate opinion in Fan (2002));</p> <p>(b) how businesses align their transactions with governance structure based on models in Klein <i>et al.</i> (1990), Brouthers and Brouthers (2003) and Brouthers and Nakos (2004); and</p> <p>(c) to find the source of transaction costs and its relationship with:</p> <p>(i) locational choice</p> <p>(ii) plant arrangement</p>	<p>Development process: approval process, timing and durations, plant commissioning.</p> <p>Firms' external factors: global and local gas market changes, government behaviour.</p> <p>Inter-firm relationship: landowners' history, development of firms' ownership structure, plant production line relationship.</p>	<p>Official records</p> <p>Interview with firms</p>	<p>Official publication</p> <p>Investors documentation</p>

APPENDICES

APPENDICES

Appendix A

Preliminary Data

Section A : GDP, Export of Natural Gas, Crude Oil and Petroleum Products

	GDP	natural gas		crude oil		petroleum products	
year	%	volume (mt)	value (RM)	volume (mt)	value (RM)	volume (mt)	value (RM)
1991	8.6	7,650,000,000	3,280,000,000	22,600,000,000	10,200,000,000	2,540,000,000	1,020,000,000
1992	7.8	7,470,000,000	2,710,000,000	22,500,000,000	9,120,000,000	3,210,000,000	1,210,000,000
1993	8.3	7,840,000,000	2,650,000,000	21,000,000,000	7,930,000,000	3,430,000,000	1,290,000,000
1994	9.2	8,090,000,000	2,550,000,000	19,100,000,000	6,550,000,000	4,970,000,000	1,750,000,000
1995	9.3	9,730,000,000	3,070,000,000	19,200,000,000	6,700,000,000	6,560,000,000	2,400,000,000
1996	10	12,900,000,000	4,750,000,000	17,500,000,000	7,210,000,000	6,180,000,000	2,580,000,000
1997	7.3	15,100,000,000	6,260,000,000	15,900,000,000	7,070,000,000	6,260,000,000	2,820,000,000
1998	-7.4	14,600,000,000	5,950,000,000	18,100,000,000	7,540,000,000	6,240,000,000	2,640,000,000
1999	6.1	15,000,000,000	7,000,000,000	17,700,000,000	9,310,000,000	7,110,000,000	4,010,000,000
2000	8.5	15,400,000,000	11,400,000,000	16,700,000,000	14,200,000,000	8,030,000,000	7,230,000,000
2001	0.3	15,400,000,000	11,100,000,000	15,100,000,000	11,200,000,000	9,670,000,000	7,590,000,000
2002	4.1	15,000,000,000	9,890,000,000	16,200,000,000	11,600,000,000	8,510,000,000	6,680,000,000
2003	5.3	17,400,000,000	13,300,000,000	17,900,000,000	15,700,000,000	9,000,000,000	8,240,000,000

Source : MITI

Note : mt = metric tonne

Section B : Industrial Approvals by MITI 1991 – 2003

	Malaysia				Terengganu			Pahang		
Year	Total number	Total value of Initial Investment (RM)	Number of Petrochemical Approvals	No. of Jobs Created in Petrochemicals	Total number	Total value of Initial Investment (RM)	No. of Jobs Created	Total number	Total value of Initial Investment (RM)	No. of Jobs Created
1991	901	31,600,000,000	5	1399	18	6,380,000,000	15520	11	130,000,000	3748
1992	874	27,800,000,000	6	.	13	1,370,000,000	3735	5	812,000,000	1817
1993	686	13,800,000,000	2	.	7	3,030,000,000	1541	14	1,540,000,000	2029
1994	870	23,000,000,000	2	.	29	3,880,000,000	6462	18	561,000,000	7275
1995	782	20,900,000,000	4	374	19	1,760,000,000	4693	19	424,000,000	2420
1996	898	34,300,000,000	5	395	12	2,340,000,000	1386	26	1,720,000,000	3374
1997	759	25,800,000,000	7	1394	32	7,910,000,000	4144	30	3,130,000,000	4146
1998	844	26,400,000,000	10	1269	15	1,130,000,000	1825	13	1,710,000,000	1507
1999	725	17,000,000,000	15	1730	15	40,300,000	975	22	193,000,000	2322
2000	798	33,500,000,000	7	522	6	12,600,000	686	28	3,090,000,000	4059
2001	928	11,200,000,000	6	155	8	4,750,000,000	175	16	269,000,000	818
2002	792	9,630,000,000	13	730	4	485,000,000	540	16	236,000,000	1634
2003	965	17,900,000,000	11	223	7	.	.	17	923,000,000	.

Source : MITI

Section C : Projection for Demand for Petrochemical Industrial Sites

Year	Acreage		
	Kerteh	Gebeng	Total
1990		700	700
1992		700	700
1994		700	700
1996		2100	2100
1998		2100	2100
2000		2100	2100
2002	3010	1500	4510
2004	3260	1500	4760
2006	4260	1000	5260
2008	4260	5000	9260

Source: Calculated from Second Industrial Master Plan 1996 – 2005 (p. 111-112); '*Pelan Induk Perindustrian Terengganu 2001-2010*' (p.39-46); Briefing on Pahang's industrial sector: A Focus on Gebeng Industrial Estate. A Briefing Notes to Malaysian-German Business Chambers.

Extract From Federal Constitution

PART VI

RELATIONS BETWEEN THE FEDERATION AND THE STATES

Chapter 1 - Distribution of legislative powers

73. Extent of federal and State laws.

In exercising the legislative powers conferred on it by this Constitution -

- (a) Parliament may make laws for the whole or any part of the Federation and laws having effect outside as well as within the Federation;
- (b) the Legislature of a State may make laws for the whole or any part of that State.

74. Subject matter of federal and State laws.

- (1) Without prejudice to any power to make laws conferred on it by any other Article, Parliament may make laws with respect to any of the matters enumerated in the Federal List of the Concurrent List (that is to say, the First or Third List set out in the Ninth Schedule).
- (2) Without prejudice to any power to make laws conferred on it by any other Article, the Legislature of a State may make laws with respect to any of the matters enumerated in the State List (that is to say, the Second List set out in the Ninth Schedule) or the Concurrent List.
- (3) The power to make laws conferred by this Article is exercisable subject to any conditions or restrictions imposed with respect to any particular matter by this Constitution.
- (4) Where general as well as specific expressions are used in describing any of the matters enumerated in the Lists set out in the Ninth Schedule the generality of the former shall not be taken to be limited by the latter.

75. Inconsistencies between federal and State laws.

If any State law is inconsistent with a federal law, the federal law shall prevail and the State law shall, to the extent of the inconsistency, be void.

76. Power of Parliament to legislate for States in certain cases.

(1) Parliament may make laws with respect to any matter enumerated in the State List, but only as follows, that is to say:

- (a) for the purposed of implementing any treaty, agreement or convention between the Federation and any other country, or any decision of an international organization of which the Federation is a member; or
- (b) for the purpose of promoting uniformity of the laws of two or more State; or
- (c) if so requested by the Legislative Assembly of any State.

(2) No law shall be made in pursuance of paragraph (a) of Clause (1) with respect to any matters of Islamic law or the custom of the Malays or to any matters of native law or custom in the States of Sabah and Sarawak and no Bill for a law under that paragraph shall be introduced into either House of Parliament until the Government or any State concerned has been consulted.

(3) Subject to Clause (4), a law made in pursuance of paragraph (b) or paragraph (c) of Clause (1) shall not come into operation in any State until it has been adopted by a law made by the Legislature of that State, and shall then be deemed to be a State law and not a federal law, and may accordingly be amended or repealed by a law made by the Legislature.

(4) Parliament may, for the purpose only of ensuring uniformity of law and policy, make laws with respect to land tenure, the relations of landlord and tenant, registration of titles and deeds relating to land, transfer of land, mortgages, leases and charges in respect of land, easements and other rights and interests in land, compulsory acquisition of land, rating and valuation of land, and local government; and Clauses (1) (b) and (3) shall not apply to any law relating to any such matter.

76A. Power of Parliament to extend legislative powers of States.

(1) It is hereby declared that the power of Parliament to make laws with respect to a matter enumerated in the Federal List includes power to authorise the Legislatures of the States or any of them, subject to such conditions or restrictions (if any) as Parliament may impose, to make laws with respect to the whole or any part of that matter.

(2) Notwithstanding Article 75, a State law made under authority conferred by Act of Parliament as mentioned in Clause (1) may, if and to the extent that the Act so provides, amend or repeal (as regards the State in question) any federal law passed before that Act.

(3) Any matter with respect to which the Legislature of a State is for the time being authorised by Act of Parliament to make laws shall for purposes of Articles 79, 80 and 82 be treated as regards the State in question as if it were a matter enumerated in the Concurrent List.

...
...

Chapter 2 – Distribution of executive powers

80. Distribution of executive powers

(1) Subject to the following provisions of this Article the executive authority of the Federation extends to all matters with respect to which Parliament may make laws, and the executive authority of a State to all matters with respect to which the Legislature of that State may make laws.

(2) The executive authority of the Federation does not extend to any matter enumerated in the State List, except in so far as is provided in Articles 93 to 95, nor to any matter enumerated in the Concurrent List, except in so far as may be provided by federal or State law; and so far as federal or State law confers executive authority on the Federation with respect to any matter enumerated in the Concurrent List it may do so to the exclusion of the executive authority of the State.

(3) So far as a law made under Article 76 (4) makes provisions for conferring executive authority on the Federation it shall not operate in any State unless approved by resolution of the Legislative Assembly of that State.

(4) Federal law may provide that the executive authority of a State shall extend to the administration of any specified provisions of federal law and may for that purpose confer powers and impose duties or any authority of the State.

(5) Subject to any provisions of federal or State law, arrangements may be made between the Federation and a State for the performance of any functions by the authorities of the one on behalf of the authorities of the other and such arrangements may provide for the making of payments in respect of any costs incurred under the arrangements.

(6) Where, in pursuance of Clause (4), any functions are conferred by federal law on any authority of a State the Federation shall make such payments to the State as may be agreed between the Federation and the State or as may in default of agreement be determined by a tribunal appointed by the Lord President of the Supreme Court.

81. Obligations of States towards Federations

The executive authority of every State shall be so exercised-

- (a) as to ensure compliance with any federal law applying to that State; and
- (b) as not to impede or prejudice the exercise of the executive authority of the Federation.

...
...

Chapter 4 - Land

...
...

91. National Land Council

(1) There shall be a National Land Council consisting of a Minister as chairman, one representative from each of the States, who shall be appointed by the Ruler of Yang di-Pertua Negeri, and such number of representatives of the Federal Government as that Government may appoint, but subject to Clause (5) of Article 95E, the number of representatives of the Federal Government shall not exceed 10.

(2) The chairman may vote on any question before the National Land Council but shall not have a casting vote.

(3) The National Land Council shall be summoned to meet by the chairman as often as he considers necessary but there shall be at least one meeting in every year.

(4) If the chairman or a representative of a State or of the Federal Government is unable to attend a meeting, the authority by whom he was appointed may appoint another person to take his place at that meeting.

(5) It shall be the duty of the National Land Council to formulate from time to time in consultation with the Federal Government, the State Governments and the National Finance Council a national policy for the promotion and control of the utilisation of land throughout the Federation for mining, agriculture, forestry or any other purpose, and for the administration of any laws relating thereto; and the Federal and State Governments shall follow the policy so formulated.

(6) The Federal Government or the Government of any State may consult the National Land Council in respect of any other matter relating to the utilization of land or in respect of any proposed legislation dealing with land or of the administration of any such law, and it shall be the duty of the National Land Council to advise that Government on any such matters.

PART X - PUBLIC SERVICES

132. Public Services

- (1) For the purposes of this Constitution, the public services are -
- (a) the armed forces;
 - (b) the judicial and legal service;
 - (c) the general public service of the Federation;
 - (d) the police force;
 - (e) the railway service;
 - (f) the joint public services mentioned in Article 133;
 - (g) the public service of each State; and
 - (h) the education service.
- (2) Except as otherwise expressly provided by this Constitution, the qualifications for appointment and conditions of service of persons in the public services other than those mentioned in paragraph (g) of Clause (1) may be regulated by federal law and, subject to the provisions of any such law, by Yang di-Pertuan Agong; and the qualifications for appointment and conditions of service of persons in the public service of any State may be regulated by State law and, subject to the provisions of any such law, by the Ruler or Yang di-Pertua Negeri of that State.
- (2A) Except as expressly provided by this Constitution, every person who is a member of any of the services mentioned in paragraphs (a), (b), (c), (d), (e), (f) and (h) of Clause (1) holds office during the pleasure of the Yang di-Pertuan Agong, and, except as expressly provided by the Constitution of the State, every person who is a member of the public service of a State holds office during the pleasure of the Ruler or Yang di-Pertua Negeri.
- (3) The public service shall not be taken to comprise -
- (a) the office of any member of the administration in the Federation or a State; or
 - (b) the office of President, Speaker, Deputy President, Deputy Speaker or member of either House of Parliament or of the Legislative Assembly of a State; or
 - (c) the office of judge of the Supreme Court or a High Court; or
 - (d) the office of member of any Commission or Council established by this Constitution or any corresponding Commission or Council established by the Constitution of a State; or
 - (e) such diplomatic posts as the Yang di-Pertuan Agong may by order prescribe, being posts which but for the order would be posts in the general public service of the Federation.
- (4) References in this Part, except in Articles 136 and 147 to persons in the public service or to members of any of the public services shall not apply to:
- (a) ...
 - (b) ...
 - (c) ...
 - (d) ...

133. Joint services, etc.

- (1) Joint services, common to the Federation and one or more of the States or, at the request of the States concerned, to two or more States, may be established by federal law.
- (2) ...

134. ...

135. ...

136. ...

137. ...

138. ...

139. Public Services Commission.

(1) There shall be a Public Services Commission, whose jurisdiction shall, subject to Article 144....

(1A) ...

(2) ...

(3) ...

(4) ...

(5) ...

(6) ...

140 ...

141 ...

141A ...

142 ...

143 ...

144. Functions of Service Commissions

(1) Subject to the provisions of any existing law and to the provisions of this Constitution, it shall be the duty of a Commission to which this Part applies to appoint, confirm, emplace on the permanent or pensionable establishment, promote, transfer and exercise disciplinary control over members of the service or services to which its jurisdiction extends.

(2) ...

(3) ...

(4) ...

(5) Before acting, in accordance with Clause (3) or (4), on the recommendation of the Commission therein mentioned -

(a) the Yang di-Pertuan Agong shall consider the advice of the Prime Minister; and

(b) the Ruler or Yang di-Pertua Negeri shall consider the advice of the Chief Minister of his State, and may once refer the recommendation back to the Commission in order that it may be reconsidered.

(5A) Save as provided in Clause (5B), federal law and, subject to the provisions of any such law, regulations made by the Yang di-Pertuan Agong may, notwithstanding the provisions of Clause (1) of Article 135, provide for the exercise by any officer in a service to which the jurisdiction of a Commission to which this Part applies extends, or by any board of such officers, of any of the functions of the Commission under Clause (1):

Provided that -

(a) no such law or regulation may provide for the exercise by any such officer or board of officers of any power of first appointment to the permanent or pensionable establishment, or of any power of promotion (other than promotion to an acting appointment); and

(b) any person aggrieved by the exercise by any such officer or board of officers of any power of disciplinary control may appeal to the Commission within such time and in such manner as may be prescribed by any such law or regulations, and the Commission may make such order thereon as it may consider just.

(5B) ...

(6) ...

(6A) ...

(7) ...

(8) ...

The Ninth Schedule - Legislative Lists
(Articles 74, 77)

LEGISLATIVE LISTS

List I - Federal List

1. External affairs, including -
 - (a) Treaties, agreements and conventions with other countries and all matters which bring the Federation into relations with any other country;
 - (b) Implementation of treaties, agreements and conventions with other countries;
 - (c) Diplomatic, consular and trade representation;
 - (d) International organizations; participation in international bodies and implementation of decisions taken thereat;
 - (e) Extradition, fugitive offenders, admission into, and emigration and expulsion from, the Federation;
 - (f) Passports, visas, permits of entry or other certificates; quarantine;
 - (g) Foreign and extra-territorial jurisdiction; and
 - (h) Pilgrimages to places outside Malaysia.
2. Defence of the Federation or any part thereof, including -
 - (a) ...
 - ...
 - ...
 - (h) ...
3. Internal security, including -
 - (a) ...
 - ...
 - ...
 - (e) ...
4. Civil and criminal law and procedure and the administration of justice, including -
 - (a) ...
 - ...
 - ...
 - (l) ...
5. Federal citizenship and naturalisation; aliens.
6. The machinery of government, subject to the State List, but including -
 - (a) Elections to both Houses of Parliament and the Legislative Assemblies of the States and all matters connected therewith;
 - (b) The Armed Forces Council and the Commissions to which Part I applies;
 - (c) Federal services including the establishment of services common to the Federation and the States; services common to two or more States;
 - (d) Pensions and compensation for loss of office; gratuities and conditions of service;
 - (e) Government and administration of the Federal Territories of Kuala Lumpur and Labuan including Islamic law therein to the same extent as provided in item I in the State List and in respect of the Federal Territory of Labuan, native law and custom to the same extent as provided in item 13 of the Supplement to State List for States of Sabah and Sarawak;
 - (f) Federal Government contracts;
 - (g) Federal public authorities; and
 - (h) Purchase, acquisition and holding of, and dealing with, property for federal purposes.
7. Finance, including -
 - (a) ...
 - (b) ...
 - ...
 - ...
 - (m) Capital issues, ...
8. Trade, commerce and industry, including -
 - (a) ...
 - (b) ...
 - (c) ...
 - (d) ...
 - (i) Industries, regulation of industrial undertakings;

- (j) Subject to item 2 (c) in the State List; Development of mineral resources, mines, mining, minerals and mineral ores, oils and oilfields; purchase, sale, import and export of minerals and mineral ores; petroleum products; regulation of labour and safety in mines and oilfields;
 - (k) Factories, boilers and machinery, dangerous trades; and
 - (l) Dangerous and inflammable substances.
9. Shipping, navigation and fisheries, including -
- (a) ...
 - ...
 - ...
 - (f) ...
10. Communications and transport, including -
- (a) ...
 - ...
 - ...
 - (h) ...
11. Federal works and power, including -
- (a) ...
 - ...
 - (c) ...
12. Surveys, inquiries and research, including -
- (a) ...
 - ...
 - ...
 - (d) ...
13. Education, including -
- (a) ...
 - (b) ...
14. Medicine and health including sanitation in the federal capital, and including -
- (a) ...
 - ...
 - ...
 - (d) ...
15. Labour and social security, including -
- (a) ...
 - ...
 - (c) ...
16. Welfare of the aborigines.
17. Professional occupations other than those specifically enumerated.
18. Holidays other than State holidays; standard of time.
19. Unincorporated societies.
20. Control of agricultural pests; protection against such pests; prevention of plant diseases.
21. Newspaper, publications, publishers, printing and printing presses.
22. Censorship.
23. Subject to item 5(f) of the State List, theatres; cinemas; cinematograph films; places of public amusement.
24. Federal housing and improvement trusts.
25. Co-operative societies.
26. Subject to item 9A of the Concurrent List, prevention and extinguishment of fire, including fire services and fire brigades.
27. All matters relating to the Federal Territory, including the matters enumerated in items 2,3,4 and 5 of the State List and in the Cast of the Federal Territory of Labuan, the matter enumerated in items 15,16 and 17 of the Supplement to State List for States of Sabah and Sarawak.

List II - State List

(Article 95B (1) (a))

1. Except with respect to the Federal Territories of Kuala Lumpur and Labuan, Islamic law and personal and family law of persons professing the religion of Islam, including the Islamic law relating to succession, testate and intestate, betrothal, marriage, divorce, dower, maintenance, adoption, legitimacy guardianship, gifts, partitions and non-charitable trusts; Wakafs and the definition and regulation of charitable and religious endowments, institutions, trusts, charities and charitable institutions operating wholly within the State; Malay customs. Zakat, Fitrah and Baitulmal or similar Islamic religious revenue, mosques or any Islamic public places of worship, creation and punishment of offences by persons professing the religion of Islam against precepts of that religion, except in regard to matters included in the Federal List; the constitution, organisation and procedure of Syariah courts, which shall have jurisdiction only over person professing the religion of Islam and in respect only of the matters included in this paragraph, but shall not have jurisdiction in respect of offences except in so far as conferred by federal law*, the control of propagating doctrines and beliefs among persons professing the religion of Islam; the determination of matters of Islamic law and doctrine Malay custom.
2. Except with respect to the Federal Territories of Kuala Lumpur and Labuan, land including -
 - (a) Land tenure, relation of landlord and tenant; registration of titles and deeds relating to land; colonization, land improvement and soil conservation; rent restriction;
 - (b) Malay reservations or, in the States of Sabah and Sarawak, native reservations;
 - (c) Permits and licences for prospecting for mines; mining leases and certificates;
 - (d) Compulsory acquisition of land;
 - (e) Transfer of land, mortgages, leases and charges in respect of land; easements; and
 - (f) Escheat; treasure trove excluding antiquities.
3. Except with respect to the Federal Territories of Kuala Lumpur and Labuan, agriculture and forestry, including -
 - (a) Agriculture and agricultural loans, and
 - (b) Forests.
4. Local government outside the Federal Territories of Kuala Lumpur and Labuan, including -
 - (a) Local administration; municipal corporation; local town and rural board and other local authorities; local government services, local rates, local government elections;
 - (b) Obnoxious trades and public nuisances in local authority areas;
 - (c) Housing and provision for housing accommodation, improvement trusts.
5. Except with respect to the Federal Territories of Kuala Lumpur and Labuan, other services of a local character, that is to say -
 - (a) (Repealed).
 - (b) Boarding houses and lodging houses;
 - (c) Burial and cremation grounds;
 - (d) Pounds and cattle trespass;
 - (e) Markets and fairs; and
 - (f) Licensing of theatres, cinemas and places of public amusement.
6. State works and water, that is to say -
 - (a) Public work for State purposes;
 - (b) Roads, bridges and ferries other than those in Federal List, regulation of weight and speed of vehicles on such roads; and
 - (c) Subject to the Federal List, water (including water supplies, rivers and canals); control of silt; riparian rights.
7. Machinery of the State Government, subject to the Federal List, but including-
 - (a) Civil List and State pensions;
 - (b) Exclusive State services;
 - (c) Borrowing on the security of the State Consolidated Fund;
 - (d) Loans for State purposes;
 - (e) Public debt of the State; and
 - (f) Fees in respect of any of the matters included in the State List or dealt with by State law.
8. State holidays.
9. Creation of offences in respect of any of the matters included in the State List or dealt with by State law, proof of State law and of thing done thereunder, and proof of any matter for purposes of State law.
10. Inquiries for State purposes, including commissions of inquiry and collection of statistics with respect to any of the matters included in the State List of dealt with by State law.
11. Indemnity in respect of any of the matters in the State List or dealt with by State law.
12. Turtles and riverine fishing.

List IIA - Supplement to State List for State of Sabah and Sarawak

13. Native law and custom, including the personal law relating to marriage, divorce, guardianship, maintenance, adoption, legitimacy, family law, gifts or succession testate or intestate; registration of adoptions under native law or custom; the determination of matters of native law or custom; the constitution, organization and procedure of native courts (including the right of audience in such courts), and the jurisdiction and powers of such courts, which shall extend only to the matters included in this paragraph and shall not include jurisdiction in respect of offences except in so far as conferred by federal law.
14. Incorporation of authorities and other bodies set up by State law, if incorporated directly by State law, and regulation and winding up of corporations so created.
15. Ports and harbours, other than those declared to be federal by or under federal law; regulation of traffic by water in ports and harbours or on rivers wholly within the State, except traffic in federal ports or harbours; foreshores.
16. Cadastral land surveys.
17. Libraries, museums, ancient and historical monuments and records and archaeological sites and remains, other than those declared to be federal by or under federal law.
18. In Sabah, the Sabah Railway.
19. (Repealed).

List II B - (Repealed)

List III - Concurrent List
(Article 95B (1) (b))

1. Social welfare; social services subject to Lists I and II; protection of women, children and young persons.
2. Scholarships.
3. Protection of wild animals and wild birds; National Parks.
4. Animal husbandry, prevention of cruelty to animals; veterinary services; animal quarantine.
5. Town and country planning, except in the federal capital.
6. Vagrancy and itinerant hawkers.
7. Public health, sanitation (excluding sanitation in the federal capital) and the prevention of diseases.
8. Drainage and irrigation.
9. Rehabilitation of mining land and land which has suffered soil erosion.
- 9A. Fire safety measures and fire precautions in the construction and maintenance of building.

List IIIA - Supplement to Concurrent List for State of Sabah and Sarawak

10. Personal law relating to marriage, divorce, guardianship, maintenance, adoption, legitimacy, family law, gifts or succession testate and intestate.
11. Adulteration of foodstuffs and other goods.
12. Shipping under fifteen registered tons, including the carriage of passengers and goods by such shipping, maritime and estuarine fishing and fisheries.
13. The production, distribution and supply of water power and of electricity generated by water power.
14. Agricultural and forestry research, control of agricultural pests, and protection against such pests, prevention of plant diseases.
15. Charities and charitable trusts and institutions in the State (that is to say, operating wholly within, or created and operating in, the State) and their trustees, including the incorporation thereof and the regulation and winding-up of incorporated charities and charitable institutions in the State.
16. Theatres; cinemas; cinematograph films; places of public amusements.
17. Elections to the State Assembly held during the period of indirect elections.
18. In Sabah until the end of the year 1970 (but not in Sarawak), medicine and health, including the matters specified in items 14 (a) to (d) of the Federal

List III B - (Repealed)

National Land Council Proceedings

A : Members of the Council

1. Deputy Prime Minister
2. Minister of Finance
3. Minister of Public Works
4. Minister of Primary Industries
5. Minister of International Trade and Industry
6. Minister of Agriculture
7. Minister of Science, Technology and the Environment
8. Minister of Housing and Local Government
9. Minister of Land and Co-operative Development
10. Minister of Entrepreneurial Development
11. Chief Minister of Perlis.
12. Chief Minister of Kedah
13. Chief Minister of Penang
14. Chief Minister of Perak
15. Chief Minister of Selangor
16. Chief Minister of Negeri Sembilan
17. Chief Minister of Malacca
18. Chief Minister of Johore
19. Chief Minister of Pahang
20. Chief Minister of Terengganu
21. Chief Minister of Kelantan
22. Chief Minister of Sarawak
23. Chief Minister of Sabah
24. Attorney General

B : Extract From Minutes of the Meetings 1996 – 2000

Key:

- (x) Proceeding number
- (a) Brief description of the Proceeding
- (b) Issue
- (c) Proceeding Category
- (d) Issue Category
- (e) Decisions Made

(1) MTN.Bil.1/52/1996

- (a) A proposal to register land ownership for commercial allotments along toll highways.
- (b) State Governments complained that they were losing revenues from quit rent on land used for highways as a result of the compulsory purchase of private land for highway construction.
- (c) Allocation of land to the Central Government.
- (d) To standardise procedures for registration of land by the Central Government.
- (e) The Council decided to register land ownership for commercial allotments along toll highways. Issue resolved.

(2) MTN.Bil.2/52/1996

- (a) A proposal to establish a training institute for land administration.
- (b) There were at the time two land administration training institutes. One was for land administration and the other was for land survey training. To be more efficient, a new institute was proposed that would merge the two existing institutions.
- (c) Report of project implementation.
- (d) To improve Land Office administration system.
- (e) Approved. Issue resolved.

(3) MTN.Bil.3/52/1996

- (a) A proposal to revise the compensation rate for land under high voltage lines.
- (b) There was a need to revise the compensation rate for land under high voltage lines in line with changes in the market price of property.
- (c) Law proposal.
- (d) To protect landowners' rights.
- (e) Approved. Issue resolved

(4) MTN.Bil.4/52/1996

- (a) A draft proposal for rules regarding the levy on land transferred to foreign entities.
- (b) During the economic turmoil of the late 1990s, to control property price speculation, the Parliament passed a bill imposing a levy on land transferred to foreign entities.
- (c) A uniform policy.
- (d) To streamline with the central government economic policies on land supply.
- (e) Approved.

(5) MTN.Bil. 5/52/1996

- (a) A proposal for amending land laws relating to the Malay reservations.
- (b) There were studies that recommended amending the land laws relating to the Malay reservations to ease restrictions and make the land easier to develop and trade.
- (c) Law amendment.
- (d) To streamline Central and State Governments economic policies regarding land supply.
- (e) State governments objected to the proposal and the issue was not resolved.

(6) MTN.Bil.6/52/1996

- (a) A proposal for a draft policy on strategies to redevelop land under the FELDA schemes.
- (b) The Central government, under the Rural Development Measures, in the 1960s and 1970s undertook land development projects that were implemented by FELDA, a Federal Government agency. After a 25-year period starting from the date when a land development project was handed to FELDA or after settlers repaid the land development costs, the land development projects used to be handed over to State Governments and ownership of the allotments registered under the settlers' names. In the 1990s the Central Government proposed a new policy to transform the orientation of the settlement areas from agricultural outlook into urban/township settlement.
- (c) Allocation of land to the central government.
- (d) To solve a dispute over limits of Central Government power.
- (e) State governments objected to the proposal and the issue was not resolved.

(7) MTN Bil. 1/53/1997

- (a) A proposal to standardise the quit rent on land owned by the Federal Government.
- (b) The quit rent varied between states. Thus, as the largest land owner in Malaysia the Federal government faced difficulties in settling its dues to State governments. To resolve the problem, the Federal Government applied to all States to standardise the quit rent for land owned by Federal Government.
- (c) Allocation of land to the central government.
- (d) To standardise quit rent.
- (e) State governments objected to the proposal and the issue was not resolved.

(8) MTN Bil. 2/53/1997

- (a) A proposal to amend the Land Acquisition Act (1960).
- (b) There was accusations that some state governments were unfair to landowners when paying compensation for compulsory land purchase.
- (c) Law proposal.
- (d) To protect land owners' rights.
- (e) The draft bill was passed and the issue was resolved.

(9) MTN Bil.3/53/1997

- (a) A proposal to register land ownership in the Federal reserves.
- (b) State Governments proposed to register ownership of land reserved for the Federal government. Thus, quit rent could be collected.
- (c) Allocation of land to the Central government.
- (d) To solve a dispute over limits of Central Government power.
- (e) Approved and resolved

(10) MTN Bil. 4/53/1997

- (a) A proposal to standardise quit rent on land for government schools.
- (b) The Federal Government applied to reduce the quit rent on land for government schools arguing that Federal Government educational facilities benefit both the Federal Government and States.
- (c) Allocation of land to the Central Government.
- (d) To standardise quit rent.
- (e) Approved and resolved.

(11) MTN Bil. 5/53/1997

- (a) A proposal to amend Schedule Five of the National Land Code.
- (b) Law updating.
- (c) Law proposal.
- (d) Uniformity of laws and regulations.
- (e) The draft bill was passed and the issue was resolved.

(12) MTN Bil. 6/53/1997

- (a) A proposal to amend the National Land Code to impose a levy on land acquired by non-Malaysian entities.
- (b) During economic turmoil in 1997, the Parliament adopted a resolution to impose a levy on all land transfers to foreigners. It was believed that this measure would stop property 'over-speculation'. The resolution could not be implemented unless the Code was amended.
- (c) Law proposal.
- (d) To streamline the Central State Government economic policies regarding land supply.
- (e) The draft bill was passed and the issue was resolved.

(13) MTN Bil. 7/53/1997

- (a) A proposal for measures to curb illegal encroachment onto Federal lands.
- (b) The Federal Government sought State Government assistance in enforcing of laws on illegal occupation of Central Government lands.
- (c) Law enforcement.
- (d) To improve Land Office administration.
- (e) State Governments agreed to cooperate. Resolved.

(14) MTN Bil. 1/54/1998

- (a) A proposal for procedures for handling files on land conversion applications at the Land Office.
- (b) A study commissioned by the Prime Minister's Department recommended that in order to increase Land Office efficiency the filing movement system needed to be revised.
- (c) Land Office Administrative Procedure.
- (d) To improve Land Office administration system
- (e) Approved and State Governments adopted the recommendations. Resolved.

(15) MTN Bil. 2/54/1998

- (a) A draft policy for developing land designated as 'urban areas' within FELDA schemes.
- (b) The Land Development (Group Settlement Areas) Act 1960 (GSA) requires the authorities to divide Group Settlement Areas, including FELDA schemes, into 'rural' and 'urban' areas. A rural area is where a plantation is located and an urban area is where the settlement is located. Since the times have changed and urbanisation has been rapid, FELDA settlements have transformed into towns and growth centres. A policy was needed to guide the development process.
- (c) A uniform policy.
- (d) To streamline the Central State Government economic policies regarding land supply.
- (e) Approved and State Governments adopted the recommendations. Resolved.

(16) MTN Bil. 3/54/1998

- (a) A draft policy for crematoriums and burial grounds.
- (b) Traditionally the crematoriums and burial grounds have been provided by religious and charity organizations. Given growing demand, trading these properties had become lucrative business. The government and religious bodies felt there was a need for policy guidelines, especially for State Governments, outlining when to approve applications for land conversion for crematoriums and burial grounds.
- (c) A uniform policy
- (d) To streamline the Central State Government economic policies regarding land supply.
- (e) Approved and State Governments adopted the recommendations. Resolved.

(17) MTN Bil. 4/54/1998

- (a) A draft policy to enhance agricultural production.
- (b) The ministry of Agriculture saw great potential for investment in horticulture in Malaysia. Potential areas were identified.
- (c) A uniform policy
- (d) To streamline with the central government economic policies on land supply
- (e) Resolved

(18) MTN Bil. 5/54/1998

- (a) A draft of guidelines for a procedure for land transfer to foreign entities.
- (b) During the economic crisis of 1997, the government introduced restrictions on the transfer of land to foreign entities in order to curb speculation. The Council needed to formulate guidelines for implementation by State Authorities. Any transfer to a foreign entity was subject to approval by the Foreign Investment Committee as well as a levy payable to the Land Office.
- (c) A uniform policy
- (d) To streamline the Central State Government economic policies regarding land supply.
- (e) Approved and State Governments adopted the recommendations. Resolved.

(19) MTN Bil. M1/54/1998

- (a) A project progress report (National Land Infrastructure System ([NaLiS])).
- (b) Project progress report.
- (c) Land Office Administration.
- (d) To improve the Land Office Administration system.
- (e) Ongoing supervision

(20) MTN Bil. M2/54/1998

- (a) A proposal for enforcing the Computerised Land Registration System in Petaling District, Selangor and the Federal Territory of Putrajaya.
- (b) As required by law, enforcement of the computerised land registration system requires the Council's approval.
- (c) Report of project implementation.
- (d) To improve the Land Office Administration system.
- (e) Approved and Resolved.

(21) MTN Bil. M3/54/1998

- (a) Report on implementation of the National Land Information Infrastructure.
- (b) The project enabled information about land (e.g. land ownership, boundary surveys, GIS mapping, valuations, soil, etc.) to be shared among government departments.
- (c) Report of project implementation
- (d) To improve the Land Office Administration system.
- (e) Approved and Resolved.

(22) MTN Bil. 1/55/1999

- (a) A proposal to register land titles for Federal Government within GSA areas.
- (b) Ownership of Federal Government land within GSA areas was normally not registered. State Governments proposed to register these land in order to collect quit rent from the Federal Government.
- (c) Allocation of land to the central government.
- (d) To standardise quit rent.
- (e) Approved and resolved

(23) MTN Bil. 2/55/1999

- (a) A proposal to standardise the quit rent for Central Government lands.
- (b) The proposal was to revise quit rent for Federal Government land used for purpose other than public facilities.
- (c) Allocation of land to the central government
- (d) To standardise quit rent.
- (e) Approved and resolved

(24) MTN Bil.3/55/1999

- (a) A proposal to designate sites for solid waste disposal as reservation land under section 62 of the National Land Code, and a proposal to register land ownership for sites used for incinerators.
- (b) The Central Government was undertaking projects to improve the national sanitary system. It needs a huge area of land at a cheap price. It asked State Government to provide land by way of reservation according to the NLC.
- (c) Allocation of land to the Central Government.
- (d) To standardise procedures for registration of Central Government lands.
- (e) Approved and resolved

(25) MTN Bil.4/55/1999

- (a) A proposal to standardise the quit rent for land used by the Fire Department as surrendered by local authorities.
- (b) Fire services were originally provided by local Authorities. Following changes in the Local Government Act of 1964, these services were vested to the Federal Government. However ownership of some lands were still under local authorities which enjoyed a low quit-rent. Upon agreement between Central and State Governments, all of these lands will be transferred to the Federal Government. This paper asked the State Governments to retain the low quit rent as as before.
- (c) Allocation of land to the Central Government.
- (d) To standardise premium (land price)
- (e) Approved and resolved

(26) MTN Bil. 5/55/1999

- (a) A proposal to declare land used by the central sewage system as public reservation.
- (b) The Federal Government, in order to save costs on the central sewage project, applied to State Governments to declare areas used for the project as public reservation.
- (c) Allocation of land to the Central Government.
- (d) To standardise procedures for registration for the Central Government lands
- (e) Approved and resolved

(27) MTN Bil. 6/55/1999

- (a) A proposal to reduce and standardise the quit rent for land used by government-supported schools.
- (b) There are three types of schools in Malaysia: Government schools, government-supported schools and private schools. Government-supported schools are those built by non-profit organisations such as religious bodies. The buildings and facilities provided by founding associations but the teachers' salaries are paid by the Federal Government. To ease financial burdens, these organisations asked the government to reduce the quit rent. The Council agreed to reduce the quit rent to RM100 per annum with certain conditions.
- (c) Allocation of land to the Central government.
- (d) To standardise the rate of quit rent Federal Government interest
- (e) Approved and resolved

(28) MTN Bil.7/55/1999

- (a) A proposal to register land ownership in Central Government reservations.
- (b) State Governments requested that the Federal Government register land ownership in Federal public reservations to allow for quit rent collection
- (c) Allocation of land the central government
- (d) To standardise quit rent.
- (e) State governments objected to the proposal and the issue was not resolved.

(29) MTN Bil. 8/55/1999

- (a) A proposal for a policy on Malay Reservation Development.
- (b) Proposed that the proceeding MTN.Bil. 5/52/1996 be discussed again.
- (c) Law proposal
- (d) To streamline Central and State Governments economic policies regarding land supply.
- (e) State governments objected to the proposal and the issue was not resolved.

(30) MTN.Bil.M1/55/1999

- (a) A proposal to amend the Environment Act (1974).
- (b) The council adopted a draft of a proposal to amend the Environment Act (1974). The objective of the amendment was to control the burning that frequently caused haze.
- (c) Law proposal
- (d) Law Enforcement.
- (e) The draft bill was passed and the issue was resolved.

(31) MTN Bil.M2/55/1999

- (a) A project progress report (National Land Infrastructure System ([NaLiS])).
- (b) Project progress report.
- (c) Land Office Administration.
- (d) To improve the Land Office Administration system.
- (e) Ongoing supervision

(32) MTN.Bil. 1/56/2000

- (a) A proposal to amend the National Land Code.
- (b) To fulfill the land law amendment procedure.
- (c) Law amendment.
- (d) To update the land laws.
- (e) The draft bill was passed and the issue was resolved.

(33) MTN.Bil. 2/56/2000

- (a) A proposal to amend the Land Strata Act (1985).
- (b) To fulfil the land law amendment procedure.
- (c) Law amendment.
- (d) To update the land laws.
- (e) The draft bill was passed and the issue was resolved.

(34) MTN.Bil. 3/56/2000

- (a) A proposal to amend the Land Acquisition Act (1960).
- (b) There were accusations that State Governments were abusing the law that allowed for compulsory purchase of people's land at low prices by using the land for non-public purposes, such as selling it to companies and property developers. The proposed amendment aimed to curb such practices.
- (c) Law amendment
- (d) To protect landowners' rights.
- (e) The draft bill was passed and the issue was resolved.

(35) MTN.Bil. 4/56/2000

- (a) A proposal for enforcing the Computerised Land Registration System in Johore, Kelantan, Melacca, Negeri Sembilan, Perak, Penang and Selanogor.
- (b) As required by law, enforcement of the computerised land registration system requires the Council's approval.
- (c) Report of project implementation.
- (d) To improve the Land Office Administration system.
- (e) Approved and Resolved.

(36) MTN.Bil. 5/56/2000

- (a) Minutes of the 15th Meeting of the National Forestry Council.
- (b) A formality (the Constitution requires minutes of the National Forestry Council and the National Mineral Council to be adopted by the National Land Council)
- (c) Adopting reports from subordinate councils (the National Forestry Council and National Mineral Council)
- (d) Adopting reports from subordinate councils.
- (e) Resolved.

(37) MTN.Bil. 6/56/2000

- (a) Minute of the 1st Meeting National Mineral Council.
- (b) A formality (the Constitution requires minutes of the National Forestry Council and the National Mineral Council to be adopted by the National Land Council)
- (c) Adopting reports from subordinate councils (the National Forestry Council and National Mineral Council)
- (d) Adopting reports from subordinate councils.
- (e) Resolved.

(38) MTN.Bil. M1/56/2000

- (a) A proposal for enforcing the Computerised Land Registration System in all States.
- (b) As required by law, enforcement of the computerised land registration system requires the Council's approval.
- (c) Report of project implementation.
- (d) To improve the Land Office Administration system.
- (e) Approved and Resolved.

(39) MTN.Bil. M2/56/2000

- (a) A project progress report (National Land Infrastructure System ([NaLiS])).
- (b) Project progress report.
- (c) Land Office Administration.
- (d) To improve the Land Office Administration system.
- (e) Ongoing supervision

C : Summary of the Decisions

(a) Decisions according to the NLC areas of jurisdiction

A uniform policy	6
Allocation of land to the Central Government	17
Land Office Administrative Procedure	1
Law amendments	9
Reports of project implementation	5

(b) Decisions according to the objectives of the meetings

For law enforcement	1
To protect landowners' /house buyers' rights	5
To improve Land Office administration	7
To resolve disputes between Federal and State Governments	17
To streamline land administration with Central Government economic policies on land supply	7
To update the land laws with to reflect changes in other statutes	1

Extract From the National Land Code

National Land Code
(Act-No. 56 of 1965)

14 Power of State Authority to make rules

(1) Subject to subsection (2), the State Authority may make rules generally for carrying out the objects and purposes of this Act within the State, and in particular, but without prejudice to the generality of the foregoing, may by such rules make provision with respect to-

- (a) the mode in which applications for State land are to be made;
- (aa) the exemption of any disposals of land, or any dealing or other act with regard to alienated land or any interest in land from the requirement in subsection (1) of section 433B or subsection (1) of section 433E, as the case maybe;
- (ab) the exemption of any non-citizen or foreign company or class of non-citizen or foreign company from Part Thirty-three (A) and the circumstances in which the exemption may be given;
- (b) the issue, under Chapters 2 and 3 respectively of Part Four, of temporary occupation licences and permits to extract and remove rock materials, and the issue for the purposes of section 427 of permits for the grazing of animals;
- (c) ...
- (d) ...
- (e) the rates (being rates per hectare or other lesser unit of area) at which the rent to be reserved on, and the premium (if any) to be charged in respect of, alienation under this Act of land of any class or description are, subject to provisions of this Act, to be calculated;
- (f) the payments to be made under, and other incidents of, licences and permits issued under this Act;
- (g) the fees or levy to be paid in connection with any matter arising under this Act;
- (ga)....
- (h)...
- (i)...
- (j)the collection,remission,rebate, payment by installments or deferment of payment of any item of land revenue;
- (ja)..
- (k)the powers and duties of any officers appointed under subsection (1) of section 12; and
- (l)..
- (1A)...
- (2)....

15 General powers of State Director, etc

- (1) The State Director, the Registrar, and any Land Administrator, may for the purposes of this Act (...) –
- (a) at all reasonable times have free access to, and enter upon, any land in the State;
 - (b) conduct enquiries in accordance with the provisions of Chapter 4;
 - (c) ...
 - (d)
 - (e) ...
 - (f) ...
 - (g) exercise all other powers conferred on him by this Act, and all such powers ancillary or incidental thereto as may be reasonably necessary to carry out the purposes of this Act.

PART FIVE DISPOSAL BY ALIENATION CHAPTER 1 INTRODUCTORY

76 Meaning of alienation.

The alienation of State land under this Act shall consist of its disposal by the State Authority-

- (a) ... for a term not exceeding ninety-nine years;
 - (aa) in perpetuity-
 - (i) ...
 - (ii) ..
 - (iii) ..
 - (a) in consideration of the payment of an annual rent;
 - (b) in consideration, unless the State Authority thinks fit to exempt therefrom in any particular case, of the payment of a premium;
 - (c) subject, unless the State Authority otherwise directs pursuant to subsection (5) of section 52, to a category of land use determined in accordance with subsection (2) and (3) of that section; and
 - (d) subject to such conditions and restrictions in interest as may be imposed by the State Authority under, or are applicable thereto by virtue of, any provision of this Act.
- Provided that ...

CHAPTER 2

APPROVAL OF LAND FOR ALIENATION

79 General provisions relating to approvals

- (1) Where any approval of the State Authority to the alienation of land under this Act relates to land which (under subsection (2) of section 77) is required to be surveyed before it can be held under final title, it shall be given by reference to a plan and description sufficient to enable the land and its boundaries to be provisionally identified and ascertained pending the survey.

- (2) The following matters shall be determined by the State Authority at the time when it approves the alienation of land under this Act to any person or body-
- (a) the area approved for alienation or (in the case of land requiring to be surveyed) the area provisionally approved;
 - (b) the period for which the land is to be alienated;
 - (ba) *(deleted)*;
 - (c) the form of final title under which the land is ultimately to be held;
 - (d) the rate per hectare or other lesser unit of area at which the rent to be reserved thereon is to be calculated;
 - (e) the question whether any premium is to be charged and, if so, the rate per hectare or other lesser unit of area at which it is to be calculated;
 - (f) the question whether (as permitted by subsection (5) of section 52) the land is to be alienated free from any category of land use and, if not, the category to be imposed (unless already prescribed by a notification having effect in relation to the land under subsection(2) of that section); and
 - (g) the express conditions and restrictions in interest (if any) to be imposed

CATEGORY : AGRICULTURE

115 Implied conditions affecting land subject to the category "agriculture"

- (1) Where any alienated land is subject by virtue of any provision of this Act to the category agriculture", the following implied conditions shall, subject to subsection (3), apply thereto-
- (a) that no building shall be erected on the land other than a building or buildings to be used for one or more of the purposes specified or referred to in sub-section (4);
 - (b) that a bona fide commencement of cultivation of the land shall be made within twelve months of the relevant date;
 - (c) that the whole area of the land, other than any part thereof-
 - (i) occupied by or in conjunction with a building (whenever erected) used for one or more of the purposes, specified or referred to in subsection (4), or
 - (ii) used for any of the purposes mentioned in paragraph (e) of that subsection, or any other purpose which the State Authority may specially authorise,
 shall be brought fully under cultivation within three years of the relevant date;
 - (d) that the area referred to in paragraph (c) shall be maintained and cultivated according to the rules of good husbandry; and
 - (e) that the said area shall be continuously cultivated:

Provided that ...

- (2) ...
- (3) ...
- (4) The purposes referred to in paragraph (a) of subsection (1) are the following-
- (a) the purposes of a dwelling-house for the proprietor of the land or any other person lawfully in occupation thereof, or for the servants of, or any persons employed for agricultural purposes by the proprietor or any other such person:
 Provided that the dwelling-house for the proprietor of the land or any other person lawfully in occupation thereof shall not occupy more than one-fifth of the whole area of the land or two hectares, whichever is the lesser;
 - (b) the purposes of agriculture;
 - (c) the purpose of extracting or processing raw material from any agricultural produce of such land;
 - (d) the purpose of preparing for distribution any such material or produce, or any honey-bees, livestock or reptiles kept or bred on such land, or the produce of such livestock or aquaculture on such land;
 - (e) the purposes of providing educational, medical, sanitary or other welfare facilities, including (so far as they are provided primarily for use by persons employed on the land) facilities for the purchase of goods and other commodities;
 - (f) any purpose which the State Authority may prescribe for the purpose of this section by rules under section 14;
 - (g) any purpose which the State Authority may think fit to authorise in the circumstances of any particular case;
 - (h) any purpose incidental to a purpose falling within any of the preceding paragraphs.

[CATEGORY : BUILDING]

116 Implied conditions affecting land subject to the category "building".

- (1) Where any alienated land is subject by virtue of any provision of this Act to the category "building", the following implied conditions shall, subject to subsection (3), apply thereto-

- (a) that, unless on the relevant date such a building already existed on the land, there shall within two years of that date be erected thereon a building suitable for use for one or more of the purposes specified or referred to in subsection (4);
- (b) that no part of the land shall be used for agricultural or industrial purposes (except in so far as the erection or maintenance of any building for a purpose or purposes falling within paragraph (f) or (g) of subsection (4) may constitute such a use);
- (c) that every building thereon (whensoever erected) shall be maintained in repair;
- (d) that no such building shall be demolished, altered or extended without the prior consent in writing of the appropriate authority.

(2) ...

(3) ...

- (4) the purposes referred to in paragraph (a) of subsection (1) are the following-

- (a) residential purposes;
- (b) administrative or commercial purposes, or the purposes of passenger transport;

- (c) the purposes of exhibiting, selling by retail, repairing or otherwise dealing in any goods or commodities, or of providing any services;
- (d) the purposes of providing educational, medical, sanitary or other welfare facilities;
- (e) the purposes of entertainment, refreshment or recreation;
- (f) ...
- (g) ...
- (h) ...

CATEGORY : INDUSTRY

117 Implied conditions affecting land subject to the category "industry"

- (1) Where any alienated land is subject by virtue of any provision of this Act to the category "industry", the following implied conditions shall, subject to subsection (2), apply thereto-
- (a) that it shall be used only for industrial purposes, that is to say, for the purposes of the erection or maintenance of factories, workshops, foundries, warehouse, docks, jetties, railways or other buildings or installations for use for on in connection with one or more of the following purposes-
 - (i) manufacture;
 - (ii) smelting;
 - (iii) the production or distribution of power;
 - (iv) the assembling, processing, storage, transport or distribution of goods, or other commodities;
 - (v) ...
 - (b) ...
 - (a) that no such building or installation shall be demolished, altered or extended without the prior consent in writing of the appropriate authority:
- Provided that ...
- (1A) ...
- (2) ...

VARIATION OF CONDITIONS, RESTRICTIONS AND CATEGORIES

124 Power of State Authority to vary conditions, etc, on application of proprietor

- (1) the proprietor of any alienated land may apply to the State Authority under this section for-
- (a) the alteration of any category of land use to which the land is for the time being subject or, where it is not so subject, for the imposition of any category thereon;
 - (b) ...
 - (ba) ...
- (5) Any direction given by the State Authority under this section may be made conditional upon all or any of the following matters-
- (a) the payment of a further premium;
 - (aa) ...
 - (c) ...
 - (d) ...

124A Simultaneous applications for sub-division and under section 124 (1) in respect of the proposed sub-divisional portions

- (1) the proprietor of any alienated land may apply to the State Authority for the approval of the sub-division of the land and at the same time make an application under subsection (1) of section 124 in respect of the proposed sub-divisional portions.
- (1A) ...
- (2) ..
- (3) ...
- (4) ...

[SURRENDER AND RE-ALIENATION - SPECIAL PROVISIONS]

204A Declaration as to continued operation of section 124 and Chapters 1 and 3 of Part Nine

The provisions of this part shall not be construed as affecting the continued operation of the provisions of section 124 and Chapters 1 and 3 of Part Nine, or the rights of a proprietor of alienated land to make an application under those provisions and to have his application considered and determined in accordance therewith.

204B Power to approve surrender and re-alienation

The State Authority may approve the ...

204C Conditions for approval of surrender and re-alienation

- (1) ...
- (2) ...

204D ...

204E Procedure on applications

- (1) ...

204F ...

204G ...

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24 Ogos 2004

Tuan,

**Permohonan Menjalankan Penyelidikan Akademik Untuk Kajian
Empirikal Bagi Memenuhi Keperluan Kursus Peringkat Ph.D Untuk
Diadakan di Kawasan Perindustrian Kompleks Petrokimia Gebeng di
Kuantan dan Kerteh di Terengganu**

Dengan hormatnya mohon dirujuk perkara di atas.

2. Sukacita dimaklumkan bahawa saya adalah seorang pegawai kerajaan Persekutuan dan pernah berkhidmat dalam pentadbiran Negeri Sembilan dan Kementerian Tanah dan Pembangunan Koperasi yang kini diberi Hadiah Persekutuan bagi melanjutkan pelajaran di peringkat Ph.D di Universiti Aberdeen, United Kingdom dalam bidang '*Land Economy*', dengan pengkhususan kemajuan perindustrian.

3. Atas persetujuan Universiti, saya berhasrat mengadakan kajian empirikal bagi memenuhi keperluan penyediaan tesis Ph.D saya berdasarkan kajian kes

kemajuan perindustrian petrokimia Malaysia khususnya di Kawasan Koridor Pantai Timur, khususnya di Kerteh dan di Gebeng.

4. Berdasarkan kajian awal, adalah difahamkan bahawa kedua-dua kawasan industri ini merupakan antara kawasan petrokimia yang terpenting di Asia selepas Jepun dan Singapura serta berpotensi untuk mengukuhkan kedudukannya dalam sektor berkenaan. Kajian awal juga menunjukkan keupayaan industri ini bersaing di peringkat antarabangsa atas kejayaan kerajaan Persekutuan, negeri dan peneraju utama industri berkenaan iaitu Petronas dalam menarik dan mengekalkan pelabur di industri berkenaan.

5. Pandangan-pandangan tersebut yang juga menjadi asas kepada hipotesis kajian akan dikaji secara empirikal. Oleh yang demikian, dengan persetujuan universiti, saya bercadang untuk menjalankan kajian tersebut di kedua-dua zon perindustrian pada awal tahun 2005.

6. Selain daripada dapat mempelajari kejayaan kerajaan dan Petronas dalam memajukan industri petrokimia Negara, dapatan kajian itu kelak dapat dikongsi bersama, khususnya dengan kerajaan dan Petronas, kiranya dapat dimanfaatkan untuk faedah pihak-pihak berkenaan.

7. Oleh yang demikian, saya dengan hormatnya memohon pertimbangan tuan agar dapat membenarkan kajian empirikal yang dimaksudkan ini dijalankan di jabatan bawah kelolaan tuan. Sukacita juga, sepanjang tempoh kajian, kiranya tiada sebarang halangan untuk saya menemu bual pegawai-pegawai tuan dan mendapatkan maklumat yang diperlukan setakat yang saya dibolehkan memperolehnya.

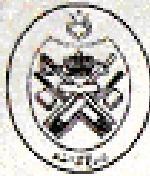
8. Bersama-sama ini disertakan sesalinan *proposal* kajian untuk rujukan tuan.

Segala perhatian dan pertimbangan tuan didahului dengan ucapan terima kasih

Yang benar

signed

(SALLEHUDDIN ISHAK)



لجابه ستياوسها كراجان، ترنگڠانو.
PEJABAT SETIAUSAHA KERAJAAN,
TERENGGANU,
WISMA DARUL IMAN,
20503 KUALA TERENGGANU.

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Teleks: SUKTR MA 5198
Telegram: SECSTATE, KUALA TERENGGANU
Fax: 09-6234228 dan 09-6246989
E-mail: upentr@terengganu.gov.my
http: www.terengganu.gov.my

RUJ. KITA : SUK. TR. (S) 435/25 Jld. 10 -(33)
TARIKH : 21 SEPTEMBER, 2004
BERSAMAAN : 06 SYAABAN, 1425

Encik Sallehuddin bin Ishak
No. 1, Jalan PU 8/8
Taman Puchong Utama
47100 Puchong
SELANGOR.

Tuan,

**PERMOHONAN MENJALANKAN PENYELIDIKAN AKADEMIK UNTUK
KAJIAN EMPIRIKAL BAGI MEMENUHI KEPERLUAN
KURSUS PERINGKAT PH.D UNTUK DIADAKAN DI KAWASAN
PERINDUSTRIAN KOMPLEKS PETROKIMIA GEBENG DI KUANTAN DAN
KERTEH DI TERENGGANU**

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan bertarikh 24 Ogos, 2004 adalah berkaitan.

2. Sehubungan dengan itu, sukacitanya dinyatakan pentadbiran ini tiada apa-apa halangan di atas permohonan tuan dan membenarkan kajian empirikal dijalankan di bawah Jabatan kelolaan saya dan menemubual pegawai-pegawai di bawah Jabatan saya bagi mendapatkan maklumat yang diperlukan.

Sekian, terima kasih.

" ISLAM HADHARI TERENGGANU BESTARI "
" BERKHIDMAT UNTUK NEGARA "

Saya yang menurut perintah

(MAZLAN BIN NERAZI)
Timbalan Setiausaha Kerajaan (Pembangunan)
b.p. Setiausaha Kerajaan
Terengganu.

SMKBT Surat Jahan pg. 36 386/uan.



يونيٲه فرنچڤ ايكونومي نكري
UNIT PERANCANG EKONOMI NEGERI

PEJABAT SETIAUSAHA KERAJAAN PAHANG
TINGKAT 4, WISMA SRI PAHANG
25646 KUANTAN.

Tel: 09-5126700
Fax: 09-5156327
e-mail: upen@pahang.gov.my

Ruj. Tuan Bil. (11) dlm. PHG.SULIT.UPEN 7338 PT. 13
Ruj. Kami

Tarikh : 30 Ogos 2004

En. Sallehuddin bin Ishak
No. 1, Jalan PU 8/8
Taman Puchong Utama
47100 PUCHONG
SELANGOR

Tuan,

**PERMOHONAN MENJALANKAN PENYELIDIKAN AKADEMIK UNTUK
KAJIAN EMPIRIKAL BAGI MEMENUHI KEPERLUAN KURSUS PERINGKAT
Ph.D UNTUK DIADAKAN DI KAWASAN PERINDUSTRIAN KOMPLEKS
PETROKIMIA GEBENG DI KUANTAN**

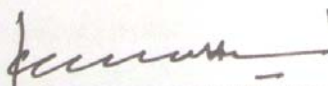
Dengan hormatnya saya merujuk kepada surat tuan bertarikh 24 Ogos 2004 mengenai perkara di atas.

2. Sukacita dimaklumkan bahawa Pentadbiran ini tiada halangan dan bersedia memberikan kerjasama kepada tuan bagi mendapatkan maklumat-maklumat yang diperlukan di dalam menjalankan penyelidikan akademik tersebut. Tuan bolehlah berhubung secara terus dengan pegawai di pentadbiran ini bagi mendapatkan maklumat-maklumat seperti yang dikehendaki.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,


(HJ. ZULKIFLI BIN HJ. YAACOB)
Unit Perancang Ekonomi Negeri
b.p. SETIAUSAHA KERAJAAN PAHANG

KY/mu
+Sallehuddin

Letter to FMM and Petrochemical Company CEO's
Section A : The Letter

Sallehuddin bin Ishak

Department of Urban Studies,
University of Glasgow,
25 Bute Gardens,
Glasgow G12 8RS
UNITED KINGDOM

No 1 Jalan PU 8/8
Taman Puchong Utama
47100 PUCHONG
SELANGOR
■ 012-3115666
✉ sallehuddinishak@yahoo.co.uk

.....
.....
.....
.....

22 February 2005

Sir,

Applying for a Meeting With

I am pleased to inform that I am a Ph.D candidate from Department of Urban Studies, University of Glasgow, Scotland, United Kingdom.

2. My study interest is on development of industrial land and emphasises on the development of petrochemical industry in the Malaysian East-Coast states. The study will investigate the process of the development from a triangular relationship, namely:

- (a) government-industry relationship;
- (b) industry-industry relationship; and
- (c) inter-government department relationship.

3. To complete the study, it is essential to get opinions and information from all related parties that engage in the industry, industrialists, government as well as related non-profit organizations. Therefore, I am very grateful if you can kindly spare your precious time, at date, and place convenience to you, to get your view especially on:

- (a) Malaysian and East Coast states prospect and problems in petrochemical industry;
- (b) expectation and problem in dealing with government departments;
- (c) business and informal relationship among industry;

4. To conclude, I am pleased to inform that this research is solely for academic purpose and bound by university's code of conducts. Therefore, as university researcher, I am responsible to maintain the anonymity of the organisation and person interviewed. I am also responsible to ensure the information gathered is only used for the purpose this academic research and will not be passed to other parties, government, business, not-profit organisations or individuals.

Yours sincerely,

(SALLEHUDDIN ISHAK)

Section B : List of Addressees

1. Federation of Malaysian Manufacturers.
2. Malaysian Petrochemical Association.
3. Petroliaam Nasional Berhad (Petronas).
4. BP Asia Pacific (M) Sdn Bhd.
5. BP-Petronas Acetyl Sdn Bhd.
6. Exxon-Mobil Malaysia Sdn. Bhd.
7. Optimal Chemicals (Malaysia) Sdn Bhd.
8. Aromatics Malaysia Sdn Bhd.
9. Vinyl Chloride Malaysia Sdn. Bhd.
10. Petronas Ammonia Sdn Bhd.
11. DuPont Malaysia Sdn Bhd.
12. BASF Chemical Asia Pacific (M).
13. Dow Chemical (M) Sdn Bhd.
14. MTBE Malaysia Sdn Bhd.
15. Polypropylene Malaysia Sdn Bhd.
16. Sealed Air / Cryovac Malaysia Sdn Bhd.
17. Industrial Resins Malaysia Sdn Bhd.
18. Kaneka Malaysia Sdn Bhd
19. Mitsubishi Chemical (Malaysia).
20. Petlin Malaysia Sdn Bhd.
21. Flexsys Asia Pacific Sdn. Bhd.
22. WR Grace Specialty Chemical Malaysia Sdn Bhd.
23. Eastman Malaysia Sdn Bhd.
24. Polyplastics Malaysia Sdn. Bhd.
25. Kertih Airport.
26. Kertih Port.
27. Kuantan Port.

Data Collection Report**1. INTRODUCTION – PRELIMINARY RESEARCH**

Data collection began with formal applications sent to the State Governments of Terengganu and Pahang as well as Petronas. These letters, dated 24 August 2004, were in Malay and the translation is in Appendix E. The letters to the state governments were addressed to the State Economic Development Unit (SEPU) at the State Secretariats. The letter for Petronas was sent to the company headquarters at Petronas Twin Towers at the KLCC, Kuala Lumpur. Official approval was secured from Terengganu on 21 September 2004 in a letter signed by the Deputy State Secretary. Approval from the State of Pahang was secured earlier in a letter dated 30 August 2004. Even though there was no written consent from Petronas, the researcher was invited to meet with a company's official. Another letter was addressed to the Secretary General, Ministry of Natural Resources and the Environment on 27 January 2005. On 22 February 2005, a letter, as copied in Appendix F, was sent to the Malaysian Petrochemical Association (MPA). The MPA represents manufacturers and services in the petrochemical industry sub-sector and is a branch of the Federation of Malaysian Manufacturers (FMM). Below is a record of the activities that followed:

- (a) On 18 August 2004, a meeting was held with the Deputy State Director of Lands and Mines in Kuala Terengganu. It was learnt that the department would communicate with the Kemaman Land Office, where records of applications for land in the studied area are maintained. The official also offered to secure assistance from other departments especially the SEPU and the Municipality of Kemaman. After discussion, a list of industrial sites and associated companies throughout the state was provided. It was learnt that the list was prepared by the Kemaman Municipality.
- (b) A meeting was held with the Deputy State Director of the Economic Planning Unit (SEPU), Pahang (SEPU), in Kuantan on 30 August 2004. At this meeting, the researcher was informed that although the department would not be able to supply the requested information, the research was fully supported by the State. It was learnt that all planned industrial sites in Pahang are vested to the Pahang SEDC. As this body is also under the jurisdiction of the SEPU, the SEDC was asked to assist with the research. As a consequence, on the same day, an appointment with an SEDC official was arranged. During the meeting, important information on the development of the GIPC as well as on site transaction was obtained.
- (c) A meeting was held with the Media Manager of Petronas on 21 September 2004, at the Corporate Affairs Division, at the Petronas Twin Towers, during which assurance was given that Petronas would fully cooperate and provide all information needed. To follow up, the headquarters would liaise with the East-Coast Regional Manager, who is in charge of the KIPC and GIPC, to provide further assistance. Before the discussion started, a stack of papers was ready on the officers' table ready to be collected.
- (d) Since a full list of companies operating in Kuantan was not available at the Pahang SEPU, correspondence with the Department of the Environment of Pahang was established. On 8 December 2004, a full list was received by e-mail.
- (e) A meeting was held with a senior official of the Federation of Malaysian Manufacturers (FMM), on 15 February 2005, in Kuala Lumpur. Besides supplying a full contact list of its members, as in Appendix F, full cooperation was also assured.

- (f) A courtesy call was made to the Secretary General of the Ministry of Natural Resources and the Environment (SGNRE) on 16 February 2005 in Kuala Lumpur. The SGNRE is also the Secretary of the National Land Council. During the meeting, he granted permission to approach and gather information from any of his staff and subordinate departments.

After analysing the documents provided, it was clear that there is a significant difference between methods of site acquisition as well as land ownership history of factories in the KIPC and GIPC. All sites in the KIPC are currently owned by Petronas-related companies and were originally awarded by the state government to Petronas. In contrast, all sites in the GIPC were acquired through normal sale and purchase arrangements between the Pahang SEDC and the present occupiers. Another dissimilarity is that Petronas-related companies are minority residents at the GIPC. The differences discovered at this early stage of investigation enabled the researcher to fine tune his data collection strategy.

Since all property transactions are recorded and maintained at the National Property Information Centre (NAPIC) as well as published in the Property Reports, data on property transactions in the GIPC was mostly obtainable in print form from published or unpublished sources. In other cases, assistance from NAPIC was required. Data on the KIPC on the other hand, had to be dug out of official government records. To this end, another letter was addressed to the NAPIC on 18 March 2005.

2. OFFICIAL RECORD INVESTIGATION AT THE LAND OFFICE

To facilitate an official record investigation in order to gather information on the history of land development in the KIPC, three separate letters, dated 27 January 2005, were addressed to the State Director of Lands and Mines (DLMO), the Land Administrator of Kemaman and the Terengganu State Development Corporation requesting permission to interview officials and obtain access to official records. A written consent was received with an invitation for a formal meeting held on 24 February 2005, purposely for this exercise. This meeting was arranged by the DLMO at the Kemaman Land Office and chaired by the Deputy Director of Lands and Mines. Representatives from the Municipality of Kemaman and senior officials at the Land Office were among the attendees.

3. LOG BOOK

A. AUG – SEP 2004

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
24.8.2004			Letter sent to Petronas, State Governments of Pahang and Terengganu		
21.9.2004			Received approval from the State of Terengganu Met with Petronas Officer		
30.8.2004			Met Pahang Deputy State Director of SEPU Met with Pahang SEDC Officer		

B. FEB – MAY 2005

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
27.1.2005			Letter sent to Terengganu DLMO, Kemaman Land Office and Terengganu SEDC		
14.2.2005	12.00pm	while driving	Received a phone call from Petronas Kerteh Regional Manager – agreed to meet on 27.2.2005, 10.00am, at his office. He also invited me to go around the KIPC area and to take aerial photographs.		Kuala Lumpur
	2.00pm	KLCC	Received text message from Terengganu SEPU, confirming interview date, 20.2.2005, 10.00am.		
	2.15pm	KLCC	Confirmed interview with Terengganu SEDC investment executive, 22.2.2005, over lunch.		

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
15.2.2005	10.00am-11.00am	Petaling Jaya	<p>Met with Executive Officer of the FMM and she:</p> <ol style="list-style-type: none"> 1) informed the researcher that the association does not have much information on members' business. The role of the association is limited to: <ol style="list-style-type: none"> (a) communicating between members; (b) channelling problems faced by the members to the government (c) be communicating channel between members with other businesses. 2) informed the researcher that under the FMM is the Association of Malaysian Petrochemical Industries (MPEA) which has about forty members. She advised the researcher that approaching and interviewing the chairman of FMM would not help much. The chairman of the MPEA would be more helpful. She will make arrangements. 3) agreed to supply the researcher details of MPA membership with up-to-date contact numbers. 	20	Kuala Lumpur
16.2.2005	8.30am – 9.30am	NRE, KL	<p>Met with Sec. Gen. Ministry of NRE and during the discussion he:</p> <ol style="list-style-type: none"> 1) agreed to allow officers of his ministry to be interviewed and provide information needed; 2) agreed with a suggestion that there are crucial problems of 'delays in government approvals for land development for industrial lands. He also agreed that the government cannot automatically to supply land in reaction to demand. Even the Prime Minister, in a recent meeting with top government officials expressed concern regarding the matter. The Prime Minister also mentioned an approval in the chemical industry in the State of Malacca which took only three months as good example to follow. 3) agreed with a suggestion that decisions from Central Government, for example from the National Land Council (NLC) normally take a very long time to reach Land Administrators. Thus, a long time is required is needed to implement them. 4) suggested the researcher to look at a case where decision from the NLC which was made in 1993 to uniform all state mining laws. Until last week, only five state government had agreed to adopt the law. He said, some states, for certain some reasons, simply find a diplomatic way to reject the laws. 	20	Kuala Lumpur

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
17.2.2004	10.15am	Kuala Lumpur	Confirmed a meeting with LA Kemaman, organised by DLMO on 24.2.2005, 9.30am		
18.2.2004	8.30am	Kuala Lumpur	Meeting with an official of the Department of the Director General of Land and Mines was cancelled for the second time.		
19.2.2005	4.30pm-1.30am	Kuala Lumpur	Driving to Terengganu (to Permaisuri).	455	Permaisuri
20.2.2005	10.45am-12.15pm	Kuala Terengganu	Interview the State Assistant Secretary (Industry).	90	Permaisuri
	1.00pm-2.15pm	DLMO	Meeting with State Deputy Director of Lands and Mines to arrange a formal meeting between the Kemaman Land Office, Kemaman Municipality and the researcher on 24.2.2005, 9.30am at Kemaman Land Office.		
	5.50pm		Return to Permaisuri.	90	Permaisuri
21.2.2005	3.20pm-4.00pm	Kuala Terengganu	Interview with the Director of Investment and Planning, SEDC Terengganu.	90	Permaisuri
	5.50pm		Return to Permaisuri.	90	Permaisuri
22.2.2005	9.00am	Kuala Terengganu	Meeting with official at DLMO was cancelled – for an urgent matter.	90	Permaisuri
	11.00am	Permaisuri	Permaisuri.		Permaisuri
23.2.2005	3.00pm	Permaisuri	Meeting with officials from NAPIC was cancelled.		Permaisuri
	7.00pm		Driving to Kuantan from Permaisuri.	310	Kuantan
24.2.2005	9.30am-12.00pm	Kemaman	Formal meeting with LA of Kemaman, Kemaman Municipality and Terengganu DLMO. At the meeting it was agreed that since the research directly benefits the state government, officers and staff may be interviewed and official records may be viewed	60	Kuantan
	3.00pm		Return to Kuala Lumpur for weekend	335	Kuala Lumpur

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
27.2.2005	4.00am	Kuala Lumpur	Driving to KIPC from Kuala Lumpur	335	
	9.00am	Kemaman	Meeting with Petronas GM called off – replaced by a meeting with a deputy GM (interviewee B11)		
	12.00pm		Return to Permaisuri	250	Permaisuri
28.2.2005	6.00am	Permaisuri	Driving from Permaisuri to Kemaman	295	Kuantan
	11.00am	Kemaman	Interview Land Office Staff regarding land conversion process. Communicate with Terengganu Royal Golf Club captain; agreed to be interviewed on 12.3.2005		
	2.00pm		Communicate with oil companies: BP Asia Pacific Mitsubishi BASF Chemicals Dow Chemicals Industrial Resins Association of Malaysian Petrochemical Companies. Agreed to be interviewed on 4.3.2005		
	4.00pm		Drive to stay in Kuantan	60	Kuantan
1.3.2005	11.00am	Kemaman	Met with Kemaman Land Office staff to interview regarding applications for government land for industrial sites and to identify records on petrochemical industrial sites approvals	60	Kuantan
	4.00pm		Drive to stay in Kuantan	60	Kuantan
2.3.2005	9.00am	Kemaman	Met with Kemaman Land Office staff to interview regarding approval process for land conversions and to prepare study samples.	60	Kuantan
	4.00pm		Drive to Kuantan	60	Kuantan
3.3.2005	9.00am	Kemaman	Record Inspection at the Kemaman Land Office	60	Kuantan
	4.00pm		Drive to Kuala Lumpur from Kemaman	335	Kuala Lumpur

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
4.3.2005	10.00am	KLCC	Interview with the President of the Malaysian Petrochemical Association.	30	Kuala Lumpur
12.3.2005	10.00am	Kuala Lumpur	Drive from Kuala Lumpur to meet with the Royal Terengganu Golf Captain at night, in Kuala Terengganu	495	Permaisuri
	11.00pm	Kuala Terengganu	Drive to Permaisuri	90	Permaisuri
14.3.2005	9.00am	Kuala Terengganu	Interview with former State Deputy Director of SEPU, Terengganu	90	Permaisuri
	2.00pm	Kemaman	Record Inspection at the Kemaman Land Office	160	Kuantan
	4.00pm		Drive to Kuantan	60	
15.3.2005	9.00am	Kemaman	Record Inspection at the Kemaman Land Office	60	Kuantan
	3.00pm	Kuala Terengganu	Interview with Department of Environment, Terengganu	160	Permaisuri
	5.00pm		Return to Permaisuri	90	
16.3.2005	9.00am	Kemaman	Record Inspection at the Kemaman Land Office	250	Permaisuri
	2.30pm		Interview with Department of Valuations		
	4.30pm		Return to Kuala Lumpur	335	
17.3.2005		Kuala Lumpur	Off day		
18.3.2005	5.00pm	anonymous	Meet with the former Federal; Director General of Lands and Mines	240 (return)	Kuala Lumpur
19.3.2005	4.00am	Kuala Lumpur	Drive to KIPC to meet with Petronas East Coast Region General Manager	380	Kuala Lumpur
20.3.2005	9.00am	KIPC	Meet with Petronas East Coast Region General Manager	380	Permaisuri
	12.00pm		Drive to Permaisuri	265	

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
21.3.2005	10.00am	Kuala Terengganu	Interview with the State of Terengganu Town and Country Planning Department Director	90	Permaisuri
	2.00pm		Return to Kuala Lumpur	495	
22.3.2005	10.00am	Petaling Jaya	Interview with B6	20	Kuala Lumpur
	11.00am		Successfully communicate with office of former Prime Minister, Tun Dr. Mahathir Mohamed		
23.3.2005	2.30pm	Kuala Lumpur	Interview with B13	20	Kuala Lumpur
24.3.2005		Kuala Lumpur	Off day		Kuala Lumpur
25.3.2005	10.00am	Petaling Jaya	Interview with B8	20	Kuala Lumpur
26.3.2005	7.00am	Kuala Terengganu	Drive to Kuala Terengganu for an appointment with DOSH at 2.30 (changed to 4.45pm because of an official Prime Minister visit to Terengganu)	495	Permaisuri
	6.00pm		Drive to Permaisuri	90	
27.3.2005	2.30pm	Kuala Terengganu	Interview with the State of Terengganu MIDA Director	90	Kuantan
	5.00pm		Drive to Kuantan	220	
28.3.2005	8.30am	Kemaman	Interview with the Kemaman District Public Works Engineer	60	Kuantan
	11.00am – 4.00pm		Records inspection at the Kemaman Land Office		
29.3.2005	10.00am – 4.00pm	Kemaman	Records inspection at the Kemaman Land Office	60	Kuantan
30.3.2005	10.00am – 4.00pm	Kemaman	Records inspection at the Kemaman Land Office	60	Kuantan

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
31.3.2005	10.00am – 4.00pm	Kemaman	Records inspection at the Kemaman Land Office	60	Kuantan
	6.00pm		Return to Kuala Lumpur	335	Kuala Lumpur
1.4.2005-3.4.2005		Kuala Lumpur	Off day		Kuala Lumpur
4.4.2005		Kuala Lumpur	Appointment with Pahang Chamber of Commerce cancelled (car had problem)		Kuala Lumpur
5.4.2005	9.00am	Kuala Lumpur	Interview with the Director General of Survey and Mapping Note: parts of the interview irrelevant to the study topic were excluded from analysis.	30	Kuala Lumpur
8.4.2005	9.00am	Kuala Lumpur	Interview with B10	20	Kuala Lumpur
9.4.2005	7.00am	Kuala Lumpur	Driving to Kuala Terengganu to meet with former Terengganu Chief Minister at 2.30pm	480	
	5.00pm	Kuala Terengganu	Drive to Kuantan	220	Kuantan
10.4.2005	10.00am – 4.00pm	Kemaman	Records inspection at the Kemaman Land Office	60	Kuantan
11.4.2005	9.00am	Kuantan	Interview CEO of company B9	15	
	11.00am		Return to Kuala Lumpur	275	Kuala Lumpur
12.4.2005-13.4.2005			Off day		Kuala Lumpur
14.4.2005	8.30am	Kuala Lumpur	Interview former Pahang Chief Minister	40	Kuala Lumpur
15.4.2005	3.45pm	KLCC	Interview with B12	30	Kuala Lumpur
16.4.2005-19.4.2005			Off day		Kuala Lumpur

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In
18.4.2005			Appointment with Eastman cancelled		Kuala Lumpur
25.4.2005	10.00am	GIPC	Interview with Eastman (Kuantan)	550(return)	Kuala Lumpur
3.5.2005	2.00pm	GIPC	Interview with a US based firm Interview with another US firm cancelled	550 (return)	Kuala Lumpur
8.5.2005	2.30 pm	Putrajaya	Collected information at the NAPIC in Putrajaya	10	Kuala Lumpur
10.5.2005-11.5.2005			Off day – waiting for an invitation from Mahathir. Received it at 12.15pm 11.5.2005		Kuala Lumpur
12.5.2005	11.00am	KLCC	Interview with Mahathir, Petronas Advisor and former Prime Minister	30	Kuala Lumpur
13.5.2005	12.00pm		Return to UK		

C. SEP – DEC 2005

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In:
8.11.2005		Kuala Lumpur	Communicate with former Negeri Sembilan Chief Settlement Officer to obtain additional information on the National Land Code		
10.11.2005			Communicate with Pahang SEDC to set interview date		
13.11.2005		Seremban	Met with Former Negeri Sembilan Chief Settlement Officer		
15.11.2005	10.00am	Kuantan	Interview with Pahang SEDC		
21.11.2005			Collected data on quit rent from the Office of the Director General of Lands and Mines		
25.11.2005		Kuantan	Collect additional information from Pahang SEDC		

Date	Time	Place	Event/Activity	Estimated Travelling Distance (km)	Stay In:
30.11.2005		Kuantan	Met with the Pahang State Director of DoE		
8.12.2005		Kuala Lumpur	Collected data at the NRE		
15.12.2005		Terengganu	Present data collected to Terengganu SEPU		
17.12.2005			Return to UK		

Appendix H

Call Number of File Sampled

Newly Created Call No (xx/yy/zz)	Sample ID	Newly Created Call No (xx/yy/zz)	Sample ID
04/03/05	21	04/99/05	39
08/03/05	22	08/99/05	40
12/03/05	23	12/99/05	41
09/03/05	24	04/00/05	42
04/04/05	25	08/00/05	43
08/04/05	26	12/00/05	44
12/04/05	27	04/01/05	45
04/98/01	28	08/01/05	46
08/99/01	29	12/01/05	47
08/00/01	30	09/01/05	48
04/00/01	31	07/01/05	49
04/02/03	32	04/01/10	50
04/03/05	33	08/01/10	51
04/98/05	34	04/02/05	52
08/98/05	35	08/02/05	53
12/98/05	36	12/02/05	54
09/98/05	37	09/02/05	55
07/98/05	38	07/02/05	56

Note:

xx = unique official identification number

yy = year file opened

zz = sequence number in the application roll book of the *mukim*

Numbers 28 to 33 (shaded) are applications of the 'surrender and realienation'.

Detailed Data from File Investigation.

Section A : Summary of information on petrochemical plants and other facilities.

Section B : History of petrochemical industrial plants in Kerteh.

Section C : History of petrochemical industrial plants in Kuantan.

Section D : Data from applications for private land conversion.

Section E : Milestones in Malaysian petroleum, gas and petrochemical production.

Section F : Petroleum, gas and petrochemical facilities and other related infrastructural development 1982-2004.

Section A: Summary of Information On Petrochemical Plants And Other Facilities

A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Site Number	Area	Plant	First Owner	Second Owner– Project Initiator	Current landowner (Feb – May 2005)	Investment Value (millions)	Price Paid for Site	Investment : Land Price	Date Land Awarded/ Purchased	Actual Date of Site Possession	Date of Plant Commis- sioning	Country of Origin
1	Site 1	9.88 ha	1C	Petronas	No change	Petronas + B7	US400	RM494k	8,384 : 1	Jul 2000	Jul 2000	Dec 2000	UK Malaysia
			1B			Petronas Subsidiary	RM988					2000	Malaysia
			1A			Petronas Gas	RM1,616					Jan 2001	Malaysia
2	Site 2	27.00 ha	2A	Petronas	No change	Petronas + B6 = B1	RM1,820	RM6,755	8,318 : 1	Jul 2000	Jul 2000	Apr 2002	US Malaysia
			2B										
			2C										
			2D										
			2E										
			2F			Petronas + B6	RM 1,535				Jul 2000	Feb 2002	US Malaysia
			2G								Jul 2000	Jan 2002	US South Africa Malaysia
			2H			Petronas + B6	RM2,260						
			2I										
3	Site 3	100 acre	3A	B8	B12	B12(A)	RM182	RM1.4m	130:1	Jan 1994	Jan 1994	End 1999	Malaysia Japan
			3B			B12(B)					Aug 1995	Sep 2000	Malaysia Japan
			4			Site 4					9.88 ha	4A	Petronas	No change	Petronas	RM1,797	494k	3,638 :1	Jan 1994	Jan 1994	Jul 2000	Malaysia Japan
4B	Petronas												
5	Site 5	19.20 ha	5A	Petronas	No change	B3	RM740	960k	771 : 1	Jul 2000	Jul 2000	Feb 2002	Saudi Arabia South Africa Malaysia

A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Site Number	Area	Plant	First Owner	Second Owner– Project Initiator	Current landowner (Feb – May 2005)	Investment Value (millions)	Price Paid for Site	Investment : Land Price	Date Land Awarded/ Purchased	Actual Date of Site Possession	Date of Plant Commissioning	Country of Origin
6	Site 6		6A	Petronas	No change	Petronas	RM 570			Mar 1988	Mar 1988	Sept 1995	UK Malaysia Netherlands South Africa Japan
						Petronas							
			6B			Petronas	RM1,146						Malaysia Japan
7	Site 7	162 acre	GPP 1	Petronas Gas	No change	Petronas Gas	200,000,000	486,240	411 : 1	Jul 1981	1983	1984	Malaysia
			GPP 2								1992	1992	
			GPP 3										
			GPP 4								1994	1994	
8	Site 19		GPP 5	Petronas Gas	No change	Petronas Gas					1998	1998	Malaysia
			GPP 6										
9	Site 8		Kerteh CTF	Kerteh Port	No change	Kerteh Port				Jan 2000	Jan 2000	Jan 2001	Malaysia
10	Site 9	334.827 acre	9A	Pahang SEDC	9A	B10	USD 1,000			Feb 1998	Feb 1998	2000	Germany Malaysia
			9B									2002	
			9C									2001	
			9D									2000	
			9E			B10 B19	US40				2005	Under Construction	Germany Japan
11	Site 10	138.4 acre	10A	Pahang SEDC	B9	B9(A)	NA			Mar 1989	1998	2000	Malaysia
			10B			B9(B)					Mar 1989	Nov 1992	

A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Site Number	Area	Plant	First Owner	Second Owner– Project Initiator	Current landowner (Feb – May 2005)	Investment Value (millions)	Price Paid for Site	Investment : Land Price	Date Land Awarded/ Purchased	Actual Date of Site Possession	Date of Plant Commissioning	Country of Origin
			10C			B9(C)						Dec 1992	
12	Site 11	57.419 acre	11A	Pahang SEDC	B13	B13	224.9	10.77m	21 : 1	1995	1995	May 1998	US
13	Site 12	149.1 acre	12A	Pahang SEDC	B7	B7	1,200	18.05m	66 : 1	1994	1994	June 1996	UK
					B7	UK							
14	Site 13	55.42 acre	13A	Pahang SEDC	B15	B14	RM540	13.11m	41 : 1	1993	2001	1997	US
			13B			B14						2003	US
			13C			B15					1993	1997	US
15	Site 14	13.00 ha	14A,14B	Pahang SEDC	14A	B18	RM280		1998	1998	2001	2001	Belgium US Netherlands
16	Site 15	30.35 ha	15A	Pahang SEDC	B17	B17	RM608		1997	1997	2000	2000	US Japan
17	Site 16	39.66 ha	16A	Pahang SEDC	B16	B16(A)	RM440			1995	1995	1997	Japan
			16B	Pahang SEDC		B16(B)					1996		
			16C	Pahang SEDC		B16(C)					2000		
			16D	Pahang SEDC		B16(D)							
18	Site 17	NA	Gebeng CTF	Pahang SEDC	Petronas	Petronas				1998	1998	Jan 2001	Malaysia
19	Site 18	99.14 acre	Gebeng CUF	Pahang SEDC	Petronas	Petronas				1998	1998	Jan 2001	Malaysia

Sources : Columns **B, D, F, L, M** and **N** : Petronas, Pahang SEDC; Columns **C, E, K** : Kemaman Land Office, Pahang SEDC; Column **G** : Kemaman Municipality, Pahang DoE; Columns **H** and **I** : Petronas, Pahang SEDC, Property Reports 1994; 1995.
Column **J**, own calculation (Investment Value : Price Paid for Site)

Section B : History of Petrochemical Industrial Plants in Kerteh

SITE NO. 1

Date	Event / Action
12.7.1999	Approval in principle received from SEPU through DLMO
25.7.1999	Formal application form submitted
9.10.1999	Consent from the DoE
16.11.1999	TOR approved by the Post-EXCO
21.12.1999	Statutory offer made
2.2.2000	Site plan approved by the Post-EXCO Committee
20.6.2000	Surveyed site plan submitted by a CS
26.7.2000	Land registered
Dec 2000	Plant 1B commissioned Plant 1C commissioned
Jan 2001	Plant 1B commissioned

SITE NO. 2

Date	Event / Action
12.7.1999	Approval in principle received from SEPU through DLMO
25.7.1999	Formal application form submitted
19.9.1999	Application presented at the Post-EXCO committee: approval pending further commentary from the following bodies: <ul style="list-style-type: none">▪ DoE▪ Town and Country Department▪ Drainage and Irrigation Department▪ State Water Supply Corporation▪ Fire Department▪ Electricity Board
6.10.1999	Approval from the Post-EXCO Committee, with conditions site plan altered according to comments from the above departments
21.12.1999	Statutory offer made
26.7.2000	Land registered
Dec 2000	Plant 2B commissioned Plant 2D commissioned
Feb 2002	All plants commissioned

SITE NO. 3

Date	Event / Action
1.7.1993	Application for allotment no. 1 Approval in principle received from SEPU through DLMO
1.7.1993	Formal application submitted
31.1.1994	Approval in principle received from SEPU through DLMO (decision made by the SIC)
17.1.1994	Applicant appeals to reduce the price from RM10 per sq. foot to RM5 per sq. foot
27.6.1994	Second EXCO decision with TOR and decisions on appeal to reduce the land premium (a discount was granted but the size of the parcel was reduced from 100 acres to 70 acres)
27.10.1994	A statutory offer conveyed
9.1.1995	Land (allotment no.1) registered
6.4.1995	Application for allotment no. 2 (new file was opened) Application received
10.8.1995	Approval in principle received from SEPU through DLMO
26.3.1996	Surveyed site plan submitted by a CS
24.1.1997	Applicant appeals to change the conditions of land use
undated	A series of communications between the applicants and the state government concerning the EIA report, the project feasibility studies and a change in company ownership
20.1.1998	Application (for allotment no.2) approved
End 1999	Plant 3A commissioned
Sep 2000	Plant 3B commissioned

Note : The company, during the approval process was owned by three individuals. However during the Malaysian economic turmoil of the late 1990's they all sold of their shares to Petronas.

SITE NO. 4

Date	Event / Action
16.1.1988	EXCO approval
20.1.1998	Formal application submitted
6.2.1988	Approval received from the SEPU through the DLMO
30.3.1988	Statutory offer made
4.6.1988	Petronas appealed to reduce the rate
16.6.1988	Petronas sent another letter comparing prices set in previous cases
28.7.1988	Petronas sent another letter suggesting new prices
13.8.1988	LA seeks a DLMO advice
26.11.1988	SEPU advises LA to retain the previous price
22.2.89	New EXCO decision released
14.3.1989	New statutory offer made with the same price
10.6.1989	Applicant agreed to the price but appealed for an extension
25.7.1989	Surveyed site plan submitted by a CS
11.11.1990	Land registered
July 2000	Plant 4A commissioned
Sep 2000	Plant 4B commissioned

SITE NO. 5

Date	Event / Action
12.7.1999	Approval in principle received from SEPU through the DLMO
25.7.1999	Formal application form submitted
9.10.1999	Consent from DoE
16.11.1999	TOR approved by Post -EXCO
21.12.1999	Statutory offer made
2.2.2000	Site plan approved by the Post-EXCO Committee
20.6.2000	Surveyed site plan submitted by a CS
26.7.2000	Land registered
Feb 2002	Plant 5A commissioned

SITE NO. 6

Date	Event / Action
11.6.1991	Compulsory purchase sanctioned by the EXCO
17.8.1992	Formal application form submitted
10.11.1992	SO carried out site investigation
5.12.1992	Application by the project owner to enter commence development in Jan. 1993
20.12.1992	Application to commence work approved
11.2.1993	Project owner notified the Land Office that earth work had began
18.2.1993	Reminder issued to the planning authority to expedite feedback
24.2.1993	Clearance by the planning authority
19.5.1993	Consideration paper forwarded to the DLMO
18.8.1993	EXCO approval
4.9.1993	DLMO notified the EXCO approval
11.9.1993	Statutory offer made
24.10.1994	Land registered
Sep 1995	Both plants commissioned

SITE NO. 7

Date	Event / Action
8.3.1981	EXCO decision conveyed to the Land Office by the SEPU that land alienation was approved 'in principle'
10.3.1981	Formal application submitted by the project owner
13.7.1981	Statutory offer made to the project owner
25.9.1981	Project owner appealed to differ acceptance because of a problem in company's legal status
8.3.1982	Project owner notified the Land Office that its legal status had been resolved
28.8.1982	Project owner appealed to the Land Office to transfer the statutory offer to its subsidiary company
22.5.1983	EXCO authorized a change of landownership as appealed. New statutory offer issued
1.7.1983	Application to build an independent power supply was referred to the: <ul style="list-style-type: none">▪ District Office▪ Public Works Department▪ Telecommunications Department▪ Drainage and Irrigation Department▪ Electricity Board▪ Land Office
26.10.1983	EXCO authorized the construction of an independent power supply following approval by the departments
19.3.1984	Land registration completed
Aug 1984	On-stream

Section C : History of Petrochemical Industrial Plants in Kuantan

SITE NO. 9

Feb 1998 – S & P completed
July 2000 – Plant 9A commissioned
Apr 2001 – Plant 9B commissioned
2002 – Plant 9D commissioned
2004 – Plant 9C commissioned
2004 – Plant 9E started construction

SITE NO. 10

Dec 1989 – S & P completed
Nov. 1992 – Plant 10A commissioned
Dec. 1992 – Plant 10B commissioned
2000 – Plant 10C commissioned

SITE NO. 11

1994 – S & P completed
May 1998 – plant commissioned

SITE NO. 12

1993 – S & P completed
June 1996 – plant commissioned

SITE NO. 13

1993 – S & P completed
1997 – Plant A commissioned
2003 – Plant B commissioned
1997 – Plant C commissioned

SITE NO. 14

1998 – S & P completed
2001 – plant A commissioned

SITE NO. 15

1998 – S & P completed
2001 – plant commissioned

SITE NO. 16

1995 – S & P with completed
1997 – Plant 16A, 16B and 16D commissioned
2000 – Plant 16D commissioned

Section D : Data from files of application for private land conversions at the Kemaman Land Office

Section D1 Abbreviations

Abbreviations used in the tables:

A:C	Conversion of land use from agricultural to commercial use	N:I	Conversion of land use from a 'nil condition' to industrial use
A:R	Conversion of land use from agricultural to residential use	N:R	Conversion of land use from a 'nil condition' to residential use
App	Date application submitted dd.mm.yy:C : application submitted by a consultant dd.mm.yy:O : application submitted by the land owner	NA	File not accessible / not immediately available
Cir	Date application referred to technical departments	Notify	Date when the Land Office issued a notice of decision
CP	Date of EXCO consideration paper was signed by the Land Administrator	NR	Not referred to
CPI	Certified Plan	Pf²	per square foot
CS	Chartered Surveyor	PreM	date clearance secured from the Pre-EXCO Committee (Y=agree; N=disagree)
D&I	Date comment was received from the Department of Drainage and Irrigation (Y=agree; N=disagree)	Price	Land value set by the EXCO as a base for determining the extended premium
DLMD	Date when the DLMO conveyed a decision to the Land Office	Pur	Purpose of application
DLMO	Office of the Director of Lands and Mines	PW	Date comment was received from the Department of Public Works (Y=agree; N=disagree)
DoE	Department of the Environment	R:C	Conversion of land use from residential to commercial use
EIA	Environmental Impact Assessment	RM	Ringgit (Malaysian monetary denomination)
ELC	National Electricity Company	SEPU	The State Economic Planning Unit
ExDate	Date EXCO executed a decision	SIC	State Investment Committee
ExDec	the EXCO decision	SO	Settlement Officer
ID	Sample identification number	T&C	Date comment was received from Town and Country Planning Department (Y=agree; N=disagree; C=conditional approval; P=decision pending)
KM	Date comment was received from the Kemaman Municipality Council (Y=agree; N=disagree; C=conditional approval; P=decision pending)	TOR	Terms of Reference
LA	Land Administrator	Updt	Date of information updated on Land Office litho sheet
LAU	Local Authority	Val	Date the estimated value of land was received from Department of Valuations dd.mm.yy XXX = RM 0,000

Section D2 Raw Data

	ID	Pur	App	Cir	Updt	D&I	PW	KM	T&C	Val	PreM	CP	ExDate	ExDec	Price	DLMD	Notify
1	21	A:C	27.4.03:C	29.4.03	19.5.03	10.7.03:Y	4.6.03:Y	1.6.03:N	29.5.03:N	17.6.03:29K	21.5.03:N	17.6.03	29.7.03	Declined	-	5.8.05	17.8.03
2	22	A:I	21.4.03:O	29.4.03	19.5.03	10.7.03:Y	1.7.03:Y	1.6.03:N	29.5.03:N	23.6.03:77K	21.5.03:N	17.6.03	29.7.03	Declined	-	5.8.05	17.8.03
3	23		NA														
4	24	A:R	18.03.03:O	24.3.03	17.4.03	28.5.03:Y	NR	11.5.03:Y	16.4.03:Y	4.5.03:77K	21.4.03:P 25.5.03:Y	undated	18.6.03	approved	77K	24.6.03	16.7.03
5	25	N:R	30.3.04:O	31.3.04	31.3.04	28.4.04:Y	26.4.04:Y	5.7.04:N	5.5.04:N	26.4.04:76K	13.7.04:N	undated	4.8.04	Declined	-	19.8.04	28.12.04
6	26		NA														
7	27	R:C	11.1.04:C	14.1.04	27.1.04	16.2.04:Y	29.1.04:Y	7.3.04:Y	23.3.04:Y	17.2.04:22K	28.1.04:Y	8.2.04	3.3.04	Pending	22K	10.3.04	Pending
8	28	R:M	9.5.98:O	23.8.98	23.8.98	3.8.98:Y	23.7.98:Y	25.8.98:Y	9.8.98:Y	8.10.98:40K	1.7.98:Y	28.10.98	25.11.98	approved	40K	19.12.98	31.12.98
9	29	A:M	21.11.97:C	6.12.99	6.12.99	14.12.99:Y	15.12.99:Y	1.2.00:Y	18.1.00:Y	11.4.00:95K	22.12.99:Y	23.8.00	11.10.00	approved	95K	23.10.00	8.11.00
10	30		NA														
11	31	A:R	4.1.01:C	21.1.01	13.2.01	21.1.01:Y	5.2.01:Y	9.8.02:P 25.6.01Y	30.5.01:C	5.1.03:149K	30.9.01:Y	undated	6.2.02	approved	149:K	26.2.03	7.3.03
12	32	R:C	15.9.02:C	5.11.02	11.12.02	15.12.02:Y	20.11.02:Y	3.12.02:P 29.12.02:Y	5.12.02:Y	5.1.03:39K	21.11.02:Y	6.11.02	14.1.04	approved	39K	28.1.04	3.2.04
13	33	R:M	5.1.04:C	5.1.04	3.3.04	8.2.04:Y	21.1.0:Y	7.3.04:Y	10.2.04:Y	4.2.04:160K	28.1.04:Y	9.3.04	23.6.04	approved	160K	6.7.04	29.7.04
14	34		NA														
15	35	R:C	25.3.98:C	22.4.98	27.4.98	17.5.98:Y	5.5.98:Y	NR	30.5.98:Y	20.5.98:54K	25.5.98:Y	29.7.98	19.8.98	approved	54K	8.9.98:Y	27.9.98
16	36		NA														
17	37		NA														
18	38		NA														
19	39	A:R	12.12.98:O	9.2.99	14.2.99	24.2.99:Y	23.2.99:Y	NR	9.3.99:Y	13.4.99	8.6.99:Y	undated	7.2.99	approved		17.7.99	9.9.99
20	40	A:R	6.4.99:O	25.4.99	19.4.99	25.4.99:Y	26.4.99:Y	NR	24.5.99:N	11.5.99	14.7.99	undated	undated	Declined	-	15.8.99	5.9.99
21	41		NA														
22	42		NA														
23	43	R:C	27.3.00:O	30.3.00	12.4.00	20.4.00:Y	23.4.00:Y	NR	17.5.00:N	27.4.00:40K	16.5.00:N	19.6.00	19.7.00	Declined	-	31.7.00	6.8.00
24	44		NA														

	ID	Pur	App	Cir	Updt	D&I	PW	KM	T&C	Val	PreM	CP	ExDate	ExDec	Price	DLMD	Notify
25	45	R:C	21.2.01:C	27.2.01	28.2.01	25.3.01:Y	14.3.01:Y	NR	22.3.01:Y	28.3.01:100K	28.3.01:Y	22.5.01	25.7.01	approved	100K	3.10.01	21.10.01
26	46		NA														
27	47	A:R	29.8.01:O	10.9.01	12.9.01	20.9.01:Y	27.9.01:Y	NR	10.10.01:Y	29.10.01:26K	26.9.01:Y	19.11.01	2.1.02	approved	26K	13.1.02	23.1.01
28	48		NA														
29	49	A:R	28.2.01:O	14.3.01	14.3.01	8.4.01:Y	NR	NR	16.4.01:Y	5.5.01:36K	28.3.01:Y	10.5.01	20.6.01	approved	36K	1.7.01	17.7.01
30	50	A:R	25.3.01:O	29.3.01	3.4.01	22.4.01:Y	24.4.01:Y	NR	6.5.01:Y	10.5.01:	12.6.01:Y	NA	25.7.01	approved	NA	5.8.01	12.8.01
31	51	N:I	9.4.01:C	18.4.01	24.4.01	14.5.01:Y	15.5.01:Y	NR	24.5.01:C	27.5.01:86K	13.6.02:Y	NA	7.8.02	approved	86K	19.8.02	25.8.02
32	52	N:R	9.1.02:O	16.1.02	17.1.02	24.1.02:Y	30.1.02:Y	NR	3.2.02:Y	20.2.02:136K	30.1.02:Y	20.3.02	24.4.05	approved	136K	20.5.02	5.6.02
33	53	A:R	23.4.02:O	6.5.02	6.5.02	19.6.02:Y	19.6.02:Y	NR	6.6.02:Y	17.2.02:72K	3.6.02:Y	23.6.02	7.8.02	approved	72K	19.8.02	25.8.02
34	54	A:R	4.4.02:O	11.4.02	11.2.02	7.4.02:Y	23.4.02:Y	NR	8.4.02:Y	15.5.02:129K	30.4.02:Y	16.6.02	21.8.02	approved	129K	8.9.02	22.10.04
35	55	A:R	4.4.02:O	11.4.02	11.2.02	7.4.02:Y	23.4.02:Y	NR	24.4.02:Y	15.5.02:52K	30.4.02:Y	NA	26.6.02	approved	52K	5.8.02	19.8.02
36	56	N:R	5.6.02:O	13.6.02	16.6.02	10.7.02:Y	26.6.02:Y	NR	7.7.02:Y	3.7.02:87K	8.7.02:Y	14.7.02	14.7.02	approved	87K	26.8.02	14.11.02

Section E : Milestones in Malaysian Petroleum, Gas and Petrochemical Production

Dates	Events
8 May 1971	Esso discovered the first oil field, the Seligi Field off Terengganu
17 August 1974	Petroleum Nasional Berhad (PETRONAS) was incorporated under the Companies Act, 1965.
March 1978	First oil production at Esso's Tapis 'A' platform off Terengganu
11 May 1978	PETRONAS Carigali Sdn Bhd, the wholly-owned exploration and production subsidiary of PETRONAS was incorporated.
6 August 1980	PETRONAS Carigali drilled its first appraisal well at the Duyong gas field in its exploration block off Terengganu.
3 March 1982	PETRONAS Penapisan (Terengganu) Sdn Bhd was incorporated to carry out refining operations at the Terengganu Refinery, Kertih.
11 March 1982	The PETRONAS Technical Training School in Terengganu was officially opened by YAB Menteri Besar of Terengganu Datuk Seri Amar Di Raja Haji Wan Mokhtar Ahmad.
6 Jun 1982	PETRONAS Carigali made its first oil discovery at Duyong Barat, in the PM6 Block off Terengganu.
26 February 1983	PETRONAS's Terengganu Refinery received its first consignment of 280,000 barrels of crude oil which was shipped by the oil tanker, PERNAS DUYONG.
9 March 1983	PETRONAS Terengganu Refinery in Kertih, the first nationally-owned oil refinery, commenced operation.
7 April 1983	The first lifting of naphtha from the Terengganu Refinery for export to Japan was successfully carried out.
23 May 1983	PETRONAS Gas Sdn Bhd (PGSB), now known as PETRONAS Gas Berhad (PGB), was incorporated to handle gas operations.
31 October 1983	PETRONAS' Petroleum Industrial Training Institute in Batu Rakit, Terengganu, which was built to cater to the needs of the petroleum industry, took in its first batch of students.
7 November 1983	The Terengganu Crude Oil Terminal started operation.
14 April 1984	The Duyong Gas Development Project undertaken by PETRONAS Carigali was successfully completed with the first landing of natural gas onshore at Kertih, Terengganu, to feed the Peninsular Gas Utilisation (PGU) project.
1 August 1984	First Gas-in to PGSB's Gas Processing Plant (GPP) 1 in Kertih.
15 October 1984	PETRONAS made the first gas delivery to the Paka Power Station, Terengganu with the completion of Phase 1 of the PGU 1 project.
15 March 1985	PGSB successfully completed the first phase of the PGU project.
3 July 1985	PGSB launched the first shipment of liquefied petroleum gas (LPG) to Japan through its gas storage at the Tanjung Sulong Export Terminal.
15 August 1985	The Kertih Airport, constructed by PETRONAS to serve the needs of the petroleum industry in Terengganu, was officially opened by Prime Minister Dato Seri Dr Mahathir bin Mohamad.

Dates	Events
1 July 1987	Opening of Sekolah Rantau PETRONAS in Kertih.
15 August 1987	PETRONAS's Petroleum Industrial Training Institute in Batu Rakit, Kuala Terengganu was officially opened by Chief Minister of Terengganu Datuk Seri Amar Di Raja Haji Wan Mokhtar Ahmad.
30 June 1989	The PGU II project was launched by Prime Minister Dato Seri Dr Mahathir bin Mohamad.
22 April 1991	The Dulang crude oil facilities were inaugurated and launched by Prime Minister Dato Seri Dr Mahathir bin Mohamad at Kertih, Terengganu.
14 December 1991	The PGU Phase II system was inaugurated by YAB Prime Minister Dato Seri Dr Mahathir bin Mohamad.
28 May 1995	Polyethylene Malaysia Sdn Bhd's plant, a joint venture between PETRONAS and BP Chemicals of the United Kingdom, in Kertih commenced production.
26 September 1995	First export of ethylene from EMSB's plant in Kertih.
8 April 1998	PETRONAS signed agreements with US-based company, Union Carbide Corporation (now known as The Dow Chemical Company) for the development of an olefin cracker, an ethylene oxide ethylene glycol plant and a multi-unit derivatives plant in Kertih through three joint venture companies, namely Optimal Olefins, Optimal Glycols and Optimal Chemicals.
17 November 1998	PETRONAS Carigali and EPMI signed a PCS involving 22 gas fields off Peninsular Malaysia which will meet some two-thirds of the nation's consumer requirement for the next 25 years.
1 January 1999	Sekolah Rantau PETRONAS was handed over to the Government.
27 December 1999	First power plant at PGB's Central Utilities Facility in Kertih was commissioned.
31 January 2000	PETRONAS Carigali commenced commercial production of gas from the Resak Field off Terengganu at an initial average rate of 120 million standard cubic feet per day (mmscfd) of gas and 3,000 barrels per day (bpd) of condensates.
1 July 2000	Aromatic Malaysia Sdn Bhd's plant commenced operation.
15 August 2000	PETRONAS Amonia's plant commenced operation.
30 August 2000	PETRONAS Gas Bhd successfully commenced its first delivery of steam from the Centralised Utilities Facility to customers in the Integrated Petrochemical Complexes in Kertih and Gebeng.
4 November 2000	The Vinyl chloride monomer plant started operation.
10 November 2000	BP PETRONAS Acetyls' plant started producing acetic acid.
21 December 2001	The Angsi field, jointly developed by PETRONAS Carigali and ExxonMobil Exploration and Production Malaysia Inc, produced its first oil and gas.
9 February 2002	Petlin's LDPE plant commenced operation.
9 May 2002	Official opening of the PETRONAS Petroleum Industry Complex in Kertih by Prime Minister Dato Seri Dr Mahathir bin Mohamad.

Source : Petronas (2002)

**Section F: Petroleum, Gas and Petrochemical Facilities and Other
Related Infrastructural Development 1982-2004**

FACILITIES	Commencement Year
MLNG commenced in Bintulu Sarawak	1982
First Petronas refinery	1983
First landing of the natural gas	1984
GPP	
Kerteh Airport	1985
PGU Phase 1	
PGU Phase 2	1989
Kerteh Compressor 'A' (3x8 MW) GPP 2 GPP 3	1992
GPP 4	1994
Kerteh Port Phase 1 Kerteh Compressor 'B' (2x18 MW) Kerteh Centralised Utilities Facility	1995
GPP 5 GPP 6 Upgrading of Kuantan Port	1998
Kuantan Industrial Training Institute, Gebeng	1999
The Petronas Resak Field Kerteh Central Tankage Facility Kerteh Port Phase 2 SMSO Warehouse Kerteh Centralised Utilities Facility Gebeng Centralised Utilities Facility Upgrading of Liquid Chemical Berth, Kuantan Port Launching of Gebeng Township	2000
The Petronas-ExxonMobil Angsi Field Dungun Water Supply	2001
Kerteh-Kuantan Railway PGU Completed	2002
1 st Phase of new East Coast Highway (K.Lumpur – Kuantan)	2004

Source: Petronas, Pahang SEDC

Supporting Information from the Land Office

Section A : Contents of Papers for EXCO Considerations

A. PURPOSE OF THE PAPER

- A short explanation of the purpose of the application

B. APPLICATION BACKGROUND

- Date application submitted
- A short explanation of the proposed project

C. APPLICANT BACKGROUND

- Company's registered name and address
- A brief description of the company (history, other investments)
- Paid up capital
- Board of directors
- Shareholders

D. ABOUT THE PROJECT

- Type of industry and products
- Technology used
- Comment from MIDA
- Jobs created
- Project financial requirements
- Industrial input availability

E. LAND APPLIED FOR

- Land status
- History of land
- Description of factory layout
- Provisional land premium (price)
- Provisional quit rent (annual tax)

F. INCENTIVES

- what incentives could state government offer?

G. COMMENTS FROM THE ECONOMIC PLANNING UNIT

- In favour or not
- Regarding jobs creation
- Regarding land requirement
- Regarding land premium proposed
- Regarding incentives

H. COMMENTS FROM OTHER TECHNICAL DEPARTMENTS

I. PRAYER

- Whether the government is in favour of the application
- If in favour, the government is advised to consider the:
 - size of the allotment
 - location, as advised by the technical departments
 - premium rate
 - quit rent
 - restrictions of interest
 - land use
 - registration (at the State or District Registry)

J. SIGNATORIES

- Land Administrator
- State Director of Lands and Mines
- Clerk of the Council

K. APPENDICES

- Statutory application form
- Building lay out
- Receipt of application fee
- Site plan
- Copy of MoA
- Transfer of shares certificate
- EIA study report
- Project feasibility study report

Section B : Land Office Statutory Forms

National Land Code

Form 5A

(Sections 81 and 82)

NOTICE THAT LAND REVENUE IS DUE

Land Application No

To
of

You are hereby required, within a period of from the date of the service of this notice to *pay/place on deposit at the Land Office of this district the following sums —

Rent for the first year	...	...	...	...	RM
Premium	...	...	...	...	RM
[*]Survey Fees (excluding Boundary Marks)					RM
Boundary Marks	...	...	...	...	RM
Preparation and registration of [documents of qualified title and] final documents of title					RM
Total					RM

Take notice that if the above total is not *paid/deposited in full within the time specified then, by virtue of the provisions of section *81/82 of the National Land Code—

*the approval of your application will lapse,

*your application will be deemed to have been withdrawn.

Dated this day of, 19.....

.....
[Land Administrator]/Authorised Officer

District

[National Land Code

[Form 7D]

(Section 124A)

APPLICATION FOR VARIATION OF CONDITIONS, RESTRICTIONS
AND CATEGORIES IN RESPECT OF PROPOSED
SUB-DIVISIONAL PORTIONS OF LAND

To the Land Administrator, District of

*I/We, the undersigned *proprietor/co proprietors of following land—

*Town/Village/Mukim..... Lot No.....

Description and No of Title..... Area.....

hereby apply for approval for variation of *condition/restriction/category of
the proposed sub-divisional portion thereof as shown in the proposed sub-
divisional plan attached.

For purposes of clarification *I/we also attach an explanatory memorandum.

2 As required, *I/we now submit—

(a) the prescribed fee of RM.....;

(b) the proposed sub-division plan referred to above together with
..... copies thereof;

*(c) a copy of the approval of the Planning Authority;

(d) a letter of consent from each of the following persons (being persons
whose consent is required under sections 124 (1) and 136 (1)(e)),
the particular reason for the consent being specified in each such letter:

(i)

(ii)

(iii)

Dated this day of, 19.....

.....

Signature of Proprietor

For Official Use Only

(A) Rent for the current year paid.

Land Administrator

For use
when
planning
approval
is not
earlier
obtained

(B) (1) Sub-division as in attached plan approved.

(2) One copy of the said plan retained.

.....
Signature

Planning Authority

(C) (1) ~~Sub-division approved *subject to the following modifications:—~~

.....
.....

(2) Variation of *condition/restriction/category of proposed sub-divisional portions approved.

Dated this day of, 19.....

.....
Director / Land Administrator

[National Land Code]

Form 12D

(Section 204A)

Application for surrender and re-alienation

To the Land Administrator, District of
*I/We
of
proprietor of the land scheduled below, hereby apply for approval of *my/our
surrender of these [lands] on the terms that the land comprised therein be
immediately re-alienated to *me/us ... in the different units, shown on the
attached plan.

In the said plan, the boundaries of the existing lots as scheduled are
shown in black and the boundaries of the proposed new units, different from
the old, are shown in red.

2 As required by section 204D, *I/We now submit—

- (a) the prescribed fee of RM.....;
- (b) a letter of consent from the following persons:
 - (i)
 - (ii)
- (c) *the issue documents of title to the land/s—
.....
- (d) *the shown statement under section 204D (2).
.....

Dated this day of, 19.....

.....
Signature of Proprietor

[SCHEDULE

District	*Town/Village/ Mukim	Description and No of Title	*Lot No/ LO No	Area

*Delete as appropriate

For Official Use Only

(A) Rents for the current year paid.

Land Administrator

District

(B) Surrender approved.

Dated this day of, 19.....

.....
Director/[Land Administrator]

[National Land Code

[Form 7G]

(Section 124)

NOTICE THAT PAYMENT IS DUE
(Variation of conditions/restrictions/categories)

Application No.....

To.....
of.....

*proprietor/co-proprietors of the land held under—

Title No.....

Lot/LO No..... *Town/Village/

Mukim..... District of.....

Take notice that your application under section 124 of the National Land Code for variation of *conditions/restrictions/categories in respect of the above land has been approved and you are hereby required within a period of months from the date of service of this notice to pay at the Land Office of this district the following sums:

Further premium	= RM
Other charges	= RM
New rent	= RM

Total = RM

Take further notice that if the above total is not paid in full within the time specified, then by virtue of the provisions of section 124 of the National Land Code, the approval of your application will lapse.

Dated this day of, 19.....

.....
Land Administrator

District

INTERVIEW NOTES

<p>1. Interviewee A1 Category-Government (Terengganu SEPU) Date-20.2.2005 Position-Assistant State Secretary Place-State Secretariat, Kuala Terengganu Language-Malay</p>	
<p>1.1. Peranan UPEN ialah untuk menarik pelabur sama ada domestik atau pelabur asing ke Terengganu, oleh bertanggungjawab:</p> <ul style="list-style-type: none"> • menyediakan infrastruktur di kawasan industri; • mengadakan misi pelaburan; • 'negotiate' dengan para pelabur; • dalam pembangunan IKS dan; • ke atas SEDC. <p>1.2. Tanggungjawab UPEN hanyalah melihat dari aspek ekonomi. Aspek-aspek lain (perundangan, alam sekitar, keselamatan dll) adalah tanggungjawab jabatan lain. Dalam menarik pelaburan, Kerajaan Negeri:</p> <ul style="list-style-type: none"> • mengharapkan 'spill-over' kegiatan ekonomi; • kutipan cukai oleh Pejabat Tanah dan PBT; • memberikan perhatian yang serius kepada pembangunan Petrokimia dan menyerahkan program pembangunan di PPIC melalui Petronas; • menjangka, menjelang tahun 2008 seluas lebih daripada 5,000 hektar akan dimajukan di Kerteh dan kawasan-kawasan sekitarnya dibangunkan dengan industri berkaitan petroleum; • menyediakan tapak yang telah tersedia dan cukup luas bagi menarik pelaburan; dan • menawarkan harga tanah sehingga yang terendah di Malaysia. <p>1.3. UPEN tiada sebarang kuasa. Semua keputusan dibuat oleh EXCO, atas nasihat SIC yang anggotanya:</p> <ul style="list-style-type: none"> • EXCO Pelaburan, Perindustrian dan Pelancongan (Pengerusi); • YB Setiausaha Kerajaan; • YB Pegawai Kewangan Negeri; • YB Penasihat Undang-undang; • PTG; • Pengarah UPEN (Setiausaha) 	<p>Theme : Land supply</p> <p>(a) Category 1 : Roles</p> <p>(i) Sub-category 1 : Roles Played To provide physical infrastructure for industrial areas within industrial zones and to be negotiator, on behalf of the state government, with investors and to implement the Small and Medium Industrial (SMI) Plan</p> <p>(ii) Sub-category 2 : Goals and intention State government efforts to attract investment on its soil are in expectation of:</p> <ul style="list-style-type: none"> • economic spill over • revenue from quit rents and local authority taxes; and <p>(iii) Sub-category 3 : Strategy The state anticipates the industrial growth. By 2008, 5,000 hectare in Kerteh will be prepared for industrial sites, ready to be occupied at the lowest price.</p> <p>(b) Category 2 : Institutional-Framework</p> <p>(i) Sub-category 1: Powers All decisions are made by EXCO under the SIC advice. SIC's recommendations are subjected to the MIDA, District Officer, DoE, TCPD. The SIC consists of an EXCO member, State Secretary, State Financial Officer, State Legal Adviser, State Directors of SEPU and DLMO.</p>

<div> <p>Nasihat SIC adalah berdasarkan perakuan daripada:</p> <ul style="list-style-type: none"> • Pegawai Daerah berkenaan; • JPBD; • DoE; • MIDA </div> <div> <p>Setakat ini belum ada kelulusan EXCO yang bercanggah dengan perakuan SIC atau jabatan teknikal. Selepas mendapat 'kelulusan dasar EXCO' barulah pemohon boleh merujuk kepada Pejabat Tanah.</p> </div> <div> <p>1.4. Hubungan dengan jabatan-jabatan mestilah rasmi dan bertulis.</p> </div> <div> <p>1.5. Masalah pembangunan industri Terengganu:</p> <ul style="list-style-type: none"> • jumlah FDI yang berkurangan, walaupun parti memerintah adalah yang menyokong Persekutuan, sokongan Persekutuan masih belum mencukupi; • percanggahan antara perakuan-perakuan jabatan-jabatan teknikal yang melewati kelulusan satu-satu permohonan. Jika berlaku, jabatan-jabatan berkenaan akan dipanggil berbincang; • harga 'feedstock' di Lembah Kelang dan Terengganu adalah sama – pelabur petrokimia boleh memilih untuk tidak ke Terengganu; • pelabur tidak tertarik dengan insentif harga tanah yang rendah – harga tanah hanya merupakan 'second issue' kepada para pelabur kerana 'one-off cost'. Harga feedstock melibatkan 'running cost'; • feedstock dikawal oleh syarikat-syarikat besar dan mereka yang mempengaruhi pelabur • persaingan oleh Gebeng </div>	<div> <p>(c) Category 3 : Rules and procedures</p> </div> <div> <p>(i) Sub-category 1 : Norms Recommendations are prepared by the Assistant Director and vetted by the Deputy Director. Subsequently by the State Director.</p> </div> <div> <p>(ii) Sub-category 2 : Procedure</p> </div> <div> <div> <div>1. Project proponent/investor: Submits application and presents project proposal at the SEPU</div> <div>↓</div> <div>2. Assistant SEPU Director: Prepares a recommendation paper</div> <div>↓</div> <div>3. Deputy SEPU Director: Yets the paper</div> <div>↓</div> <div>4. State Director: <div> (a) Yets/approves recommendations in the recommendation paper (b) Brings to the SIC (c) Forwards SIC recommendation to the EXCO Secretary </div> </div> <div>↓</div> <div>5. EXCO: Approves (or rejects)</div> <div>↓</div> <div>6. Assistant SEPU Director: Despatches decision to the Land Office through the DLMO</div> </div> </div> <div> <p>(iii) Sub-category 3 : Correspondence All correspondence must be in writing.</p> </div> <div> <p>(iv) Sub-category 4 : Problems</p> <ul style="list-style-type: none"> • Insufficient Federal support; • Delays in technical department reports; • Feedstock prices in the Klang Valley are the same as in Terengganu; • Investors are not attracted to low-priced land; </div>
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<p>1.6] Bukan masalah:</p> <ul style="list-style-type: none"> • perubahan kerajaan, sama ada di bawah PAS atau BN, hubungan UPEN dan MIDA dengan ahli politik baik; • tekanan politik (ada tetapi tidak mengganggu); • bajet dan kakitangan (kurang tetapi boleh diatasi). UPEN (Seksyen Industri) hanya ada 3 pegawai dan 2 kerani tetapi kerja makin bertambah; • norma kerja (perakuan mesti disediakan oleh Penolong-Pengarah, kemudian diangkat untuk kelulusan Pengarah melalui Timbalan. Kemudian didapatkan kelulusan SIC). Kelulusan Pengarah boleh didapatkan dalam satu hari. 	<ul style="list-style-type: none"> • Big companies that control feedstock influence investors' decisions; • Competition from Gebeng <p>→ (i) Sub-category 5 : Not a problem</p> <ul style="list-style-type: none"> • Political interference; • Political change; • Budget and manpower; • Work norms.
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<p>2. Interviewee A2</p> <p>Category-Government (Pahang SEDC)</p> <p>Date-15.11.2005</p> <p>Position-Industrial Division Executive</p> <p>Place-SEDC HQ, Kuantan</p> <p>Language-Malay</p> <p>Remarks-Due to interviewee's official commitments, the interview session was very short (about 15 minutes). However, extensive official documents were provided after the interview.</p>	
<p>2.1] Fungsi LKNP ialah untuk membangunkan kawasan perindustrian, termasuk Gebeng, and menjualkannya kepada pelabur, serta sebagai agen Kerajaan negeri dalam penjualan tanah industri, perniagaan dan perumahan.</p>	<p>Theme 1 : Land supply</p> <p>(a) Category : Roles</p> <p>(i) Sub-category : Role</p> <p>To develop and sell industrial, commercial and housing sites and to negotiate with investors on behalf of the state government</p> <p>(ii) Sub-category : Land Price</p> <p>Fixed by the government and published in an investment guide booklet</p>
<p>2.2] Harga tanah di sini ditetapkan oleh kerajaan seperti yang disiarkan dalam booklet LKNP</p>	
<p>2.3] Gebeng I, II dan III adalah industri untuk petrokimia.</p> <p>2.4] Semua lot industri di Gebeng I (yang menempatkan syarikat-syarikat besar seperti Amoco, BASF dan Eastman), telahpun habis dijual.</p> <p>2.5] Kemasukan pelabur baru dan penjualan tanah amat perlahan. Masih lagi terdapat kawasan yang luas di Gebeng II dan III yang masih belum terjual.</p> <p>2.6] Oleh sebab sukar memasarkan tapak industri petrokimia, kegunaan lain juga dibenarkan. Sebab itulah boleh terdapat kilang kertas dan kilang minyak masak.</p> <p>2.7] Dalam proses tawar-menawar, walaupun tanah di Gebeng ditawarkan lebih murah, ada pelabur membuat keputusan untuk ke Kerteh.</p>	<p>Theme 2 : Actual development progress</p> <p>(b) Category : Supply and Demand</p> <p>(i) Sub-category : Actual demand and supply</p> <ol style="list-style-type: none"> 1. Gebeng I, II, III are for petrochemical industry use; 2. Gebeng I was sold out, but there is large area of unsold land at Gebeng II, III. Therefore, other types of industries are allowed to operate in Gebeng; 3. Even though land offered at low price, some investors take up land in Kerteh.

3. Interviewee A3

Category-Government (Office of State Director-Lands and Mines)

Date-20.2.2005

Position-Deputy State Director

Place-Kuala Terengganu

Language-Malay

3.1. Jabatan ini tidaklah terlibat secara langsung dalam proses permohonan tanah. Tanggungjawab jabatan ini adalah untuk menyelaraskan proses permohonan tanah di seluruh negeri yang boleh dibuat sama ada melalui Pejabat Tanah, UPEN atau SEDC.

3.2. Permohonan tanah bagi bukan industri dan pertanian yang kurang 10 ekar dibuat di Pejabat Tanah. Bagi industri selain petroleum mesti dibeli melalui SEDC. Bagi yang berkaitan petroleum dibuat terus melalui UPEN.

3.3. Walau bagaimanapun, semua permohonan adalah diluluskan oleh EXCO dan semua kertas EXCO mesti dihantar melalui PTG. Sebelum diangkat kepada EXCO, ulasan setiap jabatan akan disemak dengan teliti dan dipastikan semuanya selaras. Jika tidak selaras, ulasan yang terperinci mungkin diperlukan.

3.4. Data on quitrent (RM)

Year	All Types of Use		Industrial Use	
	Terengganu	Kemaman	Terengganu	Kemaman
1997	12,910,308	3,441,266	4,475,602	2,187,144
1998	17,466,479	5,061,441	8,822,741	3,755,871
1999	15,724,585	4,633,709	5,742,101	2,879,282
2000	15,134,179	4,938,403	6,589,784	3,117,622
2001	17,600,544	6,867,296	6,932,980	3,660,513
2002	17,548,892	6,597,348	5,984,002	3,363,976
2003	21,235,629	7,333,363	8,484,387	4,187,178
2004	22,788,526	6,148,109	7,614,507	4,250,566

Theme : Roles

(a) Category : Roles

(i) Sub-category 1 : Goals and intentions

The DLMO's is aim to ensure that government decisions co-ordinate with overall policies and between government functions.

(ii) Sub-category 2 : Role

To mediate between the EXCO and other departments;

To examine EXCO papers, to ensure they are up-to-standard

(iii) Sub-category 3 : Standard

State Land Rules;

DLMO Directives.

<p>4. Interviewee-A25</p> <p>Category-Government (Kemaman Municipality)</p> <p>Date-9.4.2005</p> <p>Position-Planner</p> <p>Place-Kemaman</p> <p>Language-Mixed (Malay and English)</p>	
<p>4.1. Kemaman Municipality is the local authority for the Kemaman. District Kerteh Petrochemical Complex is in this district. As a planning authority, the municipality's roles are to:</p> <ul style="list-style-type: none"> • enact and implement the Structure Plan; • control land development; • comment on land development proposals submitted to the Land Office • certify building plans; • issue certificates of fitness for occupation (CFO); <p>The Municipality's role is not limited to controlling development. It also promotes economic and land development according to the Structure Plan.</p> <p>In land development, the Municipality's roles are to:</p> <ul style="list-style-type: none"> • certify building plans; • issue Certificate of Fitness for Occupation (CFO) <p>4.2. The statutes that govern the Municipality are:</p> <ol style="list-style-type: none"> 1. The Local Government Act (1976) 2. The Town and Planning Act (1972) 3. The Kemaman Structure Plan (1988) 4. The Kemaman Structure Plan 1998-2020 5. Kemaman Draft Structure Plan (Review) <p>4.3. Applications for development approval depend on the Land Office. The municipality cannot process any application if :</p> <ul style="list-style-type: none"> • a site is without ownership; • an application contradicts with land use conditions <p>4.4. Municipality comments used by the Land Office must get be endorsed by the Municipality Council.</p> <p>4.5. In practice, the Council's decisions are based on advice from technical departments, mainly:</p> <ul style="list-style-type: none"> • DOSH; • Fire Department; • TCPD; • Drainage and Irrigation Dept; • Public Health Department; • PWD. 	<p>Municipality's roles</p> <p>Law and statutes</p> <p>Limitation of powers</p> <p>Internal limitation</p> <p>External limitation</p>

<p>4.6. On problems faced by the Kemaman Municipality:</p> <ul style="list-style-type: none"> • Kemaman is a fast-developing district. The workload is immense. It is not to say we are short of manpower or finances. But, the workload does not match the resources; • political interference is normal in the Local Authorities but not a reason to delay any approval. 	<p>Problems</p>
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<p>5. Interviewee A6 Category-Government (Pahang SEPU) Date-30.8.2004 Position-Deputy State Director Place-Kuantan Language-Malay</p>	
<p>5.1. Interview was not long. The interviewer was informed that all industrial matters are handled by the Pahang SEDC. During the conversation, he:</p> <p>(a) Arranged an interview with the Director of Investment, Pahang SEDC;</p> <p>(b) Was informed that:</p> <p>(i) They are aware that there is a trend in which investors within Gebeng Industrial Complex make their own arrangements to find new investors for land allocated to them. That is why we find that plants on each site are clustered;</p> <p>(ii) In recent years, investment in Pahang has slowed down; and</p> <p>(iii) They know that investors buy a large area of land, but they have no idea why most of the investors are reluctant to fully develop their land.</p>	

<p>6. Interviewee A7</p> <p>Category-Government (Terengganu SEDC)</p> <p>Date-21.2.2005</p> <p>Position-Director of Investment and Planning</p> <p>Place-SEDC HQ, Kuala Terengganu</p> <p>Language-Malay</p>	
<p>6.1. Berbanding dengan SEDC Pahang, SEDC Terengganu, yang hanya menjadi Ahli-Jawatankuasa Pelaksana, tidak langsung terlibat dengan pembangunan industri Petrokimia di Kerteh.</p> <p>Pelan pembangunan dan infrastruktur di KIPC adalah disediakan oleh Petronas, SEDC tidak terlibat langsung. Pembangunannya banyak peringkat – daripada cari gali, pengeluaran gas sehinggalah membina kemudahan sendiri seperti pelabuhan, gudang dan lapangan terbang.</p> <p>Permohonan tanah di kawasan KIPC perlu dibuat terus kepada Kerajaan Negeri melalui UPEN.</p>	<p>(a) Theme 1: Land supply</p> <p>(b) Category : Rules and procedures</p> <p>(i) Sub-category : How to apply</p> <p>For petrochemical sites, in Terengganu, through SEPU, in Pahang, buy from SEDC</p> <p>(c) Category 1 : Roles Played</p> <p>(i) Department's Roles</p> <p>Development plan for Kerteh Petroleum Complex is prepared by Petronas</p>
<p>6.2. SEDC-Terengganu berperanan dalam:</p> <p>pembangunan perindustrian: menyediakan infrastruktur untuk sesebuah kawasan pembangunan kilang. Apabila siap, akan diserahkan kepada kerajaan negeri yang menguruskan untuk penjualannya. Hargapun kerajaan negeri yang menentukannya;</p> <p>pembangunan hartanah, membina dan menjual rumah kediaman dan kedai;</p> <p>pemegang saham kerajaan negeri, iaitu, Eastern Pacific Industrial Corporation (EPIC), Pengkalan Bekalan Kemaman (KSB) dan Golden Pharos Berhad;</p> <p>usaha kerajaan negeri, kedua-duanya – BN dan PAS, untuk mendapatkan pinjaman daripada kerajaan persekutuan.</p> <p>Sumbangan SEDC Terengganu tidaklah hebat tetapi masih boleh mengagihkan dividen kepada pemegang-pemegang sahamnya.</p> <p>6.3. SEDC tidak berminat bersaing dalam pembangunan industri petrokimia yang telah diceburi oleh Petronas dan swasta. Industri petrokimia saling berkait dengan produk-produk Petronas yang lain. Jika ingin terlibat SEDC perlu menyediakan kompleks-kompleks lain yang berasingan.</p> <p>6.4. Memang berlaku kelembaban pembangunan sekarang ini dan memang benar ada terdapat kawasan kosong sepanjang jalan arah perjalanan ke Teluk Kalong. Ada pihak yang berminat untuk memajukannya, iaitu industri berasaskan petroleum. Namun, belum ada keputusan muktamad.</p>	<p>Theme 2: Actual development progress</p> <p>(d) Category : Supply and Demand</p> <p>(i) Actual Supply and Demand</p> <p>A no-takers situation is evident around Kerteh</p> <p>Theme 3: Firms' strategy</p> <p>(e) Category : Business environment</p> <p>(i) Sub-category : Investment attraction</p> <p>GIPC is more attractive due to:</p> <ul style="list-style-type: none"> • Land price • Federal Government support • Infrastructure and facilities • Terengganu State Government's politics and administration

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6.5. Kemungkinan kelembaban pembangunan industri petrokimia di Terengganu adalah kerana:

- (a) sejarah hubungan kerajaan negeri dengan Petronas yang kurang baik. Dikatakan bahawa Petronas diberikan tanah yang tidak baik (berpaya) dengan premium yang sangat tinggi;
- (b) persaingan dengan Gebeng – Gebeng adalah menarik kerana:
 - (i) politiknya, Terengganu tidak kuat. Berbanding Pahang, selalunya tiada menteri kabinet dari kalangan orang Terengganu. Tambahan pula Timbalan Perdana Menteri sekarang orang Pahang;
 - (ii) kerenah politik dan pentadbiran negeri Terengganu. Sebab itu BASF dan Amoco yang telah berunding dengan Terengganu, membina kilang di Kuantan. Sebab itu juga Petronas sanggup keretapi dan saluran paip lebih daripada 100km, untuk menyalurkan bekalan ke Gebeng;
 - (iii) persepsi pelabur bahawa Kuantan mempunyai infrastruktur, kemudahan (seperti hotel-hotel) yang lebih baik;
 - (vi) Kuantan lebih *friendly* dengan Petronas.

<p>7. Interviewee A7</p> <p>7.1. Category-Government (Kemaman Land Office)</p> <p>Date-28.2.2005 and 3.3.95</p> <p>Position-Chief clerk and three other clerks</p> <p>Place-Kemaman Land Office</p> <p>Language-Malay</p> <p>Professional-Training (of senior officials) State Administrative Service Officer</p> <p>Staffing-Out of 81 posts, 56 filled (4 officers and 52 supporting staff).</p>	
<p>7.2. Kakitangan LOKM:</p> <p>Ketua Bahagian : Ketua Penolong Pentadbir Tanah (PTN-N54), Ketua SO, 3 Ketua Kerani, termasuk Pendaftaran, Unit Penempatan, Pesaka, Pengambilan dan Unit Hasil ada 81 jawatan, hanya 56 yang diisi.</p> <p>7.3. Proses memohon tanah industri;</p> <p>Dibuat melalui UPEN, bersama-sama borang 5A dan kertas kerja. Dibawa ke mesyuarat EXCO selepas pembentangan kertas-kerja. Selepas itu, UPEN akan memaklumkan jumlah premium perlu dikutip oleh LOKM. Maklumat dan fail lengkap disimpan di UPEN.</p> <p>7.4. Proses tukar syarat;</p> <p>Dibuat di LOKM, mengisi borang (4 salinan), sijil carian rasmi, 35 salinan pelan (yang mesti dipersetujui oleh Majlis Perbandaran Kemaman). Kemudian akan diminta ulasan Majlis Perbandaran Kemaman, Jabatan Pertanian, JPS, Jabatan Perancangan Bandar dan Desa (JPBD), JKR dan Jabatan Penilaian. Kelewatan selalunya ketika menunggu ulasan, selalunya JPBD. Paling cepat, JKR. Kemudian, Mesyuarat Jawatankuasa Teknikal (MJKT) akan diadakan. Kelulusan dibuat oleh EXCO, tetapi kertas EXCO, bersama perakuan MJKT, dihantar melalui PTG.</p> <p>Ulasan JBT mestilah dalam surat rasmi dan dalam MJKT.</p>	<p>(a) Category 1 : Roles Played</p> <p>(i) Government Department's roles</p> <p><u>The Land Office</u></p> <p>In land development, the role of the Land Office is to record and process applications for:</p> <ol style="list-style-type: none"> <u>Petrochemical sites</u> <ol style="list-style-type: none"> Prepare EXCO paper after an 'approval in principle' is issued by the SEPU; Issue a formal offer to successful applicants; Receive payments and register land ownership
	<p style="text-align: center;">next page</p>

<p>7.5. Tidak ada campur tangan orang/parti politik dalam melaksanakan tanggungjawab. Namun, perubahan dasar kerajaan yang drastik sedikit sebanyak memberikan kesan.</p> <p>7.6. Biasanya dalam 3-4 bulan urusan di LOKM boleh selesai. Pejabat Tanah ingin mempercepatkan segala urusan kelulusan tanah. Jika kelulusan lambat negeri kehilangan hasil.</p>	<p><u>(B) Non-petroleum-related industrial sites</u></p> <ol style="list-style-type: none"> 1. Prepare EXCO paper after an 'approval in principle (initial approval)' is issued by the SEPU; 2. Issue a formal offer to successful applicants; 3. Receive payments and register landownership <p><u>(C.) Land conversion</u></p> <ol style="list-style-type: none"> 1. Receive and record applications; 2. Refer the application to technical departments; 3. Organise formal meetings with technical departments; 4. Prepare EXCO paper after a formal meeting; 5. Issue a formal offer to successful applicants; 6. Receive payments and register the change of land ownership <p>(b) Category : Rules and procedures</p> <p>(i) Procedure</p> <ul style="list-style-type: none"> • All types of applications must come to LOKM, must be in statutory form, and include the Kemaman Municipality's approved plan (if for land conversion or sub-division) and processing fee. • For industrial use, must approach the SEPU first with a project proposal. • LOKM must consult technical departments before a submission to the EXCO: DTCP, the Local Authority, Dept of Agriculture, PWD, DID, Valuations Department. • Decisions are only by the EXCO. A submission to the EXCO must be in an 'EXCO Paper', that is submitted through DLMO. <p>(ii) Problems</p> <ul style="list-style-type: none"> • Delay in getting technical department comments. • There is no political interference in the Land Office work. However, a drastic change in government policy has an impact. <p>(iii) Sub-category : Communication</p> <p>Must be formal.</p> <p>(c) Category : Roles</p> <p>(i) Sub-category : Goals and intentions</p> <p>LOKM has no desire to delay any approval. Delays result in loss of state government losing revenue from quit rent.</p>
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<p>8. Interviewee A10 Category-Government (Former Deputy Director of SEPU) Date-14.3.2005 Position-Retiree Place-Kuala Terengganu Language-Malay</p>	
<p>8.1. The low price of land in Kerteh does not attract investment because investment in Kerteh is dictated by Petronas and the Central Government. This is because:</p> <ul style="list-style-type: none"> • Terengganu is politically weak; • Petronas is the one who decides whether or not to supply feedstock; <p>8.2. Other factors that keep investors away from Kerteh are:</p> <ul style="list-style-type: none"> • Facilities in Kerteh are not to petroleum executives' taste and lifestyle. Most senior executives commute from KL; • Pahang is more effective in luring investors to Gebeng; <p>8.3. It is difficult to improve the Terengganu-Petronas relationship because:</p> <ul style="list-style-type: none"> • Historically, the Terengganu-Petronas relationship has a bad track record. It is said that the present location, which is swamp land , used to be within the former Chief Minister's constituency, who was enter to rehabilitate; Since then, Petronas is always seeking excuse not to bring investors to Kerteh. • None of Petronas' senior officials are from Terengganu; • State and Petronas planning have never been coordinated because Petronas only listens to the central government. There are Petronas representatives on the State Planning Committee but their participation is only to '<i>ambil hati sahaja</i>' (for the sake of formality). 	

<p>9. Interviewee A11</p> <p>Category-Government (Former Federal Director General of Lands and Mines)</p> <p>Date-18.3.2005</p> <p>Position-Retiree</p> <p>Place-Anonymous</p> <p>Language-Malay</p> <p>Note-The interviewee advised the interviewer to meet with Rahim Bakar (interviewee A19), a Chief Minister of Pahang to acquire more information on the history of Gebeng.</p>	
<p>9.1. GIPC is an extension of the Kuantan Port which was planned and developed by Razak, the late Second Prime Minister who was born in Pahang. He had a dream of seeing Kuantan Port as internationally reputable. However, today, Pahang cannot take credit for Kuantan Port because it was developed solely at Petronas' expense.</p> <p>9.2. For political reasons, the Federal government pays more attention to Pahang, but as an oil producer, Terengganu deserves more attention. However, political attention does not guarantee extra allocation.</p> <p>9.3. In the 1970's the Federal government was hoping to find oil within Pahang's territory. Efforts to extract oil off. Kuantan failed. When an agreement was made between the Federal government and Thailand to extract oil and gas within Kelantan from Thailand's soil, it was proven that the Federal government is trying hard to avoid dealing with the Terengganu and Kelantan State Governments. Therefore, there is a connection between the problems of the (a) Terengganu-Petronas relationship the; (b) Federal-State relationship; and the (c) UMNO-PAS relationship;</p> <p>9.4. SAS is more effective in state administration because of their loyalty to their state. Since they are not transferable to other states, they are very specialised in matters relating to state administration.</p>	

<p>10. Interviewee A12</p> <p>10.1. Category-Government (Town and Planning)</p> <p>Date-21.3.2005</p> <p>Position-Assistant State Director</p> <p>Place-Kuala Terengganu</p> <p>Language-Malay</p>	
<p>10.2. Matlamat JPBD ialah untuk mengoptimumkan guna-tanah mengikut potensinya. JPBD, sebuah jabatan negeri, berfungsi menyelaras perancangan dan pelaksanaan pembangunan peringkat Persekutuan dan Negeri, 2/3 daripada peruntukan tahunannya daripada kerajaan Persekutuan. JPBD yang terikat dengan arahan-arahan ibu-pejabat di Putrajaya, yang bertanggungjawab menasihati pembangunan, bertanggungjawab:</p> <ul style="list-style-type: none"> • menjadi Ahli Jawatankuasa Perancangan Negeri; • menjadi Ahli Majlis Pihak-Berkuasa Tempatan (PBT); • menyediakan Pelan Struktur PBT <p>Para pelabur ke Pantai Timur memilih kawasan yang baik kemudahan sedia ada dengan mengambil kira senario politik. Oleh itu, mereka lebih memilih Kuantan. Selain itu, Pahang yang di bawah pegawai PTD pentadbirannya lebih baik. Mereka mempunyai kebolehan/kepakaran yang pelbagai, berbanding PTN.</p>	<p>(a) Theme : Roles</p> <p>(b) Category : Roles</p> <p>(i) Sub-category 1 : Goals and intentions</p> <ul style="list-style-type: none"> • To optimise land use • Sub-category 2 : Role <ol style="list-style-type: none"> 1. To co-ordinate spatial plans and their implementations between the Central and State governments; 2. To undertake preparation of Structure Plans for the Local Authorities 3. To be a member of the State Planning Committee; 4. To be an ex-officio member (councillor) of the Local Authorities; <p>(ii) Sub-category 3 : Position</p> <p>A Federal Government appointment but salaried by State Government. Therefore subject to directives from the Central Government</p> <p>(c) Theme : Firms' strategy</p> <p>(d) Category : Business environment</p> <p>(i) Sub-category 1 : Investment attraction</p> <ul style="list-style-type: none"> • Most important: infrastructure • Also important: <ul style="list-style-type: none"> ➤ State politics; ➤ State administration system; those under ADS are better and more attractive than under SAS; ➤ Central government support

<p>10.3.Secara keseluruhannya Jabatan ini tidak ada menghadapi masalah kewangan, tiada ada gangguan politik dalam pentadbiran. Malahan, semasa Kerajaan Terengganu di bawah PAS, jabatan ini langsung tidak menghadapi masalah. Kelewatan laporan JPBD adalah kerana:</p> <ul style="list-style-type: none"> • perlu membuka fail dan mengemas kini maklumat; • selain daripada Akta Perancangan Bandar dan Desa dan Pelan Struktur, terdapat 35 garis panduan yang dirujuk; • norma jabatan: 30 hari; • pemeriksaan tapak dan status projek perlu dibuat; • bebanan tugas berbanding dengan tenaga-kerja (lebih 3,000 setahun, berbanding hanya 45 orang kakitangan yang ada, dengan 3 orang pegawai dan hanya 15 orang juru teknik); • ulasan mesti bertulis dan ditandatangani oleh Pengarah Negeri sahaja. <p>Dalam pembangunan petrokimia, JPBD menjadi jabatan rujukan UPEN</p> <p>10.4. Kerteh dan Gebeng mempunyai peluang yang besar untuk maju tetapi terdapat beberapa isu yang belum diselesaikan, antaranya:</p> <ul style="list-style-type: none"> • walaupun undang-undang menghendaki diadakan Jawatankuasa Pemuafakatan Wilayah, kerajaan Terengganu dan Pahang tidak melaksanakannya; • polisi Persekutuan yang mahu menjadikan Kuantan sebagai growth-centre menjadikan pembangunan menyebelahi Kuantan; • pemindahan pentadbiran Pelabuhan Kemaman ke Kuantan, walaupun pelabuhan Kemaman fizikalnya adalah lebih baik daripada Kuantan, mungkin tidak menguntungkan Kemaman. 	<p>(a) Theme : Land supply</p> <p>(b) Category : Rules and procedures</p> <p>(i) Sub-category 1 : Standards</p> <ul style="list-style-type: none"> • Town and Planning Act (1972) • The Structure Plan. <p>(ii) Sub-category 2 : Norms</p> <ul style="list-style-type: none"> • 30 days • Comments must bear State Director's signature <p>(iii) Sub-category 3 : Role in the petrochemical industry</p> <ul style="list-style-type: none"> • SEPU reference point <p>(iv) Sub-category 4 : Problems</p> <ul style="list-style-type: none"> • No financial problems; • No political interference; • No problem from political changes; • Shortage of manpower (more than 3,000 cases to be investigated annually compared a 45- member workforce - 3 officers and 15 technicians) <p>(v) Sub-category 1 : Procedure</p> <p>When called upon, the it is referred to DTCP consults the law and 35 other guidelines and follows the work process below:</p> <pre> graph TD 1[1. State Director - Receives application/letter] --> 2[2. Clerk - Records application/letter] 2 --> 3[3. Technician - does a detailed investigation, including visiting site and report to Senior Technician] 3 --> 4[4. Senior Technician - verifies reporting, prepares draft of comments and submits to Assistant Director] 4 --> 5[5. Assistant Director - Prepares draft of comments and directs a secretary to prepare a reply letter] 5 --> 6[6. State Director/Deputy - Gives consent and sign an official letter] </pre>
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	<p>(c) Theme : Land supply</p> <p>(d) Category : Institutional framework</p> <p>(i) Institutional problems</p> <ul style="list-style-type: none"> • Kerteh and Gebeng plans not coordinated; • Federal policies biased against Terengganu, e.g.; <ul style="list-style-type: none"> ➤ A plan to promote Kuantan as growth centre; ➤ The transfer of the Kemaman Port to Kuantan.
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<p>11. Interviewee A13</p> <p>11.1. Category-Government (Department of Safety and Health)</p> <p>Date-26.3.2005</p> <p>Position-State Director</p> <p>Professional Training-Mechanical Engineer</p> <p>Place-Kuala Terengganu</p> <p>Language-Malay</p>	
<p>11.2. Terlibat dalam pembangunan industri bermula sejak awal lagi iaitu memberi nasihat kepada MIDA ketika permohonan diterima. DOSH adalah <i>custodian</i> kepada Akta-akta:</p> <ul style="list-style-type: none"> • Kilang dan Jentera (1967); • Petroleum (Langkah-langkah Keselamatan) 1984; • Keselamatan dan Kesihatan Pekerjaan (1994). <p>Semua peruntukan undang-undang tersebut adalah untuk menjamin keselamatan pekerja.</p> <p>11.3. DOSH juga bertanggungjawab memberi ulasan kepada:</p> <ul style="list-style-type: none"> • JPBD; • DoE; • PBT sebelum CF boleh dikeluarkan. 	<p>(a) Theme : Roles</p> <p>(b) Category : Roles</p> <p>(i) Sub-category 1 : Goals and intentions</p> <ul style="list-style-type: none"> • DOSH's interest is in workers' safety <p>(ii) Sub-category 2 : Role</p> <ul style="list-style-type: none"> • To issue periodical plant shut-down orders for safety inspection; • To certify plant and machine lay-out plans; • Reference for MIDA, DoE, DTCP, Local Authorities.

<p>11.4. Keselamatan kilang diberi perhatian sejak dari peringkat awal lagi. Bermula daripada jaminan keselamatan terhadap reka bentuk mesin yang akan digunakan. Reka bentuk mesin bukan sahaja selamat, malah spesifikasinya menepati standard internasional. Untuk proses mendapatkan kelulusan/lesen syarikat perlu:</p> <ul style="list-style-type: none"> • melantik juruperunding untuk menyediakan spesifikasi kilang; • mengisi borang dan membayar fee; • DOSH membuat siasatan dan ujian teknikal. 	<p>(iii) Sub-category 3 : Standards</p> <ul style="list-style-type: none"> • The Factories and Machinery Act (1967); • The Occupational Safety and Health Act (1994); • The-Petroleum (Safety Measures) Act (1984).
<p>11.5. Masalah-masalah:</p> <ul style="list-style-type: none"> • ada juga berlaku (sedikit) gangguan politik dalam melaksanakan tugas. Walau bagaimanapun jabatan ini akan mengikut prosedur, mana-mana kilang yang tidak akur dengan peraturan dibawa ke mahkamah; • pelabur dari negara lain (negara maju) merungut kerana mereka tidak diberi kebebasan untuk self-regulated. Namun disebabkan negara kita baru dalam pembangunan perindustrian, masih perlu ada kawalan. Malah untuk seimbang, ada juga diberi ruang '<i>self regulated</i>'; • tumpuan bebanan tugas yang diberi terhadap kawasan perindustrian Kerteh adalah melebihi 50% berbanding kawasan lain. Peruntukan kewangan dan jumlah staf yang ada masih tidak mencukupi untuk melaksanakan peranan yang dipikul. Beban tugas bergantung pada jadual bilangan kilang yang akan menghentikan operasi untuk pemeriksaan pada sesuatu tahun berkenaan; • ada jabatan tidak tahu/faham peranan DOSH; • UPEN tidak pernah memanggil pihak DOSH untuk memberi pandangan dalam membantu kerajaan dalam pembangunan perindustrian negeri 	<p>(vi) Sub-Category 4 : Procedures</p> <ul style="list-style-type: none"> • Appoint consultant to prepare plant and machine specifications; • Fill out forms and pay fees; • Carry out plant inspections and mechanical testing. <p>(v) Sub-category 5 : Problems</p> <ul style="list-style-type: none"> • 50% of the workload is in Kerteh. Budget and staff is insufficient to carry out department duties; • Some political interference, but does not affect department's performance; • Some departments don't understand DOSH's functions; • State government never consults DOSH in its industrial planning; • Complaints from investors calling for self-regulation.

<p>12. Department A13</p> <p>12.1. Category-Government (Malaysian Industrial Development Authority)</p> <p>Date-27.3.2005</p> <p>Position-State Director</p> <p>Professional Training-Administration</p> <p>Place-Kuala Terengganu</p> <p>Language-Malay</p>	
<p>12.2. Tanggungjawab MIDA adalah untuk melaksanakan:</p> <p>(a) The Industrial Co-ordination Act (1975); dan</p> <p>(b) The Promotion of Investment Act (1986).</p> <p>12.3. Penglibatan MIDA dalam pembangunan perindustrian ialah:</p> <ul style="list-style-type: none"> • di peringkat awalnya untuk mendapatkan lesen-lesen perindustrian dan lesen-lesen lain yang berkaitan (drp DOSH, DoE, dll; • menjadi jawatankuasa pemantauan projek – jika ada masalah birokrasi (biasanya ada masalah), MIDA akan masuk campur – dengan kuasa yang ada, akan meminta penjelasan daripada jabatan berkenaan; • di peringkat akhir, membuat monitoring jika pelabur menghadapi masalah di peringkat awal operasinya. <p>12.4. MIDA:</p> <ul style="list-style-type: none"> • mempunyai hubungan yang baik dengan jabatan dan kerajaan Negeri dan berada dalam SIC yang bermesyarat setiap 3 bulan; • sentiasa diminta oleh kerajaan negeri untuk meneliti proposal projek baru; • bekerjasama rapat dan mendapat kerjasama baik daripada kedua-dua kerajaan, BN dan PAS; • tiada masalah dengan mana-mana jabatan contohnya UPEN, PTG, DOSH, DoE. <p>12.5. MIDA juga:</p> <ul style="list-style-type: none"> • memberi perhatian khusus terhadap pembangunan industri Petrokimia Kerteh kerana menyokong hasrat Persekutuan dan JDA (the Malaysian, Thailand and Singaporean Joint Development Area) menjadikan Kuantan sebagai Hub Petrokimia ASEAN; <p>12.6. bersetuju dengan sasaran Kerajaan Negeri dalam pembangunan industri Kerteh dan Teluk Kalong, termasuk penyediaan tapak yang luas untuk menarik pelabur. Kerajaan negeri yang berusaha untuk menarik pelabur, termasuk menyediakan menawarkan insentif khas</p>	<p>(a) Theme : Roles</p> <p>(b) Category : Roles</p> <p>(i) Sub-category 1: Goals and intentions MIDA's objective is to attract investment to this country, either to Pahang, Terengganu or other regions.</p> <p>(ii) Sub-category 2 : Role The core role is to promote and co-ordinate industrial development</p> <ul style="list-style-type: none"> • To assist investors in approaching related authorities; • To be a trouble shooter to solve bureaucratic problems; • To advise investors on matters pertaining to investment in Malaysia; • Industrial license issuer • Reference for the SEPU; • A member of the SIC. <p>(iii) Sub-category 3 : Standards</p> <ul style="list-style-type: none"> • The Industrial Co-ordination Act (1975); • The Promotion of Investment Act (1986). <p>(iv) Sub-category 4 : Problems</p> <ul style="list-style-type: none"> • Investors keen to leave Kerteh because the Federal policies favour Kuantan; • Investors complain about the income tax structure; • Tension between economic development and other social interests.
<p>12.7. Kepada MIDA, yang dipentingkan ialah pelabur melabur di Malaysia, tidak kira sama ada di Pahang atau di Terengganu, jangan mereka ke negara lain.</p>	<p>(i) Sub-category 5 : Not a problem</p> <ul style="list-style-type: none"> • Political interference; • Budget and manpower;

<p>12.8. Isu-isu:</p> <ul style="list-style-type: none"> • tanah perindustriaan di Gebeng lebih mahal; • rungutan para pelabur mengenai struktur cukai pendapatan syarikat; • rungutan kerajaan negeri bahawa peluang pekerjaan yang disediakan, oleh industri petrokimia yang tidak seperti diharapkan – hanya untuk lebih kurang 5,000 orang pekerja sahaja, daripada itu, hanya 30% sahaja anak Terengganu; • para pelabur sedia ada berminat meninggalkan Terengganu dan beroperasi di Gebeng. Hal ini ada kaitan dengan Plan Perindustrian Nasional; • kita berada dalam dilema – sama ada mahu pembangunan dan cepat maju dengan mengketepikan kepentingan-kepentingan lain atau mematuhi semua peraturan. 	
<p>12.9. Bukan isu:</p> <ul style="list-style-type: none"> • gangguan politik; • masalah kewangan. 	

<p>13. Interviewee A15</p> <p>13.1. Category-Government (Department of Valuation)</p> <p>Date-16.3.2005</p> <p>Position-District Valuer</p> <p>Professional Training-Property Valuer</p> <p>Place-Kemaman</p> <p>Language-Malay</p>	
<p>13.2. Pejabat ini merupakan Pejabat Penilaian ialah Pegawai Penilai Daerah. Di Kemaman belum pernah ada conversion untuk petrokimia, begitu juga pindah milik kepada petrokimia. Semua pembangunan yang ada adalah atas tanah kerajaan yang diberi milik melalui Petronas</p>	<p>(a) Theme : Land supply</p> <p>(b) Category : Rules and procedures</p> <p>(i) Sub-category : How to apply</p> <p>There has been no private land conversion for petrochemical use. The existing plants are on government land acquired through Petronas.</p>
<p>Sebaik sahaja diperoleh permohonan daripada Pejabat Tanah, dibuka fail satu lot satu fail (lot besar), didaftarkan untuk dinilai potensi tanah yang didaftar contohnya utk pembinaan bangunan. Selepas pelan disediakan, siasatan, termasuk lawatan ke tapak dijalankan. Kerja-kerja teknikal pegawai penilai dibuat oleh Penolong Pegawai Penilai. Norma kerja ialah 28 hari. Signatory power hanya ada pada Pegawai Penilai Daerah dan Pengarah Negeri Sahaja. Jika penilaian melebihi had yang ditetapkan, permohonan dirujuk ke Putrajaya.</p>	<p>(c) Theme : Land supply</p> <p>(d) Category : Rules and procedures</p> <p>(i) Limitation of powers</p> <p>Only district and state valuers have signatory powers, but certain high-value properties must be referred to the HQ.</p> <p>(ii) Norms : Length of time required.</p> <p>28 days</p> <p>(iii) Norms : Work process</p> <p>The work flow is:</p>
<p>13.3. Dalam membuat penilaian hartanah, Pegawai Penilai kerajaan tidak terikat kepada mana-mana undang-undang, tetapi hanya kepada <i>Code of Conduct</i> penilaian.</p>	<div> <ol style="list-style-type: none"> 1. State Director - Receives application/letter 2. Clerk - Opens file for each case 3. Assistant Valuation Officer - Does detailed investigation, including visiting site and reporting to the District Valuer 4. District Valuer - Verifies report, prepares draft of comment. If value of property is within his/her limit, gives consent and signs an official letter. If not, sends to State Director. 5. State Director - If value of property is within his/her limit, gives consent and signs an official letter. If not, sends to Director General in Putrajaya. 6. Director General - Gives consent and signs an official letter. </div> <p>(e) Theme : Land supply</p> <p>(f) Category : Institutional framework</p> <p>(i) Standards and values</p> <p>In making an assessment, government property valuers abide by professional codes of conducts and are not subject to any legislation.</p>

<p>14. Interviewee A16</p> <p>Category-Government (Department of Environment)</p> <p>Date-15.3.2005</p> <p>Position-Assistant State Director</p> <p>Place-Kuala Terengganu</p> <p>Language-Malay</p>	
<p>14.1. Akta Kawalan Alam Sekitar (1974), menghendaki industri Petrokimia seperti di Kerteh dikawal oleh EIA, sentiasa dipantau oleh JAS dan pembangunannya memerlukan Kajian-Analisa-Risiko. Kepentingan JAS ialah keselamatan orang awam. Tanggungjawab JAS adalah untuk:</p> <ul style="list-style-type: none"> • memberikan kelulusan EIA; • mengulas kesesuaian tapak; • bekerjasama dengan EXCO Alam Sekitar, berada dalam Jawatankuasa-jawatankuasa Negeri, memberi nasihat kepada jabatan-jabatan lain seperti DOSH, Kesihatan, Pejabat Tanah, Majlis Daerah dan JKR. <p>JAS tidak memberikan kelulusan tapak/projek kerana itu kuasa EXCO.</p>	<p>(a) Theme : Roles</p> <p>(b) Category : Roles</p> <p>(i) Sub-category 1 : Goals and intentions</p> <ul style="list-style-type: none"> • DoE's interest is in public safety. <p>(ii) Sub-category 2 : Role</p> <ul style="list-style-type: none"> • To certify EIA studies • Reference department for PWD, DOSH, Health, Land-Office, Local Authorities. <p>(iii) Sub-category 3 : Standards</p> <ul style="list-style-type: none"> • The Environmental Quality Act (1974); • Environmental Quality Regulations. <p>(iv) Sub-Category 4 : Powers and limitations</p> <ul style="list-style-type: none"> • Decisions are made by the Headquarters; • DoE can only certify EIA studies. The EXCO holds approval power.
<p>14.2. Untuk penyediaan laporan atau ulasan, projek proponent perlu menyediakan 17 salinan <i>project proposal</i> atau draf EIA report untuk diagihkan kepada jabatan-jabatan lain. JAS juga akan membuat siasatan sendiri. Dalam tempoh sebulan, semua agensi diminta menghantar ulasan dan diadakan mesyuarat dengan agensi dan mereka diminta memberi ulasan/pandangan. Kemudiannya dikemukakan ke ibu-pejabat untuk kelulusan. Biasanya kelulusan dalam tempoh dua bulan.</p> <p>Oleh sebab memerlukan maklumat terperinci, selalunya JAS kurang berpuas hati dengan sesetengah Pejabat Tanah atau PBT yang meminta ulasan JAS dengan hanya melalui surat yang semuka surat sahaja.</p>	<p>(c) Theme : Land supply</p> <p>(d) Category : Rules and procedures</p> <p>(i) Sub-category 1 : Procedure</p> <p>To prepare a comment or approval, DoE needs to:</p> <ul style="list-style-type: none"> • Carry out a site investigation; • Be given detailed information on the project proposal (17 copies needed); • Consult 17 other departments. <p>(ii) Sub-category 2 : Norms</p> <p>An approval/report ready in 2 months.</p>
<p>Cara berhubung antara bahagian-bahagian, jabatan-jabatan lain serta arahan pejabat-mesti bersurat/kepada pengarah mesti bersurat. Dari Pengarah mungkin sekadar memo. Email tidak digunakan secara rasmi, hanya guna faks atau surat. Kalau ada telefonpun mesti disusuli dengan surat. Surat yang melibatkan kelulusan atau sesuatu yang baru, barulah perlu dari pengarah dan ditandatangani.</p> <p>Problem JAS:</p> <ul style="list-style-type: none"> • sedikit gangguan pengaruh politik, tetapi tidak banyak mengganggu tugas JAS; • kekurangan <i>manpower</i>, tetapi tidak mengganggu prestasi keseluruhan jabatan, 	<p>(iii) Sub-category 3 : Correspondence</p> <ul style="list-style-type: none"> • All correspondence and directives must be in writing. • An approval must bear the State Director's signature. <p>(iv) Sub-category 4 : Problems</p> <ul style="list-style-type: none"> • Some political interference, but does not affect department's professionalism; • A shortage in manpower, but not affect the overall department's performance.

<p>15. Interviewee A18</p> <p>15.1. Category-Government (Public-Works-Department)</p> <p>Date-28.3.2005</p> <p>Position-District Engineer</p> <p>Professional Training-Civil Engineer</p> <p>Place-Kemaman</p> <p>Language-Malay</p>	
<p>15.2. JKR yang answerable kepada Pengarah Negeri dan Ketua Pengarah Persekutuan, berfungsi:</p> <ul style="list-style-type: none"> • menyediakan infrastruktur, khususnya jalan awam, dan bangunan awam; • dalam pembangunan tanah, memberikan komen kepada Pejabat Tanah (land conversion) dan kepada PBT. <hr/> <p>15.3. Hubungan antara jabatan adalah baik, cuma untuk dikomen:</p> <ul style="list-style-type: none"> • JKR terikat dengan standard dan spesifikasi teknikal. Oleh itu, berlaku juga perbezaan pendapat antara JKR dengan jabatan lain khususnya UPEN – cuma dalam technical/professional point of view dan tidak menjejaskan hubungan inter-personal; • wujud ketidak-selarasan dalam perancangan negeri yang menyebabkan kelewatan kelulusan dan pelaksanaan projek pembangunan; • hubungan antara jabatan mesti dengan ‘hitam-putih’. Ada bukti jika berlaku pertikaian. <hr/> <p>15.4. Dalam menjalankan tugas:</p> <ul style="list-style-type: none"> • JKR ada menghadapi sedikit gangguan politik tetapi tidak memberi kesan besar; • bebanan tugas semakin bertambah staff masih mencukupi dan tidak menjadi bebanan untuk melaksanakan urusan yang bukan bidang tugas; • peruntukan tahunan (pembangunan) RM100 million, tidak mencukupi. Belanja mengurus (RM2 juta) – mencukupi; • memberikan perhatian khusus kepada KIPC kerana ‘show-case’ pembangunan industri negeri. Untuk memberikan keyakinan kepada pelabur dan bakal pelabur. 	<p>Theme 1 : Roles</p> <p>(a) Category : Roles</p> <p>(i) Sub-category 1 : Goals and intentions</p> <ul style="list-style-type: none"> • To ensure land development is in harmony with present and future plans; • The safety of public roads and buildings. <p>(ii) Sub-category 2 : Roles</p> <ul style="list-style-type: none"> • To build public roads and buildings; • To comment on proposals for land conversion • Reference for the Land Office and Local Authorities. <p>(iii) Sub-category 3 : Standards</p> <ul style="list-style-type: none"> • Engineering standards. <hr/> <p>(iv) Sub-category 3 : Communication</p> <p>Interdepartmental communication must be in black and white. It is reliable. If there is an argument, we have proof.</p> <hr/> <p>(v) Sub-category 5 : Problems</p> <ul style="list-style-type: none"> • Minor political interferences do not affect PWD’s performance; • Workload is increasing but PWD workforce and budget are sufficient to carry out its duties; • There are differences in opinion between PWD and other departments, maybe because of different professional points of view. The differences do not result in problems in inter-departmental relationships.

<p>15.5. Prospek pembangunan Terengganu lebih perlahan berbanding Pahang. Mungkin kerana:</p> <ul style="list-style-type: none"> • pentadbiran Pahang yang di bawah PTD yang banyak pengalaman di peringkat Federal dan lain-lain negeri, lebih baik; • kuasa politik yang tidak menentu. Politically, Terengganu lemah, berlaku pertukaran kerajaan dan selalu tiada wakil dalam kabinet; • faktor Kuantan yang: <ul style="list-style-type: none"> ➤ merupakan ibu negeri, lebih banyak kelebihan, seperti konsumer, produk, spare-part, pejabat-pejabat, HQ, pejabat swasta dan perumahan – berupaya membayangi pembangunan Kemaman; ➤ sering mencuri peluang pembangunan; <p>Oleh itu, kerajaan negeri sedang merancang membangunkan Kemaman, yang juga berpotensi (akan access ke LPT, ada lapangan-terbang, pelabuhan sendiri), sebagai 'self-contained' untuk mengelakkan penduduk tempatan bertumpu ke Kuantan.</p> <p>Perancangan kerajaan menyediakan tanah yang luas bagi menarik pelabur ke Kerteh adalah munasabah</p> <p>15.6. Mengenai Petronas, ia terlalu terikat dengan kepentingan Persekutuan, oleh itu:</p> <ul style="list-style-type: none"> • berjaya membangunkan KIPC, tetapi hanya tertumpu ke kawasan yang ia berkepentingan sahaja. Contohnya, kawasan dalam daerah Dungun yang bersempadanan dengan KIPC langsung tiada kemajuan; • tidak banyak membantu kotraktor tempatan. 	<p>Theme 2 : Development (Firms' Strategy)</p> <p>(a) Category 1: Industrial Environment</p> <p>(i) Sub-category 1 : External factors</p> <ul style="list-style-type: none"> • State politics; • Central government support; • State administration; • Shopping and housing; • Land
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<p>16. Interviewee A19</p> <p>Category-Government (Abdul Rahim Bakar)</p> <p>Date-14.4.2005</p> <p>Position-Pahang Chief Minister</p> <p>Place-K.Lumpur</p> <p>Language-Mixed (Malay and English)</p> <p>Note: 1. The interviewee did not request anonymity</p> <p>2. The interviewee was the Pahang Chief Minister during the early development of Gebeng. The interview was lengthy – more than two hours, possibly the longest one. However a long time was spent telling his unpleasant experience in office, which he requested the interviewer not to disclose.</p> <p>16.1. What was your vision when you were the Chief Minister (CM)? My principle is that, do the correct thing first. If we do not, more problems will happen next. Of course, integrity comes first. ... I do not know whether I have answered your question or not... I believe that CM is an institution. Be an institution, it is not a person. For this, what you are doing is not because you are knowledgeable. But, when you make a decision, it is everybody's decision. So a CM must give and take.</p> <p>When I was CM, I imagined that 'I am CEO'. So, the most important quality is accountability. Because of that, when the royalties asked a special treatment (he told stories that he asked not to be disclosed) I refused to entertain... that sparked a crisis between the palace and me.</p> <p>For me CM's decision must be on consciousness. CM must work in a team. He must maintain an integrity. Because you are not a person, but institution. CM is not an individual. When you are in-charge (as CM), when you are doing something, do not side-line other parties... government servant, technicians, politicians, ... of course, you are the one to take the risk.. So, if you want to make big decision, do not (do it) without anybody else... never.</p> <p>When I was in office, when the state government granted anything I expected the highest return to the government. However, this goal is not necessary in tangible income but also a fair distribution of wealth among the people.</p> <p>16.2. For this also, to urbanise Malay folks so that they have equal share in economy, was my greater aim when I was a CM. We don't want an economic development resulting in marginalizing the poor.</p>	
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<p>When we talk about restructuring a society (he refers to the NEP), have you seen the action plan?. No. So that's why we create Atabara (a satellite town to Kuantan). It was created to balance the racial-ratio composition in Kuantan. The number of Malay population in Kuantan was too small. That is what we call it 'create a <i>kampong</i> (village) in town', to expose the Malays to urban life. The project was not only in Kuantan but also in the entire state.</p> <p>So, we acquired land at the fringe of towns, all over the state... we resettle the Malays. We can claim that we are the pioneer in shifting the Malay from traditional <i>kampong</i> folk life to an urban life... What I want to tell you is that when we do something there is something in our mind. .. the reason, the philosophy (is) why, why, why... When we did something we were not told to do so. When did something we knew what we were doing.</p> <p>But there were lots of problems (he told a story). The second problem is culture. The Malay society is closed society, living in a self-sufficient economy society – they can't live in town. Urban life is individualistic.</p> <p>As CM, I should think of developing the infrastructure. A human being has a survival instinct. If infrastructure is good, people know what to do next. For example, after you build a road, it's no need to teach people what to do next. They would find ways to build shops, hotels, etc. When we build simple shops, it's no need to teach business. People know what to sell, etc...</p> <p>16.3. What is your opinion on a suggestion that Pahang grows faster than Terengganu because of political backing from the Federal? I don't agree. Yes, I was very close with Hussein (the 3rd Prime Minister) but I got nothing from him. Whatever asked from him was denied. For example, we planned to build a Gallery for Tun Razak's memorabilia. Razak was from Pahang. So, we think it is reasonable to build (it) in Pahang. The cost was not much. Only RM70 million. What did I got from the Federal government? Nothing (he also told stories of his unpleasant relationship with the previous Prime Minister, Dr. Mahathir [in researcher's opinion, it is not proper to disclose these]).</p> <p>16.4. When you were in Pahang SEDC, how was land priced? We set a guideline. But, I gave the investment officer freedom to negotiate with buyers. If he wanted to increase the price, it was up to him. But, if he wanted to reduce he must consult me.</p>	
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<p>16.5. Were you happy with the performance of the government official? No. The reason is corruption (he cited examples that he asked not to be disclosed). You know what the risk of corruption is to a country? Investors would come only for a very short period. They put their money there, maybe for one year, or less. They find ways to make profit as fast as possible. Then they leave the country. However, an administrative system where the State Government is managed by the ADS must be maintained. I believe the ADS is the most qualified to run the State Government.</p> <p>16.6. What's your opinion on Gebeng? Originally Gebeng was nothing. It was just a port. The industrial sites came in only to support the port. The actual plan was to develop Kuantan as a growth centre for the Eastern Coast States. For me, Kuantan must be the centre for the East Coast. It must be the gateway to the region... by land, by sea and by air. Kuantan in fact is superior in term of the infrastructure.</p> <p>For me, Kuantan has developed not because of Terengganu's oil. With or without oil, Kuantan is as it has been. You know why? Kuantan has its own strengths. Especially its geographical location and infrastructure. It grows naturally.</p>	
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<p>17. Interviewee A20</p> <p>Category-Government (Abdul Hadi Awang)</p> <p>Date-9.4.2005</p> <p>Position-Former Terengganu Chief Minister</p> <p>Place-Rusila, Terengganu</p> <p>Language-Malay</p> <p>Note: The interviewee did not request anonymity.</p>	
<p>17.1. On industrial development, by implementing Islamic principles, my aims were to:</p> <ul style="list-style-type: none"> • eradicate poverty by way of creating jobs; and • maximise state natural resources and economic potential (mainly, petroleum, lumber and, minerals). <p>17.2. On the Federal-State relationship:</p> <p>(a) Terengganu has been discriminated against by the central government. The reason is that the opposition party, PAS, is strong here;</p> <p>(b) The Central Government always gives preference to states where political figures come from, for example Pahang, the home state of Razak who was the 2nd Prime Minister. You see, Teluk Kalong is physically better. But since Razak was from Pahang, the Central Government created Gebeng Port. After oil was discovered off Terengganu, the Federal Government inevitably built a port in Teluk Kalong. When PAS took over Terengganu in 1999, Teluk Kalong port administration was immediately taken over by the Kuantan Port Authority;</p>	<p>Terengganu is lacking in central government support.</p>

<p>(c) Administratively, prior to approaching the State Government, investors are required to get approval for investment in Malaysia from MITI and the FIC. This opportunity has been used by the Central government to control foreign investment in Terengganu. There was a case where an investor from Germany was keen to bring in investment worth about USD4 billion. After failing to secure fuel at the right price from Petronas, the firm withdrew and went to another ASEAN country. We believe, the Petronas' stand was influenced by the Federal government;</p> <p>17.3. Based on the history of Petronas, according to Salleh Abbas (a Lord President who later won a seat in the Terengganu Assembly and appointed as Terengganu EXCO member), the Constitution states that natural resources are 100% state government owned. When oil was discovered off Sabah and Sarawak and the central government tried to take control, both states threatened to leave the Federation. To ease tensions, a commission was formed to communicate with the states which included:</p> <ul style="list-style-type: none"> • Razaleigh Hamzah (Minister of Finance); • Abd Rahman Yaacob (Sarawak Chief Minister); • Salleh Abbas (Attorney General); • Ismail Ali (the Central Bank Governor). <p>(The interviewee advised the interviewer to meet with the survivors among them to get more information on Petronas' history).</p> <p>Among the recommendations were:</p> <ul style="list-style-type: none"> • Enactment of the Petroleum Act 1975; • Formation of a state run corporation, to which state oil and gas are to be surrendered, to own and manage off-shore and on-shore oil and gas; • The company owes the state government where its extracts oil and gas a 5% royalty. <p>Subsequently, Petronas was created.</p>	<p>Roles of MITI and the FIC.</p>
<p>17.4. Oil was discovered in Terengganu in 1978. Petronas paid a royalty of RM7,000 million up until 1998. This was 80% of the state revenue. When PAS won the state election in 1999, Terengganu UMNO urged Petronas to stop paying the oil royalty to the state. Since then, the State has not received any payment from Petronas, even though BN now is in power. However, the company is still paying the states of Sabah and Sarawak. The PAS state government discussed the matter with Petronas' high level administration, but was informed that it was a Federal government directive.</p> <p>17.5. The PAS State Government challenged the decision in the Court. When PAS lost in the 2004 election, the present state government (BN) withdrew the case. However, on Salleh Abbas' advice, the case has been re-filed.</p>	<p>Revenue from petroleum.</p>

<p>17.6. On our relationship with Petronas, it was not influenced by the sour Federal-State relationship. We had a good time. I am pleased with Petronas which has contributed significantly to Terengganu's economy and the Kerteh infrastructure. We were also pleased to provide Petronas with facilities affordable to us. For example, in constructing the Dungun water supply, dedicated for Petronas use.</p>	<p>Infrastructure within and around the KIPC is provided by Petronas.</p>
<p>17.7. When I was in office there was no:</p> <ul style="list-style-type: none"> • Inconsistency between my government industrial development plan with the IMP2. The plan was prepared by government officials, whose professionalism I trusted; • Political pressure or interference in public administration – you may check this; • Discrimination against officials who were not supporting my political party – they got the promotions they deserved; • Intention to replace the present state administration system. I was pleased with state government officials. <p>17.8. When I left office, I was delighted that the state poverty level had improved from the 2nd position to the 4th (incidence of poverty/household)</p> <p>17.9. On future state industrialisation, in my opinion, a change in state politic cannot guarantee an investment. Instead, FDI is dependent on multiple variables, mainly:</p> <ul style="list-style-type: none"> • Cleanliness of government. In an unhealthy administration investors pay a high price for hidden costs; • Economic fundamentals, especially cost effectiveness of labour and natural resources. Today, we are face stiff competition from China and Vietnam. I believe operating in Vietnam and China is comparatively more cost-effective. A sizeable domestic market is an additional advantage. We heard a number of plants have moved to both countries. I believe we are not doing enough to stop the exodus. 	

<p>18. Interviewee A21</p> <p>Category-Government (Mahathir Mohamed)</p> <p>Date-12.5.2005</p> <p>Position-Former Prime Minister</p> <p>Place-Level 86, The Petronas Twin Tower, Kuala Lumpur</p> <p>Language-Mixed Malay and English</p> <p>Note: The interviewee did not request anonymity</p>	
<p>18.1. The first thing to emphasise that is Petronas has a role in the national development plan.</p> <p>18.2. Historically, a study suggested that our reserves will not last beyond 20 years. Therefore the government urged Petronas to diversify its activities, to grab opportunities before it runs out of oil. We also encouraged Petronas to go overseas because our reserves and also our domestic market are small. Despite an erroneous in the earlier projection, today Petronas:</p> <ul style="list-style-type: none"> • has successfully ventured into various forms of investment; • has investments all over the world and has emerged as one of the worlds leading oil companies. <p>During diversification Petronas ventured into the petrochemical industry. The aim of this venture was to add value to our indigenous product. It would save on foreign exchange.</p>	<p>Petronas' institutional roles</p> <p>History and rationale of Petronas' activities in the petrochemical industry</p>
<p>18.3. Petronas' management is trusted by the government to run the company in a fully business manner. The government does not interfere in Petronas' business. However the government needs to remind Petronas that it is answerable to its shareholders, that is the <i>rakyat</i> (the people).</p> <p>18.4. We also understand the Terengganu's feeling when they complain that Petronas is not doing enough for Terengganu, where the oil is extracted. On this, there are two things to stress:</p> <ul style="list-style-type: none"> • we agree that the oil is from Terengganu's soil, but the national wealth needs to be shared with all Malaysians; and • Petronas has been spending billions of ringgit in Terengganu for infrastructure and other facilities. 	<p>Petronas as business entity</p> <p>Petronas' institutional roles</p> <p>Petronas' social obligation</p>

<p>18.5. The central government is aware that there are complaints about development approvals by the State Authorities. However, it's beyond the limit of the Central Government power to interfere with State matters.</p>	<p>The limit of Federal Government power</p>
<p>Another problem is that development plans between states are not coordinated. The Central Government has a system to coordinate development plans, but some states have their own plans.</p>	<p>Problem of Federal-State co-ordination</p>
<p>From experience, it is easier to deal with a state government that is run by the same political party as the Central Government.</p> <p>18.6. The central government is also aware that there are complaints regarding why investors need to submit applications to both Federal and State governments. In the first step they are required to get approvals from MITI and FIC. Then, they need to secure land from State Government. We need to maintain this system because:</p> <ul style="list-style-type: none"> • it is part of our social and political institution; • we need a dual-system for checks and balances; • we attract investors in our (national) interest. This includes economic development and distribution of wealth. We also need to ensure that FDI is in harmony with national interests. We need a system to check applications and to ensure industrial approvals are consistent with national interests. <p>I cannot see that the system is harmful to investors. Most of them can get their money back and make a profit in 2-3 years.</p>	<p>Rationale for bureaucracy</p>

18.7. The Central Government is aware that there are problems in state administration and has made an effort to improve it. There are desk files, job lists, work-flow chart and work procedure manuals. However, human problems are not easy to overcome.	Problem of bureaucracy in state administration
18.8. Regarding public administration, there are benefits to the division of public service into administrative and professional areas. Initially, we were thinking of considering professionals for ministries' Secretary General posts. After ' <i>fikir-masak-masak</i> ' (much thought), we dedicated that the present system needs to be maintained. It's better for the nation if professionals, like doctors and engineers pay more attention on their expertise and let administrative matters like finance and human resources be taken care of by the ADS.	Public administration system

19. Interviewee B1 Category- Firm, also representing the Malaysian Petrochemical Association (MPEA) Date- 4.3.2005 Position- President Place- KLCC Language- English	
19.1. MPEA is created to solve common interest of the members, to communicate with Petronas, government (e.g. MITI, Local and port authorities) and other services (haulage, shipping, etc), to get together, to talk on common issues and to organise conferences and conventions. We are not vocal or a pressure group. 19.2. Petrochemical companies are looking for the most integrated site. Without which, companies run at high costs. Integrated means feedstock are supplied and processed at the same location, plus supply other industrial inputs such as water and electricity as well as common facilities such as tankage and pipelines. In an integrated complex, buyer, supplier and supporting industries are placed under one roof. 19.3. An integrated facilities together with an abundance of human and natural resources are Malaysian natural advantages. Kerteh is fully integrated. There are GPP, CUF, CTF, crackers to produce ethylene, storage, dedicated port, utility companies to produce industrial water and oxygen, fire service. If investors want to move out, not to say impossible, but difficult. 19.4. Within a petrochemical complex there maybe rivals companies. There are competitions, rivals and quarrels but not extended to head to head war. We never bring disputes to court or arbitrar. Instead, we solve it amicably because we have a common interest, i.e. feedstock.	<p>(a) Theme : Firms' strategy</p> <p>(b) Category : Business environment</p> <p>(i) Sub-category 1 : Investment attraction</p> <ul style="list-style-type: none"> • Most important: Feedstock • Important: An integrated complex • Other important: A supply of competent labour • Not important: <ul style="list-style-type: none"> ✎ Quality of government service; ✎ Land price <p>(ii) Sub-category 2 : Inter-firm relationships</p> <ul style="list-style-type: none"> • Plants are clustered <p>(iii) Sub-category 3 : Site acquisition</p> <ul style="list-style-type: none"> • Site acquired through Petronas

<p>19.5.The price of Malaysian feedstock which is 3 or 5 times cheaper than the American, is negotiable and not subjected to global gas price. It is negotiated from time to time and not subjected to long term contract. During a JV negotiation with Petronas, the feedstock pricing is discussed altogether. So, as long as natural gas price in the US is high, and as long as Malaysian feedstock is cheaper, there is no reason for companies operating in Malaysia to return to their home countries.</p> <p>19.6.On human resources, Malaysians possess basic knowledge in the industry, speak English and easy to train. Therefore, they are competent human resource.</p> <p>19.7.On Singapore, yes, it functions well as a service centre, to host oil companies' regional offices, but I doubt whether the country can be this region's petrochemical hub. Petrochemical industry is dependent on raw material that Singapore doesn't have.</p> <p>19.8.Gebeng and Kerteh have the same potentialities. Whether to choose Gebeng or Kerteh it is at investors' business interest. State government bureaucracy or land premium rate is not the reason to choose either. Individual government has its own administrative style. Investors understand this. State government bureaucracies, if compared to Western countries are still problematic, but if compared to most of other ASEAN or developing countries, are better off. The story about the creation of Gebeng petrochemical complex as a result of Petronas' dissatisfaction with Terengganu's treatment may be true. There was a story that Petronas was provided with swamp land, without infrastructure and spent a huge amount of money to improve the land. What is the value of the service then?</p> <p>19.9.In Kerteh, a site is negotiated through Petronas, the custodian of the KIPC. No consultant or broker service is used. After agreed upon, Petronas is the one to decide which location is suitable, depending on investors' needs. The agreed site is then sub-let by Petronas to the investor, I believe.</p>	
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<p>19.10. As long as they can make money, foreign companies are happy in Malaysia. They also supply the local partners with technology, expertise and immediate market. Dow, for example, which has global immediate market, is a global company and produces chemical world-wide in big volume, managed to bring down the production costs.</p> <p>19.11. We see government has great influence in Petronas business. Which are related to national interest are understandable. Sometimes government decisions are difficult to apprehend. We heard that Petronas has ventured to businesses which are not related to its core business. I am not saying that the government as stakeholder cannot tell Petronas what to do. But, Petronas which is a multi-national company, has multi-national business partners. Its partners are looking at this phenomena very closely.</p> <p>19.12. In term of costs, Malaysia is competitive. However, a policy that requires us to undergo a periodical inspections, which we think too frequent, concerned us. The first inspection is within the first six months, then after one year, then after 18 months. After the 18 months we can apply for two years. We are world class companies and able to be self-regulated. Even if the system is there, we cannot guarantee a disaster-free. An inspection, through which 200-300 items to be checked within about 1 month, needs a shut down. Each shut down costs a plant USD 1 million. Therefore, each inspection costs USD 25-30 million.</p> <p>19.13. I think the government is aware of how the policy affects us. However, the government decisions and policy must go through bureaucracy – the department, the ministry and the Cabinet – making it difficult to change. I think the core problem in the government is the attitude that government service has no competition, therefore, there is no necessity for change.</p> <p>19.14. Another concerned thing is the policy that requires foreign companies to joint-venture with local companies. There is no doubt that some local partners are excellent. Others however are not really competent, rather not functioning at all. Thus, the partnership rather creates ‘costs of interface’. Why shouldn’t we investors deal directly with the government? So, the operational costs would be lowered.</p> <p>19.15. In this industry, everything must be efficient. I mean by having a ‘sleeping partner’ investors have to mark up prices. If this persists, the business wont last long because the industry is very competitive. Every stage of the production process is costly. If investors need to mark up the price, they will no longer be competitive. We must note that Saudi’s feedstock is very much cheaper.</p>	<p>(a) Theme : Institutional Interference</p> <p>(b) Category : Critics</p> <p>(i) On Petronas Too much government interference</p> <p>(ii) Cost of government interference</p> <ul style="list-style-type: none"> • A mandatory shut-down: may cost USD 1 million per day • A policy that requires JV with local companies: May add to operation costs <p>(iii) Bureaucracy Difficult to change</p>
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<p>20. Interviewee B4</p> <p>Category-Firm (Licensed Land Surveyor)</p> <p>Date-12.3.2005</p> <p>Language-Malay</p> <p>Note-1. The interviewer who is also Golf Captain of the Terengganu Royal Golf Club, was introduced by LOKM staff as the most active land consultant dealing with the LOKM.</p> <p>2. He did not offer much information on the studied topic but introduced the interviewer to interviewee A10.</p>	
<p>21. Interviewee B5</p> <p>Category-Firm (Petronas)</p> <p>Date-20.3.2005</p> <p>Position-General Manager</p> <p>Place-Kerteh</p> <p>Language-English</p> <p>Note-The interviewee advised the interviewer to meet with Mahathir (interviewee A20), a former Prime Minister to get more information on Petronas' history and vision.</p>	
<p>21.1. Petronas, who is controlling 30% Malaysian domestic market share for oil and gas products, is the world:</p> <ul style="list-style-type: none"> • 6th highest crude oil producer (720K barrel per day (bpd)); • 4th highest natural gas producer (5,527 SCFD/2 billion square feet per day) – 70% consumed as energy, 30% for petrochemical industry; • 9th most profitable company oil industry (FY2004=USD6.2billion). 	
<p>21.2. Being a national oil company as well as the anchor player of the IMP2, we need to venture into three components of petroleum industry – oil, gas and petrochemical. Petronas' roles in the IMP2 are engaging in:</p> <ul style="list-style-type: none"> ➤ upstream exploration and production of oil and gas. ➤ downstream oil refining ➤ marketing and distribution of petroleum products ➤ gas processing and liquefaction ➤ petrochemical manufacturing and marketing ➤ property investment; ➤ automotive engineering; <p>Also responsible in attracting inwards investors, by:</p> <ul style="list-style-type: none"> ➤ leasing out oil and gas exploration blocks to MNC's; ➤ undertake JV activities with MNC's in all sectors of the oil and gas industry; ➤ developing and providing industrial sites in KIPC. 	<p>Petronas' role: To support the IMP2</p> <p>Primary objective : Maximum profit</p> <p>Limits its gas contribution to the petrochemical industry: less profitable</p> <p>Kerteh's strength: Natural gas</p> <p>Petronas' involvement in the petrochemical industry</p>

By venturing into petrochemical industry it doesn't mean we are not in the right business. Indeed, we are in the right business. But you cannot compare us with other major players. For example, Exxon-Mobil. Whether in the up-stream or down-stream, they are making more money. If we talk only commercial value, we should concentrate only on oil, ...you know it, oil price is very high.

The main component of production in the PPIC (KIPC) is gas. The supply of gas is sufficient for our requirement. For a back-up, we buy a small amount from Indonesia. 70% is for energy. We are not like UK where gas is produced for every residential house for heating. If every residential house in Malaysia is supplied with gas, it is good money for Petronas.

Now the price of petrochemical products is very good. However, the industry is very volatile, very cyclical, very up and down. For last three years, our petrochemical plants made a lot of money. Prior to that, we were losing. If the industry grows drastically, I don't think we can cope with it. I think our involvement in petrochemical industrial is more of a social obligation. I think if we given the freedom, we might not opt to it. In petrochemical, we have already reached our peak. I don't think we are going to expand the petrochemical industry anymore. That's why our overseas ventures are more focussed on where the money is – it's at upstream – crude oil is the most profitable. Today it is around USD50 per barrel. Our Sudan production has reached 400K bpd. Now it is 400K in Terengganu, 400K in Sabah and Sarawak and Sudan has reached 400K. By the end of the year, we are targeting to produce 1 million bpd from overseas ventures – more than our domestic production.

<p>21.3. We develop Kerteh according to master plan. It is very much a Petronas town. Yes, the state government has identified the area surrounding the PPIC as petroleum related industries. However, we are not sure whether it is blissful Petronas or not. The state has also identified the Lot Q for small and medium petrochemical industrial zone. We are working with the government to identify the most appropriate industries. Our roles in Kerteh including assisting investors in dealing with government agencies, such as:</p> <ul style="list-style-type: none"> ➤ getting land from the SEPU and Land Office; ➤ getting industrial licence from MIDA; ➤ securing a CF and other approvals from the Local Authority, DOSH, DoE, PWD, DID, Fire Department, Public Health Department.; ➤ securing utilities from TNB (electricity), Water Board, telecom etc. <p>In land development, altogether, from beginning of the process until operation:</p> <ul style="list-style-type: none"> ➤ land application approximately 5-7 months ➤ building plan approval approximately 2-3 months ➤ construction of project approximately 1-2 years ➤ CF approval approximately 1-2 months <p>We also spent about RM70billion in providing Kerteh's infrastructure, including:</p> <ul style="list-style-type: none"> ➤ a port; ➤ an airport; ➤ housing; ➤ a golf course. 	<p>Petronas' role: To provide infrastructure</p> <p>Petronas has its own plan for KIPC.</p>
<p>21.4. In Pahang, land premium was extremely competitive. In the earlier stage, land premium in Kerteh was very high. However, in Terengganu the situation has been changed. Land premium rate has been consistent and fallen to 50% for the past ten years. I suggest it is rather too late... all potential lands have been developed ... The development now has achieved objectives in our master plan... only two lots are yet taken up.. What I mean is that there is a 4,000-acre land which has been allocated by the state government to be developed by Petronas. Of course, outside the designated area there are more vacant government lands. Meaning which, only 4,000 acres are potential to be developed for petroleum industry and all of them have been taken up. The remaining two vacant lots, one of which is Lot Q, are under negotiation.</p>	<p>Land Price was not a major consideration when choosing Kerteh.</p> <p>Vacant land within and around KIPC</p>

<p>21.5. Kerteh complex in very competitive, even if compared to Singapore. Here, services are integrated where facilities are shared among the investors. Therefore, costs are brought down. CTF and CUF that provide tankage facilities and produce electricity, water and hydrogen, which are the most important facilities in petrochemical complex are provided here. Without which, investors have to construct on their own. It is very costly. But, they are not free of charge. The facilities in Kerteh and Gebeng are identical. The difference between Kerteh and Gebeng is that all plants in Kerteh are under Petronas' control.</p> <p>21.6. Aim of Petronas in a JV:</p> <ul style="list-style-type: none"> • to acquire MNC's' technical expertise and experience, especially in: <ul style="list-style-type: none"> ↳ product design; ↳ manufacturing; ↳ inventory and stock control; ↳ training, marketing and servicing; ↳ technical knowledge in plant operation and maintenance; and ↳ product branding. • to access MNC's' advantages, especially in: <ul style="list-style-type: none"> ↳ capital and assets; ↳ brand name; ↳ market control. • sharing the risk, if any. <p>21.7. We do not quarrel with other oil companies. Yes, you can see that we are competing with each other in some countries. But, in somewhere else we are partners. That is the practice in oil industry. Not to say it is culture. But we practise that. In this industry, we do not antagonise others. Anywhere, no oil company can enter a country alone. Some companies have money. Some have technology. Others have ready market. These are the criteria when to choose a partner. So, if we have the right partner, we do not fear to venture into it. So, if we produce something here, the market is ready somewhere else. On the first day you manage to make profit.</p>	<p>Characteristics of KIPC: Integrated</p>
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<p>22. Interviewee B6</p> <p>Category-Firm (Petronas JV Partner/US Based)</p> <p>Date-22.3.2005</p> <p>Position-Director (Pacific Area)</p> <p>Place-Kuala Lumpur</p> <p>Language-English</p>	
<p>22.1. I don't know the land price. The negotiation was long ago. The JV arrangement with Petronas was made by this company's forerunner. Our strengths over Petronas are in technology, expertise, brand name and market control.</p> <p>Petronas' strength is the possession of high volume of raw material at low cost. Its main weaknesses however, are static in product that does not need to R&D and too much concentration on commodity. Petrochemical has number of products, such as to convert natural gas to separate products into ethylene, glycol etc, in which we are expert.</p> <p>Our products are for Asia-Pacific and US market.</p> <p>22.2. The most important factor why we decided to JV with Petronas was not land, but feedstock. We need a guaranteed long-term supply.</p> <p>22.3. It is not to say land is not important but issue of feedstock is critical. We need land, in reasonable size. We don't want a cramped area. We need space for expansion, good infrastructure and accessibility to port. Land price only one-off, but other costs are running. So, when we talk about threat, the number one is uncertain feedstock.</p> <p>22.4. When dealing with government department, we do not approach government department directly. We only deal with MIDA, a one stop agency for investors. We go together with Petronas. MIDA is excellent, approachable and flexible. It offers a number of incentives e.g. tax break, but it needs a detail proposal on what we want. Then we discussed the proposal in great details. We are happy with MIDA.</p>	<p>(a) Theme : Firms' strategy</p> <p>(b) Category : Business environment</p> <p>(i) Sub-category 1 : Investment attraction</p> <ul style="list-style-type: none"> • Most important: <ul style="list-style-type: none"> ☞ Feedstock • Important: <ul style="list-style-type: none"> ☞ An integrated complex ☞ Land is sizeable for future expansion ☞ Good infrastructure ☞ Accessibility to port ☞ Good government treatment ☞ Government incentives • Other important: <ul style="list-style-type: none"> ☞ Individual and family preferences • Not important : <ul style="list-style-type: none"> ☞ Land price <p>(ii) Sub-category 2 : site-acquisition</p> <ul style="list-style-type: none"> • through Petronas <p>(iii) Sub-category 3 : expansion plan:</p> <ul style="list-style-type: none"> • already on the card

<p>22.5. We are very comfortable with Kerteh as it is fully integrated.</p> <p>22.6. Another thing I would like to tell is that... sometimes company's choices are influenced by wives of important individuals in the company. You know, some times when the wives say 'I don't want to go to that country'... the CEO or senior official would find 'official excuses' to avoid that country... If you don't believe me, try asking your other interviewees whether their wives like or not to stay here. ...</p> <p>Sometimes companies' decisions are not commercial base. You see, some companies choose Gebeng because of the Club Med, night-life, etc.</p> <p>There are cases where only the company knows why they are here. I know one company where raw material comes from North America, market in China but set plant in Malaysia.</p> <p>22.7. With the government as well, there are also non-apprehendable decisions. For example in piping gas to Kedah (North Malaysia) through Thailand, whereas market is not there. You how much it costs Petronas? It is USD500K per km.</p>	
<p>23. Interviewee B7</p> <p>Category-Firm (Petronas JV Partner/European Based)</p> <p>Date-23.3.2005</p> <p>Position-Deputy CEO (Asia Pacific)</p> <p>Place-KLCC</p> <p>Language-English</p>	
<p>23.1. Our strength? We are 150 years old. We are experienced. We have the technology. We have the market. We have expertise that Petronas doesn't.</p> <p>Petronas strengths?, Petronas is a good partner, a fast learner and has a lot of explorations. Oil industry is static. Exploration is only one product. You drill, you take oil out, then you refine, but petrochemical has lots of products and requires a lot of technology.</p> <p>That's why we offer our partnership with Malaysia through Petronas. We share our experience, for example on better management, crisis management and branding.</p>	<p>Company's advantages over Petronas</p>

<p>23.2. Singapore, Melbourne, China, UK, USA are our data centres. Malaysia was included in the original plan, but was dropped because of a number of constraints, such as:</p> <ul style="list-style-type: none"> ✎ insufficient communication system and government's response to our needs was too slow. e.g. our application to upgrade telephone line was not considered; ✎ insufficient connecting flights. <p>I'd like to tell a story of our plant. It was many years ago. We planned to have a plant for Asia market. We planned to have only three plants of such type. One in the North America, one in Europe and one in Asia. Knowing this, Malaysian and Singaporean authorities came in to offer facilities. In the first place, Singapore offered a very excellent offer an 'irresistible' incentives, probably, the worth was about USD50 million. It created a gap between Malaysian and Singaporean offer.</p> <p>Singapore also offered a site which was next to our existing plant. Being next to the existing plants create synergy. To set up new plant we need to create an environment for it. If it is next to the existing plant we save a lot.</p> <p>MIDA, through my experience is very efficient, very responsive, very investor driving. So, we told MIDA what we got from Singapore. MIDA then offered a counter proposal which was close to the Singaporean's with a little improvement. That was the story why we landed in the East Coast Malaysia. That shows a competition between governments and how MIDA played a key role.</p> <p>23.3. We acquire our site in Kerteh through Petronas. Petronas has set Kerteh as an integrated petrochemical complex. Petronas is also the feedstock supplier. We set up our plant in Kerteh mainly because of feedstock. Feedstock is a non-negotiable item. I think Kerteh feedstock could last for 15 years. Since Malaysia has discovered new rigs, we believe the supply would be longer.</p> <p>23.4. I don't think land is our major consideration. When we want to move to a new place, we don't think finding a land is problem. We believe it is the responsibility of the government (to provide it). All our plants are on leased land. Other than our service stations and office, all our facilities are on leased land.</p> <p>We are not interested in investing in property. Indeed we need space for a long time, but not forever. We are moving from one place to another. By having tied up with (landed) property it is rather difficult for us (to keep on moving).</p> <p>When we move to any country, we are thinking for 10 – 15 years ahead. When we set up our plant, we have already plan for expansion.</p>	<p>Comments on Malaysian infrastructure</p> <p>History of investment in Malaysia</p> <p>Also important</p> <ol style="list-style-type: none"> 1. Government incentives; 2. An integrated industrial site <p>Praised MIDA</p> <p>Most important: Feedstock.</p> <p>Land acquired from Petronas</p> <p>Not important: land</p> <p>A need for a large area of land</p>
<p>23.5. Prospects of Kuantan and Kerteh? The answer is on management. Kerteh is under Petronas' charge and better managed. In Kerteh we talk the same language, we are like brothers. Any problem that crops up, we can solve it together. It's no problem in Kerteh.</p>	<p>Kerteh is better managed</p>

<p>23.6. But, there is no one-ness in Kuantan, we do not know our neighbour. Gebeng has limitations. When we complain, the response is dependent on government budget. For example, we complained to the state government on the condition of the port, the state promised to improve it, but until now the situation remains. Officials come and go.</p> <p>23.7. On threats, in overall investment, an uncertainty in feedstock supply is our number one threats. In Malaysia, there is no threat at all, as long as UMNO is in power. However, when we complained on water supply in Kerteh, ironically, PAS government took action swiftly. Quick and transparent.</p>	<p>Problem of bureaucracy</p> <p>The importance of infrastructure</p> <p>Criticised Pahang's government</p> <p>Praise Terengganu's government</p> <p>Not important: a change in state politic</p>
<p>24. Interviewee B8 Category-Firm (Past Land Owner) Date-25.3.2005 Position-CEO Professional Training-Accountant Place-Kuala Lumpur Language-Mixed (Malay and English)</p>	
<p>24.1. In simple terms, petrochemical is about the plastic industry. The plastic industry is the last stage in the petrochemical production chain. Its contribution to the world economy may be the biggest in volume but the smallest in weight. Of course, metal is the heaviest.</p> <p>24.2. On choice of industrial location, in the petrochemical industry we consider the type of industry involved. If it is upstream the location must be closer to the source of oil and gas. If it is downstream the location must be closer to the consumer. A site that is closer to the consumer may be more expensive. However, if we sell the land later, the price may be higher.</p> <p>24.3. The second feature we look for is facilities, especially for handling gaseous substances. We need a place where there are facilities for them. We need to be close to a port where there are gas handling facilities. If they are not available, the location must allow for building the facilities. I mean pipes, vessels etc (He showed a photograph of a couple of vessels at Johore Port that he built for about USD10 million each).</p> <p>24.4. I produce PVC compounds for local markets. It is downstream in nature. So, I do not need to be in Kerteh or Kuantan. That's why I set my plant in Johore.</p> <p>24.5. The downstream sector is fragile. It is heavily influenced by the domestic economy, government policy, especially on housing and government procurement.</p> <p>24.6. Since our domestic market is small and our development is nearly saturated, this industry is very risky.</p>	<p>Theme : Firms' strategy (a) Category : Business environment (i) Sub-category 1 : Investment attraction <ul style="list-style-type: none"> • Most important: Feedstock • Important: <ul style="list-style-type: none"> ☞ Infrastructure and facilities ☞ domestic market • Not important: <ul style="list-style-type: none"> ☞ Land price (ii) Sub-category 2 : Threats <ul style="list-style-type: none"> ☞ Corruption (iii) Sub-category 3 : Site acquisition <ul style="list-style-type: none"> ☞ From State Government (iv) Sub-category 4 : Firms' assessment of government services: Satisfactory: MIDA Unsatisfactory: <ul style="list-style-type: none"> ☞ Land Office; ☞ Local Authority. </p>

<p>24.7. On Kerteh land, originally my company had an extension plan. I intended to be involved in the upstream. I applied for a piece of land in Kerteh. I agree that the site which was provided to me was a swamp and the premium was quite high. The cost to rehabilitate the land was high as well. What I understand is that Petronas was charged higher.</p> <p>24.8. However, I aborted my extension plan during the economic disaster in 1997. It was no problem. When I gave up the land I got all the money I spent for it.</p> <p>24.9. On government, all matters are dealt with through MIDA. If we go directly, the response, especially from the Land Office and Local Authority, is very slow. Normally, after a project is scheduled to take off, the land title is yet to be released.</p> <p>24.10. On the things tha concern me in business:</p> <ul style="list-style-type: none"> ➤ number one is corruption, both in government and business. When it happens, and it is always happening, we have to pay high costs for it; ➤ political stability does not worry me; ➤ feedstock? Not that either. I am satisfied with Petronas. 	
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<p>25. Interviewee B9</p> <p>Category-Firm (Petronas Subsidiary)</p> <p>Date-11.4.2005</p> <p>Position-CEO</p> <p>Professional Training-Engineer</p> <p>Place-Kuantan</p> <p>Language-Malay</p> <p>25.1.Company background:</p> <p>Ownership: 100% Petronas.</p> <p>Land: Bought from SEDC.</p> <p>Workers: 2,000</p> <p>Feedstock: Gas from Kerteh and Methanol from Labuan</p> <p>Products: ...</p> <p>Market destinations: Asia</p>	
<p>25.2. Bagi pelabur, tanah bukan satu-satunya perkara utama yang diberi perhatian, sebaliknya perkara-perkara lain lagi termasuk kemudahan yang disediakan amat dititikberatkan. Sejak beberapa tahun, tiada pelabur baru di sekitar kilangnya. Mungkin inilah antara sebab pelabur asing kurang minat untuk melabur di Malaysia. Mungkin pentadbiran dan sikap kerajaan negeri dan PBT yang tidak mengambil berat kepentingan para pelabur. Mungkin juga disebabkan perancangan kerajaan untuk menarik pelabur, untuk meluaskan GIPC 3 kali ganda daripada yang ada menjelang 2010, tidak pernah dikaji semula berbanding dengan kemampuannya untuk menjaga kebajikan pelabur sedia ada. Buktinya, walaupun aduan dan perbincangan-perbincangan dibuat, masalah-masalah tetap tidak diatasi. Juga disebabkan kerap berlaku pertukaran pegawai, berlakulah masalah:</p> <ul style="list-style-type: none"> • infrastruktur industri tidak cukup dan berlakulah masalah tekanan air, bukan sahaja rendah, malah dikongsi dengan bekalan air minuman. Walaupun jumlah kilang bertambah lebih sepuluh kali ganda dalam tempoh 15 tahun, loji bekalan dan paip air tidak dinaik-taraf. Bila bekalan air kritikal, kilang terpaksa menyewa lori-lori tangki untuk mencukupkan bekalan. Kosnya tinggi. Kilang ini ada 400 vessel, shut-down untuk pemeriksaan dibuat setiap 18 bulan, mengambil masa satu bulan. Kerugian dianggarkan mencecah USD 25 million. Dalam hal ini, DOSH sangat ecek dan senang bekerjasama. • tempat tinggal, membeli-belah dan tempat makan – tidak mencukupi, tiada kawasan perumahan dan <i>shopping</i> yang hampir dengan kilang, pekerja tiada pilihan terpaksa tinggal di Kuantan (lebih 10km); • penyelenggaraan jalan yang buruk yang menyebabkan air bertakung atas jalan raya dan rumput tiada dipotong; 	<p>Theme : Actual development</p> <p>(a) Category : vacant land</p> <p> ➤ Vacant land is obvious in GIPC</p> <p>Theme : Firms' strategy</p> <p>(b) Category : Business environment</p> <p> (i) Sub-category 1 : Investment attraction</p> <p> ▲• Most important:</p> <p> ➤ Efficient State Government that understands investors' needs and is able to react to investors' problems</p> <p> ➤ Infrastructure that is dedicated to a particular industry</p> <p> • Important:</p> <p> ➤ Housing and shopping facilities</p> <p> • Not important:</p> <p> ➤ Land and location;</p> <p> (ii) Sub-category 2 : Threats</p> <p> ➤ Shut-down: it's costly (costs almost USD 1 million per day)</p> <p> (iii) Sub-category 3 : Site-acquisition</p> <p> Site acquired through Pahang SEDC</p> <p> (iv) Sub-category 4 : Firms' assesment of government services</p> <p> Satisfactory :</p> <p> DOSH, Terengganu government and Kerteh administration</p> <p> ▲(v) Sub-category 5 : Unsatisfactory :</p> <p> Pahang state government and Kuantan Municipality</p>

<p>25.3. Kerteh boleh dikatakan 'heaven' kepada indsturi, kemudahannya lebih baik, Petronas dan kerajaan negeri mengambil berat keperluan pelabur. Disebabkan pusat beli-belah di Kerteh, pekerja/penduduk terpaksa bertumpu ke Kuantan.</p> <p>25.4. Urusan eksport dibuat terus dari Kuantan, tanpa melalui Singapura.</p>	
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<p>26. Interviewee B10</p> <p>Category-Firm (Petronas JV Partner/European Based)</p> <p>Date-8.4.2005</p> <p>Position-CEO</p> <p>Place-Kuala Lumpur</p> <p>Language-English</p>	
<p>26.1. Your question regarding our history and relationship with Petronas as well as senior government official, we think we cannot discuss it. You can find it from other resources, it is up to you. It's policy. I have been here for only four years but the company was incorporated in the 1990's. The stages of land acquisition, site planning and pre-development negotiations was over when I came. Basically, we got land through Petronas</p>	<p>(a) Theme : Firms' strategy</p> <p>(b) Category : Business environment</p> <p>(i) Sub-category 1 : Investment attraction</p> <ul style="list-style-type: none"> • Most important: Feedstock in large volume and supplied in an integrated complex. • Important:

<p>26.2. On political stability, we find Malaysia peaceful and stable. I think any political change does not have major impact on investment. You don't judge stability on incidents in crimes that are reported on newspapers. It is normal. Crimes are everywhere in the world. My daughter can go to the city alone. My wife likes to live here. There are many places to go, not like Singapore, it's a small island, nowhere to go.</p> <p>26.3. On the government support, yes, it is important and we are happy with the support. Even I can even speak to a Minister. A continuous support from government is important for petrochemical industry. But, it is not the most important.</p>	
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<p>26.4. However, I think the government support is very problematic:</p> <ul style="list-style-type: none"> • Malaysia has a decent infrastructure, but for the future, progress could be slow. In water supply, for example, the pipe is very old, the supply is limited – our production is restricted by the shortage of water supply; • The road is unsafe; • Government bureaucracy, some are efficient, e.g. MIDA and its Minister; some are very bureaucratic. the regulations, legislations, etc., making it very restrictive in Malaysia; <p>26.5. On domestic economy, Malaysian market is small. It's not important, but important if in China or India.</p> <p>26.6. On raw material, yes it is important that our JV with Petronas is for raw material. Raw material alone is not important. We also have our own oil company. We need a large quantity of raw material supplied in an integrated system.</p> <p>Integration is our expertise. We have the concept of operating large integrated site. By integrating, a waste material of a plant can be a raw material of other plants. On one hand, it minimises waste, of course it reduces cost of processing waste. On the other hand, it cuts costs. So, you need to integrate to compete with the supply-side (oil and gas supplier).</p> <p>26.7. On our strengths over Petronas,</p> <ul style="list-style-type: none"> • Brand name? Yes. We are the leading chemical company; • Capital? Yes. Capital is important, but most companies have access to capital. I would say it is an advantage but not so important; • Access to global market? Yes. It's another advantage. Petrochemical is largely commodity driven. So what we need is large size (of production), latest technology, of course, access to raw material. So we need very efficient supply of chemicals. What we need is direct sale to our customers. 	
<p>26.8. Other comments:</p> <ul style="list-style-type: none"> • But when we talk global, supply of feedstock is crucial. For current need, Malaysian raw material is feasible. Current supply is fine. But, when we talk about expansion, there is a lack of raw material for the future expansion. • We are the global supplier of chemical. As a joint-venture partner, we are looking into infrastructure and labour supply. What we need is a reliable supply of labour, efficient infrastructure, road, airport etc. 	

<p>27. Interviewee B11</p> <p>Category-Firm (Petronas)</p> <p>Date-27.2.2005</p> <p>Position-Deputy General Manager (DGM)</p> <p>Place-Kerteh</p> <p>Language-Malay</p> <p>Note-The meeting was not pre-arranged. The DGM, who was asked by the GM to replace him due to a change in the interview date, spent most of the time giving a briefing on the development of Petronas and Kerteh.</p>	
<p>27.1. Kerteh produces all major components of Petronas' production:</p> <ul style="list-style-type: none"> • crude oil; • refined oil; • natural gas; • primary petrochemical feedstock (ethane, butane, propane). <p>Production limits are set by the government.</p> <p>27.2. As to organisational chart:</p> <ul style="list-style-type: none"> • The Head-quarters is at KLCC; • The Kerteh GM, who is assisted by three deputies, reports directly to the Petronas CEO; • Kerteh focussed on production. <p>27.3. By law, oil and gas belong to Petronas. However, other oil companies are involved in production arrangement, either:</p> <ul style="list-style-type: none"> • as contractors; or • in a PSC (profit sharing contract). <p>27.4. KIPC has about 15 petrochemical plants. They supply feedstock to each other. Price is negotiated between them. There are contracts between plants. Since there is a company ownership relationship between plants, the contracts are rather a formality.</p> <p>27.5. Gas is also supplied to the nearby YTL electricity generator, a provider for the national grid.</p> <p>27.6. The Kerteh Airport which is in a strategic location and has precision equipment that Kuala Terengganu Airport doesn't have. It also maintains a 0% unsuccessful landing attempt record. The Kerteh Airport:</p> <ul style="list-style-type: none"> • ferries the off-shore oil terminal workers; • allows Petronas and KIPC personnel, most of whom live in K.Lumpur, to commute to Kerteh. <p>27.7. The Kerteh, complex which is more or less self-contained, is equipped with:</p> <ul style="list-style-type: none"> • housing and shopping facilities; • kindergartens and schools; • places for worship; • golf and social clubs –membership is open to government officials and the business community around Kerteh and Kemaman. 	

<p>28. Interviewee B12</p> <p>Category-Firm (Petronas JV/Japanese Based)</p> <p>Date-15.4.2005</p> <p>Position-CEO</p> <p>Place-KLCC</p> <p>Language-English</p> <p>Product-Intermediate products for building materials</p>	
<p>28.1. When investors are deciding to move to any country, they must ensure that there is no question at all of uncertainty in the supply of feedstock. In Malaysia, gas can be found in abundance and the price is cheap. In the Middle East region the supply, even though cheap, the countries are unstable, labour is in shortage and infrastructure is insufficient.</p> <p>28.2. On the nature of petrochemical industry:</p> <p>(a) It is very cyclical, changes almost every 10 years. That is why since the last 10 years western companies are moving to the Far East. During which, market was growing in the East. At the same time, gas was found in many Asian countries. Thus, for Petronas, there is not a shortage of supply, but on the pricing of end products where prices are not balance and not constant.</p> <p>(b) In the Far East, no company can venture into the industry without going through a government-owned petroleum company, such as Petronas in Malaysia, Pertamina in Indonesia and Petro-Viet in Vietnam.</p> <p>(c) In Malaysia, local market is small and uncertain. If this industry is relying on local market, which has ups and downs according to changes in economic growth it would be risky.</p>	<p>Theme : Firms' strategy</p> <p>(a) Category : Business environment</p> <p>(i) Sub-category 1 : Investment attraction</p> <ul style="list-style-type: none"> • Most important: Feedstock • Important: <ul style="list-style-type: none"> ✧ Political stability; ✧ Labour supply; ✧ Infrastructure. • Not important : <ul style="list-style-type: none"> ✧ Domestic economy.
<p>28.3. On Petronas, it:</p> <p>(a) has been choosy in finding partners because it wants to have a right business partner to match with its chemical products; and</p> <p>(b) is looking for partners who has advantage of which it does not have. That is why we have two or three companies working together. Maybe one company have the technology, while the other one has market and another one has capital. For example, there is a Japanese company which does not have technology expertise but it has a ready market everywhere. Therefore, technology is not always vital as it can be rented from other company.</p>	

28.4. On Kerteh vs. Gebeng:	
(a) We view it as possibility of a political decision in creating two petrochemical complexes side-by-side. To have one or two petrochemical sites in a country is not a straight forward decision. But we believe the decision is very reasonable as to evenly distribute growth is not simple. It is a government's duty to spread development throughout the country, and we companies are just following the policy. Even so, we must note that both Kerteh and Gebeng have different characters. Industries with ethylene base are used to operate in Kerteh while polyethylene companies should go to Gebeng;	
(b) There are comments that Petronas spent a lot of money to pipe a 100km gas from Kerteh to Gebeng. The reality is that there has been a pipeline between Kerteh and Kemaman for over 10 years now, of which is 2/3rd of the distance. So, Petronas was only extending them to Gebeng. In the past, when Kerteh did not have its own port, oil was shipped out from Kerteh through Chukai port.	

29. Interviewee B13 Category-Firm (US based) Date -25.4.2005 Position -HR Manager Place -Kuantan Language -English	
29.1. Company's background: Ownership: 100% American, operating from Singapore. Other branches: US, UK and Singapore. Land: 80 acres, bought from SEDC. Annual quit rent paid: RM36,000; Local Authority taxes: RM135,000 (about half of the plant General Manager's annual salary). Workers: Executives and staff are 100% Malaysian. History: Incorporated in Malaysia in 1996. In the earlier stage, planned to fully operate in Gebeng. Failing to secure guaranteed feedstock from Petronas, a major part of operation was shifted to Singapore. The company didn't agree with the condition that requires a JV with Petronas. Feedstock: PTA from BP and ethylene glycol from Optimal. Products: Polyester-based inter mediate products, 95% for export. Market destinations: Asia: China, Japan, Korea, India, New Zealand and Australia (direct from Kuantan port).	

<p>29.2. In the company's opinion:</p> <ul style="list-style-type: none"> • Malaysia is politically stable, therefore a change in domestic politics is not seen as a threat; • Government incentives contribute little to the company's profit; • Some government departments are very understanding and excellent in their service, e.g. MIDA, DoE and DOSH. Others are unsatisfactory, for example: <ul style="list-style-type: none"> ✎ Problems of low water pressure have never been solved by the State Government); ✎ unstable electric supply with high tariffs; ✎ corrupt practices in some government departments (occasionally, we have to fulfil 'unrealistic' government department demands – it affects our financial performance) <p>29.3. Since the main feedstock is PTA, an increase in oil price significantly affects the company's profits. In the last three years plant operational costs have increased 500%. To stay competitive, product price cannot be increased. The problem is a Korean company which is also producing the same material, is able to bring down the price. Results of which, profit margin swings between USD400-USD800.</p> <p>29.4. Business environment in Malaysia and management in Singapore are good. Since the plant has been on-stream, demand has always surpassed the company's target. The strength may be at the R&D in Singapore.</p> <p>29.5. The company is eyeing to operate totally from outside the US in five years time. There is a likelihood that the plant in Gebeng will undergo an expansion.</p> <p>29.6. Relationship between plants and their executives in Gebeng, Kerteh and Teluk Kalong is excellent (the interviewee offered her assistant to introduce the interviewer to her colleagues in Kaneka, BASF, BP, Tioxide, Malay-Sino, Cryovac, Flexys, and Polyplastics). She said they are like a family. Feedstock orders the only by phone, no papers to sign.</p>	<p>(a) Theme : Firms' strategy</p> <p>(b) Category : Business environment</p> <p>(i) Sub-category 1 : Investment attractions</p> <ul style="list-style-type: none"> • Most important: Feedstock • Important: An integrated complex • Also important: <ul style="list-style-type: none"> ✎ Stable price of feedstock; ✎ R&D and business environment. • Not important : <ul style="list-style-type: none"> ✎ A change in domestic politics; ✎ Quality of government service; ✎ Government incentives. <p>(ii) Sub-category 2 : Inter-firm relationships</p> <p>Very close</p> <p>(iii) Sub-category 3 : Site acquisition</p> <p>Acquired through Pahang SEDC</p> <p>(iv) Sub-category 4 : Expansion plan:</p> <p>Already being planned</p>
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30. Interviewee B14 Category-Firm (US based) Date -21.2.2005 Position -Plant Manager (Accompanied by a Finance Executive) Place -Kuantan Language -English	
30.1. Company's background: Ownership: 100% American, operating from Singapore Other branches: Shah Alam, Hong Kong and New Zealand Land: 50 acres, bought from SEDC, shared with two other plants. Workers: 106 History: Incorporated in Malaysia in 1994 under a different name, under the company that purchased the land from SEDC. Started operation in 1996. Then the company, after an expansion, split into two unrelated entities. Subsequently, this company split its operation into two plants owned by the same owner. All three plants are operating on the same piece of land. Feedstock: Benzene based, supplied by Huntsmann (Teluk Kalong) and Dow. No direct contact with Petronas. Products: Two products. Product 'A', which is a very high quality plastic (used by Adidas), is 100% exported. Product 'B', which is used in the cosmetic industry, is 50% for the domestic market. Market destinations: Asia, including China.	(a) Theme : Firms' Strategy (b) Category 1 : Business environment (i) Sub-category 1 : investment-attraction <ul style="list-style-type: none"> • Most important: <ul style="list-style-type: none"> ✎ Feedstock; ✎ An integrated complex; ✎ Government incentives; ✎ Infrastructure. • Important: <ul style="list-style-type: none"> ✎ Labour supply; ✎ Accessibility; ✎ Port facilities; ✎ MIDA's treatment. • Not important : <ul style="list-style-type: none"> ✎ Quality of government service (ii) Sub-category 2 : Inter-firm relationships Very close (iii) Sub-category 3 : Site acquisition Acquired through Pahang SEDC (iv) Sub-category 4 : Expansion plan: Already being planned (c) Category 2 : Threats Shut downs (very high cost)

<p>30.2. The site acquired from Pahang SEDC. Decision to set up a plant in Gebeng was made because:</p> <ul style="list-style-type: none"> • Gebeng is designated as a petrochemical industrial zone; • Incentives offered were cost-effective; <p>Additional factors:</p> <ul style="list-style-type: none"> • MIDA's treatment; • Gebeng's infrastructure is matched to hi-tech industry's needs; • Port facilities; <p>Did not choose Kerteh/Kemaman because Kuantan has better:</p> <ul style="list-style-type: none"> • Facilities; • Labour supply. <p>30.3. In the company's opinion:</p> <ul style="list-style-type: none"> • MIDA and DOSH are very understanding and excellent. Others are unsatisfactory, for example: <ul style="list-style-type: none"> ✗ The Local Authority's response to complaints is slow; ✗ The Customs Department doesn't understand the company's urgency. ✗ Corrupt practices in some government departments. <p>company was aware of the problems from the beginning but this didn't discourage them from investing in Malaysia</p> <p>30.4. On MIDA, it is the only department that one can bank on. If one needs to deal with government departments without going through MIDA, delays are inevitable. MIDA also always keeps in touch with investors regarding new incentives.</p> <p>30.5. It is typical that more than one plant is built on one site as well as sharing the same registration, raw materials and pipelines.</p> <p>30.6. Although some companies, e.g. BP-Amoco, MTBE and BASF, are carrying out plant expansions, Gebeng faces a stiff competition, especially from Shanghai. Reason: operating in new industrial zones, especially in China, is more cost-effective.</p> <p>30.7. The market is good. There are signs that the plant in Gebeng will undergo an expansion in 10 years time.</p> <p>30.8. This plant which has two sets of vessels can be considered a small installation. It only needs two working days to complete a scheduled inspection. The loss associated to a shut down are not amount to USD 1million per day as experienced by other chemical companies but is still very high.</p>	
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OECD - Production and Consumption of the Natural Gas (Million Cubic Metres)

Appendix L

Source : International Energy Agency at <http://www.iea.org/>

TIME	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
A. AGGREGATE PRODUCTION											
Indigenous Production - OECD	372,045	388,097	413,386	439,437	463,984	493,196	530,837	600,806	654,175	694,148	758,404
Indigenous Production - US	343,492	353,191	370,053	392,459	411,655	425,381	456,175	516,988	550,133	562,482	594,793
Indigenous Production - Japan	731	1,120	1,429	1,934	2,103	2,040	2,133	2,253	2,415	2,618	2,359
Indigenous Production - Germany	1,037	1,201	1,478	1,832	2,646	3,537	4,108	5,039	7,293	9,771	13,423
Indigenous Production - UK	73	79	114	152	171	179	173	623	2,198	5,252	11,253
B. AGGREGATE CONSUMPTION											
Inland Demand (Consumption) - OECD	369,920	385,926	413,531	437,520	462,147	490,428	530,742	597,543	655,080	694,418	741,659
Inland Demand (Consumption) - US	343,852	354,970	378,566	399,812	419,979	434,233	467,130	525,434	563,254	578,256	598,338
Inland Demand (Consumption) - Japan	723	1,072	1,370	1,898	2,064	1,984	2,062	2,198	2,346	2,859	3,933
Inland Demand (Consumption) - Germany	1,029	1,191	1,466	1,821	2,635	3,546	4,106	5,332	8,855	12,468	18,854
Inland Demand (Consumption) - UK	76	79	114	152	268	882	861	1,448	3,267	6,372	12,140
C. CONSUMPTION FOR CHEMICAL AND PETROCHEMICAL											
Chemical (incl.Petro-Chemical) - OECD	3,309	3,931	4,407	5,183	5,737	7,157	8,102	9,603	12,360	16,015	18,697
Chemical (incl.Petro-Chemical) - US	0	0	0	0	0	0	0	0	0	0	0
Chemical (incl.Petro-Chemical) - Japan	507	733	945	1,216	1,292	1,122	1,076	1,167	1,221	1,336	1,318
Chemical (incl.Petro-Chemical) - Germany	149	119	208	207	247	261	299	375	1,255	1,839	2,307
Chemical (incl.Petro-Chemical) - UK	0	0	0	0	0	0	0	0	0	0	604

TIME	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
A. AGGREGATE PRODUCTION											
Indigenous Production - OECD	806,063	844,961	875,427	866,413	832,786	842,166	855,595	860,266	897,399	888,545	878,615
Indigenous Production - US	611,652	612,043	615,085	586,300	544,476	540,539	542,396	541,234	556,563	553,539	547,885
Indigenous Production - Japan	2,433	2,475	2,595	2,572	2,436	2,493	2,804	2,641	2,414	2,197	2,102
Indigenous Production - Germany	17,049	20,522	23,124	24,395	22,364	23,359	23,773	25,636	25,886	22,881	23,558
Indigenous Production - UK	18,700	26,983	29,210	35,236	36,681	38,962	40,710	38,984	39,354	37,457	37,586
B. AGGREGATE CONSUMPTION											
Inland Demand (Consumption) - OECD	790,581	838,002	866,872	873,493	840,322	876,732	882,957	903,220	946,580	939,004	924,845
Inland Demand (Consumption) - US	616,850	625,560	624,088	600,734	552,995	564,545	552,514	555,548	572,897	562,583	549,208
Inland Demand (Consumption) - Japan	4,256	4,334	6,777	8,693	9,570	11,395	13,987	19,059	22,503	25,559	26,182
Inland Demand (Consumption) - Germany	24,752	31,995	41,301	51,226	53,525	57,338	61,046	64,397	69,832	68,550	66,109
Inland Demand (Consumption) - UK	19,574	27,776	30,027	35,873	37,518	39,953	42,038	44,259	48,475	48,201	49,260
C. CONSUMPTION FOR CHEMICAL AND PI											
Chemical (incl.Petro-Chemical) - OECD	23,821	27,685	31,645	34,734	36,607	41,097	44,348	48,928	52,322	51,524	53,899
Chemical (incl.Petro-Chemical) - US	0	0	0	0	0	0	0	0	0	0	0
Chemical (incl.Petro-Chemical) - Japan	1,487	1,310	1,250	1,159	1,138	1,118	1,059	1,022	932	802	714
Chemical (incl.Petro-Chemical) - Germany	3,851	4,467	5,233	6,381	6,767	7,574	8,525	8,845	9,824	9,188	9,413
Chemical (incl.Petro-Chemical) - UK	2,335	3,404	4,523	5,171	5,236	5,656	5,787	5,872	6,144	6,187	6,411

TIME	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
A. AGGREGATE PRODUCTION											
Indigenous Production - OECD	828,273	781,223	830,759	817,981	795,480	824,687	840,049	859,044	880,795	902,959	921,208
Indigenous Production - US	506,692	457,522	495,374	467,270	455,849	470,844	484,687	493,410	508,002	504,544	508,720
Indigenous Production - Japan	2,047	2,085	2,133	2,225	2,105	2,168	2,097	2,009	2,121	2,222	2,199
Indigenous Production - Germany	20,859	22,784	23,949	22,021	20,595	22,935	21,245	20,215	18,919	18,919	19,184
Indigenous Production - UK	38,464	39,726	38,628	43,104	45,206	47,553	45,787	44,880	49,672	56,783	55,627
B. AGGREGATE CONSUMPTION											
Inland Demand (Consumption) - OECD	883,155	862,707	925,092	925,658	900,577	942,779	971,986	1,011,567	1,023,181	1,058,372	1,077,431
Inland Demand (Consumption) - US	509,484	476,502	508,079	489,146	459,163	485,468	510,692	532,603	530,159	539,245	553,667
Inland Demand (Consumption) - Japan	27,066	28,893	38,859	41,558	42,318	43,681	45,826	49,020	53,938	57,842	58,438
Inland Demand (Consumption) - Germany	61,524	63,990	65,331	64,042	64,751	69,836	68,466	69,857	69,723	73,365	71,898
Inland Demand (Consumption) - UK	49,348	51,383	52,411	56,373	57,181	58,865	55,761	55,202	58,312	62,797	62,064
C. CONSUMPTION FOR CHEMICAL AND PI											
Chemical (incl.Petro-Chemical) - OECD	52,627	56,136	60,650	59,763	57,327	60,182	61,106	62,342	59,929	58,863	58,224
Chemical (incl.Petro-Chemical) - US	0	0	0	0	0	0	0	0	0	0	0
Chemical (incl.Petro-Chemical) - Japan	826	839	906	901	806	860	906	939	952	929	915
Chemical (incl.Petro-Chemical) - Germany	8,655	9,562	9,801	9,752	9,271	9,475	9,729	10,775	9,313	7,793	8,333
Chemical (incl.Petro-Chemical) - UK	6,697	6,635	6,439	6,032	3,969	4,546	3,846	4,155	4,242	4,017	4,575

TIME	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
A. AGGREGATE PRODUCTION										
Indigenous Production - OECD	958,349	995,288	1,009,486	1,062,466	1,066,691	1,072,440	1,082,861	1,108,034	1,129,074	1,121,675
Indigenous Production - US	515,776	536,090	529,779	535,247	538,175	537,259	536,052	545,728	557,916	538,920
Indigenous Production - Japan	2,268	2,301	2,247	2,222	2,313	2,297	2,313	2,499	2,466	2,752
Indigenous Production - Germany	19,189	19,906	21,069	22,775	22,436	21,867	23,315	22,049	22,232	22,310
Indigenous Production - UK	65,514	69,652	75,539	90,000	91,605	95,549	105,115	115,386	111,277	109,028
B. AGGREGATE CONSUMPTION										
Inland Demand (Consumption) - OECD	1,120,959	1,147,432	1,204,295	1,267,821	1,298,257	1,302,360	1,338,709	1,390,962	1,371,780	1,409,592
Inland Demand (Consumption) - US	574,242	586,371	609,314	622,030	643,818	629,895	634,393	661,261	629,956	651,561
Inland Demand (Consumption) - Japan	59,862	63,216	65,346	68,558	71,468	73,235	77,743	80,553	80,508	83,341
Inland Demand (Consumption) - Germany	74,810	77,971	83,378	89,558	85,286	88,628	89,225	87,728	91,729	90,739
Inland Demand (Consumption) - UK	68,579	71,238	75,179	87,597	88,712	92,330	98,048	101,812	101,255	99,971
C. CONSUMPTION FOR CHEMICAL AND PI										
Chemical (incl.Petro-Chemical) - OECD	57,370	59,312	130,183	131,944	120,240	114,363	113,388	146,782	133,519	134,994
Chemical (incl.Petro-Chemical) - US	0	0	68,583	69,843	56,923	54,051	53,412	84,541	75,326	77,644
Chemical (incl.Petro-Chemical) - Japan	901	932	1,026	1,013	1,056	724	788	888	840	972
Chemical (incl.Petro-Chemical) - Germany	8,115	7,939	8,533	8,135	8,336	8,538	8,888	9,171	8,683	8,863
Chemical (incl.Petro-Chemical) - UK	4,540	4,966	4,426	4,709	5,289	5,272	5,383	5,455	5,371	4,720

World Supply of the Natural Gas (Million Cubic Metres)Source : International Energy Agency at <http://www.iea.org/>***Appendix M***

TIME	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Country of Origin															
Canada	14,151	17,893	24,473	26,534	29,587	32,237	34,664	38,128	43,302	50,293	57,801	62,943	70,682	75,341	72,726
Mexico	0	0	0	0	0	9,594	9,936	8,608	8,990	10,984	11,021	10,887	11,336	12,428	12,940
United States	343,492	353,191	370,053	392,459	411,655	425,381	456,175	516,988	550,133	562,482	594,793	611,652	612,043	615,085	586,300
IEA North America	357,643	371,084	394,526	418,993	441,242	457,618	490,839	555,116	593,435	612,775	652,594	674,595	682,725	690,426	659,026
OECD North America	357,643	371,084	394,526	418,993	441,242	467,212	500,775	563,724	602,425	623,759	663,615	685,482	694,061	702,854	671,966
Austria	1,590	1,683	1,774	1,848	1,915	1,866	2,029	1,945	1,777	1,614	1,858	1,845	1,906	2,242	2,209
Belgium	63	63	64	62	63	74	56	59	58	60	47	44	46	48	54
Czech Republic	189	247	232	197	189	252	327	334	343	382	393	510	495	474	563
Denmark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
France	3,197	4,377	5,067	5,321	5,618	5,500	5,575	6,017	6,018	6,989	7,439	7,738	8,004	8,046	8,115
Germany	1,037	1,201	1,478	1,832	2,646	3,537	4,108	5,039	7,293	9,771	13,423	17,049	20,522	23,124	24,395
Greece	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	0	0	0	0	0	1,290	1,646	2,173	2,792	3,375	3,575	3,786	4,129	4,879	5,236
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	6,448	6,834	7,152	7,269	7,685	7,803	8,816	9,395	10,467	11,996	13,209	13,460	14,265	15,407	15,379
Luxembourg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	396	536	589	686	951	1,879	3,634	7,483	14,991	23,257	33,503	46,271	61,726	75,064	89,031
Norway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Poland	579	773	865	1,036	1,296	1,453	1,451	1,653	2,696	4,137	5,534	5,783	6,258	6,458	6,146
Portugal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovak Republic	0	0	0	0	0	0	0	0	591	572	604	635	589	496	386
Spain	0	0	0	2	2	3	6	3	2	2	4	2	2	1	1
Sweden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switzerland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	73	79	114	152	171	179	173	623	2,198	5,252	11,253	18,700	26,983	29,210	35,236
IEA Europe	12,993	15,020	16,470	17,369	19,240	22,383	26,370	33,071	45,939	62,698	84,704	109,405	138,078	158,495	180,233
OECD Europe	13,572	15,793	17,335	18,405	20,536	23,836	27,821	34,724	49,226	67,407	90,842	115,823	144,925	165,449	186,765
Australia	0	0	1	3	3	4	4	4	6	254	1,441	2,146	3,092	4,048	4,636
Japan	731	1,120	1,429	1,934	2,103	2,040	2,133	2,253	2,415	2,618	2,359	2,433	2,475	2,595	2,572
Korea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	99	100	95	102	100	104	104	101	103	110	147	179	408	481	474
IEA Pacific	830	1,220	1,525	2,039	2,206	2,148	2,241	2,358	2,524	2,982	3,947	4,758	5,975	7,124	7,682
OECD Pacific	830	1,220	1,525	2,039	2,206	2,148	2,241	2,358	2,524	2,982	3,947	4,758	5,975	7,124	7,682
IEA Total	371,466	387,324	412,521	438,401	462,688	482,149	519,450	590,545	641,898	678,455	741,245	788,758	826,778	856,045	846,941
OECD Total	372,045	388,097	413,386	439,437	463,984	493,196	530,837	600,806	654,175	694,148	758,404	806,063	844,961	875,427	866,413
Argentina	..	..	..	..	..	..	..	..	..	..	..	6,520	6,406	6,629	6,550
Bolivia	..	..	..	..	..	..	..	..	..	..	..	71	1,342	2,036	2,010
Brazil	..	..	..	..	..	..	..	..	..	..	..	131	144	198	363
Chile	..	..	..	..	..	..	..	..	..	..	..	761	752	625	647
Colombia	..	..	..	..	..	..	..	..	..	..	..	1,503	1,837	1,903	1,980
Costa Rica	..	..	..	..	..	..	..	..	..	..	..	0	0	0	0
Cuba	..	..	..	..	..	..	..	..	..	..	..	2	7	15	20
Dominican Republic	..	..	..	..	..	..	..	..	..	..	..	0	0	0	0
El Salvador	..	..	..	..	..	..	..	..	..	..	..	0	0	0	0
Ecuador	..	..	..	..	..	..	..	..	..	..	..	58	84	48	96
Guatemala	..	..	..	..	..	..	..	..	..	..	..	0	0	0	0

TIME	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Country of Origin															
Canada	74,499	74,395	78,285	75,170	82,228	78,118	75,592	77,097	72,528	78,911	86,123	81,029	87,872	101,210	105,534
Mexico	13,258	12,954	13,762	17,329	21,185	25,479	27,442	29,604	29,083	28,565	28,281	25,079	25,433	25,625	24,509
United States	544,476	540,539	542,396	541,234	556,563	553,539	547,885	506,692	457,522	495,374	467,270	455,849	470,844	484,687	493,410
IEA North America	618,975	614,934	620,681	616,404	638,791	631,657	623,477	583,789	530,050	574,285	553,393	536,878	558,716	585,897	598,944
OECD North America	632,233	627,888	634,443	633,733	659,976	657,136	650,919	613,393	559,133	602,850	581,674	561,957	584,149	611,522	623,453
Austria	2,356	2,124	2,367	2,389	2,311	1,904	1,436	1,324	1,214	1,272	1,164	1,112	1,167	1,264	1,323
Belgium	45	30	34	34	33	39	32	31	18	37	40	26	28	17	14
Czech Republic	400	581	466	500	636	412	447	438	335	330	315	304	310	287	264
Denmark	0	0	1	0	1	0	22	34	43	300	1,235	2,037	2,619	2,627	3,072
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
France	7,892	7,604	8,217	8,446	8,323	7,927	7,293	7,086	6,991	6,701	5,729	4,504	3,794	3,188	3,062
Germany	22,364	23,359	23,773	25,636	25,886	22,881	23,558	20,859	22,784	23,949	22,021	20,595	22,935	21,245	20,215
Greece	0	0	0	0	0	0	0	63	60	66	62	85	97	116	117
Hungary	5,178	6,051	6,537	7,239	6,410	6,133	5,953	6,556	6,416	6,861	7,468	7,124	7,018	6,267	6,065
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	572	912	1,390	2,045	2,196	2,329	2,468	1,680	1,673	2,015	2,278
Italy	14,658	15,751	13,818	13,801	13,466	12,531	14,043	14,589	13,067	13,836	14,245	15,963	16,324	16,634	16,978
Luxembourg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	95,898	102,703	102,278	93,657	98,835	96,214	89,315	76,034	80,785	81,540	85,203	78,147	78,369	69,253	75,696
Norway	195	327	2,973	14,759	21,581	25,973	26,162	25,534	25,831	27,375	26,699	28,102	29,511	29,778	30,745
Poland	6,385	7,161	7,747	8,462	7,754	6,712	6,534	5,859	5,787	6,424	6,743	6,171	6,098	6,008	5,651
Portugal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovak Republic	529	364	414	614	314	178	181	215	265	402	390	427	490	605	573
Spain	1	1	1	1	0	0	0	0	68	217	249	362	696	886	1,555
Sweden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switzerland	0	0	0	0	0	0	0	0	0	0	18	16	9	7	4
Turkey	0	0	0	0	0	0	0	40	71	40	67	457	297	99	174
United Kingdom	36,681	38,962	40,710	38,984	39,354	37,457	37,586	38,464	39,726	38,628	43,104	45,206	47,553	45,787	44,880
IEA Europe	185,668	197,493	201,175	205,446	217,408	212,383	207,237	193,097	199,605	203,481	210,087	205,720	212,400	199,470	206,442
OECD Europe	192,582	205,018	209,336	214,522	225,476	219,273	213,952	199,171	205,657	210,307	217,220	212,318	218,988	206,083	212,666
Australia	5,018	5,365	6,763	7,252	8,236	8,852	10,353	11,418	11,939	12,478	13,101	14,611	15,073	15,708	16,154
Japan	2,436	2,493	2,804	2,641	2,414	2,197	2,102	2,047	2,085	2,133	2,225	2,105	2,168	2,097	2,009
Korea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	517	1,402	2,249	2,118	1,297	1,087	1,289	2,244	2,409	2,991	3,761	4,489	4,309	4,639	4,762
IEA Pacific	7,971	9,260	11,816	12,011	11,947	12,136	13,744	15,709	16,433	17,602	19,087	21,205	21,550	22,444	22,925
OECD Pacific	7,971	9,260	11,816	12,011	11,947	12,136	13,744	15,709	16,433	17,602	19,087	21,205	21,550	22,444	22,925
IEA Total	812,614	821,687	833,672	833,861	868,146	856,176	844,458	792,595	746,088	795,368	782,567	763,803	792,666	807,811	828,311
OECD Total	832,786	842,166	855,595	860,266	897,399	888,545	878,615	828,273	781,223	830,759	817,981	795,480	824,687	840,049	859,044
Argentina	7,438	7,663	7,751	7,344	8,636	9,858	9,855	10,694	12,246	13,286	13,784	16,724	17,062	20,174	21,473
Bolivia	2,070	2,124	2,243	2,202	2,411	2,581	2,806	2,894	2,946	2,976	2,991	3,050	3,030	3,161	3,279
Brazil	411	481	595	778	855	988	884	1,250	1,773	2,185	2,621	3,121	3,301	3,580	3,834
Chile	713	1,116	1,263	1,438	940	856	853	881	937	940	958	876	859	1,143	1,690
Colombia	1,724	1,751	1,986	2,637	3,012	3,219	3,528	3,762	4,133	4,201	4,286	4,177	4,401	4,244	4,290
Costa Rica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cuba	17	22	17	11	19	19	9	10	8	3	7	6	24	22	34
Dominican Republic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecuador	120	109	70	72	52	41	66	85	105	151	154	153	143	166	131
Guatemala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TIME	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Country of Origin														
Canada	109,071	115,051	126,196	138,646	150,050	159,532	165,487	168,374	173,259	176,205	181,673	186,003	187,576	182,205
Mexico	25,579	25,459	24,880	26,902	27,605	27,094	30,130	33,018	35,852	36,442	37,221	36,868	37,762	42,222
United States	508,002	504,544	508,720	515,776	536,090	529,779	535,247	538,175	537,259	536,052	545,728	557,916	538,920	541,779
IEA North America	617,073	619,595	634,916	654,422	686,140	689,311	700,734	706,549	710,518	712,257	727,401	743,919	726,496	723,984
OECD North America	642,652	645,054	659,796	681,324	713,745	716,405	730,864	739,567	746,370	748,699	764,622	780,787	764,258	766,206
Austria	1,289	1,326	1,436	1,489	1,355	1,481	1,492	1,428	1,569	1,740	1,805	1,732	1,880	2,091
Belgium	12	9	6	4	1	0	2	0	0	0	2	0	0	0
Czech Republic	262	269	183	238	250	254	236	216	228	230	219	160	153	133
Denmark	3,137	3,941	4,105	4,504	4,880	5,284	6,421	7,860	7,565	7,755	8,153	8,382	8,382	7,965
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0
France	2,857	3,238	3,154	3,423	3,533	3,353	2,911	2,586	2,262	2,067	1,878	1,864	1,779	1,566
Germany	18,919	18,919	19,184	19,189	19,906	21,069	22,775	22,436	21,867	23,315	22,049	22,232	22,310	22,217
Greece	123	116	109	81	38	36	38	37	33	2	36	35	37	27
Hungary	4,874	4,976	4,753	5,042	4,851	4,886	4,668	4,369	3,877	3,401	3,194	3,231	3,106	2,940
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	2,318	2,374	2,348	2,668	2,714	2,778	2,678	2,360	1,742	1,366	1,186	815	838	673
Italy	17,296	17,400	18,150	19,559	20,637	20,384	20,034	19,267	19,009	17,476	16,633	15,242	14,623	13,550
Luxembourg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	76,249	86,200	86,574	88,122	83,596	84,406	95,419	84,595	80,436	75,002	72,467	77,785	75,776	73,128
Norway	27,642	27,425	29,419	28,867	30,927	31,449	41,294	46,727	47,598	50,990	52,818	56,610	69,075	76,832
Poland	4,095	4,376	4,204	5,166	4,889	5,066	5,015	5,101	5,118	4,974	5,224	5,462	5,552	5,626
Portugal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovak Republic	438	304	277	254	289	344	314	289	260	213	173	196	177	196
Spain	1,394	1,304	1,193	643	195	415	466	178	112	143	162	516	511	216
Sweden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switzerland	4	3	3	2	1	0	0	0	0	0	0	0	0	0
Turkey	212	203	198	200	199	182	206	253	565	731	639	312	378	560
United Kingdom	49,672	56,783	55,627	65,514	69,652	75,539	90,000	91,605	95,549	105,115	115,386	111,277	109,028	108,438
IEA Europe	206,260	224,486	226,442	239,545	242,735	251,516	288,640	283,917	282,412	289,333	296,627	300,193	307,876	310,336
OECD Europe	210,793	229,166	230,923	244,965	247,913	256,926	293,969	289,307	287,790	294,520	302,024	305,851	313,605	316,158
Australia	20,475	21,311	22,789	24,460	26,404	29,260	30,148	29,908	31,054	31,613	32,819	33,561	34,970	36,381
Japan	2,121	2,222	2,199	2,268	2,301	2,247	2,222	2,313	2,297	2,313	2,499	2,466	2,752	2,814
Korea	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	4,754	5,206	5,501	5,332	4,925	4,648	5,263	5,596	4,929	5,716	6,070	6,409	6,090	4,773
IEA Pacific	27,350	28,739	30,489	32,060	33,630	36,155	37,633	37,817	38,280	39,642	41,388	42,436	43,812	43,968
OECD Pacific	27,350	28,739	30,489	32,060	33,630	36,155	37,633	37,817	38,280	39,642	41,388	42,436	43,812	43,968
IEA Total	850,683	872,820	891,847	926,027	962,505	976,982	1,027,007	1,028,283	1,031,210	1,041,232	1,065,416	1,086,548	1,078,184	1,078,288
OECD Total	880,795	902,959	921,208	958,349	995,288	1,009,486	1,062,466	1,066,691	1,072,440	1,082,861	1,108,034	1,129,074	1,121,675	1,126,332
Argentina	20,326	21,788	22,566	22,419	23,332	25,479	27,837	30,648	32,373	38,259	40,465	40,008	38,795	44,092
Bolivia	3,333	3,344	3,441	3,430	3,692	3,685	3,689	3,572	3,487	2,860	3,711	5,260	6,252	7,244
Brazil	3,888	3,803	4,096	4,469	4,636	4,974	5,574	6,189	6,495	6,902	7,173	7,409	9,266	10,052
Chile	1,771	1,567	1,784	1,717	1,862	1,790	1,769	1,922	1,733	1,972	2,085	2,091	2,142	1,947
Colombia	4,537	4,493	4,602	4,506	4,648	4,873	5,257	6,463	7,503	6,582	7,338	7,791	7,783	7,682
Costa Rica	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cuba	34	30	21	23	20	17	19	37	124	460	574	595	585	585
Dominican Republic	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecuador	216	265	266	307	276	267	283	258	263	247	270	275	275	138
Guatemala	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TIME	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Country of Origin															
Haiti	0	0	0	0
Honduras	0	0	0	0
Jamaica	0	0	0	0
Netherlands Antilles	0	0	0	0
Nicaragua	0	0	0	0
Panama	0	0	0	0
Paraguay	0	0	0	0
Peru	423	413	409	425
Trinidad and Tobago	1,914	1,979	1,900	1,736
Uruguay	0	0	0	0
Venezuela	9,350	9,495	11,268	11,591
Other Latin America	3	3	3	2
Latin America	20,736	22,462	25,034	25,420
Albania	126	145	191	204
Bulgaria	312	210	212	171
Cyprus	0	0	0	0
Gibraltar	0	0	0	0
Malta	0	0	0	0
Romania	27,764	28,400	30,069	31,033
Bosnia and Herzegovina	0	0	0	0
Croatia	0	0	0	0
Former Yugoslav Republic of Macedonia	0	0	0	0
Serbia and Montenegro	0	0	0	0
Slovenia	0	0	0	0
Former Yugoslavia	1,177	1,454	1,561	1,700
Non-OECD Europe	29,379	30,209	32,033	33,108
Armenia	0	0	0	0
Azerbaijan	0	0	0	0
Belarus	0	0	0	0
Estonia	0	0	0	0
Georgia	0	0	0	0
Kazakhstan	0	0	0	0
Kyrgyzstan	0	0	0	0
Latvia	0	0	0	0
Lithuania	0	0	0	0
Republic of Moldova	0	0	0	0
Russia	0	0	0	0
Tajikistan	0	0	0	0
Turkmenistan	0	0	0	0
Ukraine	0	0	0	0
Uzbekistan	0	0	0	0
Former Soviet Union	216,867	226,001	241,183	265,993
Algeria	2,661	3,371	4,478	5,176
Angola	44	59	67	70
Benin	0	0	0	0
Cameroon	0	0	0	0
Congo	2	2	2	3
Democratic Republic of Congo	0	0	0	0
Cote d'Ivoire	0	0	0	0
Egypt	86	72	89	44
Eritrea	0	0	0	0
Ethiopia	0	0	0	0
Gabon	96	107	490	566

TIME	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Country of Origin															
Haiti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands Antilles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nicaragua	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peru	551	610	561	585	541	603	708	760	555	682	696	703	665	628	557
Trinidad and Tobago	1,578	1,776	2,088	2,492	2,576	2,911	3,206	3,897	4,037	4,230	4,330	4,431	4,694	5,403	5,413
Uruguay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Venezuela	10,892	11,462	12,503	12,429	14,221	14,643	14,424	15,397	15,330	17,398	17,269	17,476	17,445	17,179	18,623
Other Latin America	2	4	5	10	12	14	8	9	11	20	26	27	23	27	29
Latin America	25,516	27,118	29,082	29,998	33,275	35,733	36,347	39,639	42,081	46,072	47,122	50,744	51,647	55,727	59,353
Albania	301	351	351	355	369	386	386	386	386	386	386	386	386	411	334
Bulgaria	105	35	10	31	130	184	145	86	60	50	22	18	14	11	8
Cyprus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gibraltar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Romania	33,710	36,771	38,941	39,206	37,463	38,682	40,715	41,166	40,851	40,559	38,767	39,233	37,287	36,676	32,951
Bosnia and Herzegovina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croatia	0	0	0	0	0	0	0	0	0	0	1,464	1,700	1,606	2,123	2,176
Former Yugoslav Republic of Macedonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Serbia and Montenegro	0	0	0	0	0	0	0	0	0	0	936	747	909	868	665
Slovenia	0	0	0	0	0	8	6	6	6	7	7	7	11	31	33
Former Yugoslavia	1,590	1,856	2,033	2,074	1,989	2,050	1,926	2,038	1,967	1,843	2,361	2,366	2,514	2,905	2,789
Non-OECD Europe	35,706	39,013	41,335	41,666	39,951	41,302	43,172	43,676	43,264	42,838	41,536	42,003	40,201	40,003	36,082
Armenia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Azerbaijan	0	0	0	0	0	0	0	0	0	0	14,043	13,556	12,501	11,806	11,093
Belarus	0	0	0	0	0	0	0	0	0	0	292	257	269	279	292
Estonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Georgia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kazakhstan	0	0	0	0	0	0	0	0	0	0	5,447	5,814	6,300	7,122	6,698
Kyrgyzstan	0	0	0	0	0	0	0	0	0	0	115	106	112	105	105
Latvia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Republic of Moldova	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Russia	0	0	0	0	0	0	0	0	0	0	453,347	493,537	534,117	578,706	604,232
Tajikistan	0	0	0	0	0	0	0	0	0	0	302	291	280	235	195
Turkmenistan	0	0	0	0	0	0	0	0	0	0	83,049	84,560	87,982	88,150	89,765
Ukraine	0	0	0	0	0	0	0	0	0	0	43,893	39,624	35,514	32,334	30,775
Uzbekistan	0	0	0	0	0	0	0	0	0	0	34,529	38,522	39,708	39,874	41,020
Former Soviet Union	294,915	327,708	353,134	379,919	415,097	443,853	470,506	505,057	538,373	587,485	641,902	684,844	725,687	768,629	794,665
Algeria	6,374	8,028	7,684	11,916	19,532	14,134	16,829	21,873	31,526	31,374	34,171	36,371	41,048	42,912	46,270
Angola	67	58	73	73	73	79	92	92	105	118	118	132	158	160	171
Benin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cameroon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Congo	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0
Democratic Republic of Congo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cote d'Ivoire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Egypt	40	125	424	700	1,037	1,941	2,215	2,430	2,854	3,659	4,568	7,944	8,242	9,080	7,944
Eritrea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ethiopia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gabon	168	52	54	38	30	15	73	119	96	41	52	93	119	181	88

TIME	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Country of Origin														
Haiti	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands Antilles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nicaragua	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peru	547	515	451	294	226	509	560	424	504	656	597	615	674	858
Trinidad and Tobago	5,613	5,662	5,800	5,753	6,108	6,012	6,890	7,210	8,470	10,797	13,166	14,077	16,402	23,418
Uruguay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Venezuela	21,754	22,334	22,416	23,248	24,524	26,184	29,483	30,079	31,028	27,202	28,382	26,512	23,113	24,162
Other Latin America	30	33	46	45	44	43	40	24	38	48	43	42	43	43
Latin America	62,049	63,834	65,489	66,211	69,368	73,833	81,401	86,826	92,018	95,985	103,804	104,675	105,330	120,221
Albania	243	141	102	82	52	28	23	18	17	16	11	8	14	14
Bulgaria	14	10	38	69	57	50	42	35	29	27	15	23	20	20
Cyprus	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gibraltar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Romania	28,336	24,807	21,782	20,737	18,511	18,043	17,249	14,965	14,004	14,027	13,750	13,568	13,040	14,581
Bosnia and Herzegovina	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croatia	1,989	1,824	1,803	2,049	1,792	1,966	1,786	1,717	1,570	1,551	1,659	2,011	2,121	2,532
Former Yugoslav Republics	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Serbia and Montenegro	651	749	846	845	800	837	549	589	678	624	715	730	796	862
Slovenia	24	19	17	13	13	18	13	12	8	6	7	6	6	7
Former Yugoslavia	2,554	2,505	2,556	2,907	2,605	2,821	2,348	2,318	2,256	2,181	2,381	2,747	2,923	3,401
Non-OECD Europe	31,147	27,463	24,478	23,795	21,225	20,942	19,662	17,336	16,306	16,251	16,157	16,346	15,997	18,016
Armenia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Azerbaijan	9,900	8,668	7,872	6,805	6,379	6,644	6,305	5,963	5,782	6,207	5,840	5,535	5,144	5,164
Belarus	296	301	299	291	294	266	249	246	252	256	257	255	246	246
Estonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Georgia	61	61	50	50	3	11	3	0	0	0	69	40	17	17
Kazakhstan	0	7,885	8,113	6,685	4,488	5,916	6,524	8,114	7,948	9,882	11,541	12,088	14,108	17,537
Kyrgyzstan	96	83	72	42	39	36	26	40	18	25	32	33	30	30
Latvia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Republic of Moldova	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Russia	628,874	631,719	629,473	607,282	596,477	584,740	590,789	560,805	580,609	580,707	572,795	570,408	583,516	608,332
Tajikistan	112	100	65	44	33	39	49	38	30	35	40	50	30	30
Turkmenistan	84,881	84,154	54,122	65,719	36,088	35,883	35,182	17,318	13,257	22,943	47,153	51,557	53,668	59,346
Ukraine	27,886	23,352	20,882	19,200	18,300	18,161	18,408	18,131	17,967	18,092	17,884	18,337	18,680	19,376
Uzbekistan	40,729	41,827	43,144	45,393	46,300	46,827	47,064	48,784	54,790	55,581	56,401	57,414	57,836	57,440
Former Soviet Union	803,737	809,101	775,002	751,511	708,401	698,523	704,599	659,439	680,653	693,728	712,012	715,717	733,275	767,518
Algeria	47,827	51,855	54,093	54,842	50,467	57,423	60,916	70,222	75,073	84,325	85,983	80,891	83,244	86,553
Angola	540	580	570	560	520	560	560	570	580	560	580	530	620	720
Benin	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cameroon	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Congo	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Democratic Republic of Congo	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cote d'Ivoire	0	0	0	0	0	52	467	766	944	1,581	1,581	1,593	1,614	1,566
Egypt	8,242	9,080	9,779	11,544	12,155	12,646	13,250	13,408	14,065	16,918	20,444	24,628	26,734	28,873
Eritrea	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ethiopia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gabon	110	112	106	111	106	139	130	134	125	125	126	101	113	113

TIME	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Country of Origin															
Ghana	0	0	0	0
Kenya	0	0	0	0
Libya	1,596	3,525	4,185	3,855
Morocco	53	57	72	82
Mozambique	0	0	0	0
Namibia	0	0	0	0
Nigeria	211	282	434	405
Senegal	0	0	0	0
South Africa	0	0	0	0
Sudan	0	0	0	0
United Republic of Tanzania	0	0	0	0
Togo	0	0	0	0
Tunisia	1	22	125	220
Zambia	0	0	0	0
Zimbabwe	0	0	0	0
Other Africa	1	1	1	1
Africa	4,751	7,498	9,943	10,422
Bahrain	930	1,160	1,645	2,027
Islamic Republic of Iran	8,031	10,806	11,884	12,504
Iraq	930	940	1,210	1,190
Israel	126	124	54	66
Jordan	0	0	0	0
Kuwait	5,198	5,656	6,069	5,748
Lebanon	0	0	0	0
Oman	0	0	0	0
Qatar	1,010	1,100	1,580	1,300
Saudi Arabia	1,748	1,750	2,376	3,935
Syria	0	0	0	0
United Arab Emirates	1,072	1,065	1,284	1,230
Yemen	0	0	0	0
Middle East	19,045	22,601	26,102	28,000
Bangladesh	463	463	639	708
Brunei	105	155	1,695	3,967
India	688	740	721	911
Indonesia	277	315	381	604
Malaysia	84	118	118	247
Myanmar	70	108	107	111
Nepal	0	0	0	0
DPR of Korea	0	0	0	0
Pakistan	3,157	3,352	3,827	4,389
Philippines	0	0	0	0
Singapore	0	0	0	0
Sri Lanka	0	0	0	0
Chinese Taipei	1,121	1,304	1,505	1,586
Thailand	0	0	0	0
Vietnam	0	0	0	0
Other Asia	2,542	2,774	2,687	2,826
Asia	8,507	9,329	11,680	15,349
Hong Kong (China)	0	0	0	0
People's Republic of China	3,365	4,355	5,380	6,773
China (Region)	3,365	4,355	5,380	6,773
Non OECD Total	302,650	322,455	351,355	385,065
World	1,108,713	1,167,416	1,226,782	1,251,478

TIME	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Country of Origin															
Ghana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libya	4,763	4,907	5,184	5,256	5,287	5,170	3,150	3,350	3,710	4,600	5,200	5,600	5,000	5,500	6,800
Morocco	73	81	89	84	77	68	87	81	85	85	96	93	76	78	59
Mozambique	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Namibia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nigeria	541	690	818	951	1,193	1,516	2,274	2,605	3,179	3,075	3,630	3,267	3,668	3,635	4,250
Senegal	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
South Africa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sudan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Republic of Tar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunisia	231	235	252	314	362	389	429	464	476	467	447	416	355	329	329
Zambia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Africa	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
Africa	12,261	14,179	14,580	19,333	27,592	23,313	25,150	31,015	42,032	43,419	48,283	53,916	58,666	61,884	65,920
Bahrain	2,131	2,298	2,479	2,660	2,914	2,978	3,173	3,444	3,611	3,692	4,507	3,799	3,749	3,972	4,243
Islamic Republic of Ira	12,976	13,198	13,390	8,400	8,090	4,325	4,680	6,422	7,337	8,548	8,503	8,134	10,275	10,703	15,412
Iraq	1,650	2,110	1,600	1,700	2,230	2,682	1,490	2,223	2,715	3,008	3,191	4,553	7,658	9,894	11,434
Israel	60	58	58	57	74	157	158	77	64	53	47	37	42	38	38
Jordan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63
Kuwait	5,176	5,586	5,974	6,260	8,613	6,895	5,334	4,130	4,786	5,177	5,062	5,881	4,906	4,464	5,588
Lebanon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oman	0	0	0	158	306	382	473	549	693	980	1,115	1,372	1,511	1,583	1,632
Qatar	2,210	1,481	1,610	1,480	4,360	5,210	4,170	4,920	4,750	5,930	5,500	5,780	5,790	6,240	5,920
Saudi Arabia	3,797	4,412	4,977	6,208	7,901	10,426	17,609	13,432	13,052	19,291	19,291	25,859	27,512	29,849	30,526
Syria	0	35	39	38	39	52	53	55	83	141	167	423	417	986	1,613
United Arab Emirates	1,628	1,902	3,824	5,599	5,991	7,374	8,688	9,315	8,197	10,786	12,973	14,924	16,561	17,022	19,983
Yemen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle East	29,628	31,080	33,951	32,560	40,518	40,481	45,828	44,567	45,288	57,606	60,356	70,762	78,421	84,751	96,452
Bangladesh	469	714	844	895	1,025	1,277	1,533	1,830	2,076	2,407	2,647	2,996	3,739	3,943	4,712
Brunei	5,377	7,480	8,280	7,586	7,798	9,240	8,142	8,201	8,435	7,921	7,779	7,498	7,915	7,789	7,917
India	1,072	1,310	1,379	1,623	1,589	1,434	2,040	2,708	3,113	3,781	4,552	6,425	7,312	8,585	10,409
Indonesia	696	1,555	4,924	10,613	14,405	17,150	17,688	18,169	20,150	29,064	30,394	32,072	33,631	37,187	39,592
Malaysia	297	354	324	2,168	2,691	2,393	2,016	2,536	6,116	9,290	10,265	13,805	14,926	15,409	16,678
Myanmar	193	266	245	288	295	359	444	520	543	729	992	1,109	1,142	1,153	1,115
Nepal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DPR of Korea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pakistan	4,764	4,632	5,099	5,434	5,864	6,716	7,630	8,196	8,579	8,123	8,637	8,925	11,543	11,884	13,511
Philippines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Singapore	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chinese Taipei	1,574	1,886	1,990	1,961	1,893	1,959	1,669	1,418	1,471	1,480	1,327	1,209	1,223	1,395	1,405
Thailand	0	0	0	0	0	0	306	1,334	1,606	2,420	3,743	3,616	5,056	5,989	5,983
Vietnam	0	0	0	0	0	0	11	21	71	61	39	40	40	30	8
Other Asia	2,873	2,456	2,447	2,374	2,246	2,692	2,580	2,493	2,618	2,788	2,927	2,933	1,867	1,551	336
Asia	17,315	20,653	25,532	32,942	37,806	43,220	44,059	47,426	54,778	68,064	73,302	80,628	88,394	94,915	101,666
Hong Kong (China)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
People's Republic of C	7,962	9,086	10,902	12,331	13,032	12,848	11,470	10,741	10,993	11,362	14,367	15,289	15,433	15,844	16,722
China (Region)	7,962	9,086	10,902	12,331	13,032	12,848	11,470	10,741	10,993	11,362	14,367	15,289	15,433	15,844	16,722
Non OECD Total	423,303	468,837	508,516	548,749	607,271	640,750	676,532	722,121	776,809	856,846	926,868	998,186	1,058,449	1,121,753	1,170,860
World	1,256,089	1,311,003	1,364,111	1,409,015	1,504,670	1,529,295	1,555,147	1,550,394	1,558,032	1,687,605	1,744,849	1,793,666	1,883,136	1,961,802	2,029,904

TIME	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Country of Origin														
Ghana	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kenya	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libya	6,200	6,540	6,770	6,360	6,390	6,340	6,420	6,570	6,360	5,200	5,880	6,180	6,240	7,034
Morocco	53	36	22	22	21	13	17	32	35	40	47	46	45	45
Mozambique	0	0	0	0	0	0	0	0	1	1	1	1	2	2
Namibia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nigeria	4,000	4,878	5,132	5,605	5,493	5,385	5,457	5,706	6,121	7,210	12,927	15,458	14,732	19,919
Senegal	7	5	3	15	23	55	50	28	24	7	1	0	0	0
South Africa	1,842	1,868	1,882	2,100	2,100	2,100	1,890	1,687	1,421	1,859	1,711	2,223	2,435	2,488
Sudan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Republic of Tar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunisia	362	284	258	193	190	145	837	1,717	1,969	1,883	2,059	2,337	2,228	2,228
Zambia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zimbabwe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Africa	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Africa	69,183	75,238	78,615	81,352	77,465	84,858	89,994	100,840	106,718	119,709	131,340	133,988	138,007	149,541
Bahrain	4,349	3,681	4,269	4,795	4,852	4,854	5,131	5,368	5,801	5,950	6,087	6,393	6,730	6,865
Islamic Republic of Ira	22,602	28,271	27,577	31,418	38,126	42,210	41,932	46,350	48,953	55,837	61,248	63,355	73,978	77,923
Iraq	6,161	1,711	2,860	3,212	3,992	3,968	4,056	4,429	4,662	5,105	5,070	4,604	3,998	2,541
Israel	34	25	25	26	23	23	15	16	11	10	9	9	9	180
Jordan	124	120	131	154	257	266	258	273	277	265	261	252	230	289
Kuwait	4,096	847	4,990	8,841	9,433	9,433	9,454	9,435	9,618	8,803	9,354	9,153	8,208	8,516
Lebanon	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oman	2,982	3,064	3,744	4,549	4,739	4,701	4,895	5,705	6,220	6,788	10,871	16,230	17,581	19,339
Qatar	6,250	7,570	12,520	13,393	13,393	13,393	13,592	17,263	19,425	21,876	28,870	26,787	29,267	30,557
Saudi Arabia	31,053	32,842	34,000	35,900	37,695	40,340	43,840	48,081	49,651	48,993	49,810	53,108	56,891	60,262
Syria	1,776	2,073	2,145	2,123	2,301	2,902	2,902	4,500	5,823	5,961	6,020	5,517	5,724	5,850
United Arab Emirates	19,719	23,347	21,739	22,543	26,337	30,711	35,545	35,603	36,349	37,300	39,065	40,225	42,546	43,919
Yemen	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle East	99,146	103,551	114,000	126,954	141,148	152,801	161,620	177,023	186,790	196,888	216,665	225,633	245,162	256,241
Bangladesh	4,761	4,601	5,573	5,891	6,283	7,260	7,520	7,390	7,986	8,707	9,411	10,538	11,087	11,886
Brunei	8,207	8,416	8,535	8,579	8,824	9,662	9,587	9,585	9,275	8,992	10,075	10,126	10,216	10,734
India	11,879	13,358	15,158	15,202	16,223	20,908	21,187	24,238	25,260	24,466	25,358	25,367	27,267	28,204
Indonesia	48,881	54,824	57,477	59,284	66,175	67,220	70,978	73,527	71,644	77,795	72,189	69,698	75,507	79,639
Malaysia	16,509	19,604	20,319	22,112	22,907	26,243	32,722	37,263	37,668	39,056	45,370	44,152	45,540	50,235
Myanmar	956	902	887	1,033	1,289	1,444	1,566	1,692	2,761	4,622	6,132	6,214	6,442	7,056
Nepal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DPR of Korea	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pakistan	13,473	14,228	15,424	16,417	16,546	17,586	18,326	18,225	18,980	21,015	22,280	23,264	23,854	24,791
Philippines	0	0	0	0	7	7	11	6	10	7	11	145	1,823	2,096
Singapore	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chinese Taipei	1,253	913	793	761	839	865	832	784	803	779	676	768	802	836
Thailand	6,516	8,075	8,640	9,672	10,719	11,326	13,266	16,159	17,604	19,184	20,182	19,621	20,556	22,922
Vietnam	3	30	21	25	27	224	330	601	999	1,136	1,349	1,351	2,788	3,331
Other Asia	300	291	273	269	261	257	250	237	226	228	230	234	240	305
Asia	112,738	125,242	133,100	139,245	150,100	163,002	176,575	189,707	193,216	205,987	213,263	211,478	226,122	242,035
Hong Kong (China)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
People's Republic of C	17,000	17,856	17,544	18,629	19,510	19,941	22,349	23,031	25,866	27,998	30,222	33,699	36,290	38,906
China (Region)	17,000	17,856	17,544	18,629	19,510	19,941	22,349	23,031	25,866	27,998	30,222	33,699	36,290	38,906
Non OECD Total	1,195,000	1,222,285	1,208,228	1,207,697	1,187,217	1,213,900	1,256,200	1,254,202	1,301,567	1,356,546	1,423,463	1,441,536	1,500,183	1,592,478
World	2,075,795	2,125,244	2,129,436	2,166,046	2,182,505	2,223,386	2,318,666	2,320,893	2,374,007	2,439,407	2,531,497	2,570,610	2,621,858	2,718,810

Appendix N

Energy End-Use Prices (national currency per unit)

Source : International Energy Agency at <http://www.iea.org/>

PRODUCT	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
COUNTRY														
Australia
Austria	135.75	139.10	145.71	132.26	125.94	126.09	126.45	129.72
Belgium	c	c	c	c	c	c	c	c	116.39	101.81	103.50	103.12	110.78	115.15
Canada
Czech Republic	..	5,587.00	5,723.00	5,681.00	5,928.00	5,704.00	4,941.00	5,157.00	4,824.00	4,456.00	4,180.00	3,949.00	3,829.00	3,841.00
Denmark	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Finland	..	117.15	120.53	115.62	121.76	122.82	101.15	107.83	111.95	104.98	97.26	82.95	84.93	79.86
France	..	199.87	202.78	182.41	209.02	182.03	127.00	130.79	136.52	126.29	122.51	119.99	123.44	123.30
Germany	178.70	127.31	138.51	146.89	133.70	130.33	131.86	136.87	138.71
Greece	..	187.00	196.00	192.00	206.00	211.00	136.00	117.00	147.69	x	x	x	x	x
Hungary	69,176.76	49,663.25	41,935.50	37,065.75	35,286.75	30,949.75	31,983.00	31,029.00	27,063.00	16,152.00	13,275.00	11,757.00	11,757.00	12,096.00
Ireland	..	234.83	205.90	195.00	160.30	123.90	154.65	153.13	252.17	252.17	252.17	252.17	253.19	254.20
Italy	c	c	c	c	c	c	c	138.72	154.12	144.36	132.02	117.13	107.72	98.88
Japan	..	40,412.00	42,488.00	42,607.00	47,027.00	46,476.00	41,852.00	44,377.00	53,390.00	44,694.00	44,806.00	46,262.00	50,194.00	53,650.00
Korea
Luxembourg
Mexico	2,214.71	1,185.32	1,527.11	1,418.28	843.21	744.88	787.19	678.54	395.34	269.99	283.00	236.08
Netherlands	185.41	163.54	185.50	170.43	99.66	110.05	116.81	107.70	106.39	95.11	97.31	89.74
New Zealand	..	494.70	431.00	388.50	368.00	369.10	372.40	371.80	316.40	296.40	290.00	284.90	283.20	286.20
Norway	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Poland	..	655.05	684.05	706.55	709.84	578.13	482.92	460.97	428.04	373.16	314.62	262.40	210.31	160.95
Portugal	..	230.07	254.56	252.67	..	..	..	..	..	x	x	x	x	x
Slovak Republic	..	7,832.00	8,108.00	6,015.75	5,152.25	4,689.75	4,411.00	4,391.25	3,978.54	3,816.21	3,799.43	3,637.16	3,516.57	2,877.00
Spain	..	173.57	180.53	175.58	196.55	190.29	123.37	123.70	137.08	128.45	119.19	109.15	97.17	92.47
Sweden
Switzerland	..	434.10	427.00	430.30	495.40	373.00	319.60	341.90	340.10	333.20	346.20	360.40	386.50	382.70
Turkey	..	264.48	284.31	272.18	209.17	101.30	62.98	41.55	27.97	14.14	6.67	3.88	1.62	0.87
United Kingdom	..	104.61	94.07	90.58	92.74	69.17	63.58	65.64	62.21	58.98	80.60	92.44	91.60	93.18
United States
Brazil	100.42	108.15	116.02	118.15	..	..	..
China (PRC)
Chinese Taipei	11,868.26	10,722.69	9,903.09	8,943.50	9,193.00	8,691.00	7,505.00	8,316.00	8,280.00	7,238.00	7,235.00	6,983.00	7,317.00	7,329.00
Cyprus
Estonia

PRODUCT	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
COUNTRY														
Australia	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Austria	141.35	128.78	120.85	131.97	136.04	197.16	253.77	236.19	227.03	248.40	206.39	143.67	118.46	100.14
Belgium	134.78	119.61	111.30	104.49	115.54	171.69	259.22	253.02	227.14	211.70	154.81	109.89	78.04	72.09
Canada	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	4,085.00	2,171.00	2,134.00	2,939.00	2,988.00	2,988.00	2,988.00	..	..	..	..	..	..	..
Denmark	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Finland	80.58	77.70	73.63	70.69	87.34	114.97	170.32	173.27	178.45	166.04	168.37	125.15	69.19	68.59
France	130.12	128.82	126.03	121.26	136.67	165.96	245.34	222.65	205.10	187.73	154.43	113.47	74.47	67.73
Germany	152.16	139.48	122.91	127.03	140.67	218.39	278.47	262.89	245.91	256.86	188.58	145.87	113.28	109.93
Greece	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hungary	12,472.00	8,290.00	5,690.00	5,576.00	5,426.00	5,125.00	4,748.00	4,559.00	4,559.00	4,220.00	3,542.00	2,788.00	..	..
Ireland	254.20	254.20	254.20	254.20	252.68	316.36	322.35	307.12	368.11	551.07	551.07	403.32	155.90	161.07
Italy	100.00	91.77	76.38	60.37	79.17	78.02	162.05	164.04	139.21	122.87	115.00	76.69	50.44	36.57
Japan	55,456.00	58,000.00	60,694.00	60,780.00	71,060.00	84,660.00	98,890.00	102,610.00	106,750.00	109,120.00	108,590.00	100,400.00	81,090.00	80,720.00
Korea	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..	..	..	292.51	207.83	125.81	88.62	..
Mexico	212.90	249.77	249.77	188.10	87.40	43.14	18.58	10.37	4.08	1.02	0.53	0.41	0.33	0.31
Netherlands	102.92	100.38	99.28	98.80	102.60	142.34	236.18	238.31	205.87	208.86	187.42	131.75	99.15	
New Zealand	286.00	267.60	264.90	280.50	236.20	198.00	174.70	149.30	135.10	135.20	132.10	118.50	81.00	
Norway	x	x	x	x	x	x	x	x	x	x	x	x	x	
Poland	138.31	77.47	8.81	3.99	2.47	1.72	1.47	1.10	0.91	0.76	0.21	0.20	0.20	
Portugal	x	x	x	x	x	x	x	x	x	x	x	x	x	
Slovak Republic	3,018.50	1,777.50	1,746.00	2,414.00	2,448.00	2,448.00	2,448.00	2,154.00	1,851.00	1,566.00	1,272.00	976.00	903.00	
Spain	93.63	100.25	107.45	106.18	110.38	158.55	204.27	232.79	221.23	201.04	177.84	95.38	62.05	
Sweden	..	..	..	..	..	..	..	..	..	..	..	..	..
Switzerland	371.30	321.10	329.60	342.70	385.70	525.50	609.60	614.20	624.00	601.60	488.80	410.00	362.70	
Turkey	0.54	0.31	0.23	0.19	..	..	..	..	..	..	..	..	..
United Kingdom	90.06	89.21	87.42	92.09	93.83	101.40	113.71	103.43	95.40	91.17	83.44	69.72	51.98	
United States	..	..	..	..	..	..	..	..	..	..	..	..	..
Brazil	..	..	..	..	..	..	..	..	..	..	..	..	..
China (PRC)	..	..	..	..	..	..	..	..	..	..	..	..	..
Chinese Taipei	7,797.00	7,797.00	7,571.00	7,571.00	8,094.00	9,284.00	10,675.00	10,630.00	10,630.00	10,630.00	10,630.00	9,519.00	7,000.00	
Cyprus	..	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..	..	..	..	..	..

PRODUCT	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
COUNTRY														
India	1,660.47	1,660.47	1,660.47	1,660.47	1,391.13	1,238.51	1,172.10	976.75	976.75	..	..	..
Indonesia
Kazakhstan
Latvia
Lithuania
Malta
Romania
Russia	62.32	49.45	45.72	27.94	15.27	..	..	..
Slovenia
South Africa
Thailand
Venezuela

PRODUCT	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
COUNTRY														
India	
Indonesia	
Kazakhstan	
Latvia	
Lithuania	
Malta	
Romania	
Russia	
Slovenia	
South Africa	
Thailand	
Venezuela	

Statistical Tests

Test 1 : Correlation

Variables :

- (a) World demand for gas (dem_worl)
- (b) US demand for gas (dem_US)
- (c) World demand for gas in the chemical industrial sector (dem_chem)
- (d) Impact of the demand for gas on demand for land in ECIC in the same year (LAG_0)
- (e) Impact of the demand for gas on demand for land in ECIC after one year (LAG_1)
- (f) Impact of the demand for gas on demand for land in ECIC after two years (LAG_2)

		DEM_US	DEM_WORL	DEM_CHEM	LAG_0	LAG_1	LAG_2
DEM_US	Pearson Correlation	1	.978	.886	.618	.774	.727
	Sig. (2-tailed)	.	.000	.000	.043	.005	.011
	N	11	11	11	11	11	11
DEM_WORL	Pearson Correlation	.978	1	.916	.586	.833	.775
	Sig. (2-tailed)	.000	.	.000	.058	.001	.005
	N	11	11	11	11	11	11
DEM_CHEM	Pearson Correlation	.886	.916	1	.511	.833	.649
	Sig. (2-tailed)	.000	.000	.	.109	.001	.031
	N	11	11	11	11	11	11
LAG_0	Pearson Correlation	.618	.586	.511	1	.192	.183
	Sig. (2-tailed)	.043	.058	.109	.	.571	.591
	N	11	11	11	11	11	11
LAG_1	Pearson Correlation	.774	.833	.833	.192	1	.686
	Sig. (2-tailed)	.005	.001	.001	.571	.	.020
	N	11	11	11	11	11	11
LAG_2	Pearson Correlation	.727	.775	.649	.183	.686	1
	Sig. (2-tailed)	.011	.005	.031	.591	.020	.
	N	11	11	11	11	11	11

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Conclusion

There is strong correlation between demand for gas (world, US and for the chemical industry) and demand for industrial sites in ECIC.

Test 2 : Cross Tabulation

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AREA * NO_PLANT	15	100.0%	0	0%	15	100.0%

Note : AREA = acreage

NO_PLANT = number of plants on each site

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	66.000	60	.277
Likelihood Ratio	43.646	60	.944
Linear-by-Linear Association	1.219	1	.270
N of Valid Cases	15		

a. 78 cells (100.0%) have expected count less than 5. The minimum expected count is .07.

Conclusion

There is some (no strong) relationship between area of land and number of plants.

**Qualitative, Triangulation and Descriptive Quantitative Data Analyses
(Analyses of Data from Interviews and Official Records)**

Table A : Analysis of Factors Attracting Investment in the East Coast Industrial Corridor
(the numbers at the bottom of cells refer to paragraph numbers in Appendix K)

	Most Important	Also Important	Not Important
B1	1. Feedstock that is: <ul style="list-style-type: none"> (a) supplied and processed at the same location; (b) cheaper than in Western countries; (c) price is negotiated and not dependent on the world price; 2. Integrated site where supplier and supporting industries are located under one roof. This includes GPP, CUF, CTF, crackers to produce ethylene, storage, a dedicated port, utility companies to produce industrial water and oxygen, and fire service. <p align="center">19.2(b)(i)</p>	1. Supply of competent labour, i.e. have basic knowledge in industry, can speak English and easy to train. 2. Reliable supporting operators <p align="center">19.2(b)(i)</p>	1. Quality of government service; 2. Land price <p align="center">19.2(b)(i)</p>
B5			
B6	Certainty in long-term feedstock supply <p align="center">22(b)(i)</p>	Area of land for future expansion Good infrastructure Accessibility of port <p align="center">22(b)(i)</p>	Land price <p align="center">22(b)(i)</p>
B7	Feedstock in large volume supplied in an integrated complex. <p align="center">26.1(b)(i)</p>	Infrastructure and labour <p align="center">26.1(b)(i)</p>	Domestic political change <p align="center">26.1(b)(i)</p>
B8	Feedstock <p align="center">24.2</p>	Gas handling facilities <p align="center">24.3</p>	Land Price <p align="center">24.2</p>
B9	1. Efficient government; 2. Infrastructure for particular industry <p align="center">25.2(b)(i)</p>	Facilities for workers, e.g. sufficient number of residential houses close to industrial site as well as shopping facilities. <p align="center">25.2(b)(i)</p>	Land <p align="center">25.2(b)(i)</p>

	Most Important	Also Important	Not Important
B10	Feedstock 23.3	Peace and political stability Government support 23.2, 23.5	Domestic political change 23.7
B11			
B12	Feedstock –constant supply and cheap 28.1(a)(i)	Political stability Labour supply Infrastructure 28.1(a)(i)	Domestic demand for chemical product 28.1(a)(i)
B13	Feedstock 29.2(b)(i)	29.2(b)(i)	Domestic political change 29.2(b)(i)
B14	Government incentives Infrastructure 30.1(b)(i)	Labour supply Accessibility Port facilities 30.1(b)(i)	30.1(b)(i)

Table B : Summary of Factors of Attraction for Investment in the East Coast Industrial Corridors

Most Important	Also Important	Not Important
<p>1. Feedstock that is:</p> <ul style="list-style-type: none"> (a) guaranteed volume over a long period (b) supplied and processed at the same location; (c) cheaper than in Western countries; and (d) price is negotiated and does not dependent on the world price. 	<p>1. Good infrastructure, facilities and service that include:</p> <ul style="list-style-type: none"> (a) Integrated site where supplier and supporting industries are located under one roof. Including GPP, CUF, CTF, crackers to produce ethylene, storage, dedicated port, utility companies to produce industrial water and oxygen, and fire service. (b) Facilities for workers, e.g. sufficient number of residential houses close to industrial site as well as shopping facilities; (c) Reliable supporting operators <p>2. Peace and political stability;</p> <p>3. Semi-skilled labour;</p> <p>4. Government support;</p> <p>5. Government incentives.</p>	<p>1. Domestic political change;</p> <p>2. Land, including land price;</p> <p>3. Quality of government service; and</p> <p>4. Domestic demand for chemical product</p>

Table C : Roles Played by Departments Involved in Land Development

Departments and Functions	Reference to paragraph number in Appendix K	Validation
<p>1. Terengganu SEPU</p> <p>In land development, the SEPU:</p> <ol style="list-style-type: none"> 1. Provides physical infrastructure for industrial areas within industrial zones; 2. Negotiates, on behalf of the state government with investors; 3. Receives and evaluates applications; 4. Comments applications for private land conversion that are submitted to the Land Office; 5. Forwards applications to the State Investment Committee 6. Is an 'ex-officio' member of all Local Authorities and participates in approvals of building plans; and 7. Implements the Small and Medium Industrial (SMI) Plan. <p>In essence, this department functions as a facilitator for investors and communicator between investors and the decision-making body (EXCO).</p>	1.2(a)(i)	Statement is credible because there is consensus among interviewees and the statement is consistent with official documents.
<p>2. Pahang SEDC</p> <ol style="list-style-type: none"> 1. Prepares industrial sites throughout the state and to sells them investors; 2. Negotiates with investors, on behalf of the state government <p>In essence, this department functions as a facilitator for investors and communicator between investors and the decision-making body (EXCO).</p>	2.2(a)(i) 3.3(a)(ii)	Statement is credible because there is consensus among interviewees and the statement is consistent with official documents.
<p>3. Office of the State Director of Lands and Mines (DLMO)</p> <p>DLMO advises the government regarding decision and mediates between government departments and the decision maker (EXCO). As 'the only communicator' between the EXCO and the Land Office, DLMO:</p> <ol style="list-style-type: none"> 1. Conveys 'EXCO's decision-in principle' to the Land Office, on applications submitted through the SEPU; 2. Receives EXCO papers from the Land Office, forwards them to the EXCO and conveys EXCO decisions to the Land Office; 3. Certifies all EXCO papers are fit to be submitted to the EXCO, that the papers follow a standardised format and procedures and that recommendations are: <ol style="list-style-type: none"> (a) consistent with land law; and (b) in harmony between government departments. <p>In essence, this department is the communicator between the Land Office and the decision-making body (EXCO).</p>	3.3(a)(ii) 7.3(a)(i), all cases in sec. B of Appendix I 3.3(a)(ii) all cases in sec. B and D2 of Appendix I	<p>No inconsistency among interviewees or between interviews and official records.</p> <p>All cases in sec. B and D2 of Appendix I indicate that EXCO papers bear signatures of:</p> <ol style="list-style-type: none"> (a) Land Administrator; (b) State Director of Lands and Mines; (c) the Clerk of Council

Departments and Functions	Reference to paragraph number in Appendix K	Validation
<p>9. Department of the Environment (DoE)</p> <p>In general, it functions as an industrial safety and health regulator. Its concern is public health and safety. In particular, in land development, the department;</p> <ol style="list-style-type: none"> 1. The reference point for the Land Office; 2. The reference point for SEPU; 3. Certifies EIA studies; 4. Is a reference department for PWD, DOSH and Health. 5. Is an industrial waste controlling authority and the industrial waste disposal licensing authority; 6. Member of the Post-EXCO Committee at the Municipality. <p>This department functions as a professional and technical advisor to the decision-making body (EXCO).</p> <p>10. Public Works Department (PWD) and Other Departments</p> <p>10.1.PWD</p> <p>In general, it functions to provide infrastructure (roads, bridges etc.) for the public (as well as public buildings [government offices, schools etc]). In particular, in land development, the department duties are to;</p> <ol style="list-style-type: none"> 1. Comment on proposals for land development if these affect public amenities; 2. Be the reference point for the Land Office and Local Authorities; 3. Be an 'ex-officio' member of the Local Authorities. <p>10.2.Other Departments</p> <p>Involvement by some technical departments was mentioned by interviewees. Evidence was also found in the files at Land Office which shows that some other departments are involved in providing information to the Land Office and the Local Authorities. These include:</p> <ol style="list-style-type: none"> 1. Fire Department; 2. DID; 3. Electricity Board; 4. State Water Supply Corporation; 5. Telecommunications; 6. Valuations Department; 7. Public Health Department. <p>These departments function as professional and technical advisors to the decision-making body (EXCO).</p>	<p>1.2(b)(i) 14.1(b)(i) 12.6(b)(ii)</p> <p>cases in sec. B of Appendix I</p> <p>7.3(a)(i)</p> <p>7.3(a)(i)</p>	<p>No inconsistency among interviewees or between interviewees and official records.</p> <p>No inconsistency with other information.</p>

Departments and Functions	Reference to paragraph number in Appendix K	Validation
<p>11. The SIC Seems to have <i>de-facto</i> authority over matters relating to industrial land. All EXCO decisions follow recommendations of the SIC.</p> <p>12. The FIC and MITI 12.1. FIC As a regulator, the FIC controls foreign equity in companies. The body has power to disallow foreign investors from bringing in capital or acquiring property in Malaysia.</p> <p>12.2. MITI As an industrial regulator, MITI is an industrial licensing body but has no jurisdiction over land matters.</p> <p>13. Petronas 1. As the key investor in Kerteh and Gebeng, this corporation has a role in land development, especially as:</p> <ul style="list-style-type: none"> (a) Negotiator with potential investors in the petrochemical industry, in particular in Kerteh; (b) First landowner of most land, subdividing and selling or leasing it to investors; (c) Mediator between new investors and authorities. <p>2. Prepares development plan for areas within Kerteh Petroleum Complex.</p> <p>3. Provides infrastructure for areas within and around Kerteh Petroleum Complex, but not in Gebeng Complex.</p> <p>4. Supplies feedstock.</p>	<p>1.2(b)(i)</p> <p>18.6 17.2(c)</p> <p>24.10</p> <p>6.1(c)(i) 21.2</p> <p>21.3 17.6 18.4</p> <p>21.2 26.6</p>	<p>Statement is acceptable as it is consistent with the minutes of the National Land Council as in Appendix C, in proceeding no. MTN Bil.5/54/1998. It also does not contradict with ex-Prime Minister's statement.</p>

Table D : Terengganu – Category of Service of Government Department Heads and Analysis of Government Interdepartmental Communication
(the numbers at the bottom of cells refer to paragraph numbers in Appendix K)

	CATEGORY OF SERVICE: A- Professional (P) Administrative (A) B-Appointed by Federal (F) State (S) C- Salaried by Federal (F) State (S)	Communication Must be Formal	Communication in Multiple Directions	Communication Must Use Proper Tool	Communication Must be Through Proper Channels	Communication Must be by Authorised Personnel or Body	Need to refer to HQ
DLMO	A-A B-S C-S		√ 7.4(a)(i)	√ 7.4(b)(i)			
DoE	A-P B-F C-F	√ 14.1(d)(iii)	√ 14.1(b)(iv)			√ 14.1(d)(iii)	√ 14.1(b)(iv)
DOSH	A-P B-F C-F		√ 11.2(b)(ii) 14.1(b)(i)				
DTCP	A-P B-F C-S		√ 10.2(b)(i)			√ 10.4(b)(ii)	
LOKm	A-A B-S C-S	√ 7.4(b)(i)	√ 7.4(b)(i)	√ 7.4(b)(i)	√ 7.4(b)(i)	√ 7.4(b)(i)	
MIDA	A-A B-F C-F		√ 12.7(ii)				
Municipality	A-A B-S C-S	√	√ 4.5			√ 4.4	
PWD	A-P B-F C-S	√ 15.2(a)(iv)	√ 7.3(a)(i)				
SEPU	A-A B-S C-S	√ 1.2(c)(iii)	√ 1.2(b)(i)		√ 1.1(c)(i)	√ 1.1(c)(i)	
Valuation	A-A B-F C-F					√ 13.2(d)(i)	√ 13.2(d)(i)

Table E : Length of Time Required by the Government to Process Applications for the Petrochemical Industry (Months)

		Initial Approval	Formal Application	Follow Up Decision	Statutory Offer	Land Registered	Plant On-Stream	Total Time At the Land Office
Site 1	Date	July 99	July 99	Nov. 99	Dec. 99	July 00	Dec. 2000	
	Time Required		1	4	1	7	5	12
Site 2	Date	July 99	July 99	Oct. 99	Dec. 99	July 2000	Dec. 2000	
	Time Required		1	3	2	7	5	12
Site 3	Date	July 93	July 93	Jun. 94	Oct. 94	Jan. 95	Dec. 99	
	Time Required		1	11	4	3	59	18
Site 4*	Date	Jan. 88	Jan. 88	Feb. 89	Mar. 89	Nov. 90	July 2000	
	Time Required		1	13	3	20	92	34
Site 5	Date	July 99	July 99	Nov. 99	Dec. 99	July 2000	Feb. 2002	
	Time Required		1	4	1	7	18	12
Site 6**	Date	Jun. 91	Aug. 92	Aug. 93	Sep. 93	Oct. 94	Sep. 95	
	Time Required		1	12	1	13	11	26
Site 7	Date	Mar. 81	Mar. 81	May 83	May 83	Mar. 84	Aug. 84	
	Time Required		1	25	1	10	5	17

Source: Extract from section A of Appendix I

Table F : Results of Descriptive Statistic Analysis on Data in Table E

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Initial approval to formal application	7	1	1	1.00	.000	.000
Formal application to final approval	7	3	25	10.29	7.740	59.905
Final approval to statutory offer	7	1	4	1.86	1.215	1.476
Statutory offer to registration	7	3	20	9.57	5.533	30.619
Registration to plant on-streaming	7	5	92	27.86	34.237	1172.143
Total length of time	7	12	34	18.71	8.420	70.905
Valid N (listwise)	7					

Source: Calculated from Table E

** TOR approved by EXCO

Table G : Length of Time to Process Applications for Land Conversion at the Kemaman Land Office

	N	Minimum	Maximum	Mean	Std. Deviation
Total length of all processes (months)	23	4	36	8.70	8.110
Time at the Land Office before approval (months)	23	1	35	6.87	7.990
Time at the land office after the approval (months)	24	0	4	1.42	1.018
Time taken by the Planning Authority (months)	10	1	26	4.90	7.622
Time taken by Department of Drainage and Irrigation (months)	24	1	3	1.21	.588
Time taken by Department of Public Works (months)	22	1	3	1.14	.468
Time taken by the Valuation Department (month)	23	1	8	1.83	1.527
Time taken by the Department of Town and Planning (months)	24	1	4	1.25	.676
Time between the Pre-EXCO Technical Committee and completion of the EXCO Paper (months)	20	1	20	2.70	4.118
Time between the completion of the EXCO Paper and the EXCO meeting (months)	21	1	14	2.00	2.811
Time between when a case is circulated and the Pre-EXCO Technical Committee meeting (months)	23	-1	14	2.00	2.892
Valid N (listwise)	7				

Source: Calculated from figures in section D2 of Appendix I

Table H : Constraints Faced by Parties Involved in Government Decision Making
(the numbers at the bottom of cells refer to paragraph numbers in Appendix K)

	Politics	Internal Limitations	External Limitation	Political Interference	Relation with other Departments	Work Norms	Budget & Manpower	A Need to Carry Out Investigation	Dependency Relationship
DoE		✓ 14.1(b)(iv)		✗ 14.1(d)(iv)	✗ 14.1(d)(iii)	✓ 14.1(d)(ii)	✗ 14.1(d)(iv)	✓ 14.1(d)(i)	✓ (14.1(b)(iv)
DLMO						✓ 7.4(a)(i)			
DTCP	✗ 10.4(b)(iv)	✓ 10.4(b)(ii)		✗ 10.4(b)(iv)		✓ (10.4(b)(v)	✓ 10.4(b)(iv)	✓ 10.4(b)(v)	
DOSH				✗ 11.2(b)(v)			✓ 11.2(b)(v)	✓ 11.2(b)(v)	
LOKM				✗ 7.3(b)(ii)		✗ (7.3(b)(ii))			✓ (7.3(b)(ii)
MIDA	✗ (12.7(i))		✓ 12.7(ii) 11.2(b)(ii)	✗ (12.7(i))	✗ (12.7(i))		✗ (12.7(i))		✓ 11.2(b)
Municipality		✓ 4.4	✓ 7.3(b)(i) 4.5	✗ 4.6			✓ 4.6		✓ 4.5
SEPU	✗ 1.1(c)(i)	✓ 1.1(c)(i)	✓	✗ 1.1			✗ (1.6(i))		✓ 1.1(c)(i)
PWD				✗ 15.2(a)(v)	✗ 15.2(a)(v)		✗ 15.2(a)(v)		
DoV		✓ 13.2(d)(i)				✓ (13.2(d)(ii))		✓ 13.2(d)(iii)(3)	
Hadi	✓ 17.2(b)			✗	✗				✓ 17.2(b)
Mahathir		✓ 18.7		✗					✓ 18.6

Table I : Analysis of Government Goals, Motives and Intentions

Interviewees' Replies	Appendix K	Validity (Triangulation)
<p>Replies from former Chief Ministers, SEPU, DLMO and the Land Office suggest that government efforts to attract investment are in expectation of revenues from quit rent and local authority taxes.</p> <p>MIDA which is a MITI arm functions as an industrial promoter which directly supports state governments.</p> <p>In addition to creating state revenue (and supporting policies for economic development), the Land Office, DLMO, the Local Authorities and the Town and Country Planning Department have another function. They co-ordinate the economic and other interest of departments.</p>	<p>1.2(a)(ii) 18.6 17.1 7.3(c)(i) 3.4 12.6(b)(i) 3.3(a)(i) 1.2(a)(ii)</p>	<p>The statements are credible because there is no inconsistency:</p> <p>(a) among the interviewees; or</p> <p>(b) between interviewees and official records.</p>
The FIC is responsible for controlling foreign equity.	17.2	Only interviewees No. A20 and A21 explicitly mentioned this. The minutes of the NLC (proceeding no. 5/54/1998) in Appendix C, supports this.
Although Petronas has a role in the land development process, it appears that maximum profit from oil and gas export is the company's main objective.	21.2	No inconsistency with ex-Prime Minister's statement and the fact that Petronas only allocates 30% of its natural gas for the petrochemical industry. The other 70% is sold as energy because the price is higher.
For politicians, even though income for the country is important, distribution of wealth among the people as well as between regions (as in the National Economic Policy) is the most important objective.	18.6 17.1 16.2	It is difficult to assess the credibility of the claim. However, it is consistent with the National Economic Policy.
Replies from DoE and DOSH indicate that their aim is to safeguard public safety. The public Works Department (PWD), Drainage and Irrigation Department, Telecommunications Department, Fire Department and Electricity Board objectives are similar. They aim to ensure that land development is consistent with present and future infrastructure plans.	14.1(b)(i) 11.2(b)(i) 15.2(a)(i)	This statement is found in interviewee No. A18. Although interviews with the Drainage and Irrigation Department, Telecommunications Department, Fire Department and Electricity Board however could not be conducted, their letters together with letters from PWD's were found in land applications for 'Site No. 7' and 'Site No. 2' (see Appendix I). Thus, the statements are consistent with each other and this finding is substantial.

* Note : Politicians and Petronas are included in this analysis

Table J : Analysis of Department Heads' Professional Training

Department/ Position	(a) Profession (b) Professional Training/ Qualification	Main sources of information	Other sources of information
Chair of Permanent Committee for Industrial and Tourism Development	(a) Politician (b) Unspecified		
State Secretary	(a) State Administrative Service Officer (b) No specialisation in training background. Some have degree in economics, science, law, social science, engineering etc. Some are professional by training. Their responsibilities are limited to matters within the state administration.	PWD DOSH DoE	http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/N/PegTadbir.asp
State Financial Officer			
State Director of Economic Planning Unit			
State Director of Lands and Mines			
Land Administrator			
Municipality President	(a) State Administrative Service Officer (b) No specialisation in the training background. Some have degree in economics, science, law, social science, engineering etc. Some are professional by training. Their responsibilities are limited to matters within the state administration		
State Legal Advisor	(a) Legal and Justice Service Officer (b) Law		http://www.interactive.jp a.gov.my/ezskim/Klasifikasi/L/Peg_UndangU ndang.asp
MITI	(a) Administrative and Diplomatic Service Officer (b) No specialisation in the training background. Some have degree in economics, science, law, the social science, engineering etc. Some are professional by training. Their responsibilities cover all government matters - domestic and international.		http://www.interactive.jp a.gov.my/ezskim/Klasifikasi/M/PTD.asp
FIC			
MIDA			
Department of Industrial Safety and Health	(a) Engineer (b) Mechanical engineering	11.1 (Appendix K)	http://www.interactive.jp a.gov.my/ezskim/Klasifikasi/J/PemeriksaKilangJentera.asp

Department/ Position	(a) Profession (b) Professional Training/ Qualification	Main sources of information	Other sources of information
Public Works Drainage and Irrigation	(a) Engineer (b) Civil engineering	15.1(Appendix K)	http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/J/Jurutera.asp
Valuation	(a) Property Valuers (b) B.Sc in Property Management	13.1(Appendix K)	http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/W/PegPenilaian.asp
Department of the Environment	(a) Scientist (b) B.Sc (Hons) in Chemistry, Biology, Physic or Ecology		http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/C/PegawaiKawalanAlam.asp
Department of Health	(a) Health Officer (b) Hons degree in Medicine		http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/U/PegPerubatan.asp
Town and Country Planning	(a) Town Planner (b) Bachelor in Town and Regional Planning		http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/J/Peg_PerancangBandar.asp
Fire Department	(a) Fireman (b) Any degree		http://www.interactive.jpa.gov.my/ezskim/Klasifikasi/K/PenguasaBomba.asp

Table K : Investors' Perceptions of Government Departments

Interviewee	Critiques	Praises	Costs
B1	Too much interference in the industry (19.12) Changes are too slow because of bureaucracy (19.13)		<ul style="list-style-type: none"> Costs of shut-down – each shut-down costs about USD 1 million. Costs of interface – some government policies require participation of local companies. Consequently, formation of a joint-venture company is a pre-requisite. <p>Both types of costs create additional operating costs. As these are substantial, firms are less competitive in the global market (19.12; 19.13; 19.14).</p>
B5	Change of policy on land price was too late (21.4)	State of Terengganu (21.3)	
B6	Some government decisions are nonsense (22.7)	MIDA (22.4)	
B7	State of Pahang (23.6)	MIDA (23.2) State of Terengganu (23.7)	
B8	Land Office and Local Authority (24.6(a)(iv)) There are some corrupt practices in government (24.10)	MIDA (24.6(a)(iv))	Companies have to bear the cost of corruption (24.10)
B9	Local authority service; and State of Pahang (25.2(b)(iv))	DOSH (25.2(b)(iv)) State of Terengganu (25.2(b)(iv))	Investors have to bear the cost of government inefficiency. For example, in the event of water supply shortage, as happens frequently, factories have to buy raw water in large volumes and at a high cost (25.2).
B10	State of Pahang (26.1(b)(iv))	MIDA and Minister of MITI (26.4)	Investors have to bear the cost of government inefficiency. For example, low water pressure limits factories' production (26.4).
B11	No comment	No comment	
B12	No comment	No comment	
B13	State of Pahang (29.2)	MIDA(29.2) DOSH(29.2) DoE(29.2)	Firms have to bear the cost of fulfilling the unrealistic demands of certain government departments (29.2).
B14	Customs Department, Local Authority; and Inland Revenue Department (30.3).	MIDA(30.2)	Lack of understanding among government officials causes delays in the shipment of factory products (30.3).

Summary of Investors' Perceptions of Government Departments	
Critiques	Praises
Generally: Corrupt practices. Inefficiency. Lack of understanding. Lack of responsiveness.	Very efficient, understanding and responsive: MIDA; and Government of Terengganu.