



THE IMPACTS OF SERI TANJUNG PINANG COASTAL
RECLAMATION ON THE SOCIAL ECONOMY OF THE
COMMUNITY IN TANJUNG TOKONG, PENANG

BY

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ABSTRACT

The value of a coastal area is significant not only as economy resources but also as environmental safety measure it provides. However, coastal area is very sensitive to any imposed humans' development and its alteration not only affects the environment but also local community. The impacts of coastal reclamation can be seen not only to the environment but are being felt on much larger scale to the extent of socio economy of the community. This research draws literatures on the impacts of coastal reclamation from the socio economy point of views. This study aimed to investigate the impacts of coastal reclamation on the socio economy components of the community in Tanjung Tokong, Penang. It identified the affected socio economy components of the Tanjung Tokong community. Furthermore, the research investigates the most significant impact among the identified components. Apart from it, this research will propose policies on minimizing the impact of coastal reclamation to the communities' socio economy. This research adopted the Socio-economy Impact Assessment (SEIA) approach, whereby the components includes demography, employment and income, residential, public facilities and service, aesthetic quality, quality of life and sense of belonging. The research methodology engages qualitative and quantitative methods consist of review of literature, questionnaire survey and interviews. The data collected from the questionnaire survey was analyzed using Statistical Package for Social Science (SPSS) and interviews adopted Kruger's framework analysis. Among the analysis used were Crosstabulation and Spearman's Rank Order Correlation (ρ). The findings has been able to indicate the significant impacts of coastal reclamation to the Tanjung Tokong community. It shows that among all the variables involved aesthetic quality affected community the most. Finally the research proposed several policies enhancement such as public participation, community database, tourism business and constant observation.

ملخص البحث

تغطي المنطقة الساحلية بقيمة عظيمة، ليس فقط باعتبارها مورداً اقتصادياً مهماً، بل أيضاً لما تمثله من إجراءات السلامة البيئية التي تقدمها، ومع ذلك، فإن المنطقة الساحلية تتميز بالحساسية الشديدة تجاه أيّ تغيرات تفرضها التنمية بشرية، وهذه التغيرات لا تؤثر فقط على البيئة، بل تتعداها إلى المجتمع المحلي بأكمله، ويمكننا رؤية آثار الاستصلاح الساحلي التي لا تقتصر على البيئة فقط، بل تظهر آثاره على نطاق أوسع من ذلك بكثير، قد يصل إلى حد التأثير على الاقتصاد الاجتماعي للمجتمع بأكمله. وتعتمد أدبيات هذا البحث على مناقشة آثار الاستصلاح الساحلي وفقاً لوجهات نظر الاقتصاد الاجتماعي. وتهدف هذه الدراسة إلى التحقق من آثار الاستصلاح الساحلي على مكونات الاقتصاد الاجتماعي للمجتمع في مدينة (تانجونج توكونج)، بولاية (بينانج)، وتحديد المكونات الاجتماعية والاقتصادية التي أصابها الضرر في مجتمع (تانجونج توكونج). إضافة إلى ذلك، فإن البحث سيتحقق من تلك العناصر التي سيكون لها الأثر الأكبر لهذا الأضرار. وبغض النظر عن كل ذلك، فإن هذا البحث سيقترح مجموعة من السياسات التي تقلل من تأثير عملية الاستصلاح الساحلي على الاقتصاد الاجتماعي في المجتمعات المحلية. وقد اعتمد هذا البحث على نظام تقييم الأثر الاجتماعي والاقتصادي للمجتمعات المحلية (SEIA)، والذي تشمل مكوناته على التركيبة الديمغرافية، والعمالة والدخل، والسكان، والمرافق والخدمات العامة، ومعايير الجودة الجمالية، وتحسين نوعية الحياة، والشعور بالانتماء. أما منهجية البحث فتشتمل على المنهجين: الكمي والكيفي، والتي تتضمن استقراء الدراسات السابقة وتحليل الاستبيانات وإجراء المقابلات. وقد تم تحليل البيانات التي تم جمعها من الاستبيانات عن طريق استخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS)، في حين تم تحليل المقابلات عن طريق استخدام الإطار التحليلي لـ (كروجر). ومن بين أنظمة التحليل التي تم استخدامها تبويبات (كروس) ومعامل الارتباط لـ (سبيرمان). وقد أشارت النتائج إلى وجود تأثيرات كبيرة لعمليات الاستصلاح الساحلي على مجتمع (تانجونج توكونج)، والتي أكدت على أنّ المتغيرات المعنية بمعايير الجودة الجمالية كان لها التأثير الأكبر على المجتمع من بين جميع المتغيرات. وختاماً فإنني أقترح إجراء عدة بحوث لدراسة أثر السياسات التعزيزية، مثل المشاركة العامة، وبناء قاعدة بيانات للمجتمع ورجال الأعمال والسياحة، مع الملاحظة المستمرة.

APPROVAL PAGE

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DECLARATION

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LIST OF ABBREVIATIONS

AWB	Asian Wetland Bureaus
EB	Endowment Board
EIA	Environmental impact Assessment
EEZ	Exclusive Economy Zone
GDP	Gross Domestic Product
ICZM	Integrated Coastal Zone Management
JKK	Jawatan Kuasa Kampung
NATMANCOM	National Mangrove Committee
SPSS	Statistical Package for Social Science
SMEs	Small and medium enterprises
SEIA	Socio Economy Impact Assessment
TOLs	Temporary occupation license
UNESCO	United Nations Educational, Scientific and Cultural Organization

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The chapter provides an overview of the research development process. It presents the research background, problem statements, research aim, research objectives, the scope and limitation of the study, significant of research, structure of thesis and flow of research.

1.2 RESEARCH BACKGROUND

Rapid economic development in recent years in many countries has created the need of more land especially land near to the developed areas. As most of the developed areas are located close to the coastline, one of the options to create more land is to reclaim coastal area (Chen & Tan, 2012). Coastal reclamation usually takes place at a densely populated area where flat land is scarce. The most well known examples are the Kansai International Airport and Hong Kong International Airport, The Palm Islands, The World and hotel Burj al-Arab of Dubai in the United Arab Emirates. Reclamation of coastal land relates to issues such as marine pollution, deterioration in wetland, natural scenery, mangrove protection, coral reef ecosystem, aquatic resources exploitation, beach mining, offshore oil exploration, fisheries, recreational activities, housing and industrial activities.

Reclamation activity also may come at a price in terms of its adverse impact to the local people. It mainly arises from the loss of coastal resources and the ecosystem services that they provide as well as from the adverse impacts of landfill quarrying

and the development that was brought to the area. The development of such natural area reduces recreational opportunities, for example the access of amateur fisherman to water bodies for fishing, as well as reduced birdlife whereby is regarded as a loss by nature lovers. The external loss may well be very high that the area should remain undeveloped, or the external costs may dictate less development from a social viewpoint than would occur privately (Tisdell, 1993). However, many of the ecological goods and services that provided by wetlands are often nonmarketable and may take the form of a public good such as people's preferences for them. This service is often does not have a market price and their values are therefore underappreciated.

The impacts of coastal reclamation to the environment is very certain and almost impossible to avoid. A number of recent studies shown that coastal reclamation is one of the major culprits responsible for the loss of intertidal flats and other coastal resources in East and Southeast Asia (Kawabe, 1998; Hwang, 1999). Intertidal reef areas are often the first to be targeted for reclamation from an engineering perspective because they are convenient and cost effective to landfill. For example, a case in Japan's Tokyo Bay where massive reclamation projects has been responsible for a decrease in the total area of intertidal flats of more than 90%. The extent of the problem in Japan is such that several artificial intertidal flats (also known as tidelands) have been constructed for recreational purposes (Kawabe, 1998). Intertidal reef areas are unique and highly productive ecosystems that provide a habitat for a vast variety of creatures that includes shellfish, fish, and waterfowl. These areas may be categorized as marine wetlands. According to Pearce and Turner (1990), they also provide various valuable ecosystem services such as:

1. Shoreline protection and storm damage buffer zones;

2. Fisheries and fish nurseries;
3. Nutrient cycling and storage and related pollution control;
4. Commercial goods output; and
5. Extended food web control.

The loss of intertidal flats and coral areas are among the major environmental costs of coastal reclamation which could affect the socio economy of the community. However, the socio economy problems are not just limited to the impacts to coastal and marine ecosystems. In many cases, coastal reclamation projects require significant, quarrying activity to take place. Millions of cubic meters of quarried landfill are often necessary. As pointed out by Matsuoka (1994), the impacts of reclamation activity are not only from the opportunity costs associated with the loss of the sea surface area, but also include costs associated with landfill gathering, the destruction of corals by dredging operations and any temporary increase in noise and dust pollution caused by construction work and affected not only the environment but also gives a negative psychological and physical impact to the people around. There are also impacts from the additional air and marine pollution produced by the human activities that accompany the land creation work. Matsuoka (1994) summarizes and categorizes the various environmental impacts and environmental costs of reclamation activity;

1. Loss of sea surface area;
2. Impacts of building work;
3. Impacts of additional human activity on newly created land;
4. Loss value from ecosystem goods and services provided by intertidal reef areas;
5. Damage to adjacent coral;

6. External costs of landfill quarrying;
7. Increase in noise pollution and other temporary effects; and
8. Additional air and marine pollution.

The official rationale for most development decisions including the one to undertake reclamation projects is often economy. If the environmental and social imprint of reclamation activities are not taken into account, the project may tend to overstate the economic benefits of the reclamation project and understate the consequences, making it appear desirable only from an economic welfare perspective. The failure to measure and account for environmental damage can therefore lead to the unnecessary depletion, degradation and over-exploitation of natural resources (Barbier 1998; Goulder and Kennedy 1998).

1.3 PROBLEM STATEMENT

The alteration of coastal would change the environment thus severely affect local people. There will be changes in short and long term way of life. Coastal reclamation invites more people to reside in the area. It may create new employment and generate a better and easier income for the community. The rigid coastal view will be replaced by the new waterfront upfront. The land property will begin to grow and be beneficial to some locals in terms of property exchanges.

However, as people move in, the impacts to the community is ruthless. The loss of coastal resources would affect others whom their live depends on it. A study by Ramly (2008) highlights that reclamation and dredging process caused outslip of silt which turned out to be the loss to fisherman. There are also evidence showing the salinity of the ground-water increase after reclamation and could destroy coastal vegetation. In Tanjung Tokong, the 4,000,000 m³ of fill material are expected to

impact the coastal hydraulics, environment and ecosystem (Ramli, 2008). Therefore, those fisherman and farmers will turn into a new type of employment to sustain their family life.

As the natural ecosystem changes, public health also will be disturbed. Thus increases the family spending and affects quality of life. Migration in and out will occur, thus, changes the surrounding economy, demographic and increases sea pollution as water been discharged into the sea. With the loss of coastal area, the aesthetic quality is also affected. The original activities and view of the coast is destroyed.

As in Tanjung Tokong, the communities were disturbed with the Seri Tanjung Pinang reclamation. There is changed in short and long term which could not be avoided as the reclamation continues. Among other issues highlighted in Tanjung Tokong reclamation EIA report namely Tanjung Tokong Land Reclamation Project Pulau Pinang are the loss of fishing area, recreation area, fisherman loss of income loss of job opportunity, silt deposition, bacteria boost, turbidity increases and negatively affected scenic beauty.

1.4 RESEARCH AIM

This study aimed is to investigate the socio economy impacts of coastal reclamation towards the community in Tanjung Tokong, Penang.

1.5 RESEARCH QUESTIONS

1. What are the socio economy components that was affected by Seri Tanjung Pinang reclamation project;

2. What are the relationships among each socio economy components in determining the impacts; and
3. How to minimize the socio economy impact of Seri Tanjung Pinang coastal reclamation.

1.6 RESEARCH OBJECTIVES

1. To identify socio economy components among Tanjung Tokong community that was affected by Tanjung Tokong coastal reclamation;
2. To investigate the relationship among socio economy components in Tanjung Tokong coastal reclamation; and
3. To proposed an improvement of policies on minimizing the impact of coastal reclamation to the community socio economy.

1.7 RESEARCH SCOPE AND LIMITATION

This research concentrates only on Tanjung Tokong community as Tanjung Tokong is one of the on-going coastal reclamation projects in Malaysia. Therefore, the impacts on the community and the change in communities' livelihood can be expected. Furthermore this research identified the socio economy components of community in Tanjung Tokong and investigates the relationship among those components in determining the impacts. There are only seven components focused in this research which are demographic, employment and income, residential, public service and facilities, aesthetic value, quality of life and sense of belonging. Therefore it is more relevant to target the community in Tanjung Tokong as they are close to the area and is directly influenced by the projects as compared to other area.

1.8 SIGNIFICANCE OF RESEARCH

Most of the research on the coastal reclamation impacts concern on the impacts of the development to the physical environment. There are very few studies focused on the impacts to community especially in Malaysia context. Therefore, it is very important to initiate this research as coastal reclamation has become one of the major solutions in overcoming the land shortage especially in Penang where it was ranked amongst the fastest economically growing area in Malaysia. Penang also is famous among tourist as an attractive island and a modern develop city (Ramli, 2008). Moreover, Penang had been declared by United Nations Educational, Scientific and Cultural Organization (UNESCO) as one of the historic cities in Malaysia after Malacca.

A coastal reclamation project was approved by Penang government to meet the demand of urban development. However, very few noticed the impacts of the projects to the community nearby and how the communities' socio economy been affected due to it. Coastal management also always concentrates on environmental resource elements and rarely being integrated in the town planning system (Asmawi, 2011). Thus, it is hoped that this research can provide towards a better understanding on the community part thus, provide a mitigative solution in minimizing the impacts to the affected community.

1.9 STRUCTURE OF THESIS

This research has been divided into seven chapters. Chapter One highlights the structure of the study. The topics are divided into Research Background, Problem statement, Research Goal, Objectives, Research Scope and Limitation, Significant of Research, Organization of Thesis and Flow of Research.

Chapter Two focuses on reviews of various literatures derived from books, journal, articles, newspapers, government reports and other reliable sources. This chapter is important in providing a basic understanding on the topics studied and defining the variables of this research. Most of the review highlights the situation on Asian region to illustrate the Malaysia environment and most importantly gives a basic understanding on the socio economy in relation to the coastal reclamation and environment.

Chapter Three introduced Penang as a developed state in north of Malaysia and highlighted the studied area, which is Tanjung Tokong. The components in this chapter focus on the community and reclamation development. In addition, it discussed the development of Seri Tanjung Pinang which is the reclamation projects in Tanjung Tokong.

Chapter Four explains the detail of the research methodology. The development of research is done through literature review as secondary data and the primary data was collected using questionnaire survey and interview methods. It elaborates on the procedure required for data collection and types of analysis used. The questionnaires were analyzed using Statistical Package for Social Science (SPSS) and the interviews were analyzed using Kruger's framework analysis.

Chapter Five presents the findings of questionnaire survey and were explained using findings presented in tables, charts and figures. The results obtained from questionnaire surveys answer the research objectives. It reports on the current socio economy of the respondents, the impacts of reclamation on the socio economy and the sense of belonging of community after the coastal reclamation. This chapter also demonstrates the findings and discussion from the interview analysis which involve interviewees from various backgrounds. Response from the interview helps in

identifying reasons on issues and collects opinion of the community which could not be gathered through questionnaire survey.

Finally, Chapter Six summarizes the findings of the research and conclude the research. This chapter suggested a policy implementation for betterment in a future coastal reclamation. A recommendation for future study also was recommended. A simultaneously concludes the findings of the research according to the derived research objective in Chapter 1.

1.10 FLOW OF RESEARCH

The flow of this research from the beginning towards the end is summarized in the Figure 1.1

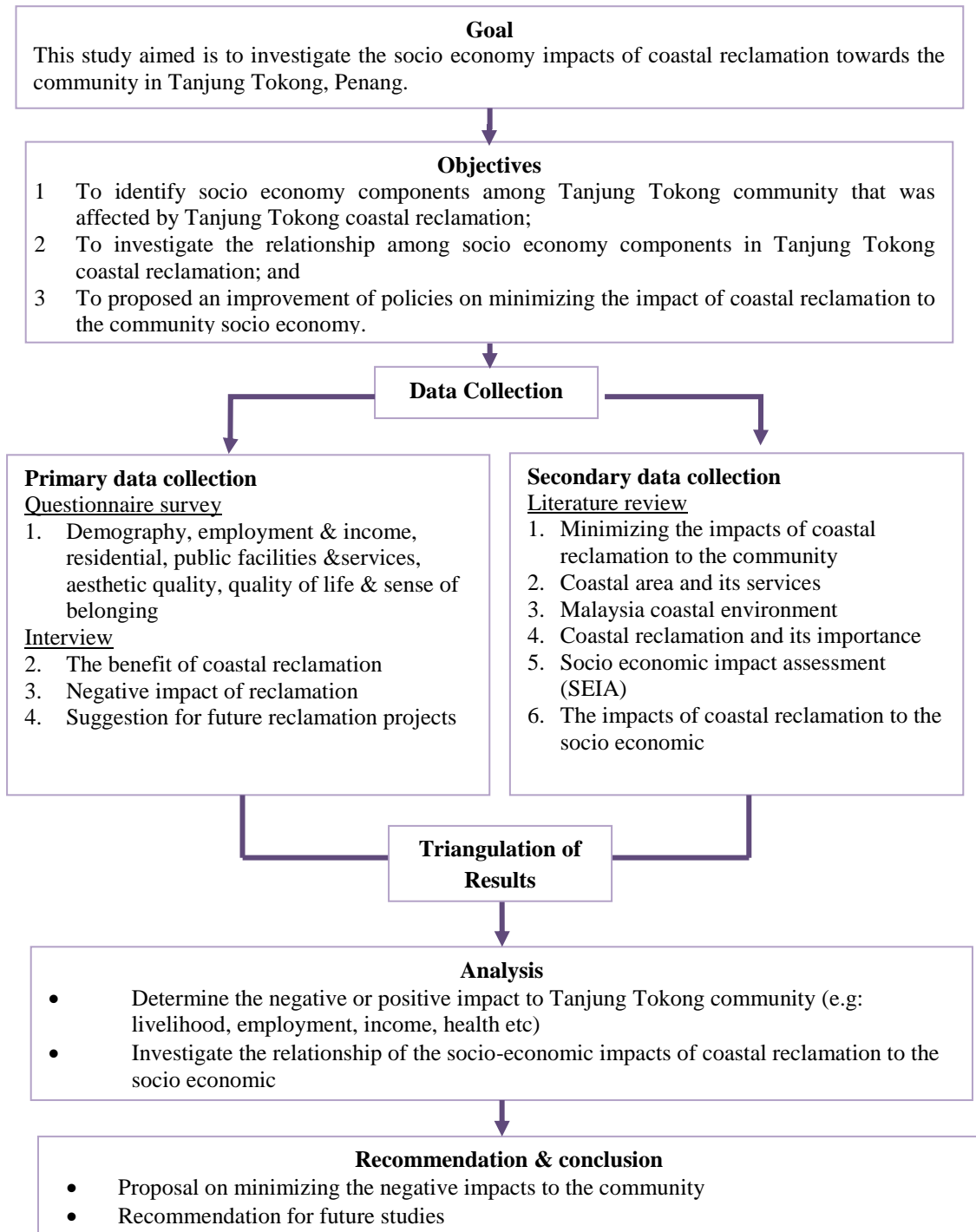


Figure 1.1: The flow of research