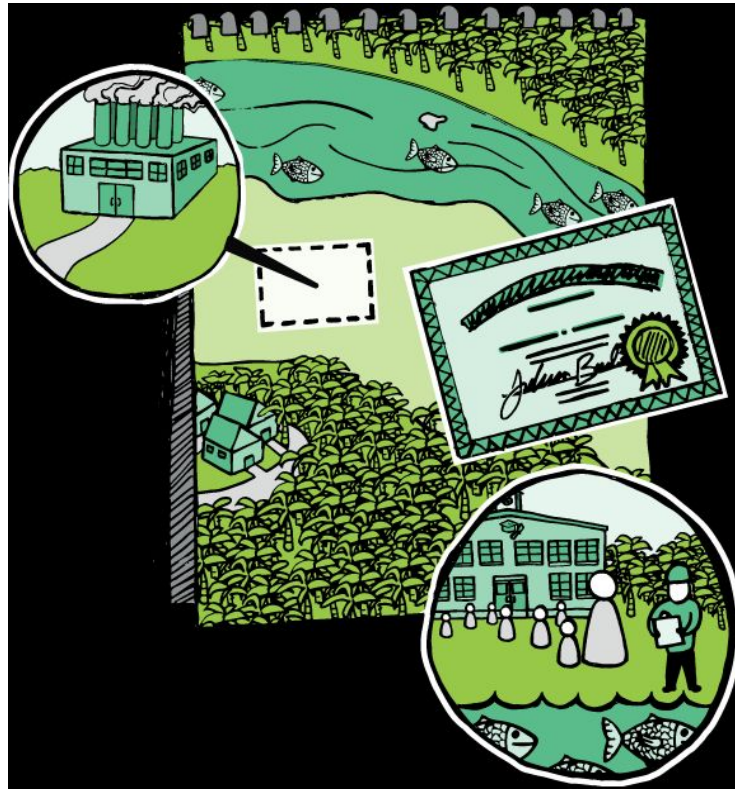


# Environmental Impact Assessment (EIA)



**Name:** Muhammad Hakimi Bin Mauludi

**Course:** INTRA 2020

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# Introduction

**Environmental Impact Assessment (EIA)** is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers. By using EIA both environmental and economic benefits can be achieved, such as reduced cost and time of project implementation and design, avoided treatment/clean-up costs and impacts of laws and regulations.

## Purpose

- Encourage harmony between man and environment
- To promote efforts that will prevent or eliminate harm to the environment and biosphere and stimulate the health and welfare of man
- To enrich the understand of the ecological systems and natural resources important to the country
- To cooperate in making wise decisions that restore and maintain the quality of our shares environmenture generations

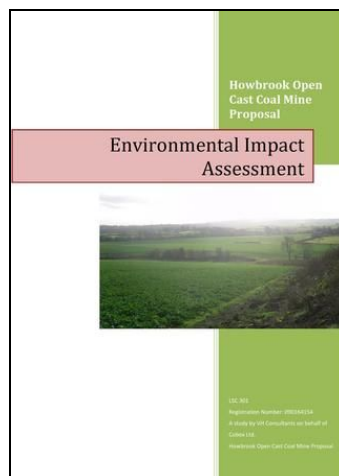


Figure 1: Example of EIA Report

## **Who can conduct EIA study?**

EIA has to be conducted by competent individuals who are registered with the Department of Environment under the EIA Consultant Registration Scheme. The DOE will reject reports which are conducted by individuals who are not registered with the Department.

## **Approval Authority**

All activities need to obtain EIA approval from the Director General of Environment prior to the giving of approval by the relevant Federal or State Government authority for the implementation of the project. This authority has the task of deciding, whether or not the project should proceed.

## **An EIA Must**

- Be in accordance with the guidances issued by the DOE;
- Contain an assessment of the impact of the Prescribed Activity on the environment; and
- Detail the proposed measures that shall be instituted to prevent, reduce or control adverse impacts on the environment



Figure 2: YBrs. Puan Norlin binti Jaafar; Director General of Environment

# **Environmental Quality Act, 1974 (Amendment, 1985)**

The **Environmental Quality (Amendment) Act 1985**, amended the Environmental Quality Act, 1974. Amendments include the insertion of section 34A which requires any person intending to carry out any prescribed activity to submit report on the impact on the environment to the Director of Environmental Quality for examination. The Amendment act was gazetted on 9 January 1986 and section 34A reads as follow:

## **Section 34A: Report on impact on environment resulting from prescribed activities**

- (1) The Minister, after consultation with the Council, may by order prescribe any activity which have significant environment impact as prescribed activity.
- (2) Any person intending to carry out any of the prescribed activities shall, before any approval for the carrying out of such activity is granted by the relevant approving authority, submit a report to the Director General. The report shall be in accordance with the guidelines prescribed by the Director General and shall contain an assessment of the impact such activity will have or is likely to have on the environment and the proposed measures that shall be undertaken to prevent, reduce or control the adverse impact on the environment.
- (3) If the Director General on examining the report and after making such inquiries as he considers necessary, is of the opinion that the report satisfies the requirements of subsection (2) and that the measures to be undertaken to prevent, reduce or control the adverse impact on the environment are adequate, he shall approve the report, with or without conditions attached thereto, and shall inform the person intending to carry out the prescribed activity and the relevant approving authorities accordingly.

- (4) If the Director General, on examining the report and after making such inquiries as he considers necessary, is of the opinion that the report does not satisfy the requirements of subsection (2) or that the measures to be undertaken to prevent, reduce or control the adverse impact on the environment are inadequate, he shall not approve the report and shall give his reasons therefore and shall inform the person intending to carry out the prescribed activity and the relevant approving authorities accordingly. Provide that where such report is not approved it shall not preclude such person from revising and re-submitting the revised report to the Director General for the approval.
- (5) The Director General may if he considers it necessary require more than one report to be submitted to him for his approval.
- (6) Any person intending to carry out a prescribed activity shall not carry out such activity until the report required under this section to be submitted to the Director General has been submitted and approved.
- (7) If the Director General approves the report, the person carrying out the prescribed activity, in the course of carrying out such activity, shall provide sufficient proof that the conditions attached to the report (if any) are being complied with and that the proposed measures to be taken to prevent, reduce or control the adverse impact on the environment are being incorporated into the design, construction and operation of the prescribed activity.
- (8) Any person who contravenes this section shall be guilty of an offence and shall be liable to a fine not exceeding one hundred thousand ringgit or to imprisonment for a period not exceeding five years or both and to a further fine one thousand ringgit for every day that the offence is continued after a notice by the Director General requiring him to comply with the act specified therein has been served upon him”.

# Activities subject to EIA

## 1. Agriculture

- Turn forest into agricultural production - 500 hectares or more
- Resettlement of 100 families or more
- Changing in type of agricultural use - 500 hectares or more

## 2. Airport

- Airstrip of 2,500 metres or longer
- Airstrip development in state and national parks.

## 3. Drainage and Irrigation

- Dams and man-made lakes and artificial enlargement of lakes - 200 hectares or more
- Drainage of wetland, wild-life habitat - 100 hectares or more
- Irrigation schemes - 5,000 hectares or more

## 4. Land Reclamation

- Coastal reclamation - 500 hectares or more

## 5. Fisheries

- Construction of fishing harbours
- Harbour expansion - 50 percent or more
- Land based aquaculture projects accompanied by clearing of mangrove forest - 50 hectares or more

## **6. Forestry**

- Conversion of hill forest land to other land - 50 hectares or more
- Logging - 500 hectares or more
- Conversion of mangrove swamp - 50 hectares or more
- Clearing of mangrove swamp on island adjacent to national marine parks

## **7. Housing**

- Housing development - 50 hectares or more

## **8. Industry**

- Chemical
- Petrochemicals
- Non-ferrous
- Non-metallic
- Iron and steel
- Shipyards
- Pulp and paper industry

## **9. Infrastructure**

- Hospitals with outfall into beachfronts
- Industrial estates - 50 hectares or more
- Expressways
- National highways
- New Townships

## **10. Ports**

- Construction of ports
- Port expansion - 50 percent or more

## **11. Mining**

- Mining in new areas - 250 hectares or more
- Ore processing
- Sand dredging - 50 hectares or more

## **12. Petroleum**

- Oil and gas fields development
- Off-shore and on-shore pipelines - 50 km or more
- Oil and gas separation, processing, handling and storage facilities
- Oil refineries
- Product depots for storage - capacity of 60,000 barrels or more

## **13. Power Generation and Transmission**

- Steam generated power stations burning fossil fuels - 10 megawatts or more
- Dams and hydro-electric power schemes
- Combined cycle power stations
- Nuclear-fueled power stations

## **14. Quarries**

- Quarrying of aggregate, limestone, silica, quartzite, sand-stone, marble and decorative building stone - within 3 km of residential, commercial or industrial areas

## **15. Railways**

- New routes
- New branch lines

## **16. Transportation**

- Mass Rapid Transport projects



## **17. Resort and Recreational Development**

- Coastal resort facilities or hotels with more than 80 rooms
- Hill station resort - 50 hectares or more
- Tourist or recreational facilities in national parks
- Tourist or recreational facilities on island

## **18. Waste Treatment and Disposal**

- Toxic and hazardous waste
- Municipal solid waste
- Municipal sewage

## **19. Water Supply**

- Dams or impounding reservoir - 200 hectares or more
- Groundwater development - industrial, agricultural or urban water supply - 4,500 cubic meters per day



Figure 3: Construction of KLIA 2

# Procedure

## Project Concept

Project proponents must make sure that the concept of the proposed project does not contradict any development plans, policies or any decisions of the Government of Malaysia prior to the EIA study.

## Site Selection

The criteria for selecting a new site normally include engineering, environmental and economic aspects. Usually, some of these criteria limit the choice of potential sites to a given few. These sites are then investigated further for their suitability through site visits and analysis of existing information. During this stage, measures to protect the environment and resolve socio economic issues are also considered. Where the project is situated on private/ individual land or near waterways, and alternative users will be affected by the project, the issue of compensation and offset investment should be addressed in the EIA.

## Preliminary EIA

- Assessment of impacts due to those activities that are prescribed
- Report is reviewed by a Technical Committee consisting of the Department of Environment State Offices and other relevant government agencies
- Number of Preliminary EIA Report - 12 copies, and 3 copies plus a soft copy of the Executive Summary of the Preliminary EIA report to the Department of Environment Headquarters

## Detailed EIA

- Undertaken for projects with major/significant impacts to the environment
- EIA report display for the public and affected community to comment.

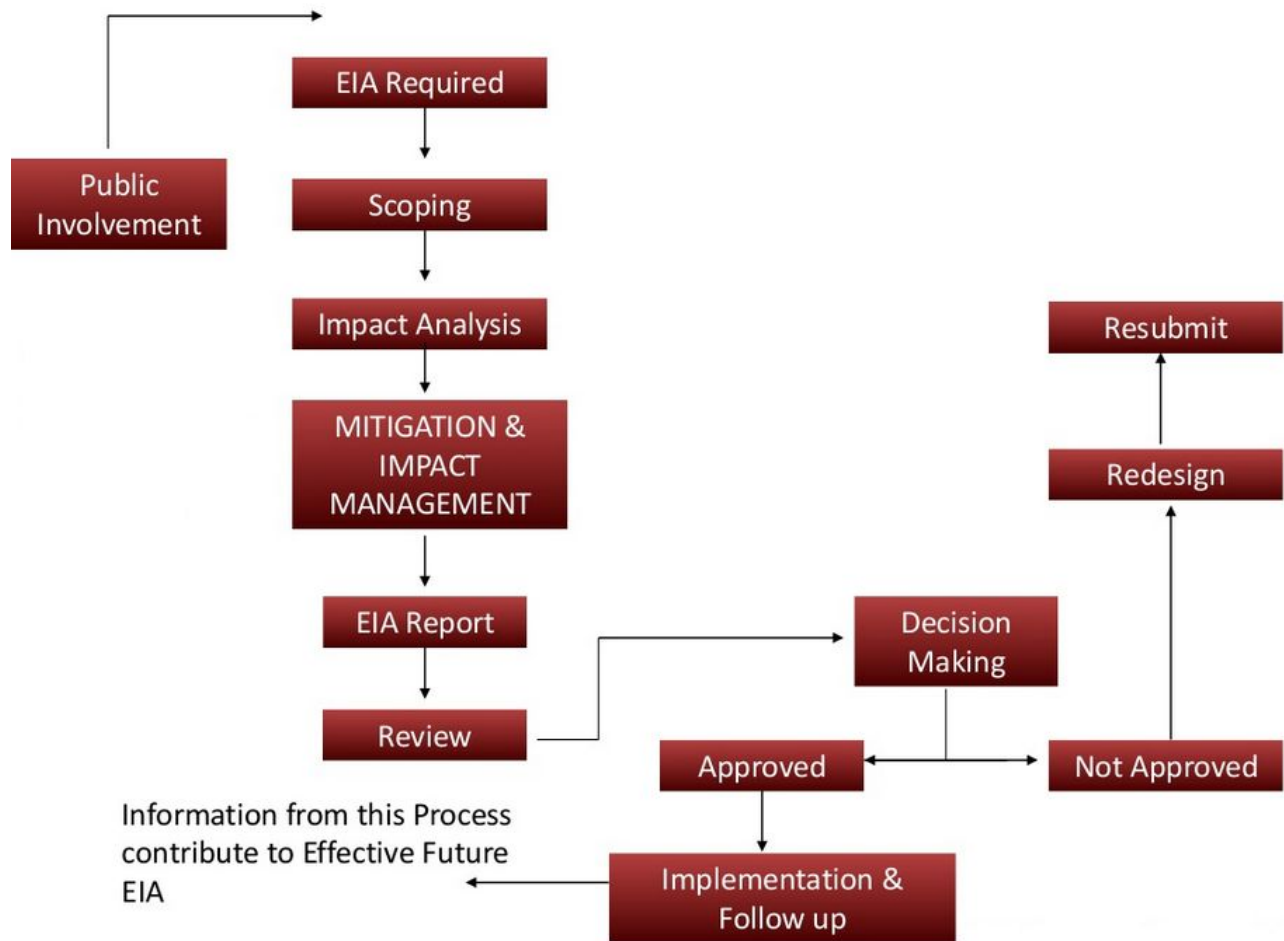


Figure 4: Procedure for EIA

## EIA Review

- Preliminary EIA report - 5 weeks
- Detailed EIA report - 12 weeks
- Preliminary EIA reports are processed and concluded by the Department of Environment State Offices including projects within the Exclusive Economic Zone
- Detailed EIA reports and projects involving more than one state are processed at the Department of Environment Headquarters

# EIA Example

## The Proposed Forest City Island Reclamation

Country Garden Pacificview Sdn. Bhd. October 2014 Volume 1: Executive Summary Mixed Development, Johor

October, 2014

### Source:

[https://govdocs.sinarproject.org/documents/ministry-of-natural-resources-and-environment/eia-reports/201411041201380-cg\\_vol1\\_execsummary.pdf/view](https://govdocs.sinarproject.org/documents/ministry-of-natural-resources-and-environment/eia-reports/201411041201380-cg_vol1_execsummary.pdf/view)

## Introduction

Country Garden Pacificview Sdn. Bhd. (hereafter referred to as the "Project Proponent")

intends to undertake land reclamation activities adjacent to the Port of Tanjung Pelepas and the coastline of Tanjung Kupang, Johor. The development is located on the Western Straits of Johor where the major aspects of it will be the formation of four man-made islands. These islands are intended to be developed as mixed development.

## Project Location

The proposed Project is located on the east of Port of Tanjung Pelepas and south of Tanjung Kupang within the Straits of Johor. The Project area stretches along the coastline

of Tanjung Adang to Sungai Pendas where the reclamation will cover an area of 4,012.5 acres. The proposed reclamation is geographically located within the coordinates listed

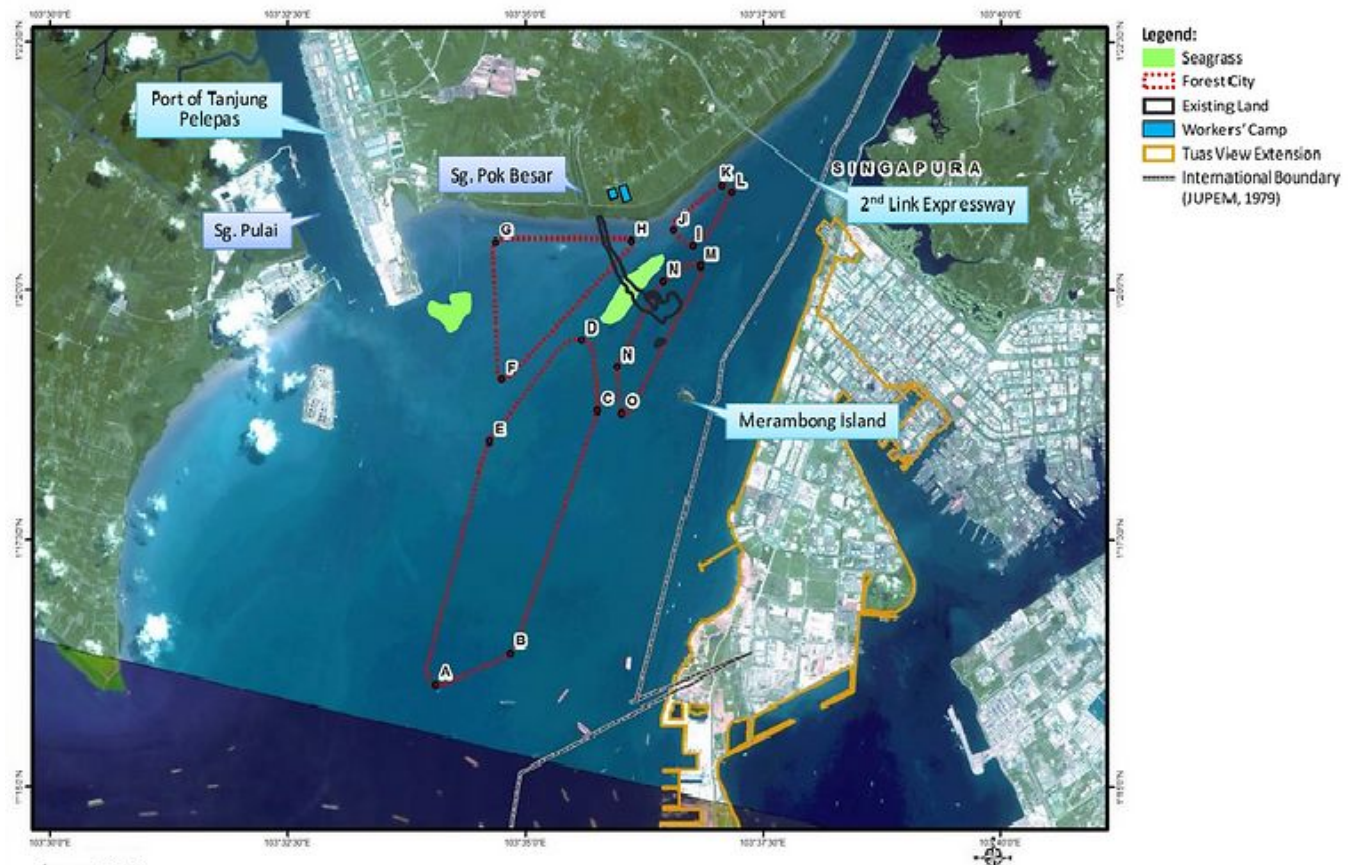


Figure 5: Satellite View of Project Location

## Project Activities

These are land reclamation, dredging works, and topside development. Pre-reclamation consists of installing a silt curtain at the Project site. Meanwhile, land reclamation and dredging works comprise of dredging at the designated area, disposal of dredged material, transportation of fill material and placement of fill material at the reclamation area. Post reclamation will cover the topside developments.

## Feedbacks from the Public Dialogue

The main concerns made about the Project can be summarized as follows:

- The Project planning aspects,
- The components of development and utilities,
- The influx of foreigners, and
- The benefits to the locals.

The social profile of the existing communities in the study area is characterized by a young population of educated background, mainly working as salaried workers, business persons and fishermen. Majority were local residents having been living in the area for 30 years or more. Only about 40% knew about the proposed Project but perceived that it would not be economically advantageous to them and that it would prove to be a source of water pollution and loss of income as a result of shrinkage or limited fishing ground.

Being highly dependent on fishing as their main source of livelihood, it is not surprising that 75.7% of the fishermen respondents disagreed with the proposed Project. Reasons being the shrinkage of their fishing ground would jeopardise their source of livelihood and income and obstruction to local fishing routes.

## **Potential Impact and Mitigation Measures**

### **Land reclamation and dredging**

#### **1. Erosion mitigation**

- Perimeter treatment at costs need to be properly designed to account for potential erosion
- Monitoring
- Type and level of ship wakes are to be accounted for in engineering design

#### **2. Sedimentation**

- The Project Proponent shall conduct periodic maintenance dredging works at intervals of 3 to 5 years within the waterways of the development that experience sedimentation to ensure effective flushing.
- Monitoring

#### **3. Sediment Dispersion**

- A silt curtain should be used to prevent or divert suspended sediment away from reaching environmentally sensitive areas
- Temporarily stopping the contributing activity during periods of fast current flows
- Placed extending far enough to allow suspended sediment to settle

## Aquatic Flora and Fauna

Dredging sea bottom, High TSS and turbidity, High water temperature and reduction in dissolved oxygen, Oil discharge or leakages, Effluent discharge

- Mitigating the episodes of algal bloom should be carried out through monitoring of nutrient content in the water column.
- Good practice on land reclamation and dredging works
- Online monitoring of turbidity and TSS concentrations
- Installation of silt curtains

## Conclusion

From the overall assessment, it can be concluded that the proposed development is expected to cause various degree of negative and positive impacts on the environment, social as well as surrounding land use. Huge commitment is needed from the Proponent in implementing all mitigation measures proposed so that this development will be beneficial not only to the Proponent, but also to the local communities and the State of Johor.



Figure 6: Rendition of Completed Project