

## **HUMAN VULNERABILITY TOWARDS SOCIOECONOMIC DEVELOPMENT: A CASE STUDY IN KG PENDAS LAUT AND KG TEBING RUNTUH IN THE DISTRICT OF GELANG PATAH, JOHOR**

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### *ABSTRACT*

Human Vulnerability is the capacity to be wounded by socioeconomic and ecological change. Human population that are exposed to substantial stress, are sensitive to change and lack resiliency are vulnerable to declining quality of life because they will be unable to respond to socioeconomic, institutional and environmental change. The paper aims to analyze the impact categories on the village people residing in Kg Pendas Laut and Kg Tebing RuntuH due to the development of NODE 1, located in NUSAJAYA within the Iskandar Malaysia Development Region, using the macroeconomic model and the implication to the environmental sustainability.

*Keywords:* human vulnerability; quality of life; ecological change; environmental change.

### **1. Introduction**

The paper proposed a flexible analytical tool for upstream assessment of the impacts of macro-level development policies and programmes on vulnerable human population located within the proposed development region. The proposed development project is called as the NODE 1 which is located in Nusajaya, within the Iskandar Development Region in Johor or popularly known as Iskandar Malaysia. Iskandar Malaysia is one of the fully integrated urban developments at the southern tip of Peninsular Malaysia, is set to become the region's nucleus of economic growth. There are five zones involved in Iskandar Malaysia, namely Zone A (JB City Centre), Zone B (Nusajaya), Zone C (Western Gate Development), Zone D (Eastern Gate Development), and Zone E (Senai-Skudai). Nusajaya is a regional city and will be the new administration centre of Johor. The town is currently under construction with some housing phases already completed and launched. It is located west of Johor, near the town of Gelang Patah. The Iskandar Malaysia is the country's first economic growth corridor, has attracted a lot of international interest, and those who have committed to invest are already pursuing their development activities. There are two iconic projects in Iskandar Malaysia such as a wellness centre and a mixed development township to include industrial, commercial and residential space.

There are two villages located within 5 km radius from the proposed project site namely Kg Pendas Laut and Kg Tebing RuntuH.

#### ***1.1 Kg Pendas Laut***

Kg Pendas Laut is located about 12 km from the town of Gelang Patah and within the impacted zone of NODE 1 project. There are about 60 households with 250 numbers of inhabitants. Most of them are Malays and only two Chinese families stay side by side with the Malay communities. Most of them worked as coastal fishermen. The infrastructures and

facilities are quite backward as compared to the neighbouring communities in Kg Ladang and Kg Tg Kupang. There is still a laterite road about 8km long passing through the palm oil estate beside the village and the tarred road is about 2 km long from the jetty to the end of the village. The village is provided with electricity and pipe water, one primary school catered for about 30 pupils, one moderate mosque, 2 groceries stores, and one community hall. There are 4 graves, different in sizes, ranging from quarter acre to one acre, and also two Chinese cemeteries located in the village. The average monthly income is around RM1000.00 and the average monthly expenditure is around RM800.00. In terms of educational background, on average most of them possessed SPM qualification especially for the young adults and finished primary and lower secondary school for the oldies.

The land use is predominantly palm oil and agricultural activities.

### **1.2 Kg Tebing Runtuh**

Kg Tebing Runtuh is located on the north-eastern part of Kg Pendas Laut and within the impacted zone of the proposed NODE 1 project. There are about 24 families with 100 population still reside in the area. All of them are Malays and work as coastal fishermen. The village is provided with electricity and pipe water, one primary school and one mosque. There are 2 grave yards within the village vicinity and one army camp. An average monthly income is around RM800.00 and an average monthly expenditure is around RM700.00. The village is connected to the town of Gelang Patah through a moderate tarred road.

The land-use is partly oil palm and partly is for agricultural activities. Mostly young adults possess SPM qualification and for older people, some had finished primary school and lower secondary school education.

## **2. The Objectives**

- 2.1 To describe a preliminary assessment of the existing socioeconomic environment conditions which are likely to be affected by the proposed project on the vulnerable segment of the human population.
- 2.2 To gather preliminary local public opinions especially the vulnerable people and their views on the implementation of the proposed project. Hence, the study is expected to solicit the degree of acceptance and opposition, including the condition set by the local public on the implementation of the proposed project.

## **3. The Methodology**

Information will be elucidated from three main sources. Firstly, gathering and compiling information from secondary sources i.e. published and unpublished reports on existing socioeconomic environment conditions on the proposed site. Secondly, a preliminary assessment and verification on the existing information from the secondary sources will also be carried out. Any data gaps from the secondary sources will be compensated through liaison with relevant authorities. Finally, a site survey is expected to be significance to enable experts to gather the awareness and perceptions and identify community attitudes and perceptions on the proposed project. In order to identify the direct and indirect impacts, the selected sample size includes respondents within 5km radius from the proposed project site. A stratified random sampling technique is used to facilitate the questionnaire survey of the socioeconomic status. This information provides the necessary guidelines for gauging socio-economic impact and appropriate mitigation.

#### 4. The Vulnerability Based Approach Model

Figure 1 shows the impacts of macroeconomic policies using a vulnerability-based approach framework to include review of proposed project, vulnerabilities filter, mapping vulnerabilities, assessing the impacts and developing recommendations. The purpose of reviewing the proposed project is to determine whether the assessment is necessary and also to determine which economic and environmental sectors need to be considered by the assessment. The purpose of vulnerability filter is to determine which environmentally vulnerable places are likely to be affected by the policy and to determine which vulnerable peoples may be affected by or contribute to these environmental changes. Meanwhile, the purpose of mapping vulnerabilities is to develop a map of environmental and socioeconomic data to support the identification of vulnerable contexts to overlay probable policy impacts to further the analysis of environmental outcomes. The purpose of assessing the impacts is to determine how the policy will affect the environment in the vulnerable places and to describe the role vulnerable peoples are likely to play and also to estimate the significance of these impacts. Finally, the purpose of developing the recommendations is to understanding the geography of the impacts, the pathways of change and the environmental significance of the policy change provides the information needed to develop recommendations.

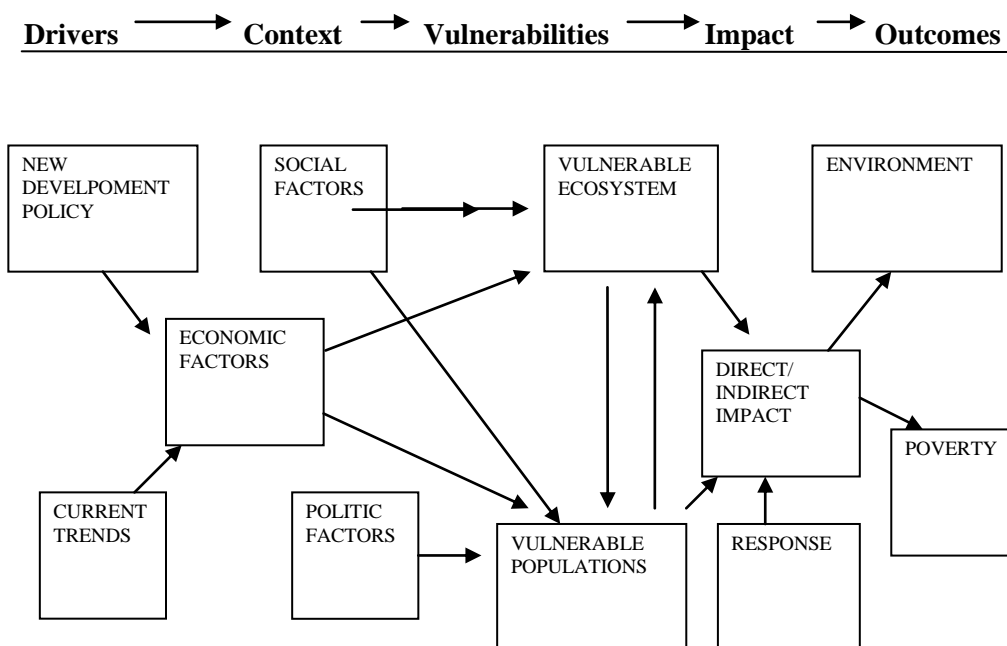


Figure 1: Impacts of Macroeconomic Policies Using A Vulnerability Based Approach.

The assessment may recommend a variety of measures, such as support for best practices, technology choices, fiscal measures, regulatory changes, infrastructure planning, payment for environmental services, resolution of tenure issues, development of community-based management options and support for protected areas. If the overall impacts of proposed policies are expected to be positive, recommendations will focus on strengthening or ensuring that positive impact. If negative impacts are likely, the assessment will identify alternative

development policies or supplemental policies or programmes to ensure that poverty and sustainability objectives are met.

#### 4.1 *Vulnerable Populations*

Vulnerable populations refer to rural poor, indigenous communities and other groups that are heavily dependent on natural resources and unable to respond dynamically to economic change. These populations frequently depend on vulnerable ecosystems for their livelihoods. Any socioeconomic change that improves the ability of these people to manage resources sustainably will have environmental benefits; any socioeconomic change that reduces their ability to manage resources sustainably will strengthen the links between impoverishment and environmental degradation.

At the local level, poverty is usually a good indicator of human population vulnerability because it reflects exposure to socioeconomic and environmental stresses, high sensitivity to change and limited resiliency. Poverty in fact is particularly very useful as a proxy for vulnerability when poverty is measured in terms of livelihoods or well-being rather than strictly in terms of income. Poverty is a pronounced deprivation in well-being (World Bank 2000) resulting from a deprivation of a multifaceted set of material goods, assets, conditions and opportunities (Reed 2001). Furthermore, vulnerability of human populations is generally the results of a combination of negative factors that are closely related to economic poverty which include the overlapping factors such as poverty, limited control over resources, limited opportunities, food and livelihood insecurity and exposure to natural disasters.

### 5. The Vulnerable Population Within 5km Radius -A Survey Results

#### 5.1 *Demographic Background*

A socioeconomic survey was carried out, aiming to gauge the awareness and perception of community within 5km radius that circumscribes the outer boundary of the proposed project. A random interview survey of 100 household respondents was conducted, covering the living quarters of Kg Pendas Laut (72 respondents) and Kg Tebing Runtuh (22 respondents). Table 1.1 shows the distribution of respondents by villages.

Table 1.1: The Distribution of Respondents by Villages

<b>Villages</b>	<b>Frequencies</b>	<b>Percentages</b>
Kg Pendas Laut	72	72.0
Kg Tebing Runtuh	28	28.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

About 72.0 percent of the samples were within 3km radius from the project site and 25.0 percent were within 2km radius outside the project boundary. In terms of ethnicity, the respondents are predominantly Malays as they make up 96 percents of the total being interviewed, and only 4 percent are Chinese and no Indian population resides in those villages.

In terms of age, the respondents are mostly active and young because about 79 percent below the age of 50 years. Table 1.2 shows the details.

Table 1.2: Age of Respondents

Age Groups	Frequencies	Percentages
20-24	3	3.0
25-29	6	6.0
30-34	10	10.0
35-39	22	22.0
40-44	16	16.0
45-49	12	12.0
50-54	21	21.0
55-59	8	8.0
60-64	1	1.0
65+	1	1.0
Total	100	100.0

### 5.2 Social and Economic Characteristics

Generally, from the educational background, majority of the respondents attain and finished primary school (61.0 percent). The rest are either having no formal education or finished lower secondary and upper secondary school. Table 1.3 shows the details.

Table 1.3: Educational Status of the Respondents

Educational Levels	Frequencies	Percentages
No formal Education	18	18.0
Primary School	61	61.0
Lower Secondary School	19	19.0
Upper Secondary School	2	2.0
Total	100	100.0

Economically, majority of the respondents are engaged themselves as coastal fishermen (89.0 percent). This is so by virtue of their coastal location. The rest of the respondents are working in either factory, private sector or no permanent job. However, most of the respondents do not have other or secondary employment. Fishing activities are carried out daily with the common fishing method being drift net and fish trap. The fish landed were sold for local use or sometimes sold in the town of Gelang Patah. An average household monthly income is about RM1000.00 and an average household expenditure is about RM750.00.

### 5.3 Mobility and Migration

About 96 percent of the respondents are local people and had been staying there ranging from 20 to 80 years. The remaining came from Batu Pahat, Kg Ladang, Muar and Pasir Gudang, in the state of Johor. Mostly the youngsters work outside the area but they do come back during the weekends or during holidays. This is not surprising because their family ties are very strong.

### 5.4 Ownership

All of the respondents live in their own houses and 55 percent of the houses are in moderate conditions, supplied with pipe water (99 percent), electricity (92 percent), and almost all have proper toilets either flush or pour and flush toilet systems.

Besides housing, the status of ownership of vehicles and other household items among the respondents can be gleaned from Table 1.4. On the whole, majority of the respondents are well equipped with modern conveniences especially for living comfort within their home.

Table 1.4: Ownership of Vehicles and Other Household Items Among the Respondents

Vehicles/Household Items	Frequencies	Percentages
Motorcar	16	16.0
Van	3	3.0
Motorcycles	94	94.0
Bicycles	73	73.0
Boats	6	6.0
Refrigerators	92	92.0
Fans	91	91.0
Radios	67	67.0
Televisions	91	91.0

### 5.5 Awareness

The degree of awareness on the proposed project is moderate. From the field survey, 83 percent reported that they were aware of the proposed project and 17 percent were not aware. For those who were aware, they knew it through friends (51 percent) and through the village heads (30 percent). They also indicated that they knew it between two months to one year ago.

### 5.6 Perceptions

With regards to the perception on benefits of the project, 81 percent of the respondents perceive the project would create new job opportunities especially for the local people. It means that majority of the respondents can foresee the advantages of having the project in their surrounding areas. According to them, the proposed project can also increased the basic infrastructures, improve their standard of living, increase income, upgrade real estates especially for the land owners, open up more opportunities in food and food chains businesses, other businesses and will spur the economic activities in the area.

The communities in the study areas perceived almost no major or adverse impacts on health and safety. Impacts such as accidents, noise, bad smell (odour), area tranquility, air borne diseases, water borne diseases, and other dangerous impacts were quite minimal and could be handle well during the pre-construction, construction and operation periods.

### 5.7 Overall Evaluation

As an overall evaluation, 66.0 percent of the respondents indicated that the project would bring benefit to the surrounding areas, 6.0 percent reported the project would not bring any benefits and 28.0 percent were uncertain. However, 93.0 percent agreed with conditions if the project is to be proceeded. The conditions are firstly, if they have to be relocated, they have to be given a proper compensation in the forms of money or land. Secondly, a proper relocation area with fishing type concepts, and finally, they should be given jobs opportunities especially with regards to the proposed project.

## 6. Potential Impacts

### 6.1 Site/land clearing and earthwork

The site clearing of the land, the earthwork and the likes will create employment to the local people since general and skilled workers will be needed. Besides that, business opportunities will be created in terms of supplying the everyday needs and activities during the said period.

### **6.2 Construction of infrastructures**

The construction of infrastructures will include drainage, roads, sewerage, amenities and utilities. The activities during this time are very massive and it will generate impacts on transportation of materials, noise, air pollution, and also at the same time will create job opportunities especially for the local people.

### **6.3 Temporary Base Camp**

Typically in Malaysia, construction workforce in any particular projects, are generally employed foreign workers, aside from local workforce. More often they come from different parts of the country or imported labour force. Sometimes, the presence of aliens in a local community can be very sensitive and upsetting especially if local culture is not respected.

### **6.4 Waste Disposal**

Waste, if not properly disposed can be an eyesore. This is particularly relevant for the not easily degradable waste such as plastic materials and metals, which will remain intact long after the project is completed. Some of these durable wastes will produce breeding space for mosquitoes and other disease agents.

## **7. Mitigating Measures**

- In order to support the growth of the local economy, employment and business opportunities such as sub contracting works and supply of essentials materials should be given, with greater priority, to the local residents or nearby residents especially in the surveyed villages in Kg Pendas Laut, Kg Tebing Runtuh. Participation of the locals will enhance the economy.
- Proper care should be taken especially during the construction of infrastructures because it involves a massive works especially during the transportation of machineries and construction materials, minimizing the noise, air pollution with proper pollution emission.
- Racial clashes and other social problems especially at the base camp could be avoided if workers' interest could be looked after, cordial relationship should be maintained and cultural tolerance had been initially brainwashed to them. Different nationalities should be placed or camped differently in order to avoid from the racial clashed.
- Plants, base camps, workshops, etc. if not completely dismantle and remove will mar the general aesthetics of the surrounding area. The remaining structures left unattended will over time become unsafe, endangering unsuspecting persons who happen to pass through the area. So proper action should be taken care in order to demolish the waste properly.

## **8. Policy Implications**

- Public involvement through public dialogue. The dialogue should be open to the public at large and should not be limited to only for directly impacted segment of population.

- Assessment must be linked to the other components of environment such as fauna, flora and physical environment to include soil, hydrology and water.
- The evaluation should be focused according to the phase of development. If the evaluation has found that the problems will be specific to the vulnerable area, solution should be developed that target this area.
- Identified the methodology and assumptions before the starting of any survey or field work. This is important in order to avoid any policy makers from jeopardizing national policy objectives for the sake of local conservation goals.
- For the sustainability of the vulnerable people, indicators to reflect important aspects of changes should be considered in order to capture the evolving relationship between the vulnerable peoples and the environmental resources.

## 9. Conclusion

The vulnerable peoples live in places where the natural environment has been very seriously degraded due to the development of the area and where no environmental resiliency remains. By anticipating the potential environmental impacts and related social impacts of the new proposed project of NODE 1 in Nusajaya, Iskandar Malaysia, both the impacted communities in Kg Pendas Laut and Kg Tebing Runtuh should not be neglected totally due to their vulnerability overlapping factors such as poverty, limited control over resources, limited opportunities, food and livelihood insecurity and exposure to natural disasters.

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