
**DETAIL IMPACT ASSESSMENT
(DEIA) FOR THE PROPOSED
DEVELOPMENT OF AN
INTEGRATED PETROLEUM HUB
AND MARITIM INDUSTRIAL PARK
INCLUDING RECLAMATION AT
TANJUNG PIAI, JOHOR,
MALAYSIA
SOCIO-ECONOMY STUDY**

10/14/2014
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EXISTING HUMAN ENVIRONMENT

POPULATION AND SOCIO-ECONOMIC PROFILE

1. INTRODUCTION

The proposed project area is in Mukim Serkat in the district of Pontian. The socio-economic assessment will cover areas within a 5-km radius (60 % of mukim Serkat) from the boundary of the proposed project site. The information developed will include the demographic characteristics and other relevant socio-economic data pertinent to the DEIA study and also the respondent's perception and views of the proposed project.

2. BACKGROUND OF THE STUDY AREA

Information concerning the study area was sought from two main sources viz. secondary sources e.g. published and unpublished reports on the human environment in the study area (Population and Housing Survey 2010, Statistics Department of Malaysia 2011) and from primary data generated through the conduct of social surveys and focus group discussion of selected areas in the study area. The social surveys would also enable the views and concerns of the respondents with regards to the proposed project to be made known and to be taken into consideration in the preparation of the report for this study.

The socio-economic survey involved a public opinion poll gathered through a questionnaire survey directed to the residents in the study area. The survey was conducted in September 2013. A total of 205 respondents were drawn randomly from several villages around the proposed project site using a purposive sampling technique.

2.1. Population Characteristics

In 2010, the total population of Mukim Serkat was 7,994 persons or 5.3% of the district of Pontian's population with 1,749 households and 1,976 living quarters (Population Distribution and Basic Demographic Characteristics, Department of Statistics 2011). Table 5.1 shows the population distribution as of 2010.

Table 5.1 and Table 5.2 show the demographic characteristics of the Mukim. The general trend shows that the younger age population (0 to 14 years old) is 26.9% of the total population of the mukim.

Table 5.1 Population Distribution by Mukim in Pontian District 2010

| Mukim | Population | Households | Living Quarters |
|---------|------------|------------|-----------------|
| Pontian | 149,938 | 34,339 | 39,306 |
| Serkat | 7,994 | 1,745 | 1,976 |

Source: Population and Housing Census 2010, Department of Statistics Malaysia, 2011

Table 5.2 Demographic Characteristic of Pontian District and Serkat Mukimin 2010

| Age Cohort (years old) | 0-14 | 15-64 | >65 | Total (Population) |
|------------------------|--------|--------|--------|--------------------|
| Pontian | 42,413 | 54,721 | 12,308 | 149,938 |
| Serkat | 2,154 | 5,167 | 673 | 7,994 |

Source: Population and Housing Census 2010, Department of Statistics Malaysia 2011

Working age population in the study area was about 64.6% of the total population of Mukim Serkat with a labor force participation ratio of 62% that would generate about 3,204 people of active labor force (Data Bank 2010 and 2012 Department of Statistics Malaysia 2010 and 2012). The unemployment rate was about 3.8% which accounted for about 121 people or 3083 employed population in the Mukim. Fishermen made up of about 410 people or 13.3% of total number of employed population

Table 5.3 Working Age Population in Mukim Serkat in 2010 by age groups

| Age Cohort of Working Age Population | Population |
|--|--------------|
| 15-19 | 796 |
| 20-24 | 718 |
| 25-29 | 618 |
| 30-34 | 493 |
| 35-39 | 494 |
| 40-44 | 479 |
| 45-49 | 468 |
| 50-54 | 433 |
| 55-59 | 382 |
| 60-64 | 286 |
| Total of Working Age Population | 5,167 |

The ethnic distribution in Mukim Serkat is as shown in Table 5.4 with 6,092 Malays and 22 other Bumiputera. Chines made up about 1,364 persons and Indians with 21 people. Non-citizen mainly of foreign workers made up about 482 people.

Table 5.4 Demographic Characteristic of Pontian District and SerkatMukim in 2010

| Mukim | Malaysian Citizens | | | | | Non-Malaysian Citizens |
|---------|--------------------|-----------------|---------|--------|--------|------------------------|
| | Bumiputera | | Chinese | Indian | Others | |
| | Melayu | Bumiputera Lain | | | | |
| Pontian | 95,732 | 1,202 | 40,188 | 1,481 | 399 | 10,936 |
| Serkat | 6,092 | 22 | 1,364 | 21 | 13 | 482 |

Source: Population and Housing Census 2010, Department of Statistics 2011

3. SOCIO-ECONOMIC CHARACTERISTIC OF THE STUDY AREA

The study area covers a 5-km radius from the proposed project site boundary which includes several traditional villages and Pekan Serkat. These towns are located about 2 km outside of the proposed project site respectively. It is estimated that the population of the study area is 4,796 people and number of households is

about 1,047. The social survey was carried over 5 days. A prepared questionnaire (Appendix 4) was developed prior to the field surveys.

3.1. Respondent Age Group

The working age group (18 to 60 years old) makes up about 93.0 percent of the respondents. The older group > 40 years old comprised of 59.0 percent (Table 5.5).

Table 5.5 Age Structure of the Respondents in the Study Area

| Age Class (Years) | Percentage (%) |
|--------------------------|-----------------------|
| >17 | 1.5 |
| 18 - 25 | 6.0 |
| 26 – 40 | 33.5 |
| 40- 60 | 53.5 |
| >60 | 5.5 |

Source: Social Survey, September 2013

3.2. Educational Level

About 80.5 % of the respondents had completed primary school education and secondary school education. Only 17.0 % of them had their further study after SPM level (Table 5.6).

Table 5.6 Educational Level in the Study Area

| Education Level | Percentage (%) |
|------------------------|-----------------------|
| Below SPM | 80.5 |
| STPM/Certificate | 12.0 |
| Diploma | 3.5 |
| Degree | 1.5 |
| Others | 2.5 |

Source: Social Survey, September 2013

3.3. Family Size

Generally, the average family size is 4 persons per family (Table 5.7). It shows that the future generation would have a zero growth trend if the natural growth maintains the same. But the number of bigger family size is still large with more than 4 persons/ family and 6 person/ family with 48.0 percent of the respondents interviewed. Family sizes that are more than 7 persons per family made up 13.5% of the respondents between the project site and the 5-km radius of the study area.

Table 5.7 Family size

| Family Size | Percentage (%) |
|---------------|----------------|
| 1-3 persons | 38.5 |
| 4-6 persons | 48.0 |
| 7-9 persons | 10.0 |
| 10-12 persons | 3.5 |

Source: Social Survey, September 2013

3.4. Employment

Generally, about 31.5% of the respondents are working as fishermen and aquaculturalist. Self-employed of the respondents (21.5%) is either as farmers, small time traders, odd job workers or managing who are farmers, small-time traders, homestay owners, odd job workers or managing small businesses or enterprises. About 16.0% of them are working in the private sectors such as private estates, restaurants, factories, shops and others. About 9.0% are employed in the government sector. They include employees such as teachers and other government departments and agencies. Those who are unemployed include (5.0%) students, retired workers or housewives (Table 5.8).

Table 5.8 Employment

| Types of Employment | Percentage (%) |
|---------------------|----------------|
| Fishermen | 31.5 |
| Government | 9.0 |
| Private | 16.0 |
| Self employed | 21.5 |
| Others | 17.0 |
| Unemployed | 5.0 |

Source: Social Survey, October 2013

3.5. Household Income

The average household income of the respondents in the study area is about RM 1000 per month (Table 5.9). Some of the respondents can be categorized as poor or hardcore poor with monthly household incomes of less than RM 500. Majority of the residents were earning between RM500 and RM1000 per month (54.5%). Those who earned more than RM1000 per month include those who are in the government services, aquaculturist and those who were traders and shop owners. There are also respondents who earned more than RM2000 per month which comprised of about 8.0% of the total respondents interviewed.

Table 5.9 Household Income of the respondents

| Income | Percentage (%) |
|-------------------|----------------|
| <RM 500 | 7.0 |
| RM 500 – RM 1000 | 54.5 |
| RM 1001 – RM 1500 | 18.5 |
| RM 1501 – RM 2000 | 12.0 |
| RM 2000 – RM 3000 | 7.0 |
| > RM 3000 | 1.0 |

Source: Social Survey, September 2013

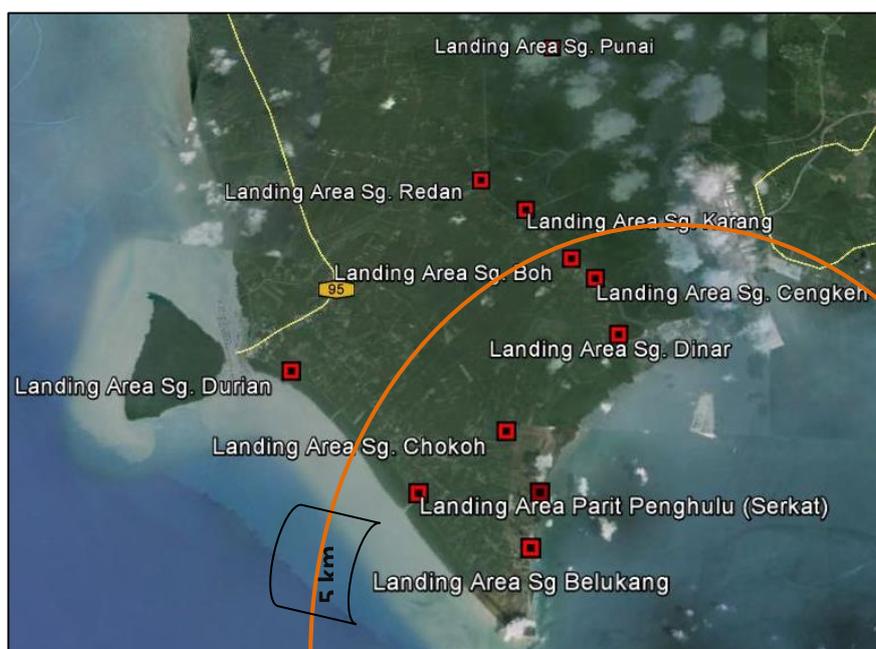
4. FISHING INDUSTRY

Other than farmers and government servants, majority of the employed population involved in fishing industry mainly those who are grouped as coastal fishermen. Number of fishermen has estimated about 473 registered fishermen in Mukim Serkat & Kukup Laut. Table 5.10 shows the distribution of registered fishermen in Mukim Serkat. About 7 fish landing points was in 5 km radius from the proposed project. Number of fishermen in 5 km radius study area is 282 fishermen.

Table 5.10 Number of Fishermen in Mukim Serkat in 2014

| Fish Landing Point | Coordinate | | No. of Fishermen | No. of Boat |
|-------------------------|-------------|--------------|------------------|-------------|
| | Latitude | Longitude | | |
| Sg. Punai | 01° 24.583' | 103° 30.406' | 6 | 3 |
| Sg. Redan | 01° 22.232' | 103° 29.533' | 19 | 19 |
| Sg. Karang | 01° 21.780' | 103° 30.203' | 16 | 16 |
| Sg. Boh | 01° 21.036' | 103° 30.890' | 32 | 32 |
| Sg. Chengkeh | 01° 20.746' | 103° 31.237' | 41 | 41 |
| Sg. Dinar | 01° 19.921' | 103° 31.591' | 24 | 21 |
| Sg. Chokoh | 01° 18.478' | 103° 30.186' | 25 | 25 |
| Perpat Pasir | 01° 17.676' | 103° 30.677' | 25 | 25 |
| Sg. Belukang | 01° 16.951' | 103° 30.583' | 25 | 25 |
| Parit Penghulu (Serkat) | 01° 17.595' | 103° 29.132' | 160 | 110 |
| Sg. Durian | 01° 19.189' | 103° 27.263' | 50 | 50 |
| Ayer Masin (Kukup) | 01° 19.558' | 103° 26.611' | 50 | 20 |
| Total | | | 473 | 387 |

Figure 5.2 Location of fish landing Areas



4.1. Background of Fishermen in the Study Area

The background of the fishermen and their activities has been gathered through social survey (84 respondents) and direct consultation either at the public consultation at Kompleks Penghulu Mukim Serkat and Persatuan Nelayan Kawasan Johor Selatan office.

4.2. Fishing Industry

There are three major fishing activities carried out by the local fishermen which include coastal fishing with 83% of the respondents, aquaculture 14% and deep sea fishing with 3.4% (Table 5.11).

Table 5.11 Type of Fishing Activities

| Fishing Activities | Percentage (%) |
|--------------------|----------------|
|--------------------|----------------|

| | |
|--------------------|------|
| Coastal Fishermen | 83 |
| Deep Sea Fishermen | 13.6 |
| Aquaculture Farmer | 3.4 |

Source: Social Survey, September 2013

4.3. Equipment/Fishing Gear

In terms of fishing equipment's used by the fishermen depending on the type of fishing activities carryout by them. But the major equipment used by the fishermen includes Trammel Nets (65.4%), Long Lines & Hooks (69.3) and the rest Cast Nets and Rod (Table 5.12).

Table 5.12 Equipment/Fishing Gear Used

| Equipment / Fishing Gear Used | Percentage (%) |
|-------------------------------|----------------|
| Trammel Net (pukat hanyut) | 65.4 |
| Long Lines & Hook (Rawai) | 69.3 |
| Cast Net (Jala/Jaring) | 7.0 |
| Rod (Pancing) | 8.0 |

Source: Social Survey, September 2013

4.4. Types of fish Catches

Types of fish's catches depend on the fishing gear used and seasons. Fishes are caught throughout the year and intermittent with shrimp catching. Squids are commonly found between April and June. Cockles are found in the mudflat on the western coast of Serkat. In terms fish catches shows that shrimp made up of 76% of the fish catches in the study area (Table 5.13). Fish is the main bulk of the fishing activities followed by squids. Whilst cockles are small in terms of catches and carried out by small number fishermen.

Table 5.13 Type of Fish / Marine Captured

| Type of Fish / Marine Captured | Percentage (%) |
|---|----------------|
| Shrimp | 76.0 |
| Fish (Grouper, Red Snapper, Mackerel, Gelama and Catfish) | 88.0 |
| Cockles | 2.7 |

| | |
|--------|------|
| Squids | 45.3 |
|--------|------|

Source: Social Survey, September 2013

4.5. Fish Landing Areas

Along the coastal area of Serkat, there are 11 jetties for the purpose of fish landing activities as shown in Table 5.14. About 34.5% of the respondents used Parit Penghulu fish landing site which reflects the number of fishermen living near Kampong Serkat. The rest of the areas are found to be small in number ranging from 1.2% in Sg Redan and 11.9% in Perpat Pasir.

Table 5.14 Landing Area

| Landing Area | Percentage (%) of fishermen used the landing area |
|-------------------------|---|
| Sg. Punai | 2.4 |
| Sg. Redan | 1.2 |
| Sg. Karang | 2.4 |
| Sg. Boh | 4.8 |
| Sg. Chengkeh | 7.1 |
| Sg. Dinar | 8.3 |
| Sg. Chokoh | 19.0 |
| Perpat Pasir | 11.9 |
| Sg. Belukang | 6.0 |
| Parit Penghulu (Serkat) | 34.5 |
| Sg. Durian | 2.4 |

Source: Social Survey, September 2013

4.6. Average Fish Catch per fishing trip

The fish catch depends on the type of fish gear applies and types of boat used for the fishing trips. Most fishermen catch in the range of 5kg to 50kg of fish per trip (51.2% of the respondents). There are fishermen catch less than 5kg per tip (27.4%). The rest of the fishermen that can catch more than 50kg of fish made up of 21.4% of the total respondents (Table 5.15).

Table 5.15 Fishery Catch

| Average Fish Catch per trip | Percentage (%) |
|-----------------------------|----------------|
| <5 kg | 27.4 |
| 5 kg – 50 kg | 51.2 |
| 50 kg – 100 kg | 9.5 |
| 100 kg – 150 kg | 9.5 |
| >150 kg | 2.4 |

Source: Social Survey, September 2013

4.7. Odd Jobs

Fishing activities are limited to weather conditions and season such as the monsoon periods. Normally when they do not go to sea, the fishermen are doing some odd jobs such as farming, small business and chicken rearing. From the survey about 30.1% of the respondents spent time to do some odd jobs for them to earn extra money (Table 5.16).

Table 5.16 Other Income

| Other Side Income | Percentage (%) |
|-------------------|----------------|
| Yes | 30.6 |
| No | 69.1 |

Source: Social Survey, September 2013

4.8. Past and Present Fish Catch

The respondents have been asked about their catches before the existence of Tanjung Bin power plant and Tanjong Pelepas projects. They blamed the existing project as the main reasons for their declining or increasing in fish catches within the study area. About 3.6% of the respondents claimed that their catches increased while 89.3% of them show a decrease in fish catches. The others who claimed there are no changes to their catches.

Table 5.17 Amount of Capture Increase / Decrease

| The Amount of Capture Increase / Decrease | Percentage (%) |
|--|-----------------------|
| Increase | 3.6 |
| Decrease | 89.3 |
| No Change | 7.1 |

Source: Social Survey, September 2013

4.9. Revenue from Fish Catch

In terms of income from the fish catches, the respondents claimed that the proposed project may affect their fish catch and income (Table 5.18). Majority of the fishermen or respondents (97.6%) have claimed that they may experience a decline on their income from fishing activities.

Table 5.18 Impacts of Fishermen Income

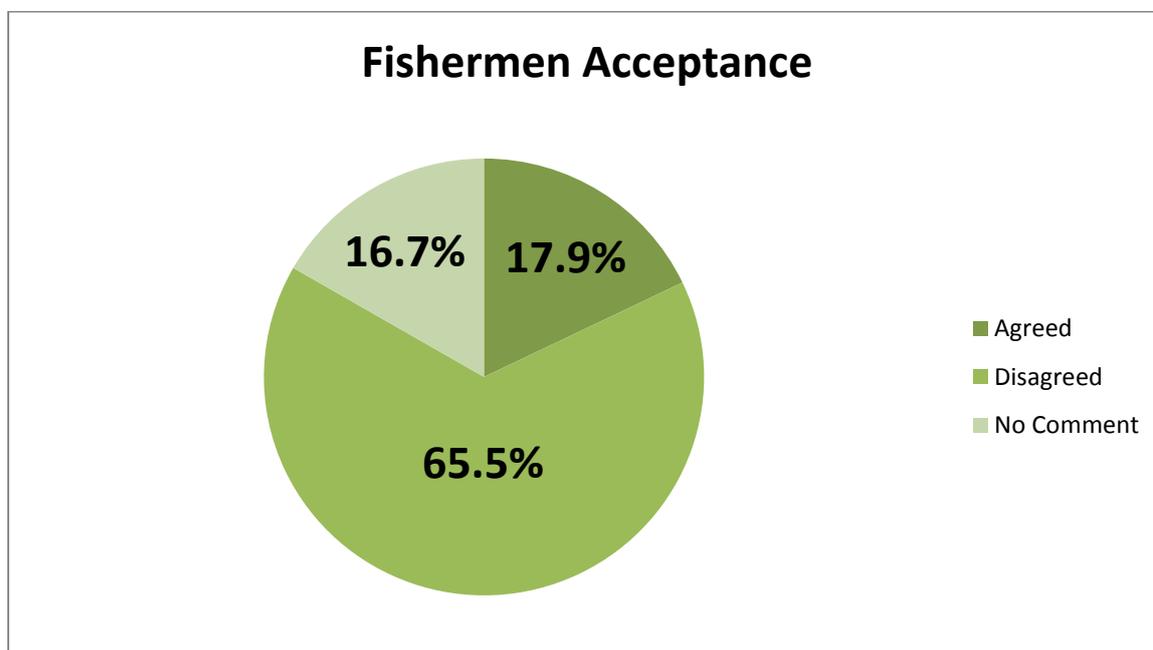
| Effect Catch & Income | Percentage (%) |
|----------------------------------|-----------------------|
| Yes | 97.6 |
| No | 2.4 |

Source: Social Survey, September 2013

4.10. Respondent's Responses

From the result of the survey whether the Project is beneficial, it can be deduced that only 17.9% of the fishermen respondents are supportive while majority of the fishermen (65.5%), objected the proposed project. The other 16.7% of the respondents are still not sure (see Figure 5.1).

Figure 5.1 Fishermen acceptance on the proposed project



Source: Social Survey, September 2013

Table 5.19 shows that the reasons given for the disagreement to the proposed project. The reclamation project would reduce their fishing ground area mainly for shrimp and fishes (43%). It was found that the other fishing ground near the estuaries and off the coast of western Serkat have been taken away for ship navigation channel near Tanjong Pelepas Port and mooring of bigger ships along the deep water of the western Serkat costs.

Due to the above reasons, about 33.4% of them claimed the loss their catch and income. The other factor is the destruction of the local coastal areas and marine habitat that reduce the number fishes and other food products from the mangrove area which accounted for about 77.3% of the local fishermen.

Table 5.19 Respondent's Responses

| Reason | Percentage (%) |
|------------------------------------|----------------|
| Reduce or Loss the catchment areas | 43.0 |
| Reduce the amount of catch& income | 33.4 |

| | |
|---|------|
| Permeant loss of Marine Habitat within the reclamation site | 77.3 |
|---|------|

Source: Social Survey, September 2013

4.11. Willingness to change jobs

It is about 51.2% and 48.8% of the respondents who are willing to change and unwilling to change their present job respectively (Table 5.20). Fishermen in the study are unwilling to change their present activities or jobs. Most of the reason given is as follows:

- Old age is one of the reasons for those who are elderly not to change to a new job.
- Changing to a new job would require new training and acquire new skill which they are unable to cope with.

Table 5.20 Willingness to Change Jobs

| Willingness to Change Jobs | Percentage (%) |
|----------------------------|----------------|
| Yes | 51.2 |
| No | 48.8 |

Source: Social Survey, September 2013

5. FACILITIES AND AMENITIES

All of the villages have good amenities. The larger villages have a mosque, *surau*, kinder garden, school, clinic, community hall and sundry shops. Electric supply is provided by Tenaga Nasional Berhad (TNB) and water supply is provided by Syarikat Air Johor (SAJ). Plate 5.1 to Plate 5.22 shows the existing settlement areas near the proposed project site.



Plate 5.1 Balai Raya Sg. Kualu, Serkat



Plate 5.2 Klinik Kesihatan Serkat



Plate 5.3 Balai Muhibbah Tg. Piai



Plate 5.4 Taman Negara Tg. Piai



Plate 5.5 Jeti Nelayan Pengkalan Sg. Chokoh



Plate 5.6 Masjid Jamek Dato' Hj. Nooh Gadot



Plate 5.7 Dewan Serbaguna Kompleks Penghulu Mukim Serkat



Plate 5.8 Local Food Industry



Plate 5.9 Jetty Pengkalan Nelayan Pt. Penghulu Mukim Serkat



Plate 5.10 Socio-survey with fishermen in Jetty Pengkalan Nelayan Pt. Penghulu



Plate 5.11 Kompleks Penghulu Mukim Serkat



Plate 5.12 Dewan Serbaguna Kg. Perpat Timbul



Plate 5.13 Klinik Desa Perpat Serkat



Plate 5.14 Klinik Desa Sungai Boh



Plate 5.15 Sekolah Kebangsaan Serkat



Plate 5.16 Kemas Kg Serkat Timur



Plate 5.17 Tanjung Piai Resort



Plate 5.18 Business Activity in Pekan Serkat



Plate 5.19 Homestay in Mukim Serkat



Plate 5.20 Reservoir Syarikat Air Johor



Plate 5.21 Keropak Lekor Entrepreneurial



Plate 5.22 House in Kg Sungai Kual



Plate 5.23 Banana plantation and House in Kg Serong Laut



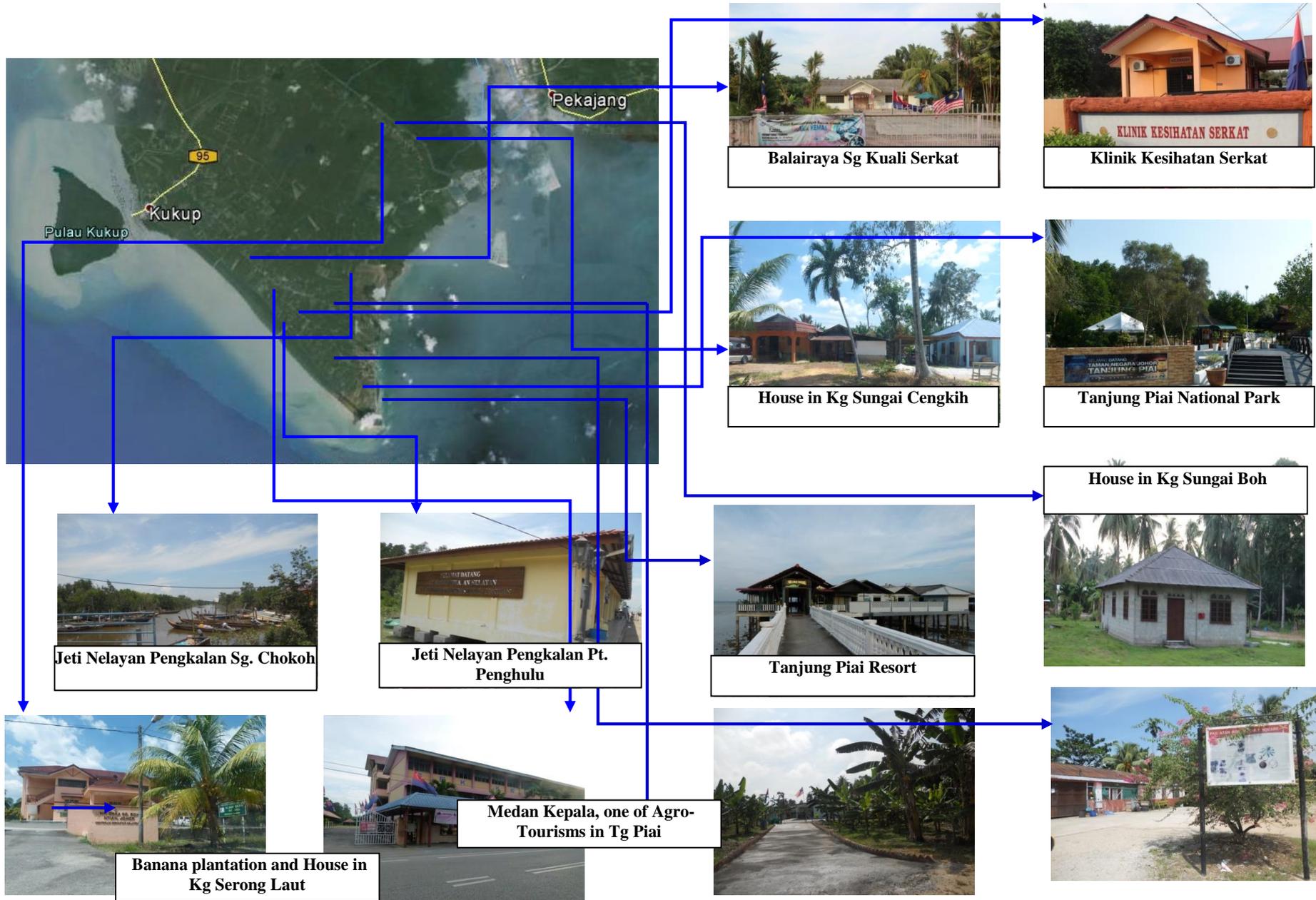
Plate 5.24 Medan Kepala, one of Agro-Tourisms in Tg Piai



Plate 5.25 House in Kg Sungai Boh



Plate 5.26 House in Kg Sungai Cengkih



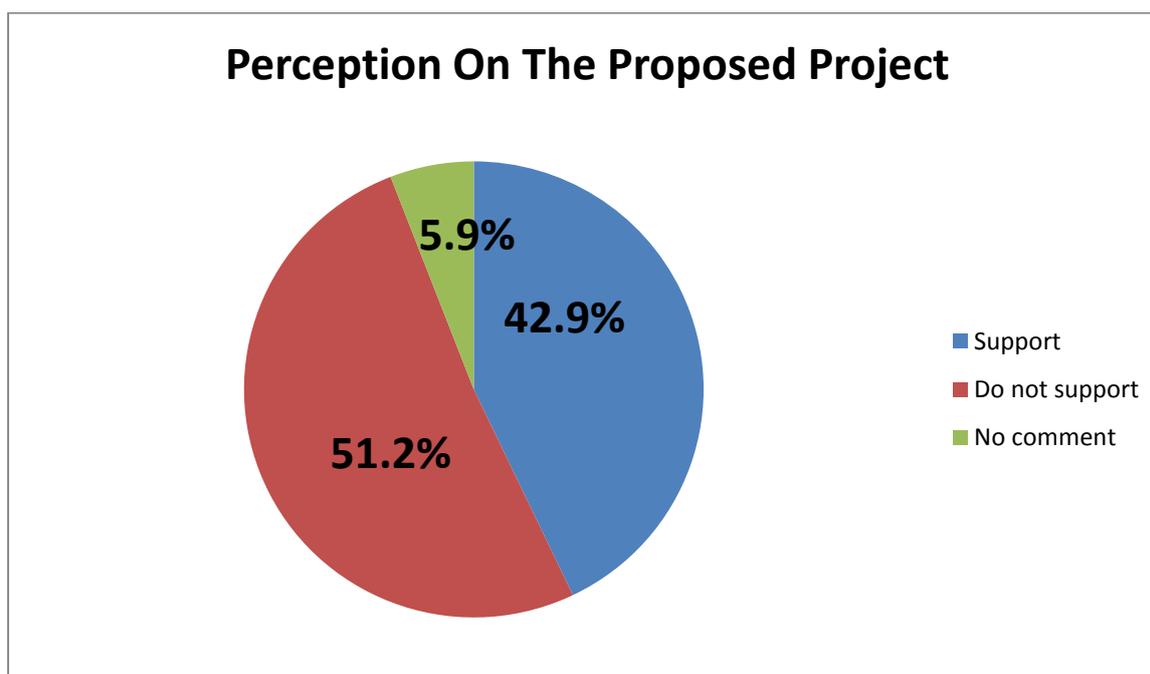
gsaan Serkat

6. PUBLIC PERCEPTIONS AND OPINIONS

6.1. Level of Awareness and Acceptability

The respondents are aware about the proposed reclamation project at Tanjung Piai but less aware of the extensiveness of the proposed development that has been proposed by the project proponent (Table 5.9). The integrated petroleum hub and maritime industrial park on the reclamation land is new to them. Those who disagreed (about 51.2%) stated that their disagreements are due to their bad experienced caused by the previous of Tanjung Bin Power Plant and Tanjung Pelepas projects. The negative impacts which they quoted include river pollution, water pollution, marine pollution, loss of marine biodiversity and affect local tourism (Figure 5.2). They also stated that the proposed project will result in serious air pollution, noise annoyance and local safety.

Figure 5.2 Public concerns on the Propose Project Activities



About 5.9 percent of the respondents were not unsure or no comments because they did not have any negative experience from the previous projects in the area

because the distance from their house and the proposed project site are further away from their house or settlements. The percentage of respondents who are supporting the proposed project comprised of 42.9% of the total respondents due to their potential for creating more job opportunities during construction and operational, improve facilities and infrastructure development and would enhance local and economic growth in study area. The public responses toward the proposed project are as shown in Table 5.22.

Table 5.22 Public Perception towards the Proposed Project

| No | Reasons | Response | Percentage (%) |
|----|---|----------|----------------|
| 1 | Encourage development in the surrounding area | Agreed | 63.5 |
| 2 | Create job opportunity for the local residents | Disagree | 70.9 |
| 3 | Increase local income | Disagree | 74.3 |
| 4 | Increase in land value and price | Disagree | 83.5 |
| 5 | Increase in trade facilities and infrastructure | Disagree | 75.7 |
| 6 | Prepare proper planning for development | Disagree | 72.6 |
| 7 | Increase heavy vehicle movement | Agreed | 79.6 |
| 8 | Increase the living cost | Agreed | 87.7 |
| 9 | Affect the existing jobs | Agreed | 85.2 |
| 10 | Increase the value of house | Disagree | 72.2 |
| 11 | Foreign workers nuisance | Disagree | 80.9 |
| 12 | Social problem to residents | Disagree | 82.9 |

Source: Social Survey by Consultant, February 2013

Further public responses include are as shown in Table 5.22 with the majority of them expressed negative views of the proposed project in the ranging from 70.9% to 87.7% of the respondents. The proposed project development would not give any direct benefits to those communities living within the study area. New jobs created may not help the local people (70.9%), and as there would an increase in local living costs (87.7% agreed), affecting local opportunity of existing job seeker (85.2%) and there would be no new increase in the local income (74.3%) due to the development of the proposed project. The proposed project may create more new vehicles and cause major concerns on the local movements (79.6%). As far as the project development is concerned they felt that the community would be affected both in terms of economic development and social amenities.

7. PUBLIC INVOLVEMENT AND CONSULTATION

The public involvement and consultation provide present information of the proposed project and seek feedback from stakeholders. This qualitative technique will give better understanding the issues from the audience perceptions, needs, problems, belief, reason and opinions. These ensure that everyone gets a chance to provide comments, criticisms and feedbacks freely and spontaneously.

Two public engagements were carried out with AJK Persatuan Nelayan Kawasan Selatan Johor and communities Mukim Serkat. The information of these two public engagements is as shown in the Table 5.23 and Table 5.24 below.

Table 5.23 Public Involvement and Consultation

| No | Date | Location | Participants |
|----|---------------|---|--|
| 1. | 13 March 2014 | Pejabat Persatuan Nelayan Kawasan Selatan Johor | The participants consisted of representatives who are Ahli Jawatankuasa Persatuan Nelayan Kawasan Selatan Johor. |
| 2. | 16 March 2014 | Kompleks Penghulu Mukim Serkat | The participants consisted of Penghulu Mukim Serkat, JKKK Mukim Serkat, fishermen and villages in Mukim Serkat. |

Table 5.24 Issues and Concerns Raised during the Public Involvement and Consultation

| No | Date | Remarks |
|----|---------------|--|
| 1. | 13 March 2014 | <p>Several issues being discussed:</p> <ul style="list-style-type: none"> Existing fishing grounds within the coastal waters of Kukup and Mukim Serkat have been limited due to the existing Tanjong Pelepas Port and Tanjong Bin activities. The proposed reclamation project would aggravate further loss of the fishing ground of local fishermen. The consequences include the reduction fish catches and reduced fisherman's income; loss of jobs, declining fishing industry and other related industry (belacan or shrimp paste supply) Aquaculture activity in the Sungai Pulai area failed to produce good production of cage fishes due to pollutions of the marine waters. The deeper waters off west coast of Serkat have become mooring areas of the big vessels that deprived the local fishing ground. Extra operating cost in terms of fuel to travel to other fishing grounds They have no place to go if their traditional fishing area is lost because of the proposed project. <p>Suggestions/ Comment</p> <ul style="list-style-type: none"> Proposed to give good CSR such as: Proposed to give to them free shares and then invest (e.g.: ASB, LKIM) for future livelihood of the affected fishermen |

| No | Date | Remarks |
|----|---------------|--|
| | | <ul style="list-style-type: none"> • Or a proposal to give them monthly compensation as remuneration from the loss of fishing income. <div style="display: flex; justify-content: space-around;">   </div> |
| 2. | 16 March 2014 | <p>Several issues being discussed:</p> <ul style="list-style-type: none"> • A potential threat to local fishermen and fishing industry. • They are concerns about their plight as no parties are able to assist them in solving their problems. • The representatives have reservation on the proposed project. • The fishermen are concerned about their jetties would be removed. • The reclamation buffer should not deprive the local fishermen using the coastal strips between the project site and the coast. • Potential loss of fisheries and fishing grounds. • The effects on the fishing areas from sedimentation and siltation of the reclamation works. • They hope that project proponent would look into the future employment of the local fishermen once their fishing areas are depleted. • Potential sedimentation on aquaculture activities in Kukup Island and its vicinity. • Concern about health and safety of the local community from pollutions and hazardous materials from the operation of the proposed project. • They want an appropriate compensation. • The project proponent should provide job opportunities to the community. |

| No | Date | Remarks |
|----|------|--|
| | | <p>Suggestions/ Comment</p> <ul style="list-style-type: none">• Majority of the representatives suggested compensations that would provide sustainable livelihood for individuals living in the Serkat area.• Suggest having hospital for locals for present and future protection of the effects of such development.• They suggested that about 1% of the cost development being donated to the local community and the compensation can be invested for future development of the local community (business/cooperative).• Proposed to provide training courses for fishermen’s children so they have skill to work at the proposed project area.• Transfer fishermen to another area for involvement in fishing industry.• They are concerned that the project proponent and fishermen would in the win-win situation. They were deceived by Tanjung Bin project that not all the fishermen gains from such development. <div data-bbox="616 774 1137 1189"></div> <div data-bbox="1160 774 1635 1189"></div> |

IMPACT DURING CONSTRUCTIONS

SOCIO-ECONOMIC IMPACTS

The proposed reclamation project and the construction of various project activities would be developed in stages for a period of three to four years upon commencement. During the construction phase, the first activity is the preparation works for the reclamation of the coastal area for about 1,000 acres. The reclamation works would have the following impacts on the local economy as well the local people.

1. LOCAL FISHING INDUSTRY

For the last five years, most of the fishing grounds within 500m to 5 km off the coast of Mukim Serkat from Kukup Island in the north-west coast of Serkat, along the off-shore of west coast of Serkat, Tanjung Piai bay and the southern part of RAMSA near Tanjung Pelepas Port and its facilities have deprived away the fishing activities of the local fishermen. The fishing grounds have been off limits to the fishermen from the Tanjung Pelepas Port and activities due to its maritime navigations and polluting sources in the adjacent RAMSA waters from ships' ballast water discharged that have cause restriction and limits of fishing areas in the bay as well as the southern part of the RAMSA. The maritime activities also restrict fishermen from fishing the deep waters of the western Serkat due to the anchoring of big shipping vassals off the coastal area. Tanjung Bin power plant too has the same implication on the fishing areas of the local fishermen and the Orang Asli (in Gelang Patah) fishing groups in the southern parts of RAMSA near the power plant site within 100m to 1000m radius. As a consequence to the existing fishing grounds being reduced in size, the proposed project would reduce further or diminish the potential of the Tanjung Piai Bay to be a fishing ground for the local fishermen in the near future. This loss of fishing ground near Serkat area would create further mishap to the livelihood of the local fishermen especially that dependent on the coastal waters of Mukim Serkat. As such about 373 fishermen living in the southern coastal area of Mukim Serkat may lose their fishing grounds.

Table 1 shows the location of the respective villages that may be affected by the proposed project development during the reclamation development phase. The followings show the potential impacts to the fishing industry as well the fishermen themselves:

Table 1 Fishing Village and Jetty that would be affected within 5 km radius

| Village & fishing village | Jetty | Distance from the Jetty | Distance from the Proposed Project |
|---------------------------|-------------------------|-------------------------|------------------------------------|
| Kg Perpat Pasir | Perpat Pasir | 500 metre | 800 metre |
| Kg Serong Laut | | 500 metre | 800 metre |
| Kg Serong Darat | | 1000 metre | 1500 metre |
| Kg Perpat Darat | | 1500 metre | 2000 metre |
| Kg Serkat Timur | Parit Penghulu (Serkat) | 3000 metre | 4000 metre |
| Kg Serkat Barat | | 2000 metre | 4000 metre |
| Kg Serkat Laut | | 800 metre | 3000 metre |
| Pekan Serkat | | 1200 metre | 3000 metre |
| Kg Sungai Belukang | Sungai Belukang | 500 metre | 800 metre |
| Kg Perpat Punggor | | 800 metre | 800 metre |
| Kg Sungai Boh | Sungai Boh | 500 metre | 5000 metre |
| Kg Sg Cengkih | Sungai Cengkih | 500 metre | 3000 metre |
| Kg Sg Dinar | Sungai Dinar | 500 metre | 2000 metre |
| Kg Sg Sam | Sungai Chokoh | 1000 metre | 1500 metre |
| Kg Chokoh Kechil | | 800 metre | 1500 metre |
| Kg Chokoh | | 500 metre | 2300 metre |
| Kg Chokoh Besar | | 500 metre | 1800 metre |

1.1. Economic Loss

The economic loss to the fishing industry can be due to two main reasons. The first reason is that the economic loss as a result of the reduction of fishing grounds and consequently it affects the annual fish catch. The second reason is the number of declining active fishermen involved in the fishing industry due to the reduction in the fishing grounds and consequently affecting the annual fish catch and loss of fishermen's income.

- Before 2002, most of the fishing grounds in the study area remained productive due to less impact from the development of the power plant and Tanjung Pelepas Port. From the discussions with the fishermen and their representative at Serkat Town and FGD, they claimed that their income per fishing trip may go as high as RM500 to RM800 (in 2005). The expected fish and prawn landings were in the range of 50kg to about 80kg per trip with annual total catch of about 3,000 tons (0.05 tons fishes/trip @ 20 daytrips/month @12 months @ 250 fishermen) as compared with 2014's estimation of 1,594 tonnes per year(0.02 tons fishes/trip @ 20 days/month @ 12 months/year @ 373 fishermen) as per discussion with local fishermen in Kampong Serkat, January 2014. The monetary loss has been calculated to be about RM4.032 million (2002 fish price was estimated to be about RM4/kg and in 2014 RM5/kg). If there is a further reduction of fishing ground, the loss would be about RM11.2million (the estimated reduction of fishermen going to sea of about 90% of the existing pool).
- The fishing industry manpower has reduced so much that the future industry could not full fill the needs of this sector in terms of economic contribution to the local fishing industry and a burden to the society and government. Therefore it is crucial to see the present wellbeing of the fishermen and their spouses will be taken up by the project proponent.

Fishermen in 11 fish landing areas would experience a declining on their income because of the proposed reclamation site and the deterioration of their fishing grounds. Thus the proposed project may cause them to lose their traditional fishing grounds wholly. Moreover the proposed project will destroy

the marine habitat on the proposed reclamation area and disturbance of the mangrove areas along the coastal areas.

1.2. Community's Hardship

Majority of fishermen would not have the immediate capacity to venture into further distance of fishing area and more abundant fishing grounds is limited due to international water restriction of Singapore and Indonesia waters. Fishing off the Malaysian waters, will increase the capital costs of acquiring larger motorized fishing vessels and additional fuel cost. This will restrict them from venturing into 12 nautical miles off-shore fishing that would minimize their fishing activity and output from the sea. In the end these fishermen will face serious financial difficulties. It will place fishermen and fishing industries under severe pressure.

1.3. Limited Skilled Labor

Most of the fishermen start working at a younger age (average 16 years old) and remain in the fishing industry until today. Moreover, most of them are in their 40's and 60's. They have no other skills or limited to their present activities. Other skills have to be acquired and further training is required in order to compete with the people who are in the trading and tourism industry, as such they become less competitive with other people in the community. It is difficult for them to get involved in different industrial activities due to lacking of skills for other types of jobs. This will cause stress and hardship to them.

2. DUST POLLUTION

During reclamation phase, the potential impact would be dust generated from the reclamation works if it is not well controlled from the not compacted sand or earth. Even though mitigation measures have been proposed to reduce the fugitive dusts from the platform, any dust being blown towards the land and the settlement areas it would become a nuisance to the local people. It also will affect the health of the affected people such as allergies and asthma. This issue is taken up in the health impact sector of the study.

3. JOB OPPORTUNITIES

During the construction phase one, two and three about 8532 construction workers would be created mainly of skilled and semi-skilled workers. The local already expected that they may not be able to get the employment opportunity as provided by the project proponent due to the lack of skills in the respective jobs being offered. The locals do not have the required skills and they might be able to get the said jobs. Therefore, most of the created jobs would be given to outside people and many locals felt that they may not be able to secure any of the jobs mentioned above. Their past experienced told them that most of the new jobs created have been mere hearsay rather than the truth as an example the Tanjung Bin project. They would hope that the project proponent would consider of employing some of them especially their children who are in the working age group.

4. UNSKILLED LABOUR

Majority of the non-fishermen are also considered having very minimal skills to participate in the development of the proposed project. Lack of skilled manpower in Mukim Serkat will draw more outsiders mainly of foreign workers into the Mukim Serkat to full fill in the respective workforce such as management, business, finance, construction & manufacturing. As a result the local people would be deprived of involving with the billion dollar project.

5. INFLUX FOREIGNER WORKERS

The influx of foreigner workers into this area will increase the existing number of foreigner workers. The locals themselves would feel uncomfortable from the foreigner's presence in their villages as they are worried on the encroachment of new culture and values the differences of cultural and courses social impacts to the community. There would be high influx of outside workers that needs to be addressed by the local authority that it would include housing, supporting facilities and amenities.

6. BUSINESS OPPORTUNITIES TO LOCAL

There is no direct benefit to the local business people from the reclamation works as the physical development is beyond their capabilities. But the local people can provide food and restaurant services to workers indirectly especially during the day and night near the construction site.

The local contractors can provide dry food supplies to the base camp who are not necessarily the local contractors. Similarly, other construction materials and provisions would be supplied by local and outside contractors. It could be potential socio-economic spin-off effects to the local and outside business individuals such as traders, sundry shop and restaurant operators. There would substantial housing demands for the workers who are not staying in the base camp, which may create for new housing needs both for the locals and those are working at the reclamation project site. The week holiday makers would resort for homestay facilities and enhance the agro-tourism activity such as the Bee-honey farm, Coconut court, Gasing court and Keropok Lekor and hawkers

The overall economic benefits to the region are the potential daily expenditure of 1,500 works in the proposed project area that would amount to about RM22,500 for food daily. The project would provide nearly RM 4.356 billion for the reclamation cost (1000 acres@RM100/sq foot) that would benefits the various sectors which include service sectors, shipping industry, fill material suppliers, building material suppliers, technical and professional inputs. The impacts will not only the project but also the regional economy of Pontian and Johor Bahru districts.

7. TANJUNG PIAI RESORT

Tanjung Piai Resort would be directly affected by the proposed reclamation works. It would be displaced and stop operation due to the closeness of the site with the proposed development. Tourists are attracted during the weekends (104 days), public and school holidays (average 71 days/year) and 10% of the total room occupancy during the off-season period (19 days). Based on the number night-stay

and average room rates (RM124/person /night) the annual revenue of the resort is estimated generate between in RM2.5 million and RM3million. The owner is expected to lose an annual income of about RM3.0 million from room rentals and RM2.5 million from food and beverages at the resort annually. This estimate has been based on the discussion with the workers of the resort in December 2013 and the standard room rates at the resort. The resort workers (20 people) would also be affected include receptionists, managers, waiters, housekeepers, cooks and errand boys. The Tanjung Piai Resort's owner would also loss about RM1 million of assets if the resort has to be demolished for the project.

8. TANJUNG PIAI NATIONAL PARK

Covering an area of over 926 ha, the Tanjung Piai National Park consists of coastal mangroves and intertidal mudflats. Almost 526 ha of land here is mangrove while the rest is inter-tidal mudflats. Due to its vicinity to the sea, the mud has high salt content and low in oxygen levels. A few species of large water birds and shorebirds were seen to be feeding on these mudflats. These mangroves and mudflats are also critical to the survival of the migratory birds from the northern and southern hemisphere. Its unique geographical position at the southern tip of mainland Asia, at 1° 16.00' North and 103° 30.46' East coordinates, is the reason the park is proudly referred to as the Southernmost Tip of Mainland Asia. Tanjung Piai is heaven for a diverse species of flora and fauna, including those unique to mangrove areas such as mangrove crabs, beady-eyed mudskippers and crab-eating macaques. Tanjung Piai is also famous for being a hot spot for birdwatchers to visit during the migratory season which falls around September and March. This park has its unique features that require continuous protection and enhancement. Its eco-tourism features will require further protection both minimizing human encroachment and development.

In 2011, the park has had attracted about 65,000 visitors (Suhairi Hashim, JNPC, 2012) which generated about RM390,000 of entrance fees to the park. The existence of this park is vital for the tourism industry in the region. Any ecological interference by human would discourage the tourist arrivals into this park. Therefore, the development of this proposed project should not encroach into this

park area or its buffer zone. As far as the proposed project boundary limits, it does not directly affect the park area with a buffer zone of more than 500m from the coast. It is anticipated that the proposed project area takes care about the enhancement of the park habitat and its preservation of the park's characteristics.

MITIGATION MEASURES

The proposed mitigation measures are planned to minimize the social and economic impacts to the people affected by the proposed project.

1. MONETARY COMPENSATION

Monetary (cash) reward, such as a bonus must be considered by the project proponent as compensation for the loss of income and fishing ground of the fishermen. The amount must take into consideration of income loss, their hardships and other factors that would improve their livelihood and wellbeing. It is up to the project proponent and the Johor State Government to decide on the quantum and mode of payment if both parties agree to the proposed monetary compensation.

2. PROVIDING FACILITIES FOR FISHERMEN

Since coastal fishing is declining both in terms of fishing ground and their activities, the fishermen are left with land-base aquaculture at their disposal. Therefore the fishermen are better equipped with fishing knowledge on fishery activities but not the culture. It would be better with the help of Department of Agriculture and Fishery Department to expose the fishermen with aquaculture industry. They would need basic training in handling and culturing the land-based fishery. It is proposed that they are being assisted for self improvement such as the followings:

2.1. Technical and marketing Assistance

Project proponent and the relevant government agencies (Department of Fisheries, LKIM, FAMA, and others) must take the initiative to provide assistance in terms of training, know-how, marketing, off-site processing and technical knowledge to the affected fishermen. In the past, the fishermen through their cooperative association have lost their investments due to

inappropriate venture into business opportunity that cost them dearly. Therefore, it is crucial that they would be given the right tools and guidance in the right direction to enhance their economic life. Along the western eastern coastal areas have abundantly low land area there are suitable for land-based aquaculture activities. These areas can be converted into aquaculture activities for at least per lease basis. The only constraints are the land areas are under mangroves or other vegetations which may cause environmental degradation.

Department of Fisheries (DOF) has provided courses and license for different types of aquaculture that can involve fishermen, such as Mud Crab farming, Freshwater Prawn farming, Freshwater Fish farming, Leech farming and Seawater Prawn farming.

2.2. Get professional inputs in aquaculture business

In Department of Fisheries Malaysia, provides course and training to anyone involves in aquaculture business. Moreover, there is an *e-aquaculture system* that provides assistance to small scale culturist, private investors, entrepreneurs and those that are involved in aquaculture activities.

2.3. Venture into other aquaculture business outside the Serkat area

If it is not possible to do aquaculture on the coastal or land in Serkat area, fishermen can venture into other aquaculture business outside the Serkat area. Example the nearest is in aquaculture Kukup and Gelang Patah.

2.4. Joint venture with other fishing industry

The idea of joint venture with the existing operator of fish culture of Kukup Island would cause some commotion amongst the existing operators. It is up to LKIM or Department of Fishery to approve some portion or areas of the channel of the existing Kukup aquaculture activity to the affected fishermen as a cooperative activity. It is essential to provide some means of areas for the affected fishermen to work on something. Project proponent provides CSR in terms of fund in investing on fish culture industry (e.g: Kukup aquacultures).

An organised establishment must be organised to carry out such venture with assistance from various sectors of the government agencies and the project proponent.

3. TRAINING AND SKILLED DEVELOPMENT

3.1. Provide funding for new skill developments

Majority of the younger generation and some fishermen who have the potential to improve their living skills would like to learn new skills for the changing environment. As such with the assistance of the project proponent they could provide the right skill development for the new emerging industry through community outreach programmes, training, education and human capital development.

3.2. Skill Training in related fields of the new proposed project

To provide employment to the locals, project proponent can provide skills training in related fields of the new proposed project. These opportunities will be delight received by the locals too.

3.3. In service training for interested individuals in the reclamation project or industrial sectors

Unskilled youngsters might be interested to get involved in the reclamation process or industrial sectors in the proposed project. Project proponent could provide services training to them or guide them until they qualified.

3.4. Training for local entrepreneurs

Local entrepreneurs have limited opportunities in commercial and business ventures due to financial constraints and communication skill or in experience. Project proponent could provide and funding for the training courses for the local in entrepreneurship especially to the fishermen and their generation, so that they will able to enhance their livelihood. Moreover, locals who are

involving in business activities are able to engage in the provision of services in the construction industry.

4. STANDARD OPERATION PROCEDURE (SOP)

During construction and reclamation phase, the contractor should follow the Standard Operation Procedure (SOP). Conducts dust management procedures and mitigations during construction to minimizing air pollution impacts on the community.

5. PUBLIC CONSULTATION

Conduct more engagement/dialogue with the local communities to keep residents informed of environmental issues such as the safety level of air and water quality status.

6. HEALTH ASSISTANCE

Work in collaboration with the local health agency to monitor public health amongst the local residents if any issues arise due to the development of the proposed project.

7. NEGOTIATION WITH TANJUNG PIAI RESORT

Project proponent should engage the owner of Tanjung Piai Resort and discuss the suitable compensation from the Resort owner and workers.

8. THE ENHANCEMENT OF “AGRO-TOURISM TANJUNG PIAI”

Major reclamation and oil and gas industry in the proposed project activities would have impacts on the conservation of Tanjung Piai National Park. In order to ensure that the proposed project can minimize the local affects from dust, fire or other unexpected incidents, the project proponent can provide assistance in the managements of the National Park in terms of species conservation, minimize impacts from the project site and provide professional in habitat conservation and protection.

DURING OPERATION PHASE

SOCIO-ECONOMIC IMPACTS

Post construction stage or operation phase the anticipated impacts on the local communities are more of adjustment with the said development. The discussion will involve the identification of social impacts and follows by the recommendations of the appropriate measures to enhance or improve further the quality of live of residents living within the 5-km radius of the proposed project.

1. JOB OPPORTUNITIES

The proposed project do generates substantial number of employment opportunities both to the outsiders as well as the locals. It is expected that the proposed project would be able to generate more than 2,000 workers of various levels of expertises. The provision of jobs would mainly for people who have the right qualification and skills that normally not able to attract the local people.

Therefore majority of the local people will be left out from the main stream of the proposed development.

The spill-over effect is the attraction of supporting services such as schools, clinics, security (police), and other amenities and utilities for the new development areas such as new growth centres and enhancing the existing towns in the study area. Normally, the supporting services would be in the range of 500 to 1000 new supporting workers as mentioned above. As such the increase in the number of employment opportunities would increase the population growth in the Mukim. This domino effect would pressure the needs for new accommodations, utility, amenities and other services in the study area.

The maritime company would also develop in line with the new industries being proposed. Therefore in the next twenty years, there would be more than 5,000 employments being generated by the proposed project and the needs for new workers in various fields of interests.

2. URBAN TRANSFORMATION

The proposed project would be a catalyst for transforming the rural community and economy into an urban character that survives on industrial developments and commercial activities. Such changes may take more than 10 years where the people depend on new economy mainly of oil and gas and other downstream activities. Even though agriculture still be the main thrust of the rural economy but with the new influx of people from different background would change the rural landscape into more new urbanites through housing estates (either private motivated or public projects), government agencies for public services (police, hospitals, schools, fire brigade and other public services). The urban settlements that would be transformed would target more than 10,000 residents based on the number of generated employments from the proposed project and the supporting services. As such the population explosion in Mukim Serkat would change some of the existing towns and villages into urban form.

The government too would have some form of vision where the changes cannot be stopped just for the sake of retaining the rural community. They have to plan for the betterment of the communities in Mukim Serkat by introducing new focused development mainly for the basic government services and improved on the existing developments through local plan and structure plan for the Serkat area.

3. PROFESSIONAL INPUTS

The fate of the fishermen in study area remains uncertain due to the rehabilitation programme has not been planned or the appropriate government agencies still find difficulties to overcome the fishermen future. The issues are that the present fishermen group belongs to middle-age and slightly older people that have very limited skills in other work sectors such as entrepreneurship skills (trading, tourism activity, handicraft, and etc.). They have survived their entire life in fishing industry mainly of small time coastal fishing with simple fishing gear that they are self-sufficiently. It is proposed that these groups of fishermen be given some form lifeline to ensure that their future would ease out to meet the poverty limits are overcome.

3.1. Aquaculture Entrepreneurship

Aquaculture is not new to the fishermen in this area. The fishermen have tried other sectors of the fishing industry but they failed to succeed due to lack of knowledge, poor knowhow, funding issues, marketing efficiency and other related handicap such as negative attitudes, lacks of confidence and poorly exposed in the business. Therefore, the enhancement of fishermen communities would require an overall approach of changing their world-view and their attitudes towards a more acceptable change in their physical appearance and accepted norms and value of modern fishermen. The following recommendations are recommended:

3.2. Professional Training and Input

Recruit those who are interested in getting new knowledge in fishing industry to formal and informal engagements of venturing in the fishing industry. Provide them with the new knowledge of aquaculture activities together with hands on

experiences of operating aquaculture business. These trainings must incorporate the basic handlings of infrastructure (ponds or cages), selection of appropriate locations, nursery selection and management, handlings during operation, fish health and diseases, marketing and other necessary accounting and housekeeping exercises. This training can be provided by the Department of Fisheries Malaysia (DOF) who has conducted course and training in aquaculture business. Moreover, there is an *e-aquaculture system* that provides assistance to small scale culturist, private investors, entrepreneurs and those that are involved in aquaculture activities.

The project proponent can assist with help of the LKIM and other government agencies to recruit some of these fishermen in getting the appropriate knowledge in enhancing their future venture in improving their livelihood and wellbeing.

3.3. Aquaculture Ventures

There are two ways of doing things. The first approach of getting the appropriate sites for the aquaculture areas those are quite abundant along the coastal areas of Mukim Serkat. These areas are under mangroves and needs the approval of the Department of Forestry (DOF) and other relevant agencies for operating in these sensitive areas. It could start on a small time venture with a handful number of fishermen.

The second approach is to venture into other aquaculture business outside the Mukim Serkat area. They have an administrative centre in Serkat but the production areas are outside the Mukim Serkat. The fishermen corporative can get assistance from the relevant government agencies with a nominal capital expenditure of less than RM 1million (the funding could have been provided by the project proponent through their CSR).

3.4. Other Professional Inputs

The communities in the Serkat area survive on agriculture as well as fishing activities. Some of them have been involving in commercial and construction

activities. The potential changes that have been planned in Serkat would cause some cultural shock to the locals. They have been brought into this scenario from the beginning of the development until future endeavour where they might not be able to cope with the changing trends within the next five years. Many of the people are not prepared for the changes and they might be left behind of the developing economic changes.

The professional inputs in terms of how they would adjust to the changes and what opportunities they can take in order to meet with the drastic changes in their community. There must be right information from the respective agencies as well as the project proponent to look into this matter. A professional group of people is required to assist the local people in providing information on future growth corridor in Mukim Serkat, potential development areas, increase in the number traffics and physical developments in their towns or new areas to be developed soon.

MITIGATION MEASURES

1. DEVELOPMENT PLANNING

Johor State Government and the Department of Rural and Urban Planning must take pro-active moves in dealing with the expected changes in Mukim Serkat to indicate the future growth corridor, potential urban development and areas that needs to be conserved and other related land use. There would be a strong increase in population that would be aggravated by immigration of people. The planned growth is crucial for Serkat so that the planned growth would direct the land use activities for the future generation of Serkat. The project proponent by now must indicate their work plan for the settlement of more than 5,000 workers or more for their housing needs (in stages) and other necessary needs of the people living within 5-km radius of the proposed project. The provisions of adequate amenities and facilities for the growing community that would have made the sprawl development unacceptable.

1.1. Conservation of RMSA

The government and the respective operators in the southern Pulai catchment must ensure that the RMSA is protected as under the National Physical Plan 1 and 2. It necessary to maintain the existing National Park and RAMSA as it existing natural condition. The reclamation project has to be made through SOP and other management practices so that the unintended pollution to reach the RMSA sites.

1.2. Training and Management Inputs

Enhance male and female educational achievements, skills and job opportunities in various fields of business and trading, semi-professional jobs through education and training. The government alone would not be able to achieve the social enhancement targets. Therefore, the project proponent through Corporate Social Responsibility (CRS) scheme or programme can assist the government in achieving their social goals of enhancing the livelihood and wellbeing of Mukim Serkat community. Moreover, trains the locals to get the right and appropriate qualification (managerial, professional and technical areas) in order to meet the new job opportunities that would be created.

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Kajian Impak Alam Sekitar Terperinci (DEIA) bagi Cadangan Pembangunan *Integrated Petroleum Hub dan Maritime Industrial Park* termasuk Penambakan di Tanjung Piai, Pontian, Johor Darul Takzim.

Kajian ini bertujuan untuk mendapatkan maklumbalas dan maklumat tentang kesan alam sekitar ke atas sosio-ekonomi dan kesihatan penduduk tempatan yang terlibat secara langsung atau tidak langsung dengan Kajian Impak Alam Sekitar Terperinci (DEIA) Bagi Cadangan Pembangunan *Integrated Petroleum Hub dan Maritime Industrial Park* termasuk Penambakan di Tanjung Piai, Pontian, Johor Darul Takzim. Tuan-tuan atau puan-puan adalah dinasihatkan untuk memberikan jawapan yang betul dan terkini agar setiap maklumat yang dianalisis dan dirumuskan dapat menggambarkan situasi yang sebenar dan tepat. Segala maklumat peribadi atau yang perlu dirahsiakan tidak akan didedahkan. Kerjasama dan bantuan Tuan/Puan amat dihargai dan didahului dengan ucapan terima kasih.

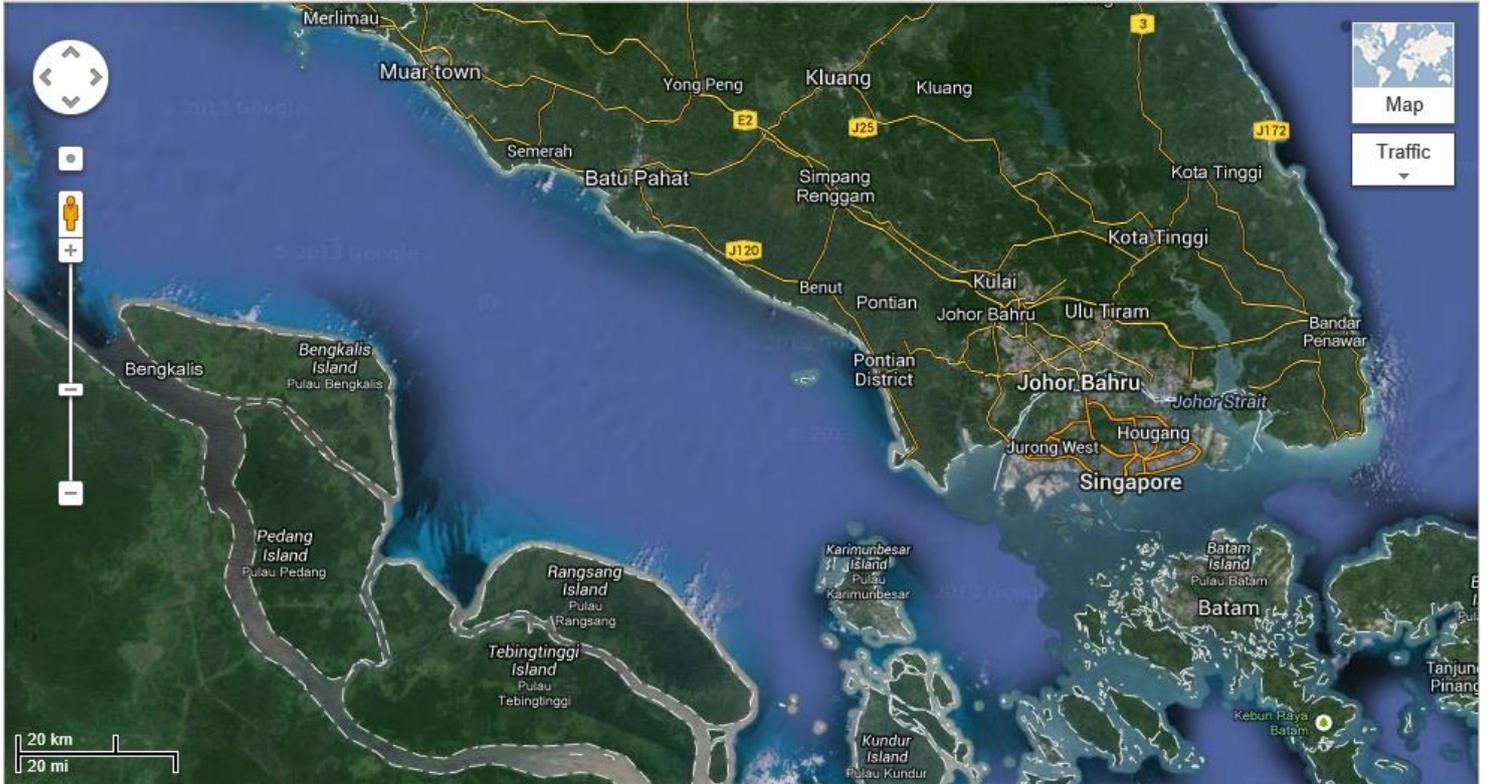
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| Tarikh: | Masa: | Lokasi: | |
| Penemuramah: | | Penyelia: | |

| A) Latar belakang Sosial | | | | | | | | | | | |
|--------------------------|----------------------------------|-----|---------------|------|--|-----|---------------------------|------|-----------------------|---|-------------|
| 1.0 | Warganegara | 2.0 | Jantina | 3.0 | Umur (Tahun) | 4.0 | TarafPerkahwinan | 5.0 | TarafPendidikan | | |
| 1 | Malaysia | 1 | Lelaki | 1 | ≤ 17 | 1 | Bujang | 1 | SPM kebawah | 4 | Ijazah |
| 2 | BukanWarga | 2 | Perempuan | 2 | 18-25 | 2 | Berkahwin | 2 | STPM/Sijil | 5 | Lain-lain |
| | | | | 3 | 26-40 | 3 | Lain-lain | 3 | Diploma | | |
| | | | | 4 | 40-60 | | | | | | |
| | | | | 5 | 60 keatas | | | | | | |
| 6.0 | Bangsa | 7.0 | Agama | 8.0 | TempatBekerja | | | | | | |
| 1 | Melayu | 1 | Islam | 1 | DalamKampung | 6 | PekanTelukKerang | 11 | Senai | | |
| 2 | Lain Bumiputera | 2 | Buddha | 2 | PekanSerkat | 7 | Bandar Pontian | 12 | Johor Bahru Central | | |
| 3 | Cina | 3 | Hindu | 3 | Kukup | 8 | PekanNenas | 13 | Skudai | | |
| 4 | India | 4 | Kristian | 4 | Bandar Permas | 9 | Tg Bin | 14 | GelangPatah | | |
| 5 | Lain-lain | 5 | Lain-lain | 5 | TgPiai | 10 | TgPelepas | 15 | Singapura | | |
| 9.0 | Pekerjaan | | | 10.0 | Pendapatan Isi Rumah (Bulanan) RM | | | 11.0 | Bilangan Isi Rumah | | |
| 1 | Nelayan | 4 | Sendiri | 1 | <500 | 4 | 1,500-2,000 | 1 | 1-3 | 4 | 10-12 |
| 2 | Kakitangan Kerajaan | 5 | Lain-lain: | 2 | 500-1,000 | 5 | 2,000-3,000 | 2 | 4-6 | 5 | >12 |
| 3 | Kakitangan Swasta | 6 | Tidak bekerja | 3 | 1,000-1,500 | 6 | >3,000 | 3 | 7-9 | | |
| 12.0 | BilanganKenderaanSeisirumah | | | 13.0 | JenisRumah Yang Dimiliki / Diduduki | | | 14.0 | JenisPemilikanRumah | | |
| 1 | Kereta | | 5 Lain-lain: | 1 | Kampung | 5 | Teres (2 Tingkat)/ Semi-D | 1 | Sewa | 4 | Asrama |
| 2 | Motorsikal | | | 2 | Banglo | 6 | Flat/Apartment | 2 | Beli | 5 | Setinggalan |
| 3 | Van | | | 3 | Teres (1tingkat) | 7 | Setinggalan | 3 | Kuarters | 6 | Lain-lain: |
| 4 | Basikal | | | 4 | Lain-lain: | | | | | | |
| 15.0 | Tempohtelahmenetap di kawasanini | | | 16.0 | Mengapa kawasan ini dipilih sebagai tempat tinggal anda? | | | | | | |
| 1 | Satutahunkebawah | 4 | 6 – 9 tahun | 1 | Rumahdan Tanah Sendiri | | | 4 | Perhubungan yang baik | | |
| 2 | 1 – 3 tahun | 5 | 9 tahunkeatas | 2 | Bekerja di sini | | | 5 | Lain-lain : | | |
| 3 | 3 – 6 tahun | | | 3 | Berhampirandengantempatkerja | | | | | | |

B) Perikanan

| B) Perikanan | | | | | |
|--------------|---|-------------|--|-------------|--|
| 17.0 | Pekerjaan dalam Perikanan | 18.0 | Peralatan yang Digunakan | 19.0 | Jenis Ikan/Hidupan Laut Di Tangkap |
| 1 | Nelayan Pantai | 1 | | 1 | |
| 2 | Nelayan Laut Dalam | 2 | | 2 | |
| 3 | Perternak Akuakultur | 3 | | 3 | |
| 4 | Pemandu Bot/Kapal | 4 | | 4 | |
| 5 | Baiki Enjin Bot/Kapal | 5 | | 5 | |
| 6 | Pembuat Pukat | 6 | | 6 | |
| 7 | Pemprosesan & Memindahkan selepas ikan mendarat | 7 | | 7 | |
| 8 | Pengurusan perniagaan & pentadbiran | 8 | | 8 | |
| 20.0 | Adakah anda pemilik bot/kapal? | 21.0 | Saiz & Jenis Bot/Kapal | 22.0 | Tempat Pendaratan |
| 1 | Ya | 1 | | 1 | |
| 2 | Tidak | 2 | | 2 | |
| 23.0 | Purata Penangkapan Sekali Turun | 24.0 | Waktu/Musim/Bulan turun ke Laut | 25.0 | Berapa krew yang ada dalam bot anda? |
| 1 | | 1 | | 1 | |
| 2 | | 2 | | 2 | |
| 26.0 | Berapa lama anda telah menjadi nelayan di sini? | 27.0 | Secara purata, berapa kali anda turun ke laut dalam masa sebulan? | 28.0 | Adakah anda mempunyai pendapatan lain? |
| 1 | | 1 | | 1 | Ya |
| 2 | | 2 | | 2 | Tidak |
| 29.0 | Adakah jumlah penangkapan anda semakin bertambah/berkurangan? | 30.0 | Adakah jumlah pendapatan anda semakin berkurang atau bertambah? | 30.0 | Adakah cadangan projek ini akan mengurangkan hasil tangkapan & pendapatan anda? |
| 1 | Bertambah | 1 | Bertambah | 1 | Ya |
| 2 | Berkurangan | 2 | Berkurangan | 2 | Tidak |
| 3 | Tiada Perubahan | 3 | Tiada Perubahan | | |
| 31.0 | Apakah kesan cadangan projek ini kepada anda? | 32.0 | Mengapa? | | |
| 1 | Positif | 1 | | 4 | |
| 2 | Negatif | 2 | | 5 | |
| 3 | Tiada kesan | 3 | | 6 | |
| 33.0 | Adakah anda sanggup menukar pekerjaan pada masa akan datang? | 34.0 | Sebab-sebab tidak sanggup? | | |
| 1 | Ya | 1 | | 3 | |
| 2 | Tidak | 2 | | 4 | |
| 35.0 | Jika anda tidak lagi bekerja di dalam industri perikanan kawasan ini, adakah anda: | 36.0 | Kemungkinan impak lain daripada projek ini? | | |
| 1 | Perlu mencari pekerjaan lain di kawasan ini | 1 | | 4 | |
| 2 | Perlu meninggalkan kawasan ini untuk mencari pekerjaan | 2 | | 5 | |
| 3 | Lain-lain: | 3 | | 6 | |

37.0 Dengan menggunakan peta yang disediakan, tunjukkan (bulatkan dan lorekkan) kawasan-kawasan penangkapan ikan yang penting bagi anda? Dengan menggunakan peta yang sama, tunjukkan (gariskan) laluan anda pergi ke kawasan-kawasan ini.



C) Industri Pelancongan

| 34.0 Pekerjaan anda dalam pelancongan | | | | | |
|--|----------------------|---------------------------------|-------------------------------------|---------------------------------|--|
| 1 | Pemilik Homestay | 5 | Pemilik Restoran Makanan Laut | 9 | Agensi Pelancongan |
| 2 | Pekerja Homestay | 6 | Pekerja Restoran Makanan Laut | 10 | Pengusaha produk makanan laut |
| 3 | Pemilik Resort/Hotel | 7 | Pekerja di Taman Negara Tg. Piai | 11 | Pekerja dalam pengusahaan makanan laut |
| 4 | Pekerja Resort/Hotel | 8 | Pekerja di Taman Negara Pulau Kukup | 12 | Lain-lain: |
| 35.0 Pendapatan dalam industri ini | | 36.0 Sebab Kedatangan Pelancong | | 37.0 Waktu Kedatangan Pelancong | |
| 1 | Sebulan : | 1 | Taman Negara Tg Piai | 1 | Hari Biasa |
| 2 | Cuti Sekolah: | 2 | Taman Negara Pulau Kukup | 2 | Hari Minggu |
| 3 | Cuti Umum: | 3 | Restoran Makanan Laut | 3 | Cuti Sekolah |
| | | 4 | Produk Makanan Laut | 4 | Cuti Umum |
| | | 5 | Tanah Terselatan Benua Asia | | |
| | | 6 | Lain-lain: | | |
| 38.0 Kesan cadangan projek ini kepada Industri Pelancongan | | | | | |
| 1 | | 3 | | 5 | |
| 2 | | 4 | | 6 | |

D) Pertanian

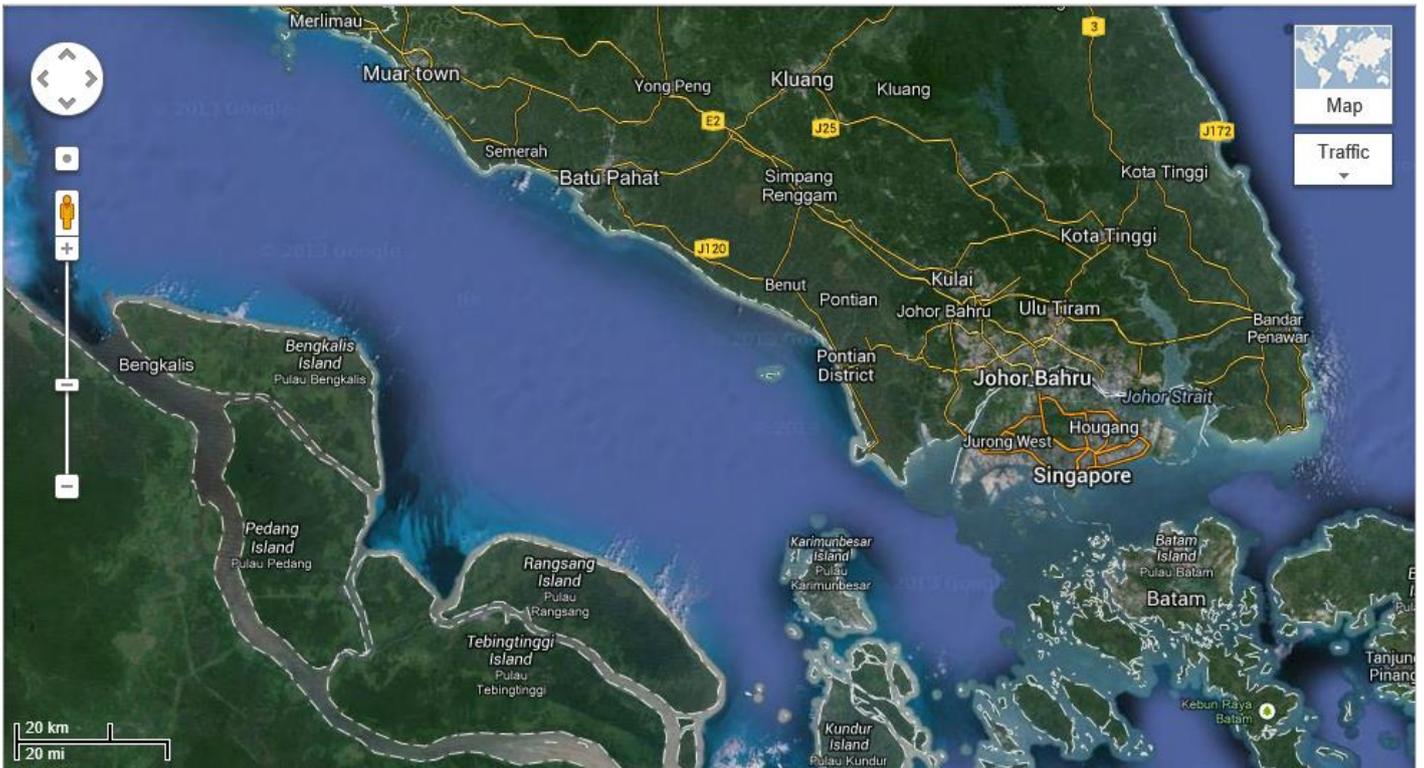
| 39.0 | Jenis Pertanian | 40.0 | Berapapendapatan daripadapertanian? | 41.0 | Kesan kepada Pertanian |
|------|-----------------|------|-------------------------------------|------|------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| D) Keadaan Trafik Semasa | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|
| 42.0 | Keadaan Semasa Kesesakan Lalulintas (kadar setuju - nombor 1 rendah dan 6 tinggi) | | | | | | |
| | Kenyataan | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | Kenderaan banyak pada waktu puncak (waktu pagidan petang) | | | | | | |
| 2 | Kesesakan berhampiran sekolah/masjid/lain-lain: | | | | | | |
| 3 | Tiada ruang parkir di kawasan sekolah | | | | | | |
| 4 | Jalan sentiasa sesak dengan kenderaan berat | | | | | | |
| 5 | Tiada laluan basikal | | | | | | |
| 6 | Mengganggu perniagaan penduduk tempatan | | | | | | |
| 7 | Kenderaan laju | | | | | | |
| 8 | Jalan raya sempit | | | | | | |
| 9 | Kesesakan ketika cuti sekolah (kunjungan pelancong) | | | | | | |
| 10 | Jalan raya terlalu dekat dengan kediaman | | | | | | |
| 11 | Kemalangan kerap berlaku | | | | | | |
| 12 | Ganggu bunyi hingar daripada kenderaan di jalan raya berdekatan | | | | | | |
| 13 | Jika pengambilan tanah untuk tambah/ besarkan laluan jalan | | | | | | |

| E) Pandangan dan Persepsi Terhadap Projek | | | |
|---|--|------|---|
| 43.0 | Apakah anda huberkena cadangan projek ini? | 44.0 | Apakah pendapat anda terhadap cadangan projek ini? |
| 1 | Ya | 1 | Sokong |
| 2 | Tidak | 2 | Tidak Menyokong |
| 3 | Kurang Pasti | 3 | Tiada Pendapat |
| 45.0 | Mengapa: | | |
| 1 | | | |
| 2 | | | |
| 46.0 | Adakah cadangan Pembangunan Projek ini mewujudkan sebarang masalah ke atas alam sekitar? | 47.0 | Apakah masalah alam sekitar yang akan timbul pada pandangan anda? |
| 1 | Ya | 1 | |
| 2 | Tidak | 2 | |
| 3 | Kurang Pasti | 3 | |
| 48.0 | Apakah kesan positif projek ini kepada anda dan masyarakat tempatan? | | |
| 1 | Menggalakkan pembangunan & pertumbuhan. | | |
| 2 | Membuka peluang pekerjaan. | | |
| 3 | Menambahkan pendapatan tempatan | | |
| 4 | Meningkatkan nilai dan harga tanah. | | |
| 5 | Memperbanyakkan kemudahan perdagangan dan infrastruktur. | | |
| 6 | Menyediakan pembangunan yang lebih terancang. | | |
| 7 | Lain-lain: | | |
| 49.0 | Apakah kesan negatif projek ini kepada anda dan penduduk tempatan? | | |
| 1 | Lalulintas daripada kenderaan berat keluar masuk daripada kawasan projek | | |
| 2 | Meningkatkan kos hidup penduduk tempatan. | | |
| 3 | Menjejaskan pendapatan tempatan / pekerjaan yang sedia ada | | |
| 4 | Meningkatkan harga tanah. | | |
| 5 | Kehadiran pekerja asing mengganggu penduduk setempat. | | |
| 6 | Menambahkan masalah sosial di kalangan penduduk tempatan. | | |
| 7 | Lain-lain: | | |

F) Hidupan Laut

| | | | |
|------|---|---------------------------------|------------------------------------|
| 50.0 | Dengan menggunakan gambar dan peta disediakan, bolehkah tuan/puan tanda (di atas peta) di mana hidupan ini pernah dilihat di kawasan peta | | |
| 51.0 | Marine Creatures/ Hidupan Marin | Last Sighting/ Tarikh nampak | No. of animals Bilangan hidupan |
| | 1.Dugong | | |
| | 2.Dolphins (Ikan Duyung) | | |
| | 3.Sharks (Ikan Yu) | | |
| | 4.Sea Turtles (Penyu) | | |
| | 9.Seahorses (Kuda Laut) | | |
| | 10.Estuarine Crocodile (buaya air masin) | | |
| | Other valuable/rare species/dangerous sea creatures to the local community – Hidupan laut berharga/jarang/bahaya yang lain : | | |



| G) KESIHATAN | | | | | |
|--------------|--|--------------------------|--------|--------------------|-----------|
| 52.0 | Kampung/Taman (tempat tinggal) | | | | |
| 53.0 | Tarikh Lahir | | | | |
| 54.0 | Jantina | | Lelaki | | Perempuan |
| 55.0 | Jenis tandas digunakan: | | | | |
| | 1 | Tandas pam | 4 | Tandas curah | |
| | 2 | Tandas lubang | 5 | Sungai / Parit | |
| | 3 | Pantai / laut | 6 | Lain-lain: | |
| 56.0 | Bekalan air rumah | | | | |
| | 1 | Telaga tiub | 4 | Telaga terbuka | |
| | 2 | Paip luar rumah (kongsi) | 5 | Paip dalam rumah | |
| | 3 | Tadahan air hujan | 6 | | |
| 57.0 | Kaedah buang sampah rumah | | | | |
| | 1 | Tanah lapang | 3 | Bakar | |
| | 2 | Tanam | 4 | Majlis Perbandaran | |
| | | Lain-lain, jelaskan: | | | |
| 58.0 | Masalah kesihatan yang pernah di alami oleh ahli keluarga dalam masa enam bulan ini? | | | | |
| | 1 | Batuk kahak | 6 | Demam selsema | |
| | 2 | Sesak nafas | 7 | Muntah / cirit | |
| | 3 | Sakit dada | 8 | Bengkak kaki | |
| | 4 | Demam panas | 9 | Gatal kulit | |
| | 5 | Gatal Mata | | | |
| 59.0 | Penyakit yang disahkan oleh doktor, pernah di alami oleh ahli keluarga dalam masa enam bulan ini? | | | | |
| | 1 | Jangkitan peparu | 7 | Dermatitis | |
| | 2 | Asma | 8 | Diabetes | |
| | 3 | Kurang zat | 9 | Darah tinggi | |
| | 4 | Serangan jantung | 10 | Jangkitan kulit | |
| | 5 | Untut | 11 | Denggi | |
| | 6 | Kurang darah | 12 | Kepialu | |
| 60.0 | Adakah terdapat ahli keluarga yang dimasukkan ke hospital untuk rawatan dalam masa enam bulan ini? | | | | |
| | 1 | Ya (ke soalan 61.0) | 2 | Tidak | |
| 61.0 | Penyakit ahli keluarga yang disahkan oleh doktor hospital? | | | | |
| | 1 | Asma | 7 | Jangkitan kulit | |
| | 2 | Kurang zat | 8 | Diabetes | |
| | 3 | Serangan jantung | 9 | Filariasi | |
| | 4 | Darah tinggi | 10 | Malaria | |
| | 5 | Denggi | 11 | Anemia | |
| | 6 | Kepialu | 12 | Kemurungan | |