

### 3. PRESENT CONDITIONS OF THE PRINCIPAL RIVER PORTS IN SUMATRA

#### 3.1 Regional Development Plans

##### 3.1.1 General

###### (1) Sumatra Island

###### 1) Topography

Sumatra Island has topographical characteristics that mountains stretch in a raw and form the west edge of the island and that, contrarily, the eastern regions are formed of low land and swampy coasts especially in provinces of Riau, Jambi and South Sumatra. Many rivers are running from the western mountains to the east coasts. Our target ports, Ports of Pekanbaru, Jambi and Palembang, are located on the banks of such rivers midst the low land.

###### 2) Area and Population

Area and population of Sumatra account for 482,393 km<sup>2</sup> and 44 million respectively showed in Table 3.1.1. Population density of Sumatra Island is lower than that of Indonesia and those of the tree provinces are further lower than that of Sumatra.

**Table 3.1.1 Area and Population in Sumatra**

| Province      | Area<br>(km <sup>2</sup> ) | Population      |                 |                 |                                 |                                     |
|---------------|----------------------------|-----------------|-----------------|-----------------|---------------------------------|-------------------------------------|
|               |                            | 1990<br>(1,000) | 1995<br>(1,000) | 1999<br>(1,000) | annual growth rate<br>99/90 (%) | density('99)<br>pax/km <sup>2</sup> |
| Aceh          | 55,390                     | 3,416           | 3,847           | 4,145           | 2.17                            | 74.8                                |
| North Sumatra | 71,680                     | 10,256          | 11,115          | 11,955          | 1.72                            | 166.8                               |
| West Sumatra  | 42,898                     | 4,000           | 4,323           | 4,595           | 1.55                            | 107.1                               |
| Riau          | 94,561                     | 3,304           | 3,900           | 4,291           | 2.95                            | 45.4                                |
| Jambi         | 53,436                     | 2,020           | 2,370           | 2,590           | 2.8                             | 48.5                                |
| South Sumatra | 109,254                    | 6,313           | 7,208           | 7,734           | 2.28                            | 70.8                                |
| Bengkulu      | 19,789                     | 1,179           | 1,409           | 1,557           | 3.14                            | 78.7                                |
| Lampung       | 35,385                     | 6,018           | 6,658           | 7,081           | 1.82                            | 200.1                               |
| Sumatra Total | 482,393                    | 36,506          | 40,830          | 43,947          | 2.08                            | 91.1                                |
| Indonesia     | 1,937,179                  | 179,379         | 194,755         | 206,517         | 1.58                            | 106.6                               |

Based on Population Censuses 1990 & 1995 and projection at Intercensal Population Survey 1995

Source: Statistic Indonesia 1999, BPS

###### 3) Transportation Network

Transportation in Sumatra is greatly affected by the topography. The east-west land transportation in the island is interfered by mountains. Three trunk roads, however, are running in a parallel with the coasts, on the west coast, along the east skirt of the mountains and midst of the low land servicing north-south transportation. These trunk roads are called the Trans Sumatra Highways and connect

main cities situated along rivers and on the coast each other.

The rivers play important roles as east-west inland waterway routes, especially cargo outlet and gateway to/from the eastern sea through Ports of Pekanbaru, Jambi and Palembang, our target ports. The other main ports, Ports of Belawan, Dumai, Padang, Bengkulu and Lampung are located on the coast.

Moreover, railways are operated in Aceh/North Sumatra West Sumatra and South Sumatra/Lampung regions for transportation of mineral resources as well as for passenger.

#### 4) Industries

The mountain regions are rich in mineral resources such as coal, gold, tin, etc., whereas the lowlands can provide rich oil/gas fields and cultivation land suitable for plantation of oil palm, rubber, etc. Forest is another asset of Sumatra. Logging in both mountains and low lands is important industry in the island.

Under these conditions, oil and gas production, oil refinery, coal mining, wood processing, paper/chip production, agricultural plantation and CPO production, etc. have been developed as main industries in Sumatra Island. Table 3.1.2 shows GRDP by industrial origin and province. This shows that main industries of Riau are oil/gas mining and manufacturing. Similarly, it gives general understanding that Jambi's leading industry is agriculture and that agriculture, mining, manufacturing and trade/hotel etc. evenly contribute to the economy of South Sumatra.

Per Capita GRDP of each province is shown in Table 3.1.3. Only Riau, in case with oil/gas, has larger values than the state average.

**Table 3.1.2 Gross Regional Domestic Product at Current Market Price by Industrial Origin (1998)**

(Billion Rp.)

| Industrial Origin                    | Riau   | Jambi | South Sumatra | Indonesia |
|--------------------------------------|--------|-------|---------------|-----------|
| Agriculture                          | 3,374  | 2,228 | 6,563         | 181,021   |
| Estate Crops                         | 1,138  | 696   | 2,800         | 33,727    |
| Forestry                             | 855    | 334   | 723           | 17,098    |
| Mining and Quarrying                 | 24,748 | 730   | 8,302         | 137,629   |
| Crude Petroleum & Natural Gas        | 24,391 | 675   | 4,668         | 83,633    |
| Non Oil and Gas Mining               | 226    | 0     | 3,260         | 44,303    |
| Manufacturing                        | 6,536  | 979   | 7,018         | 245,411   |
| Crude Oil & Gas Manufacturing        | 2,163  | 0     | 1,552         | 29,437    |
| Non Oil & Gas Manufacturing          | 4,373  | 979   | 5,467         | 215,974   |
| Electricity, Gas & Water Supply      | 150    | 39    | 165           | 11,149    |
| Construction                         | 972    | 220   | 1,547         | 55,591    |
| Trade, Hotel & Restaurant            | 2,856  | 1,242 | 5,094         | 167,117   |
| Transportation & Communication       | 98     | 554   | 1,203         | 41,837    |
| Finance, Dwelling & Business Service | 1,566  | 263   | 1,407         | 70,007    |
| Services                             | 1,189  | 602   | 1,772         | 82,472    |
| Total with Oil & Gas                 | 42,491 | 6,859 | 33,072        | 1,002,333 |
| Total without Oil & Gas              | 16,049 | 6,184 | 26,852        | 889,263   |

Source: Statistic Indonesia 1999, BPS Riau in Figures 1999, BPS of Riau

Jambi in Figures 1999, BPS of Jambi South Sumatra in Figures 1999, BPS of South Sumatra

**Table 3.1.3 Per Capita GRDP of Each Province (1998)**

| Island, Province         | With Oil & Gas<br>(1'000 Rp.) | Without Oil & Gas<br>(1'000 Rp.) |
|--------------------------|-------------------------------|----------------------------------|
| Aceh                     | 6,168                         | 2,711                            |
| North Sumatra            | 4,148                         | 4,091                            |
| West Sumatra             | 4,013                         | 4,013                            |
| Riau                     | 10,234                        | 3,865                            |
| Jambi                    | 2,641                         | 2,469                            |
| South Sumatra            | 4,316                         | 3,523                            |
| Bengkulu                 | 2,262                         | 2,262                            |
| Lampung                  | 2,800                         | 2,800                            |
| Sumatra Total            | 4,571                         | 3,462                            |
| Indonesia (27 Provinces) | 4,435                         | 3,968                            |

Source: Statistic Indonesia 1999, BPS

**(2) Riau**

Riau Province, where Port of Pekanbaru is located, occupies part of the northern Sumatra with 94,561 Km<sup>2</sup> of area and 4.3 million of population (1999) having mountainous area in the west end

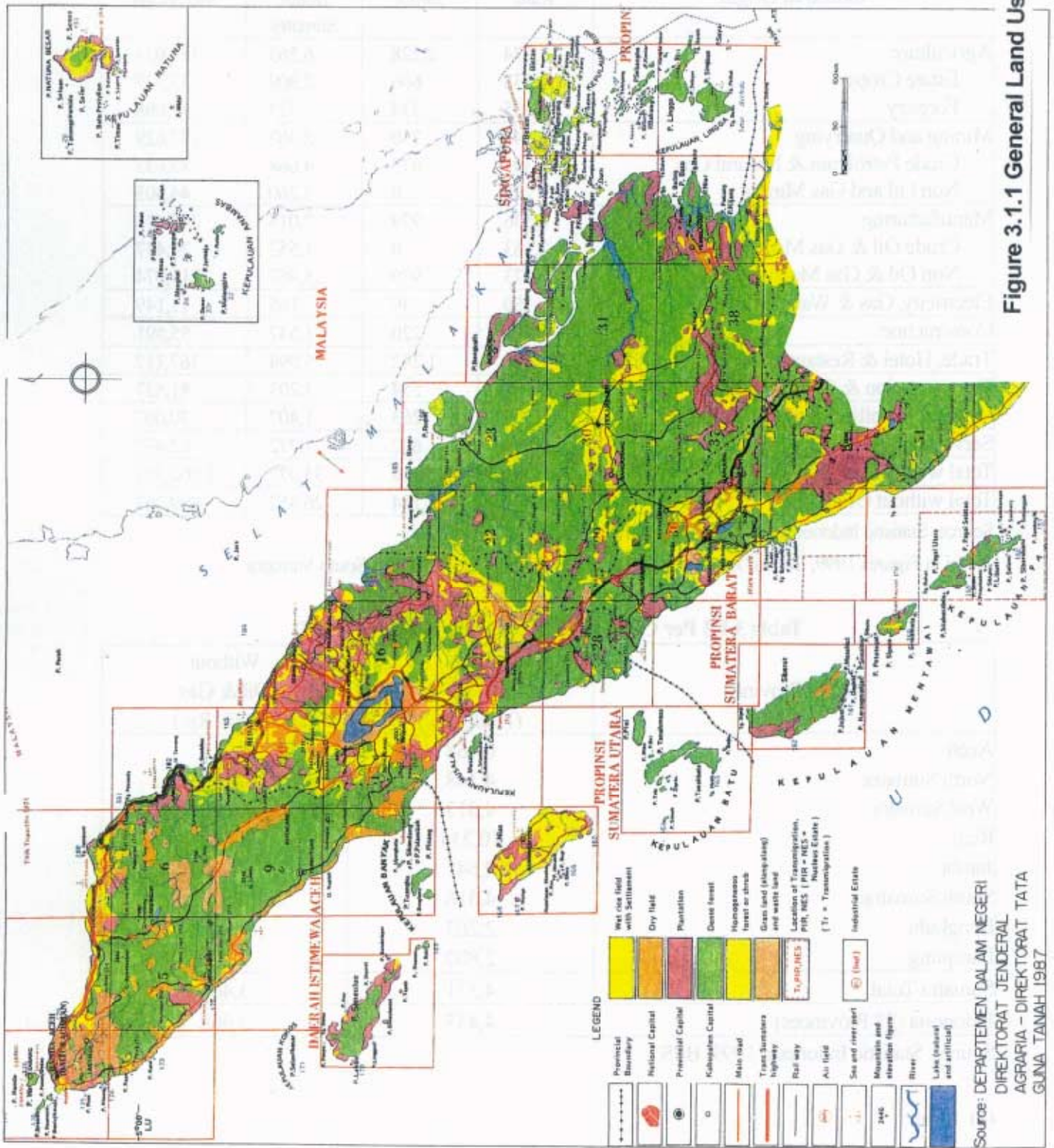


Figure 3.1.1 General Land Use in Riau

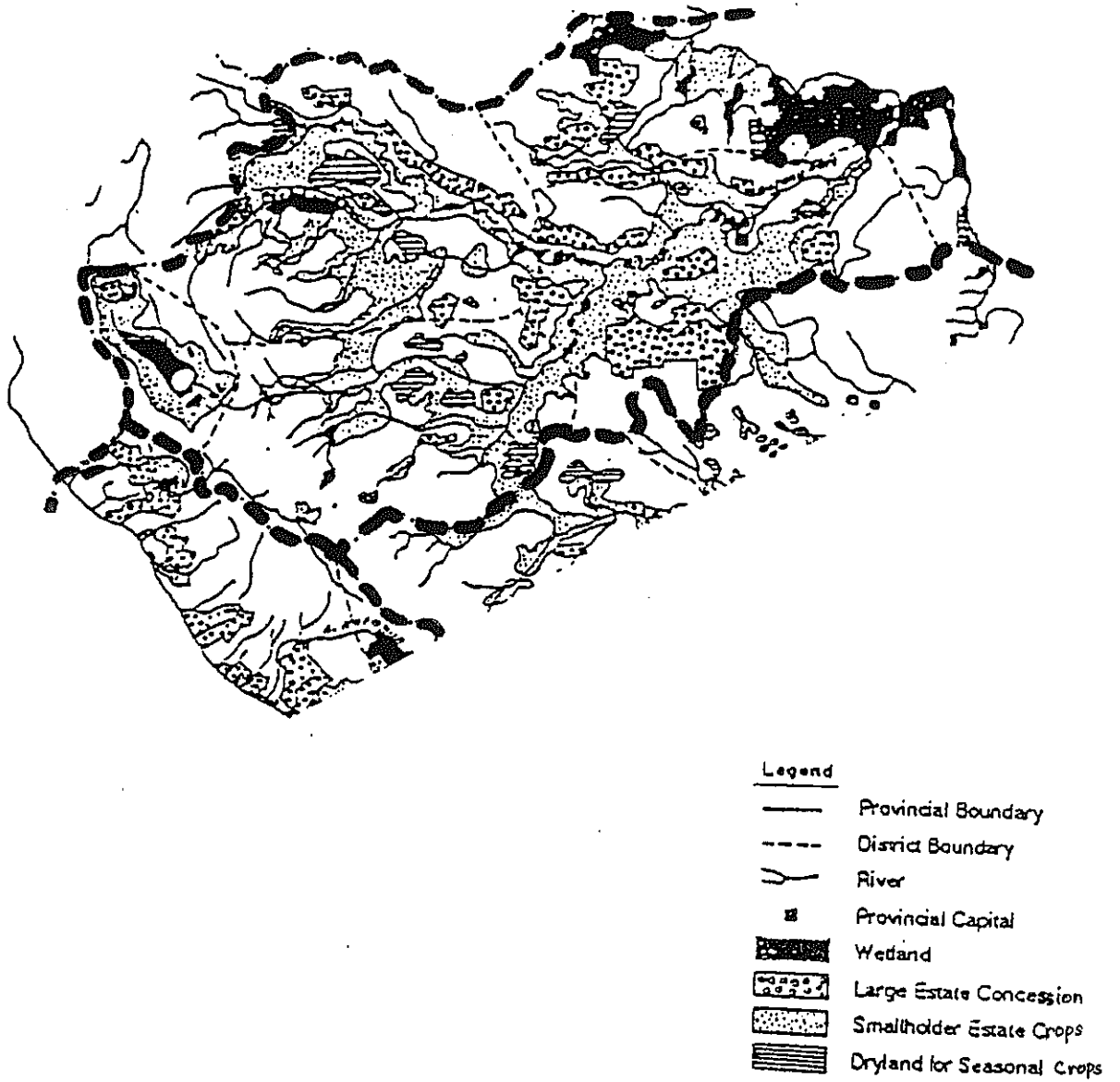


Figure 3.1.2 General Land Use in Jambi

and huge lowland in the east. The capital city of the province is Pekanbaru with 620 thousand of population (1998).

Per capita GRDP of Riau is placed at the third rank in Indonesian 27 provinces (as of 1999) and is more than twice the state average. Production of oil and gas greatly contributes to the high rank, but it falls to the state average level when oil and gas are excluded.

General land use in Riau is shown in Figure 3.1.1.

### **(3) Jambi**

River Batanghari, on which facilities of Jambi Port are located, flows from the western mountain area to the eastern low land, midst of Jambi Province. The province has 53,435.72Km<sup>2</sup> of area and 2.6 million of population (1999, the second lowest in Sumatra). The capital city of the province is Jambi with 436 thousand of population (1999).

Per capita GRDP of Jambi is the second lowest in Sumatra, Rp. 2,641,168, following Bengkulu and about half of Indonesia average. This position does not change even when oil and gas are excluded and this means that industries in Jambi has not been well developed.

Main industries in Jambi at the moment are agricultural plantation of palm oil, rubber, etc. Although coal mining and crude oil production can be seen in the province, the production levels are not large enough to enrich the economy.

General land use in Jambi is shown in Figure 3.1.2.

### **(4) South Sumatra**

South Sumatra Province, where Port of Palembang is located on Musi River running from the western mountain area through the central low land to the east coast, has the largest area followed by Riau Province and the second largest population following after North Sumatra in Sumatra Island. Topographical profile is almost the same as Riau and Jambi, consisting of the west mountain area stretching north to south, the central low land and the east coast covered with mangrove forest. South Sumatra has 7.7 million of population and around 20% of the population, 1.5 million, is concentrated to Palembang city (1999).

Per capita GRDP of South Sumatra is lower than the state average both in cases with and without oil and gas. Without oil and gas, difference to the national average is bigger than that with oil and gas, which shows the provincial economy depends on oil and gas to some extent.

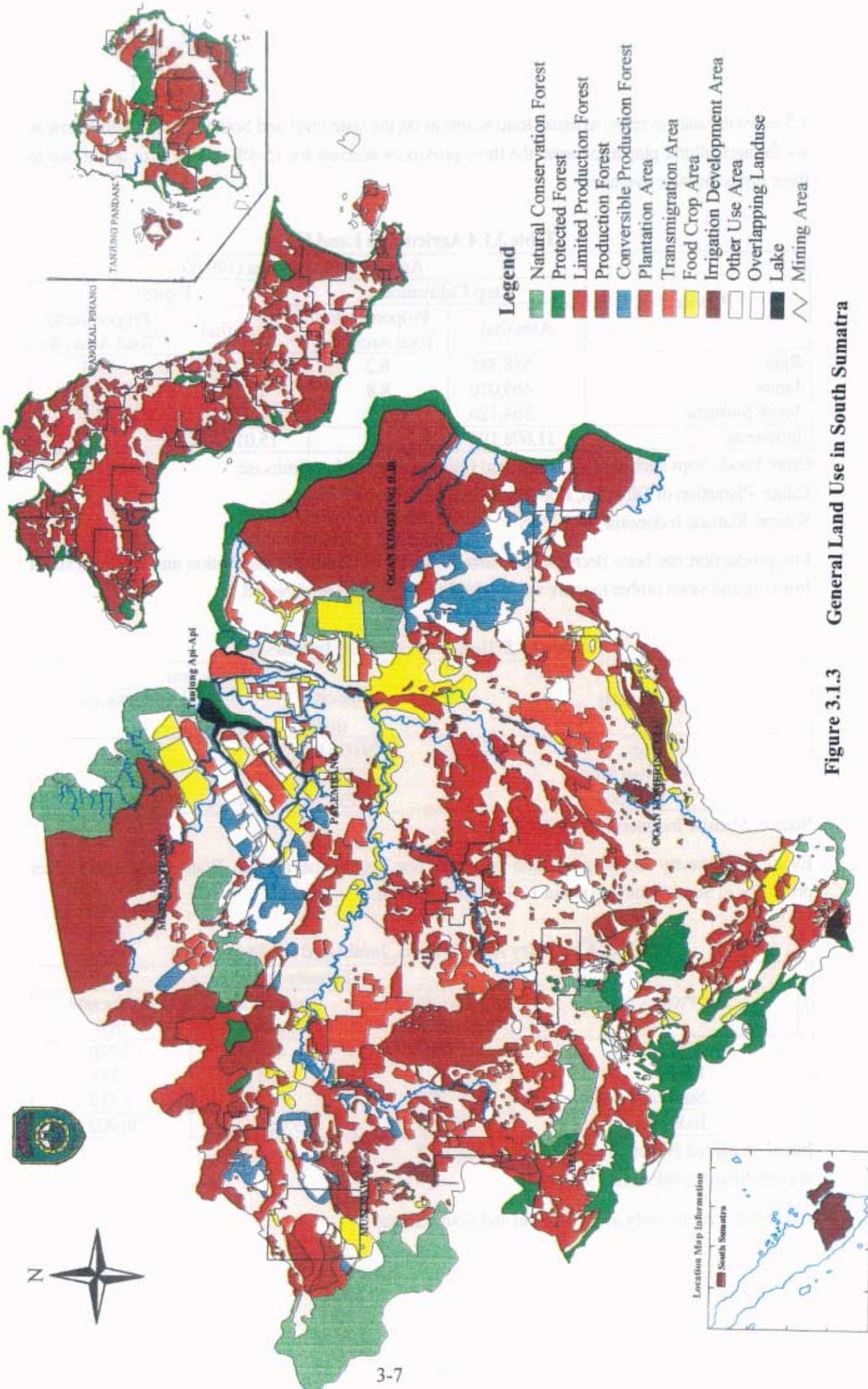
As the province has largest area of agriculture estate in Sumatra, the economy depends on agriculture as well as mining and manufacturing. General land use in South Sumatra is shown in Figure 3.1.3.

## **3.1.2 Agriculture, Forestry and Fishery**

### **(1) General**

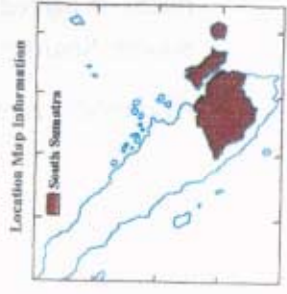
Comparing proportion of crop area against total area by province, Jambi accounts for 8.8% or

30 0 30 60 Km



**Legend**

- Natural Conservation Forest
- Protected Forest
- Limited Production Forest
- Production Forest
- Convertible Production Forest
- Plantation Area
- Transmigration Area
- Food Crop Area
- Irrigation Development Area
- Other Use Area
- Overlapping Landuse
- Lake
- ∩ Mining Area



**Figure 3.1.3** General Land Use in South Sumatra

about 1.5 times the state average whereas Riau is almost on the state level and South Sumatra falls below it. As for agricultural plantation area, the three provinces account for 15.3% to 22.7% or about two to three times the state average.

**Table 3.1.4 Agriculture Land Use**

| Province      | Agriculture Land Area (1997) |                              |            |                              |
|---------------|------------------------------|------------------------------|------------|------------------------------|
|               | Crop Cultivation             |                              | Estate     |                              |
|               | Area (ha)                    | Proportion to Total Area (%) | Area (ha)  | Proportion to Total Area (%) |
| Riau          | 588,385                      | 6.2                          | 1,450,258  | 15.3                         |
| Jambi         | 469,070                      | 8.8                          | 1,211,582  | 22.7                         |
| South Sumatra | 564,126                      | 5.2                          | 1,912,940  | 17.5                         |
| Indonesia     | 11,608,194                   | 6.0                          | 15,016,014 | 7.8                          |

Crop: Food Crops such as Padi, Maize and Cassava, Vegetables, Fruits etc.

Estate: Plantation of Oil Palm, Rubber etc.

Source: Statistic Indonesia 1999, BPS

Log production has been decreasing in Indonesia due to resource conservation and products sifted from log and sawn timber to more value-added products such as plywood.

**Table 3.1.5 Timber Products in Indonesia**

| Products  | Timber Production |             |
|-----------|-------------------|-------------|
|           | 98-99<br>(m3)     | 98-99/88-89 |
| Logs      | 19,026,944        | 0.668       |
| Sawn Wood | 2,707,221         | 0.264       |
| Plywood   | 7,154,729         | 1.187       |

Source: Statistic Indonesia 1999, BPS

Evaluating forestry industry by area of production forest, the area in Riau overwhelms other provinces in Sumatra having about 13% of the state total.

**Table 3.1.6 Forestry Area in Riau, Jambi and South Sumatra**

| Province        | Forestry Forest Area |                      |                    |
|-----------------|----------------------|----------------------|--------------------|
|                 | Protection<br>(ha)   | Park/Reserve<br>(ha) | Production<br>(ha) |
| Riau            | 397                  | 451                  | 4,770              |
| Jambi           | 181                  | 603                  | 727                |
| Sumatra Selatan | 775                  | 672                  | 1,112              |
| Indonesia       | 29,660               | 19,068               | 36,702             |

Based on agreed Forest Land Use until March 1998

Source: Statistic Indonesia 1999, BPS

Also fishery is relatively active in Riau and South Sumatra.



**Table 3.1.7 Fishery Production in Riau, Jambi and South Sumatra**

| Province        | Fishery Production (1998) |              |                   |                      |
|-----------------|---------------------------|--------------|-------------------|----------------------|
|                 | Total (ton)               | Marine (ton) | Inland Open (ton) | Inland Culture (ton) |
| Riau            | 259,543                   | 239,828      | 12,918            | 6,797                |
| Jambi           | 40,545                    | 32,969       | 4,872             | 2,704                |
| Sumatra Selatan | 200,603                   | 140,599      | 45,523            | 14,481               |
| Indonesia       | 4,466,145                 | 3,489,823    | 298,589           | 677,733              |

Source: Statistic Indonesia 1999, BPS

## (2) Plantation

Agriculture estates, i.e. plantation area, have been developed in various scales. Development of small-scale estates predominate for rubber and coconut and large-scale estates, contrarily, for palm oil. And large-scale estates are established more than two times the small scale estates.

Table 3.1.8 shows the production of main plantation crops in Indonesia. Production of palm oil has grown recently while those of rubber and coconut show no significant changes.

**Table 3.1.8 Production of Agricultural Estates in Indonesia**

| Crops    | Large Estates              |       | Small-holder Estates       |       |
|----------|----------------------------|-------|----------------------------|-------|
|          | 1999 Production (1'000ton) | 99/95 | 1999 Production (1'000ton) | 99/95 |
| Rubber   | 305.9                      | 0.897 | 1,182.4                    | 0.993 |
| Coconut  | 85.1                       | 1.998 | 2,632.5                    | 0.989 |
| Palm Oil | 4,010.9                    | 1.620 | 1,326.6                    | 1.325 |
| Coffee   | 28.3                       | 1.361 | 372.8                      | 0.867 |
| Cocoa    | 69.7                       | 1.502 | 274.7                      | 1.184 |
| Tobacco  | 5.8                        | 0.586 | 135.0                      | 0.985 |

Source: Statistic Indonesia 1999, BPS

Table 3.1.9 shows production of plantation crops in Riau, Jambi and South Sumatra. This table shows that the three provinces have high production level of rubber and palm oil and that large volume of coconut and coffee are produced in Riau and South Sumatra respectively.

**Table 3.1.9 Production of Plantation Crops in Riau, Jambi and South Sumatra**

| Crop     | Riau<br>(ton) | Jambi<br>(ton) | South<br>Sumatra<br>(ton) | Indonesia<br>(ton) |
|----------|---------------|----------------|---------------------------|--------------------|
| Rubber   | 273,414       | 230,875        | 400,447                   | 1,488,300          |
| Coconut  | 456,561       | 121,928        | 28,913                    | 2,717,600          |
| Palm Oil | 1,559,924     | 320,322        | 616,298                   | 5,337,500          |
| Coffee   | 2,528         | 5,123          | 138,500                   | 401,100            |
| Cocoa    | 5,972         | 604            | 190                       | 344,400            |
| Pepper   | 64            | 22             | 293                       | 52,100             |
| Year     | 1998          | 1999           | 1999                      | 1999               |

Source: Statistic Indonesia 1999, BPS Riau in Figures 1999, BPS of Riau

Jambi in Figures 1999, BPS of Jambi South Sumatra in Figures 1999, BPS of South Sumatra

### 1) Riau

In Riau, a lot of plantation estates for palm oil, rubber, coconut, etc. have been developed. Areas of plantation for rubber, coconut and palm oil were recorded at 509,000ha, 579,000ha and 770,000ha respectively in 1998. And the production accounted for at 273,000ton (18% of the state total), 457,000ton (17%, ditto) and 1,560,000tons (29%, ditto) respectively in 1998 and the production of palm oil and rubber grew rapidly comparing with 1997 in annual rates of 20.5 and 15.3%. Riau is one of largest province of oil palm production in Indonesia. There is 1.2million ha of suitable land for Palm Oil plantation and 0.6 million ha of it is being used.

The province produces a large quantity of palm oil products as crude palm oil (CPO) at first. Then, CPO can be processed to down stream products such as edible oil, detergent, soap and other chemicals. Because the processing capacity in Riau is not sufficient, large percentage of CPO is shipped out of the province without processed. Expansion of CPO processing capacity is one of the challenges in Riau. PKO is another products from palm oil fruit.

CPO produced at large companies is often loaded at private facilities installed in front of the private extracting mill and the rest of it and other CPO produced by small scale companies is transported by tank trucks to mainly Dumai Port. Then, some of it is exported and the other processed.

### 2) Jambi

Palm oil and/or rubber plantation can be seen everywhere in the province, which is one of main industry.

Only 300,000ha of plantation have been already developed although the province has a huge suitable land for the development. Moreover, because of shortage of processing capacity, a large amount of CPO and palm kernel is transported to neighboring provinces for processing.

### 3) South Sumatra

South Sumatra has the largest agricultural estates area in Sumatra Island. The estates produce about

400,000 tons of rubber (27% of the state total), 616,000 tons of palm oil (12%, ditto) and 139,000 of coffee (35%, ditto).

Similar to Riau province, this province has to export palm oil as CPO due to insufficient processing capacity.

**(3) Forestry**

Forests in Indonesia are managed under law for the purpose of sustainable development of the resource by classifying forests into protection area, park/reserve area and production area. Riau has 4,770ha of production area or 13% of the state production area total although its land area occupies only 5% of national territory. Jambi and South Sumatra have 2% and 3% of the total state production area respectively.

Table 3.1.10 shows wood products produced in the each province.

**Table 3.1.10 Wood Products in Riau, Jambi and South Sumatra**

| Wood Products     | Riau<br>(m3) | Jambi<br>(m3) | South Sumatra<br>(m3) | Indonesia<br>(m3) |
|-------------------|--------------|---------------|-----------------------|-------------------|
| Logs (Production) | NA           | 530,000       | 284,000               | 19,027,000        |
| Sawn Wood         | 507,738      | 106,035       | NA                    | 2,707,221         |
| Plywood           | 442,752      | 630,823       | NA                    | 7,154,729         |
| Veneer            | 90,744       | -             | NA                    | NA                |
| Chips             | 2,359        | -             | NA                    | NA                |
| Pulp              | 1,872,154    | 488,215       | NA                    | NA                |
| Blockboard        | 53,949       | 86,701        | NA                    | NA                |
| Moulding/Dowel    | -            | 76,671        | NA                    | NA                |
| Year              | 98/99        | 99/00         | 98                    | 98/99             |

NA: not available: -: negligible

Source: Statistic Indonesia 1999, BPS Riau in Figures 1999, BPS of Riau

Jambi in Figures 1999, BPS of Jambi South Sumatra in Figures 1999, BPS of South Sumatra

1) Riau

Since forestry resources are abundant in Riau, wood processing is another main industry. Wood manufacturing industries produced sawn wood (508,000m3), plywood (443,000m3), pulp (1,872,000m3) and others in 1998/99.

Moreover, leading pulp/paper companies are located in Riau, one of which is established on the north bank of Siak River next to Perawang Port. However, almost pulp and paper products are loaded at private facilities.

Many sawn timber mills are located on Siak River, and many parts of logs and timber are loaded and unloaded through the riverbank in front of the private companies. A part of sawn timbers are exported using containers.

## 2) Jambi

Saw timber and plywood are main forestry products in Jambi and main export products from Jambi Port. Production of plywood in Jambi accounts for 631,000 M3 or 9% of the state total. Also, pulp is produced in Jambi.

## 3) South Sumatra

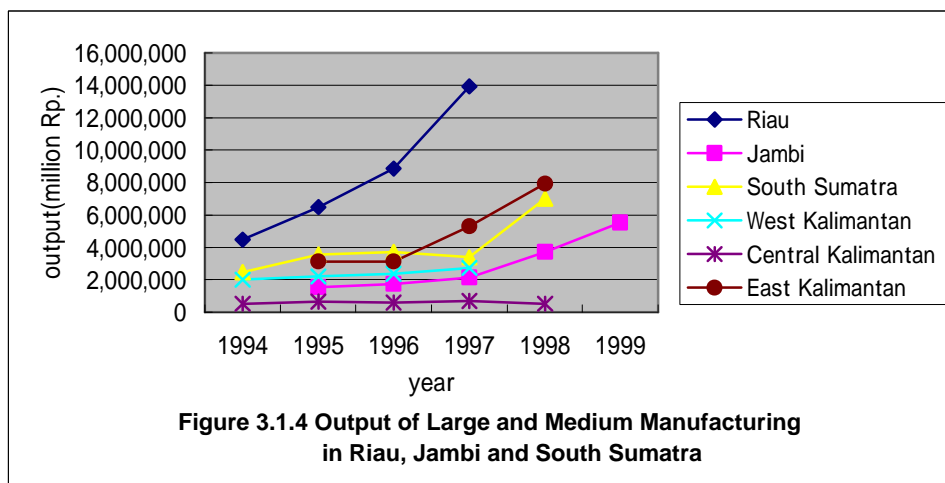
Wood processing production in South Sumatra is also active comparing with Riau and Jambi.

### 3.1.3 Industrial Development

#### (1) General

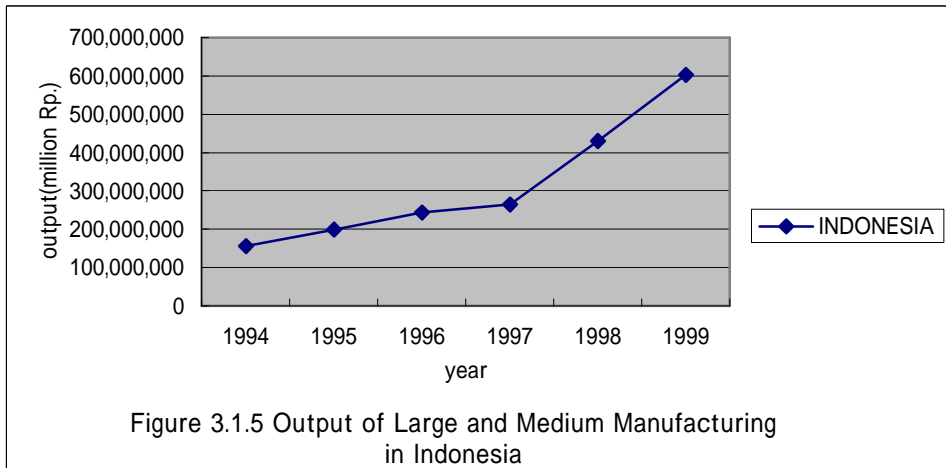
Figure 3.1.4 shows output of large/medium manufacturing in the provinces where the target ports are located. This shows that the output of Riau is the largest and it increased rapidly and that the rest of provinces except Central Kalimantan give similar movements to the national total (Figure 3.1.5).

Reason why Riau has the large output is that output of machinery sector of Batam Island is included. In case without machinery, Riau has almost the same situation as the other two provinces.



Source: Statistic Indonesia 1999, BPS Riau in Figures 1999, BPS of Riau

Jambi in Figures 1999, BPS of Jambi South Sumatra in Figures 1999, BPS of South Sumatra



Source: Statistic Indonesia 1999, BPS

In Sumatra, not only natural resources such as oil, gas, coal and forest are abundant, but also the area is suitable for oil palm plantation and huge areas have been developed. This formed several industries consisting of mining, oil refinery, wood processing including pulp/paper and palm oil processing. However, downstream industries such as petrochemical industries, and CPO processing industries have not been sufficiently established.

## (2) Minerals

As Table 3.1.11 shows, in general, Riau is rich in crude oil and natural gas whereas South Sumatra's asset is coal.

**Table 3.1.11 Mineral Production by Commodity in Riau, Jambi and South Sumatra**

| Commodity          | Riau        | Jambi | South Sumatra | Indonesia     |
|--------------------|-------------|-------|---------------|---------------|
| Crude Oil (barrel) | 302,427,510 | NA    | 35,349,471    | 516,411,000   |
| Natural Gas (MSCF) | 113,413,320 | NA    | 267,317,000   | 2,973,569,000 |
| Coal (ton)         | NA          | NA    | 10,116,967    | 65,277,341    |
| Lime Stone (ton)   | NA          | NA    | 617,544       | NA            |
| Bauxite (ton)      | 808,749     | NA    | NA            | 1,125,413     |
| Year               | 1998        |       | 1999          | 1999          |

MSCF: million standard cubic feet

Source: Statistic Indonesia 1999, BPS Riau in Figures 1999, and BPS of Riau

Jambi in Figures 1999, BPS of Jambi South Sumatra in Figures 1999, BPS of South Sumatra

### 1) Oil and Gas

Riau is rich in oil and gas. Ten oil fields in the province at Minas, Duri etc. Minas, located 20km north of Pekanbaru, is the one of the largest oil fields in Indonesia. Duri is another big oil field. Annual crude oil production in Riau accounts for about 300 million barrels per annum or 60% of the

national total in 1998. Crude oil is transported to Dumai Port or refinery of Purdamina through pipeline and exported using the private loading facilities. And the productions increased by 4.6% for oil and 11.2% for natural gas compared with 1997.

In Jambi, oil production is inactive although a little amount of crude oil is produced by Santa Fe Oil Co. near Muara Sabak and exported from the private facility to Singapore.

South Sumatra is also rich in oil. Currently, however, oil production accounts for 35 million barrels per annum. Oil/gas wells are located at Prabumulih and Musi Banyuasin. On the south bank of Musi River at Palembang, refinery complex has been established and operated by Purdamina.

## 2) Mineral Mining other than Oil and Gas

Riau is rich in granite stone and sand. The annual productions were 2.5 million tons and 2.8 million tons respectively in 1997. Bauxite is produced at Bingtang Island.

Figure 3.1.6 illustrates coal deposits and mines in Sumatra. This suggests the three provinces have a chance of development and/or expansion of coal mine.

Low calorie coal is being excavated at a coal mine located 120km west of Jambi city. The coal is transported by trucks and loaded at Talang Duku, Jambi. Another development of coal mine with deposit of 100 million tons is under arrangement and the project will be hopefully implemented in 2001. If so, tens two million tons of high calorie coal will be able to be produced.

South Sumatra has the largest coal mine in Indonesia at Tanjung Enim, which is currently producing about 10 million tons per annum and holds a quite big deposit, and coal mining company, PT BA (Tambang Batubara Bukit Asam) has plan of expansion of production up to 20 million tons per annum. At the moment, some coal mined there is transported through railway for fuel of power plant at Lampung and the other is loaded at Panjang Port for domestic users.

About 0.6 million of lime stone is also produced annually in South Sumatra.

## **(4) Other Industries**

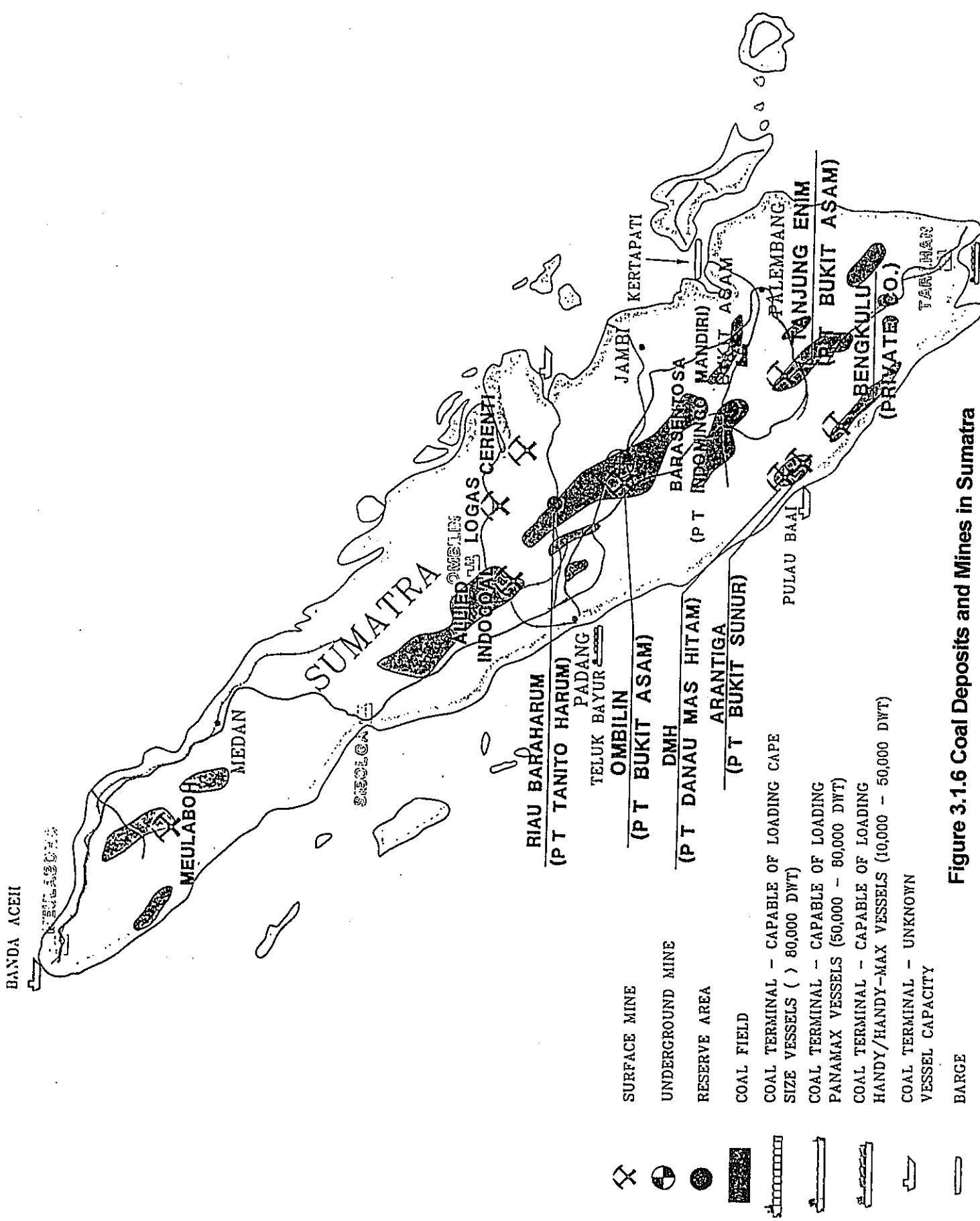
### 1) Riau

As mentioned in 3.1.2 Agriculture, Forestry and Fishery, pulp/paper industry is operated exploiting fluent wood resources.

One of largest pulp/paper company in Indonesia, PT Indah Kiat Pulp & Paper, is located on Siak River at Perawang, consumes logs and chips to produce pulp and paper. Another large paper company, PT. Riau Andalan Pulp & Paper, is also located in Riau

### 2) Jambi

In Jambi, industries are not well developed in particular.












-  SURFACE MINE
-  UNDERGROUND MINE
-  RESERVE AREA
-  COAL FIELD
-  COAL TERMINAL - CAPABLE OF LOADING CAPE SIZE VESSELS (> 80,000 DWT)
-  COAL TERMINAL - CAPABLE OF LOADING PANAMAX VESSELS (50,000 - 80,000 DWT)
-  COAL TERMINAL - CAPABLE OF LOADING HANDY/HANDY-MAX VESSELS (10,000 - 50,000 DWT)
-  COAL TERMINAL - UNKNOWN VESSEL CAPACITY
-  BARGE

Figure 3.1.6 Coal Deposits and Mines in Sumatra

### 3) South Sumatra

In South Sumatra, heavy industries such as oil refinery, cement and fertilizer production have been founded because mineral resources needed for the industries have been supplied sufficiently. Cement industry could be established by using lime stone and coal produced in the province.

A fertilizer maker, PT Psri, located on the north bank of Musi River near Bom Baru terminal of Palembang Port, produces 2.2 million tons of urea per annum.

## 3.1.4 Prospects for Industrial Development

### (1) Spatial Plan

“Spatial Plan” was formulated based on the Act for harmonious development of the land by designating Protection Areas, Cultivation Areas and Special Areas. The Special Areas, where spatial use management is a high priority, are given function and priority of development. The concept for the Special Areas shows that what kind of sectors will be potentially developed in each hinterland of the target ports and provides general idea on the future industrial development tendency.

Main functions of the special areas are shown in Table 3.1 12.

The special areas related to the target ports are illustrated in Figure 3.1.7 and the functions are:

|                        |   |
|------------------------|---|
| Pekanbaru              | Industry, Estate, Food Crops and Mining           |
| Dumai                  | Industry, Estate and Fishery                      |
| Muara Bulian           | Industry, Estate, Food Crops, Fishery and Tourism |
| Muara Bungo-Sarolangun | Estate, Forestry and Food Crops                   |
| Palembang              | Industry, Forestry and Food Crops                 |
| Muara Enim             | Estate, Food Crops and Mining                     |
| Lubuk Linggau          | Industry, Estate and Food Crops                   |

### (2) Policy of Local Government

Each province plans to develop further plantation estates and enforce CPO processing capacity. Since some provinces still have huge area of undeveloped land suitable for oil palm plantation, further plantation will be developed.

Moreover, CPO processing capacity for down stream products should be enhanced to produce more value-added products in every province. This will be one of needs for industrial estates development.

Forestry utilization is likely to continue as it is, keeping cutting volume within allowance trying to maintain forest resources.

Productions of oil and gas are likely to be maintained as it is because any more large oil deposits have been found recently.

Coal mining development or expansion is planned in several provinces.

### (3) Industrial Development Plans



Table 3.1.12 Main Functions of Each Special Area and Priority of Development in Repelita VI and VII

| Province           | Special Area            | Main Function of Area |        |          |            |        |        |              |         |       |          | Priority in Repelita |  |   |
|--------------------|-------------------------|-----------------------|--------|----------|------------|--------|--------|--------------|---------|-------|----------|----------------------|--|---|
|                    |                         | Industry              | Estate | Forestry | Food Crops | Mining | Fishey | Animal Husb. | Tourism | Trade | Services |                      |  |   |
| Riau               | Pekanbaru               | ○                     | ○      |          | ○          | ○      |        |              |         |       |          |                      |  | ※ |
|                    | Dumai                   | ○                     | ○      |          |            |        | ○      |              |         |       |          |                      |  | ※ |
|                    | Rengat-Kuala Enok       |                       | ○      |          | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Natuna                  |                       |        |          |            | ○      | ○      |              |         |       |          |                      |  | ※ |
| Jambi              | Batam Zone              | ○                     |        |          |            |        |        |              |         | ○     |          |                      |  | ※ |
|                    | Muara Bulian            | ○                     | ○      |          | ○          | ○      | ○      |              |         | ○     |          |                      |  | ※ |
| South Sumatra      | Muaral Bungo-Sarolangun | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  | ※ |
|                    | Palembang               | ○                     |        | ○        |            |        |        |              |         |       |          |                      |  | ※ |
|                    | Muara Enim              |                       | ○      |          | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Lubuk Linggau           | ○                     | ○      |          | ○          | ○      |        |              |         |       |          |                      |  |   |
| West Kalimantan    | Banka-Belitung          |                       | ○      |          |            |        |        |              |         |       |          |                      |  |   |
|                    | Pontianak               | ○                     |        |          | ○          | ○      | ○      |              |         |       |          |                      |  |   |
|                    | Johar-Sanggau           | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  | ※ |
|                    | Singkawang              | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Ketapang                | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Kapuas Hulu             | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Kuala Kapuas            |                       | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  | ※ |
|                    | Sampit                  | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  |   |
| Central Kalimantan | Pangkalan Bun           | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Buntok                  |                       | ○      | ○        | ○          | ○      |        |              |         | ○     |          |                      |  |   |
|                    | Muarateweh              |                       | ○      |          |            |        |        |              |         |       | ○        |                      |  |   |
|                    | Baikpapan-Samarinda     | ○                     | ○      | ○        | ○          | ○      | ○      |              |         | ○     |          |                      |  | ※ |
| East Kalimantan    | Tanjung Redep           | ○                     | ○      | ○        | ○          | ○      |        |              |         |       |          |                      |  |   |
|                    | Tarakan                 | ○                     | ○      | ○        | ○          | ○      |        |              |         |       | ○        |                      |  |   |
|                    | Tanah Grogot            | ○                     | ○      | ○        | ○          | ○      |        |              |         |       | ○        |                      |  |   |




 : Special Areas

Figure 3.1.7 The Special Areas in Sumatra

### 1) Mining

Mining development is planned as follows:

Riau: LNG in Natuna, Coal in Indragiri

Jambi: Development of Coal Mine at in Sarolangun-Bangko regency

100 million tons of deposit, 2 million tons per annum of production  
operation start April 2001

forwarded to Surabaya power plant, etc., export

South Sumatra: Expansion of Tanjung Enim Coal Mine (PT. Bukit Asam, 20million ton/y)

### 2) Industrial Estates

Industrial estate development is planned as follows:

Riau: Dumai Industrial Estate Development (Figure 3.1.8 partly completed)

10 km north of Dumai

CPO Processing and Cement

At Pekanbaru, Perawang and Buton in Riau, other industrial estate developments are proposed.

Jambi: Muara Sabak Port and Industrial Estate Development (Figure 3.1.9 planned)

Port Facilities: 750 ha

Purit Culum Industrial Estate (Figure 3.1.10 planned) and Santa Fe Oil Field

South Sumatra: Tanjung Api-api Port and Industrial Estate Development (Figure 3.1.11 planned)

Provincial Gov. has prepared 8,000ha of land for development

: Sungai Lais Industrial Estate Development (Figure 3.1.12 planned)

Backyard of Sungai Lais Port Terminal

### 3) Others

In Jambi, hydroelectric power plant project (350MW) at Lake Kerinci was given green signal by Norwegian company investment. This project will start in Nov. 2001 and complete in 2008.

Near Tembilahan, Riau, Muara Enok New Port Development plan is proposed.

### **(4) Tendency of Industrial Development in Riau, Jambi and South Sumatra**

Although information about future regional development is so limited, prospects of respective regional development in each province can be organized by collecting provincial government's future outlook and existing reports on several regional development as follows:

Riau:                      Plantation of Oil Palm, Hybrid Coconut and Rubber,  
                                 CPO Processing Factory

Jambi:                     Water Power Electricity Generation Plant,

Plantation of Oil Palm and Rubber,  
CPO Processing Factory  
Petrochemical Industry in Industrial Estate near Muara Sabak  
Oil Field Development,  
Coal mine Development

South Sumatra: CPO Processing Factory and other Industry in Industrial Estate near  
Tanjung Api-api,  
Coal mine expansion at Tanjung Enim

# PETA RENCANA KAWASAN INDUSTRI

DESA : LUBUKGAUNG  
 KECAMATAN : BUKITKAPUR  
 KOTA : DUMAI



SEKALA 1:100 000

1°55'N

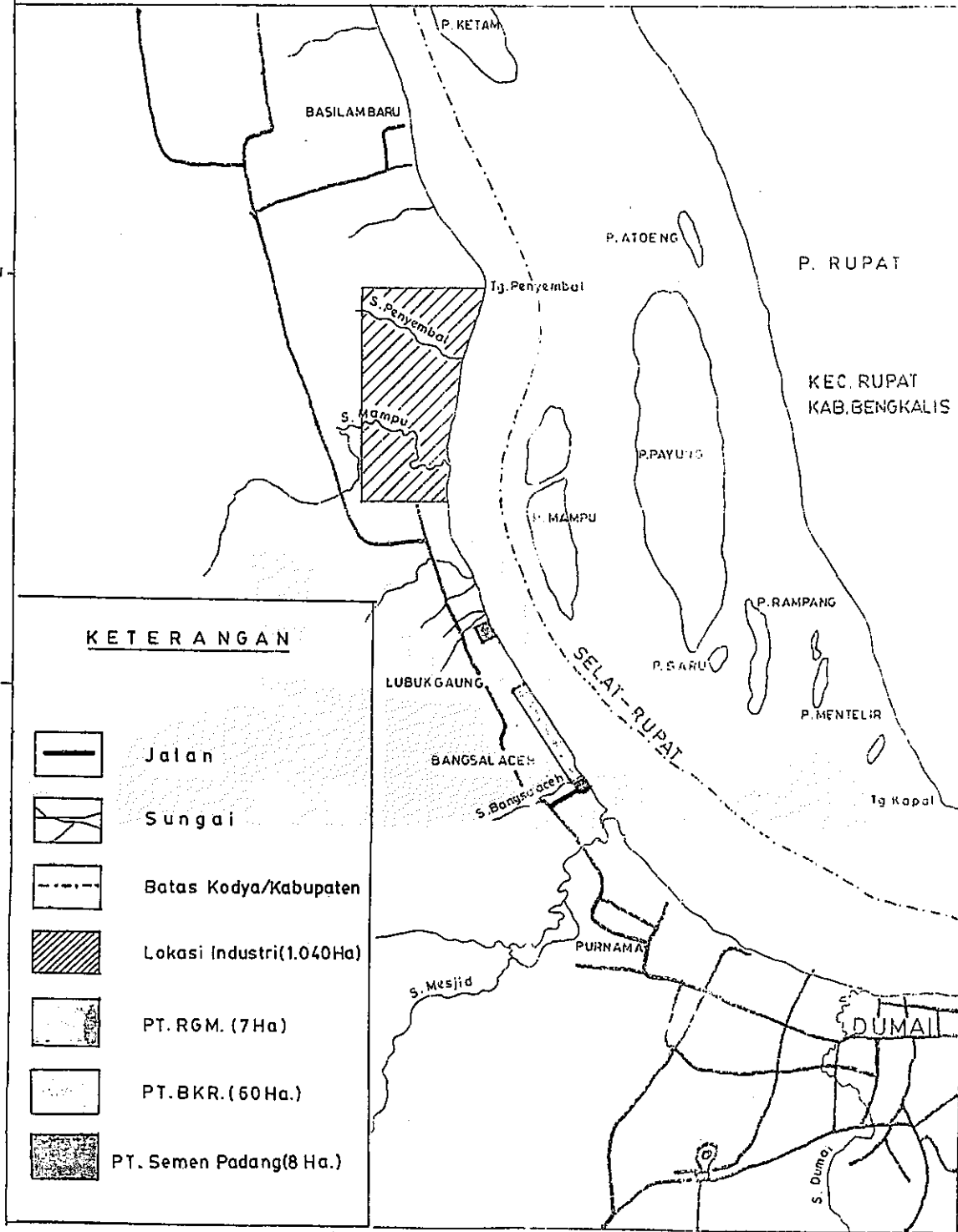
1°55'N

1°50'N








1°50'N

1°45'N

1°45'N



## KETERANGAN

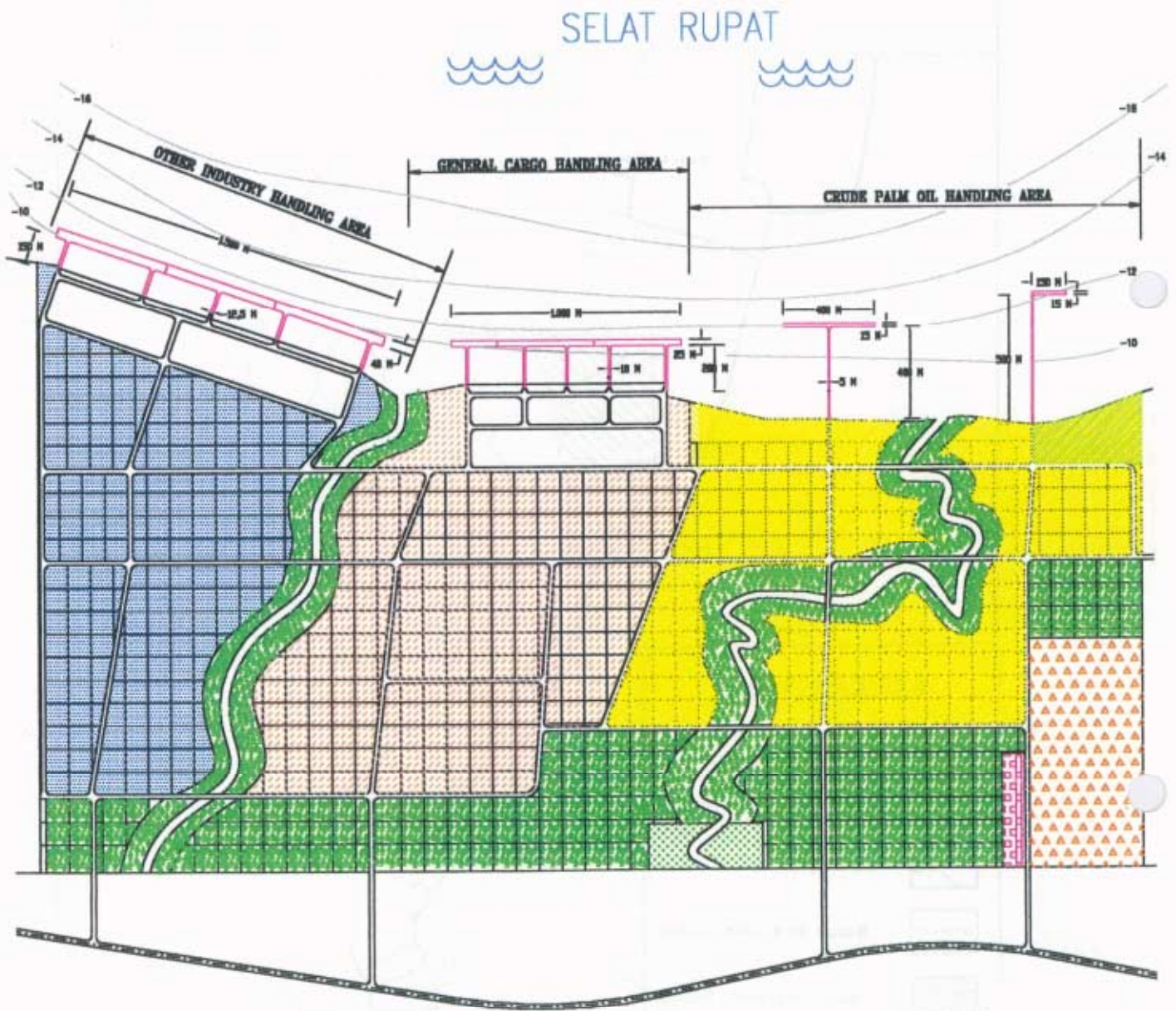
-  Jalan
-  Sungai
-  Batas Kodya/Kabupaten
-  Lokasi Industri(1.040Ha)
-  PT. RGM. (7Ha)
-  PT. BKR. (60Ha.)
-  PT. Semen Padang(8 Ha.)

101°20'E

101°25'E

Figure 3.1.8(1) Industrial Estate Development Plan in Dumai

**PEMERINTAH KOTA DUMAI**  
**RENCANA TATA RUANG**  
**KAWASAN INDUSTRI LUBUK GAUNG - DUMAI**  
**PROPINSI RIAU - INDONESIA**



- |  |                               |  |                      |
|--|-------------------------------|--|----------------------|
|  | ZONE CPO DAN TURUNANNYA       |  | SUNGAI               |
|  | ZONE GENERAL CARGO            |  | JALAN                |
|  | ZONE INDUSTRI SELAIN CPO      |  | OUTER RING ROAD      |
|  | LAPANGAN GOLF (10 Ha)         |  | CONTOUR KEDALAMAN    |
|  | LINGKUNGAN PERUMAHAN (50 Ha)  |  | LAUT                 |
|  | LINGKUNGAN PERKANTORAN (5 Ha) |  | KAPLING TANAH (1 Ha) |
|  | DAERAH PENCIJAJUAN            |  |                      |

Figure 3.1.8(2) Industrial Estate Development Plan in Dumai

RENCANA DETAIL TATA RUANG  
**PELABUHAN MUARA SABAK**  
1999 - 2009

Gambar : 2.11

ORIENTASI PEMBANGUNAN  
JALAN LINGKAR TIMUR JAMBI

Keterangan :

- Batas Propinsi
- Batas Kabupaten
- Batas Kecamatan
- Sungai
- Jalan Negara
- Jalan Propinsi
- Jalan Kabupaten
- Rencana Jalangan Jalan
- Ibukota Propinsi
- Ibukota Kabupaten
- Ibukota Kecamatan
- Kotya Jambi

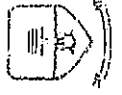
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Digambar : Uly S. Bajuri

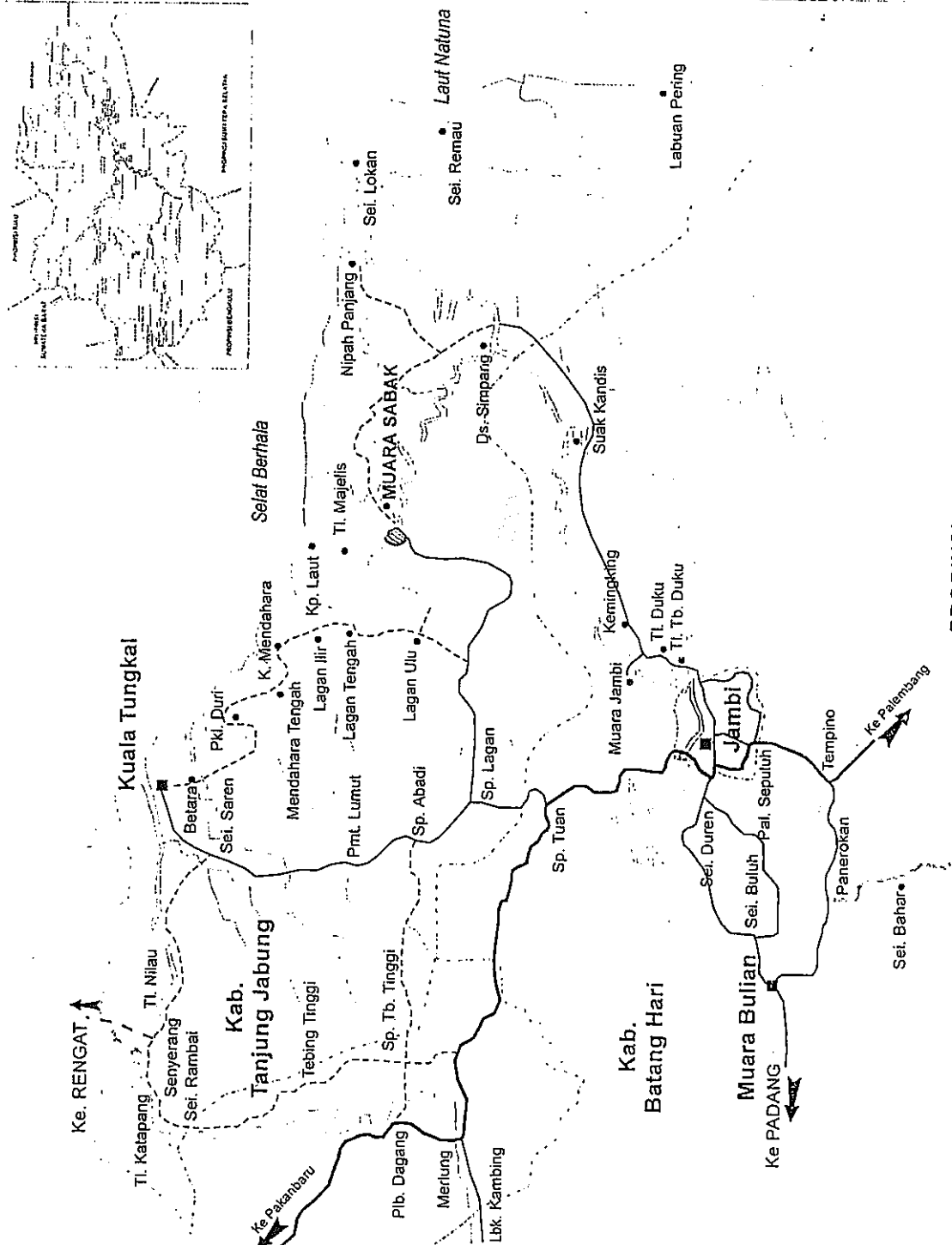
Diperiksa :

Diketahui :

Skala : 1 : 600.000



PEMERINTAH PROPINSI DATI. I JAMBI  
BADAN PERENCANAAN DAN PENGENDALIAN DAERAH  
TAHUN 1998/1999



PROPINSI  
SUMATERA SELATAN

Figure 3.1.9(1) Muara Sabak Port Development Plan

RENCANA DETAIL TATA RUANG  
**PELABUHAN MUARA SABAK**  
 1999 - 2009

Gambar : 4.1

RENCANA  
 PEMANFAATAN RUANG KPMS


Keterangan :

|  |                                    |  |                           |
|--|------------------------------------|--|---------------------------|
|  | Sungai                             |  | Lapangan Olah raga        |
|  | Jaringan Jalan                     |  | Ruang Terbuka Hijau       |
|  | Container Yard                     |  | Container Freight Station |
|  | Perkantoran                        |  | Depot Peti Kemas          |
|  | Depot Peti Kemas                   |  | Tangki CPO                |
|  | Dermaga Inter Regional             |  | Terminal Inter Regional   |
|  | Lapangan Penumpukan Inter Regional |  | Fasilitas Sosial & Umum   |
|  | Fasilitas Komersil                 |  | Terminal Truk Truck       |
|  | Penumahan Housing                  |  |                           |

Sumber : RUTR KPMS  
 Digambar : Ujly S. Bajuri  
 Diperiksa :  
 Diketahui :

Skala : 1 : 7.500

0 1 2 .3 Cm  
 0 0.075 0.150 0.225 Km



PEMERINTAH PROPINSI DAIRI JAMBI  
 BADAN PERENCANAAN PEMBANGUNAN DAERAH  
 TAHUN 1998/1999

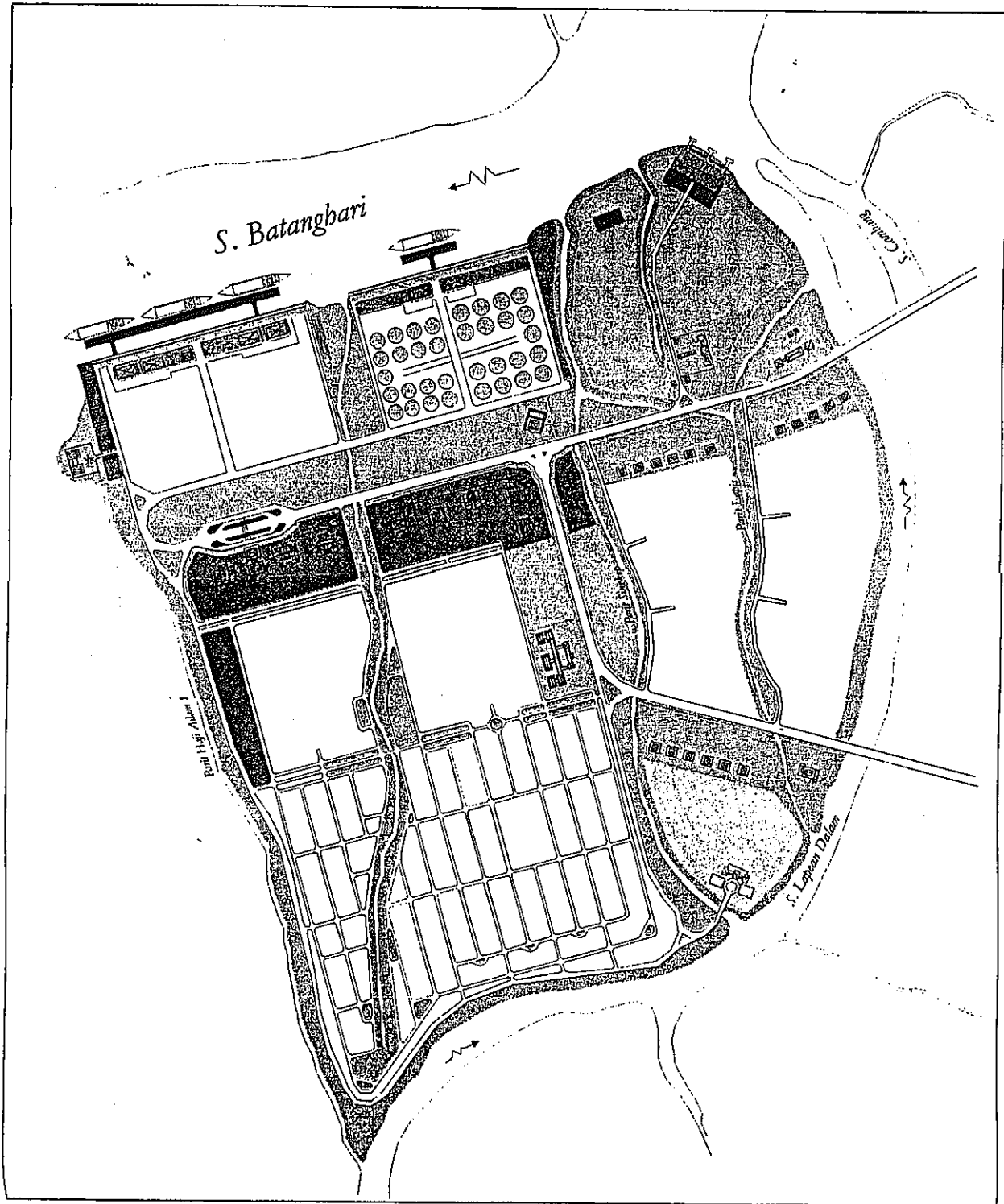
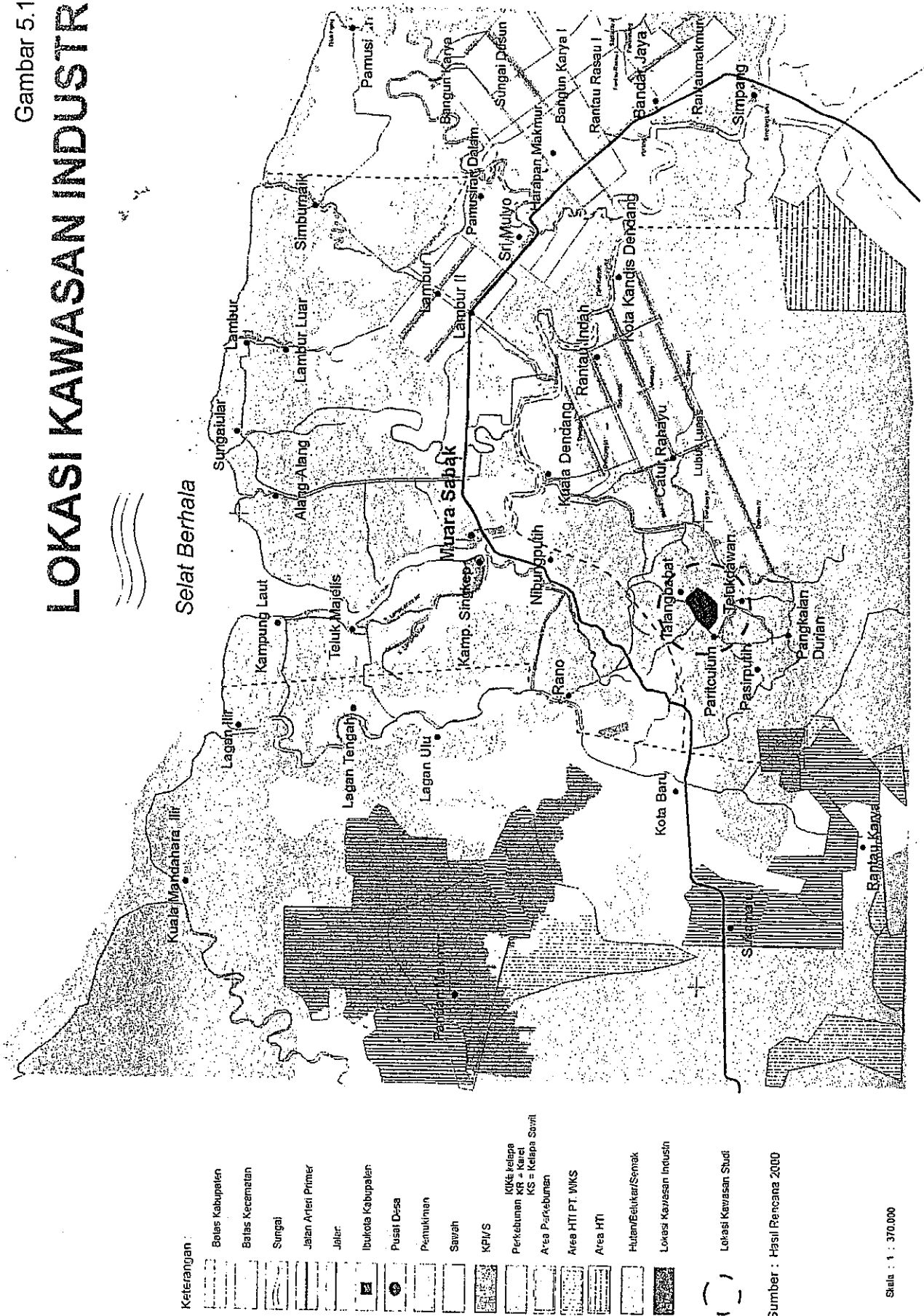


Figure 3.1.9(2) Muara Sabak Port Development Plan



Gambar 5.1

# LOKASI KAWASAN INDUSTRI



**Keterangan :**

|  |   |
|--|---|
|  | Batas Kabupaten   |
|  | Batas Kecamatan   |
|  | Sungai  |
|  | Jalan Arteri Primer   |
|  | Jalur   |
|  | Ibukota Kabupaten   |
|  | Pusat Desa  |
|  | Pemukiman   |
|  | Sawah   |
|  | KPUS  |
|  | Kawasan Kelapa<br>Perkebunan KS = Kelapa<br>KS = Kelapa Sawit |
|  | Area Perkebunan   |
|  | Area HTI PT WKS   |
|  | Area HTI  |
|  | Hutan/Selukar/Semak   |
|  | Lokasi Kawasan Industri                                       |
|  | Lokasi Kawasan Studi  |

Sumber : Hasil Rencana 2000

Skala : 1 : 370.000

Figure 3.1.10 Industrial Estate Development Plan at Purit Culum near Muara Sabak

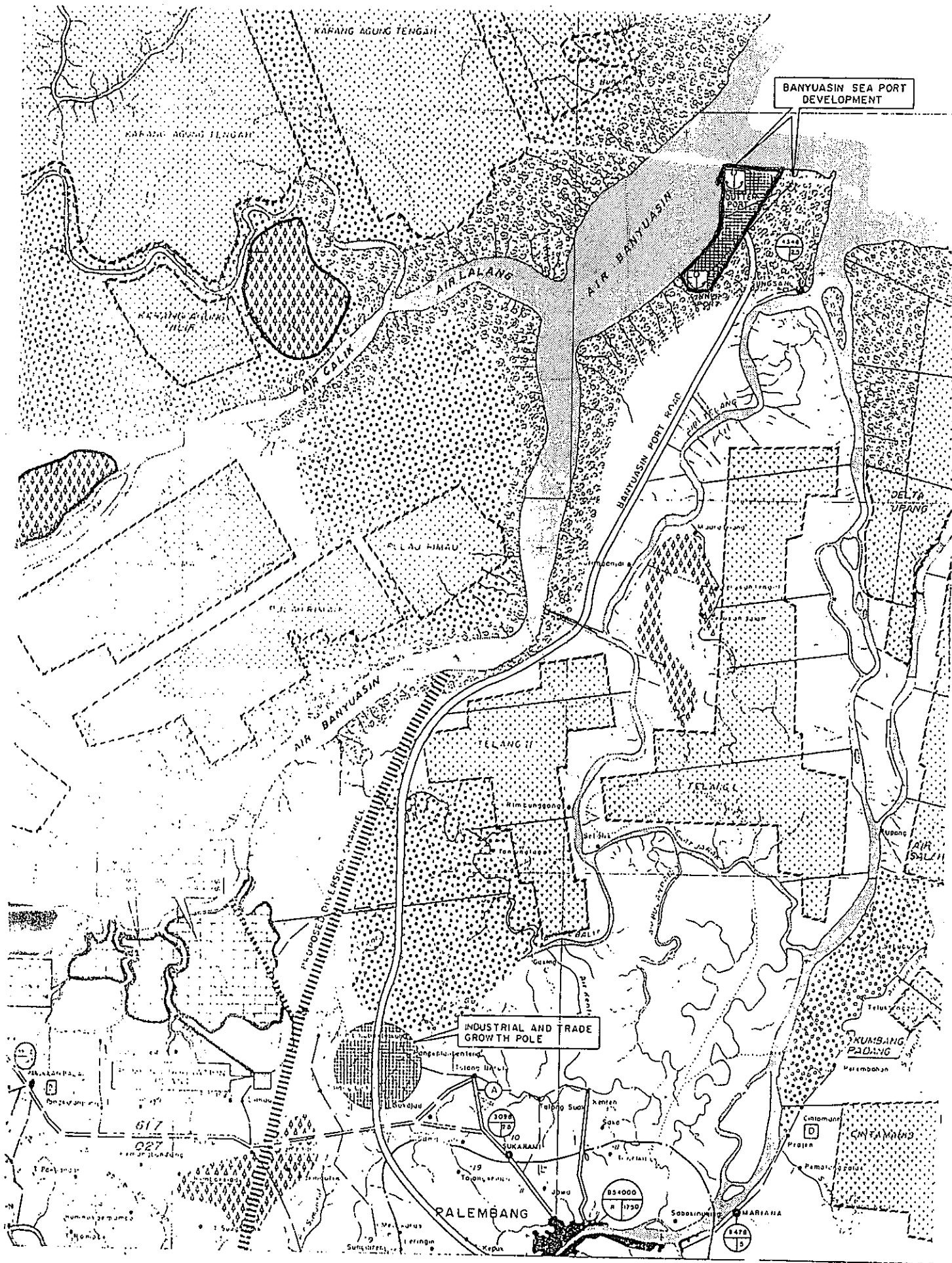
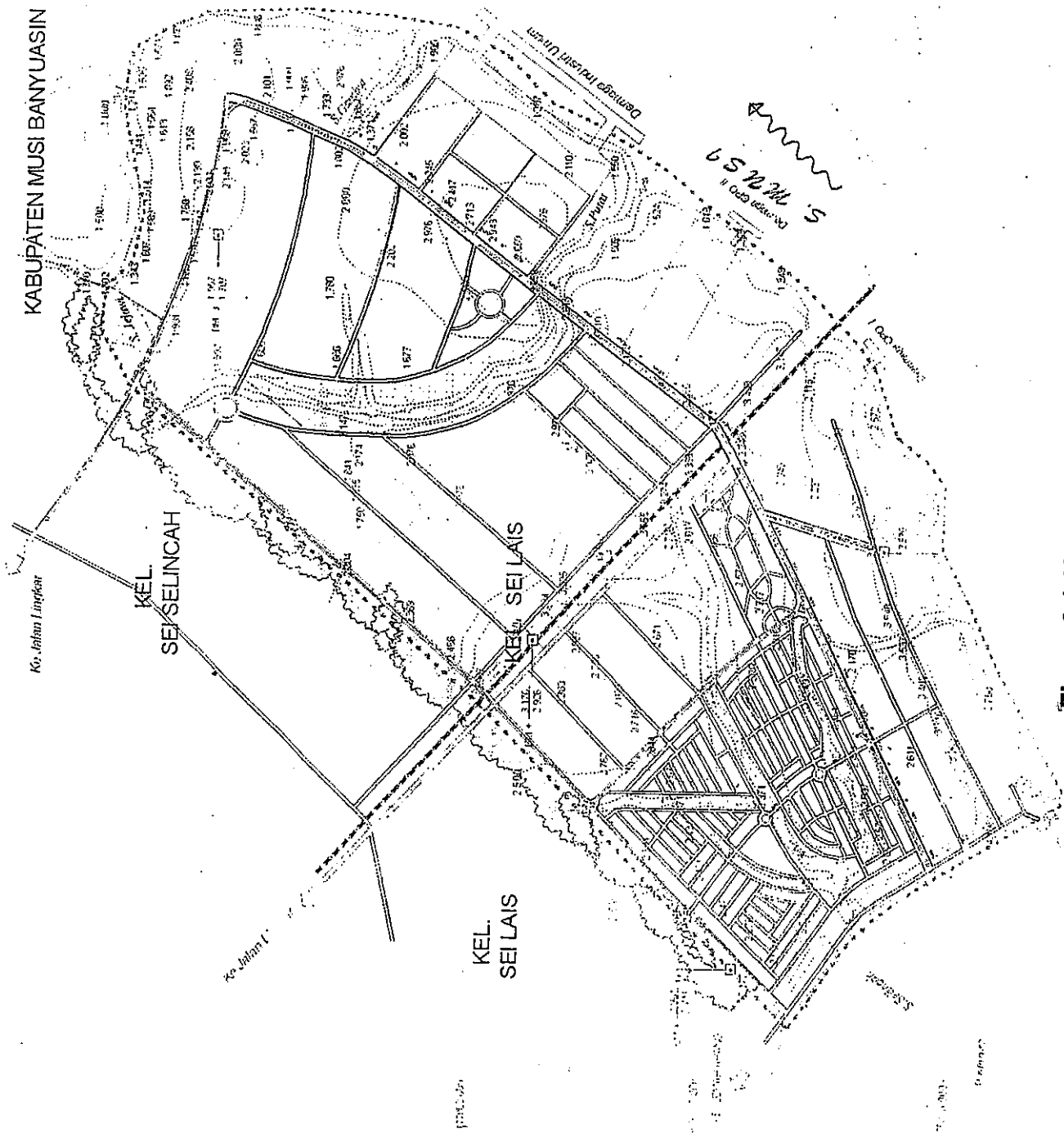


Figure 3.1.11(1) Tanjung Api-api Port and Industrial Estate Development Plan





SUMBER : HASIL ANALISIS, 1999

SKALA : 1 : 22.000

0 0.22 1 2 3 4 5 Km

0 1 2 3 4 5 Cm

Figure 3.1.12 Sungai Lais Industrial Estate Development Plan