4.4 Existing Port Development Plans

4.4.1 Pontianak

(1) Port Extension Program at Pontianak

To cope with rapidly increasing demand of port cargo, in particular containerized cargo to/from the broad port hinterland in West Kalimantan, IPC 2 formed the container terminal extension program. The port extension program consists of the following three stages, (i) Urgent Port Improvement (Target Year 2003), (ii) Medium Term Port Extension (Target Year 2008), and (iii) Long Term Port Extension (Target Year 2018). The above port extension needs the land transference from PT. ASPALINDO. At this moment, any port extension program is not initiated yet.

1) Urgent Port Improvement (Target Year 2003)

To accommodate increasing container cargo at the port, the present NO.7 container yard is extended by means of reclamation by 40 m down the stream. The creek between NO. 6 wharf and NO.7 wharf, called Sei Jawi, is also covered with concrete sheet to gain more space for container cargo. In addition, one more gantry crane is introduced to the present NO.7 container wharf in order to accelerate the efficiency of container loading/unloading activity.

2) Medium Term Port Extension (Target Year 2008)

To accommodate still increasing container cargo at the port, the present NO.7 container yard is extended by 75 m down the stream. This container yard extension makes it possible to accommodate 612 container boxes on the ground if boxes are heaped up in 3 layers.

3) Long Term Port Extension (Target Year 2018)

Finally, NO.8 container wharf (103 m long, 20 m in breadth) is newly constructed adjacent to the present NO.7 container wharf, down the stream. 2 gantry cranes are also introduced to NO.8 wharf. In addition, the container yard behind NO.8 container wharf is extended by 320 m down the stream. This container yard extension makes it possible to accommodate 767 container boxes on the ground if boxes are heaped up in 3 layers.

(2) New Deep Sea Port Development Plan at Temaju

In accordance with agronomical growth and concentrated investment, especially in CPO plantation development in West Kalimantan, Local Government is planning to frame a new port development project for large-scale CPO process and distribution terminal in the Temaju Island, about 80 km distant from Pontianak to the north. The Australian consultant conducted the preliminary study in 2000, and proposed a conceptual port development plan on the east side of the Temaju Island. According to the consultant's proposal, the long term international export port plan is to construct one concrete jetty (100 m long, 10 m deep, 25 m in breadth) with 2 mooring dolphins for 40,000

DWT CPO tanker ship, 8 CPO storage tanks, 8 CPO supply tanks and supporting facilities. The international export port plan also includes an oil tanker terminal, a container terminal equipped with 4 container berths and a necessary number of gantry cranes, a passenger terminal, and a 5 km suspension bridge between the Temaju Island and the opposite shore.

4.4.2 Kumai

In accordance with agronomical growth and concentrated investment, especially in CPO plantation development in Central Kalimantan, the position of the Kumai Port in future is very important to support and accelerate the port hinterland potential of economic development. In order to cope with growing demand of CPO-related cargo in particular, IPC 4 launched the new port development project for CPO process and distribution terminal and container/general cargo terminal in Bumiharjo, 11 km up the stream of the Kumai River. The projection of CPO production in the port hinterland is 150 thousand ton per year in 2001, 330 thousand ton per year in 2005, and 1.7 million ton per year in 2010. And the long term port development project based on the above CPO cargo demand is to construct 3 jetties (60 m long), 30 CPO tanks, other CPO-related tanks and pipeline, roads, and supporting facilities by the end of the year 2010. The first phase of the long term project is to construct a 60 m long jetty, 2 CPO tanks, and supporting facilities by the end of the year 2001, and the construction work was initiated in February 2001.

4.4.3 Sampit

In accordance with agronomical growth and concentrated investment, especially in CPO plantation development in Central Kalimantan, the position of the Sampit Port in future is very important to support and accelerate the port hinterland potential of economic development. In order to cope with growing demand of CPO-related cargo in particular, IPC 4 launched the new port development project for CPO process and distribution terminal in Bagendang, 22 km down the stream of the Mentaya River. The projection of CPO production in the port hinterland is 178 thousand ton per year in 2001, 670 thousand ton per year in 2005, and 1 million ton per year in 2010. And the long-term port development project based on the above CPO cargo demand at port is to construct 3 jetties (150 m long, 6 m deep), 32 CPO tanks, other CPO-related tanks and pipeline, roads and supporting facilities, which require 13 ha land, by the end of the year 2010. The first phase of the long-term project is to construct a 150 m long jetty, 3 CPO tanks, and supporting facilities by the end of the year 2001, and is now under construction. 90 % of jetty construction work was fulfilled in February 2001.

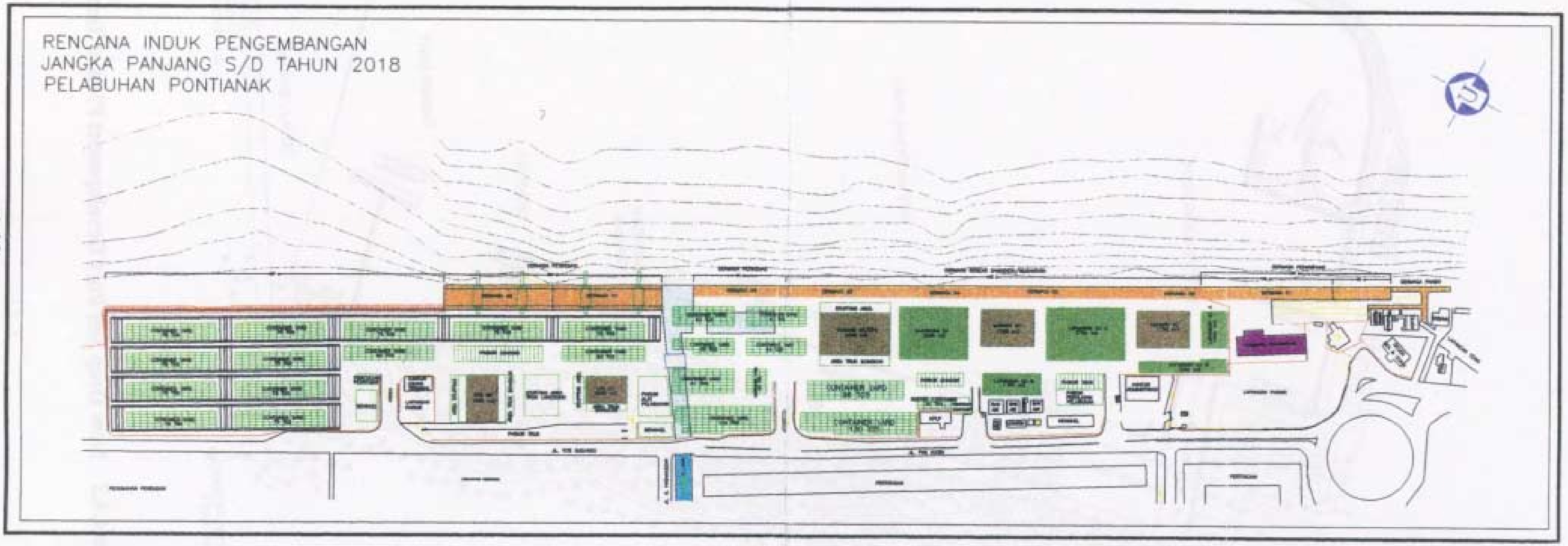

Figure 4.4.1 Port Existing Extension Program at Pontianak (Target Year 2018)

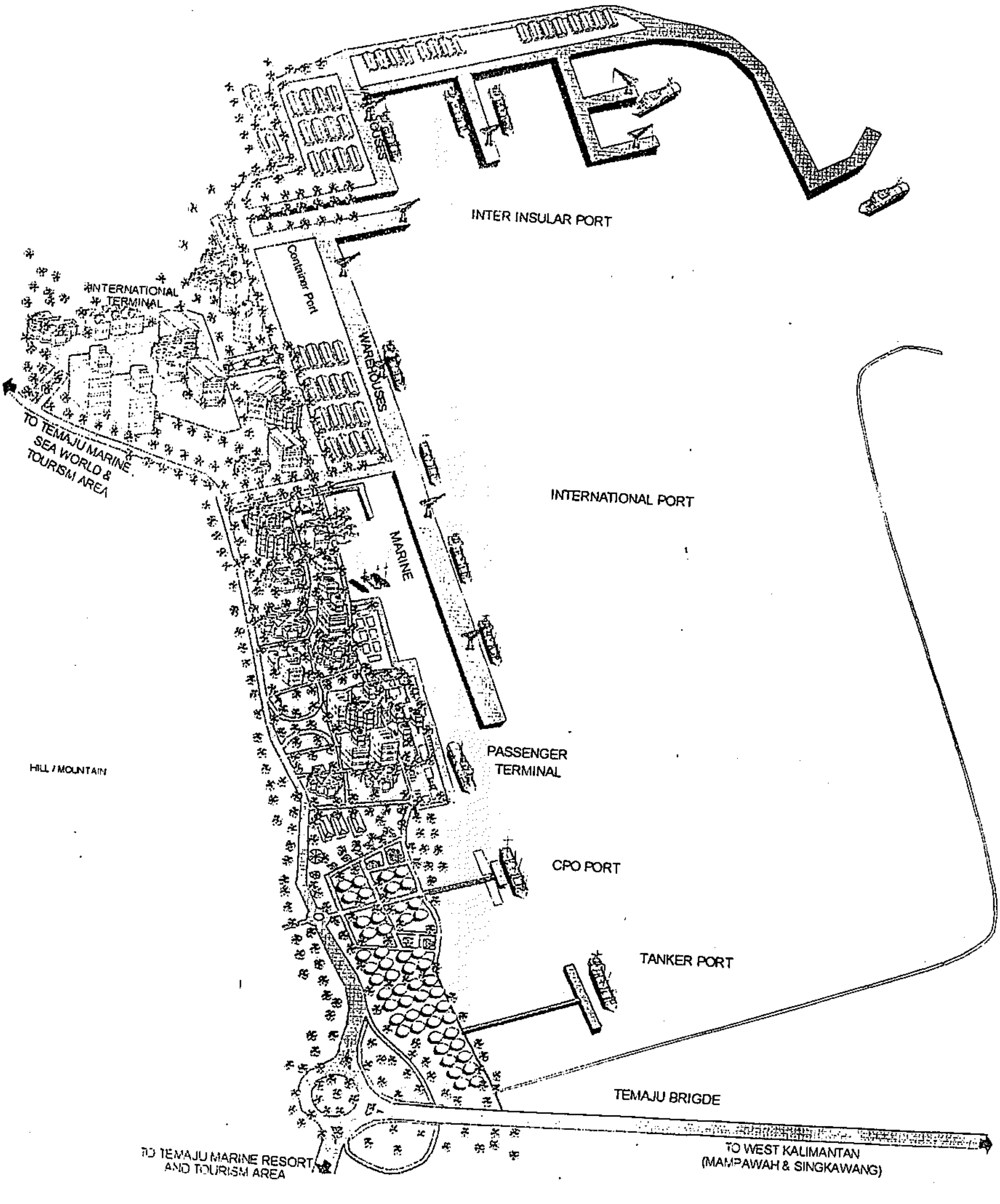

Figure 4.4.2 New Deep Sea Port Development Plan at Temaju

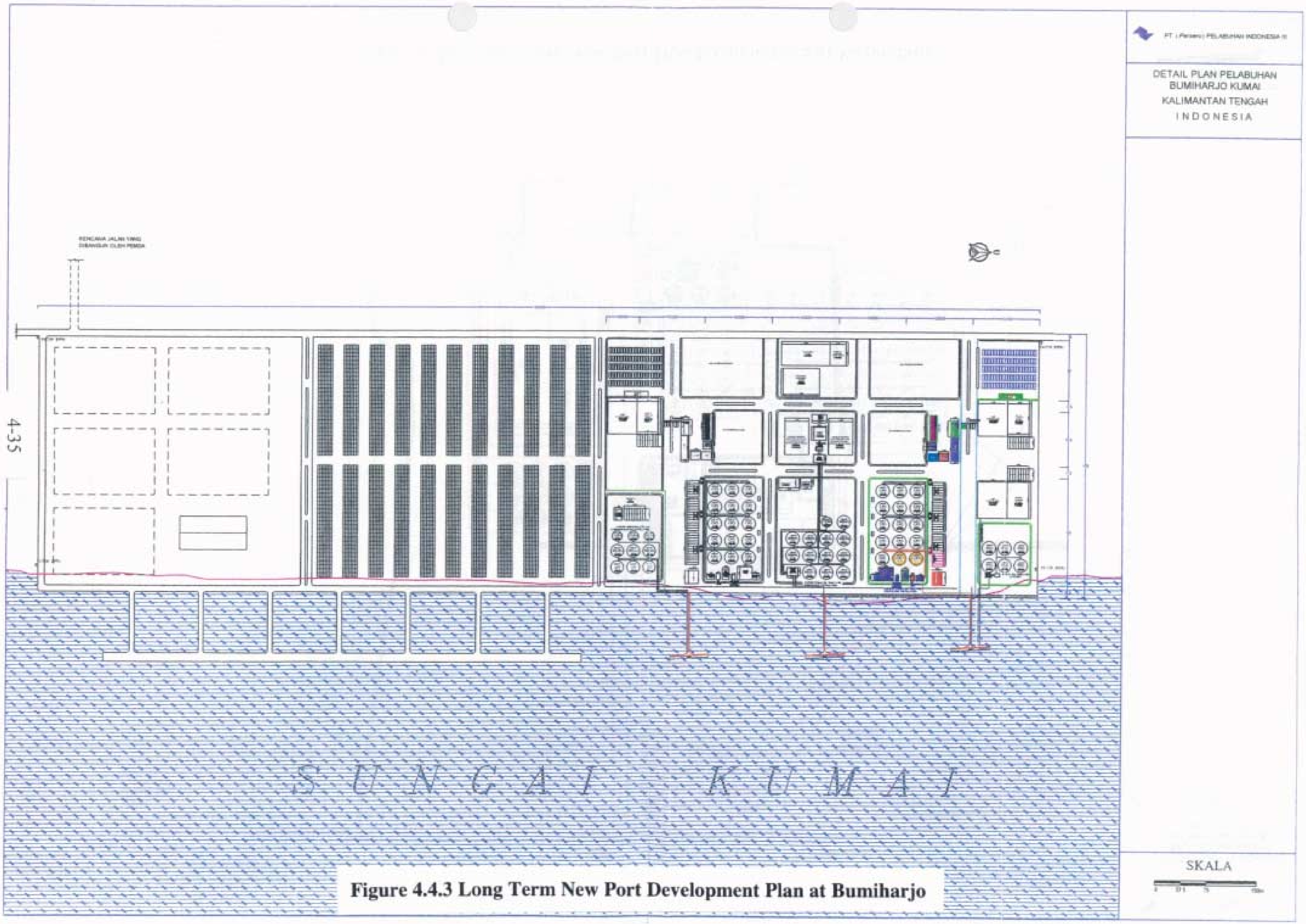

Figure 4.4.3 Long Term New Port Development Plan at Bumiharjo

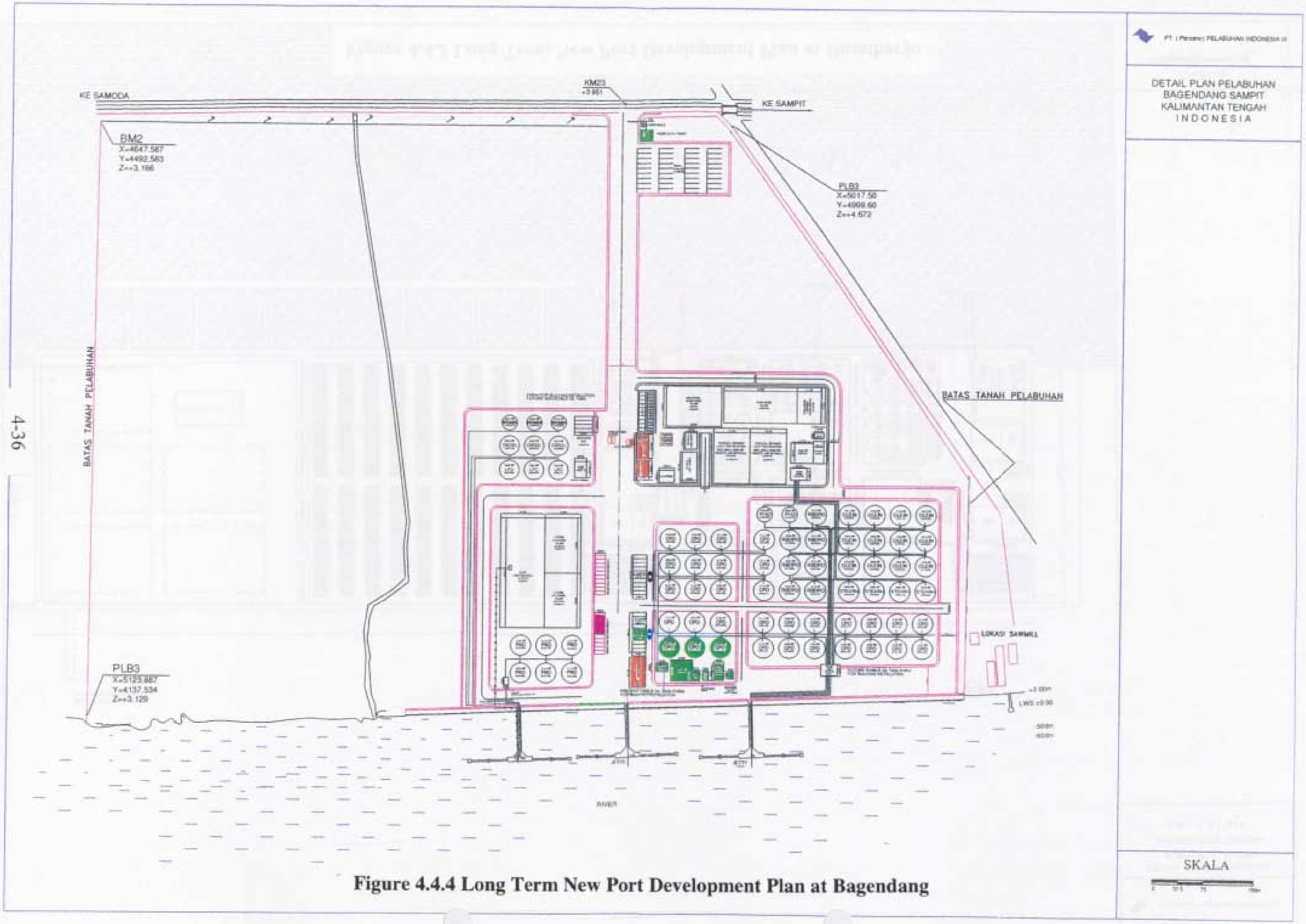

Figure 4.4.4 Long Term New Port Development Plan at Bagendang

4.4.4 Samarinda

(1) Short Term Port Improvement Program

To cope with rapidly increasing demand of port cargo, especially containerized cargo at the Port of Samarinda, IPC 4 formed the short-term port improvement program. The program consists of the following three stages and is planed to be executed by the year 2005, but is not initiated yet.

1) The First Stage

The traditional vessel berth located in the middle of 937 m wharves is relocated downstream to the existing navigational vessel terminal. The cargo handling yard dedicated to traditional vessel's cargo so far, is transferred to container cargo after being paved with concrete. The first stage of the short-term program also includes 7 ha land acquisition at Mangku Palas, on the opposite side of the Mahakam River, in order to accommodate the increasing container, general and bulk cargo from the broad hinterland of the Samarinda Port.

2) The Second Stage

The buildings of labor pool, harbor master office and coastguard office are demolished and moved to the former KANWIL office building. The site of the above three buildings is prepared for container cargo after being paved with concrete.

3) The Third Stage

The wooden traditional vessel berth is reformed into a 170 m concrete wharf, and applied to container cargo loading/unloading activity.

(2) New Deep Sea Port Development Plan at Marang Kayu

IPC 4 is planning to launch a new deep sea port development project free from high dredging cost caused by maintenance of long and shallow access channel. The project is to construct a deep sea container terminal at the neighboring area of the Cape Marang Kayu, which accommodates oceangoing full-container vessels loaded with export/import container cargo. According to IPC 4's plan, the new deep sea port is further developed into a large-scale cargo distribution terminal which accommodates mother ships available to load a great amount of bulk cargo such as palm oil, wood, coal and so on. However, the plan is still at the imaginary stage, because not only the magnitude of the port but also the exact location of the port are not determined.

(3) Port Improvement and Development at Balikpapan

The Port of Balikpapan is increasing the importance of its port role as a strategic port of East Kalimantan as well as the Port of Samarinda. The Port of Balikpapan is only 110 km distant from the Port of Samarinda, and these two ports are connected by 2-lane and solidly paved national highway. Thus, the port improvement and development at Balikpapan exerts significant influence on the direction of Samarinda's port development. In this sense, the following two projects should be mentioned.

1) Long Term Development Plan at Kariangau

In accordance with export processing zone development project at Kariangau, about 10 km distant from the city of Balikpapan, a new port development plan was studied by the Japanese consultant in 1996. The port project was just about to be implemented by means of ADB loan, but was unfortunately cancelled later due to the Asian economic crisis. The project was to construct a deep sea reclaimed port at Kariangau, which consists of 2 container berths (10 m deep) accompanied by 3 ha container yard, 3 conventional berths (450 m long, 10 m deep), reinforced port roads and supporting facilities. IPC 4 is retaining this long-term port development plan for future implementation of the project.

2) Port Extension Plan at Semayang

To cope with rapidly increasing demand of port cargo, in particular containerized cargo to/from the broad port hinterland in East Kalimantan, IPC 4 formed the short term port extension plan at Semayang, 400 m distant from the existing port toward the mouth of the Balikpapan Bay. The port extension plan at Semayang is to construct one jetty-type container wharf (200 m long, 20 m deep, 20 m in breadth), and 3.4 ha container yard which will be developed by means of reclamation in front of the waterfront highway. This port extension plan is derived from the JICA's port study at Balikpapan in 1990s, and the magnitude and lay out of the port extension is just a part of the original port master plan.

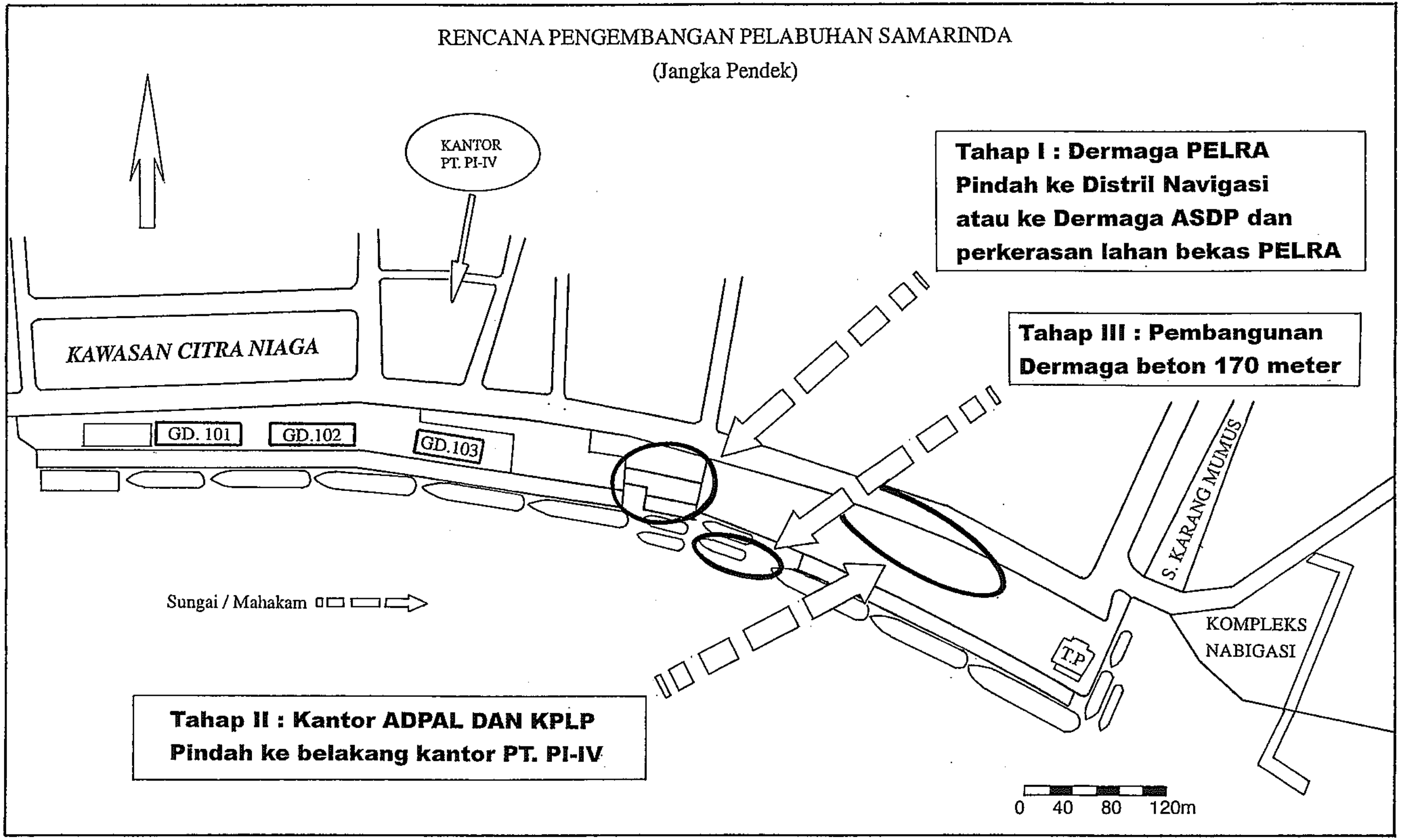

Figure 4.4.5 Short Term Port Improvement Program at Samarina

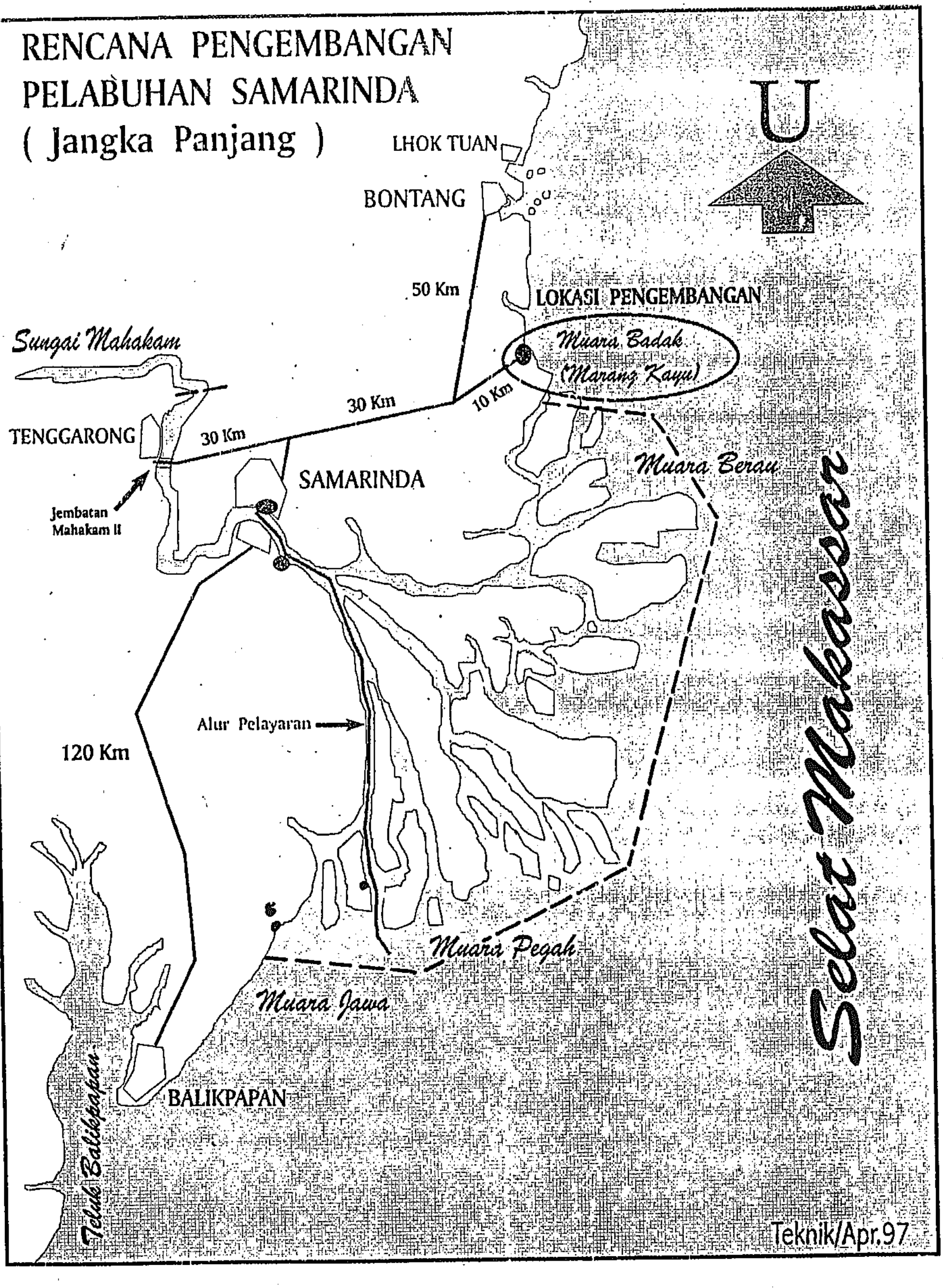

Figure 4.4.6 New Deep Sea Port Development Plan at Marang Kayu

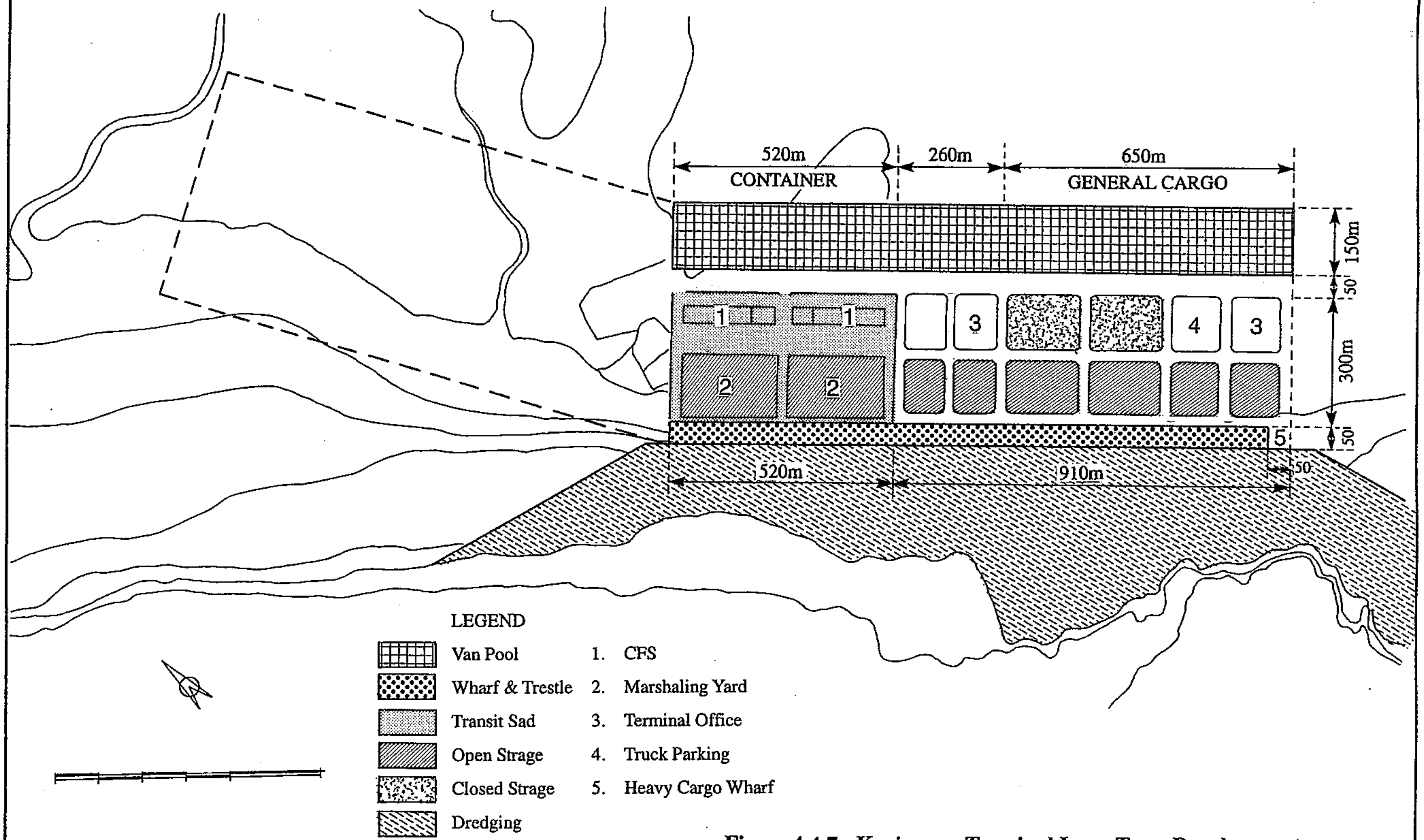

Figure 4.4.7 Kariangau Terminal Long Term Development

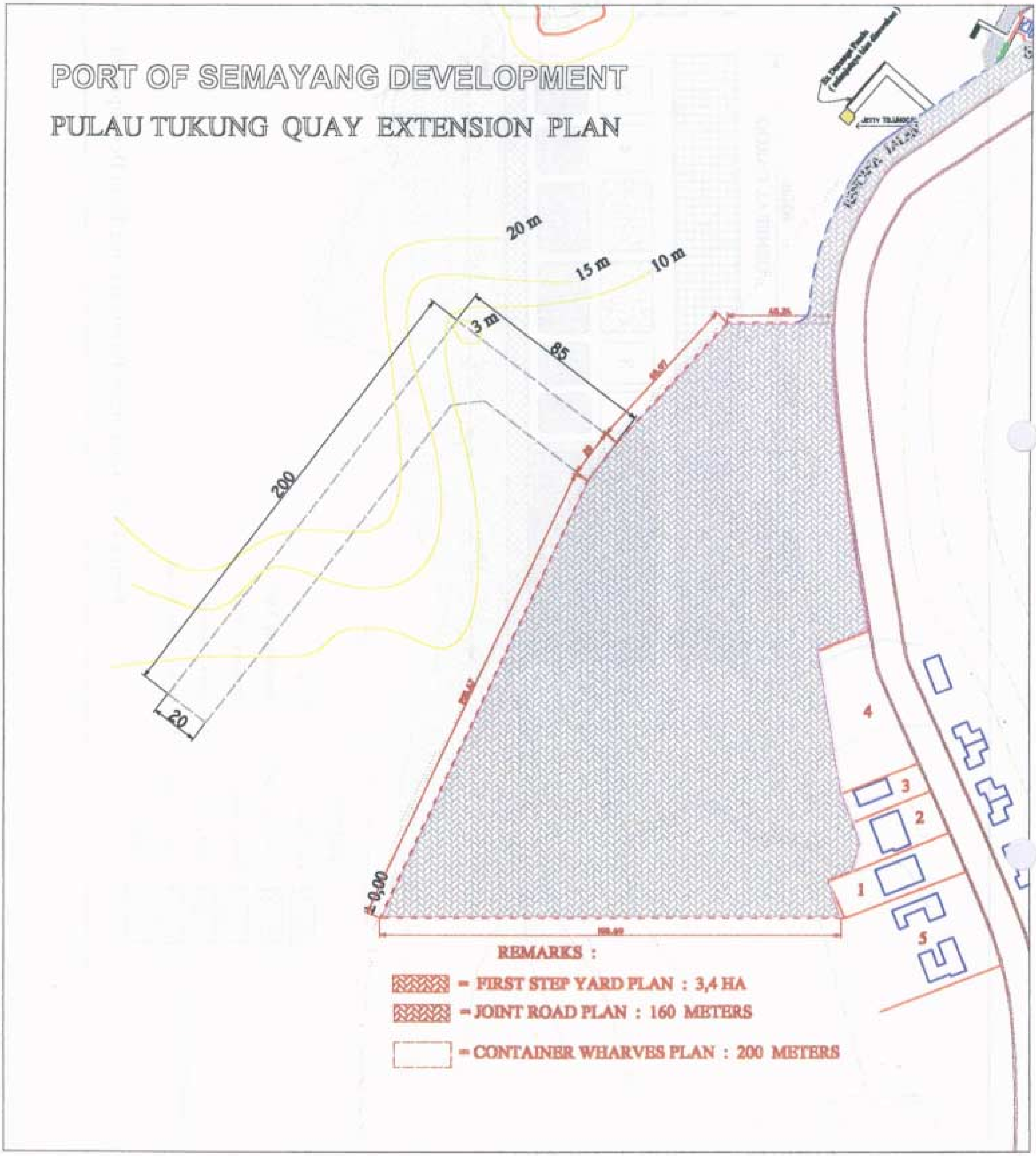

Figure 4.4.8 Port Extension Plan at Semayang

4.5 Inland Transportation Network

4.5.1 Road

Table 4.5.1 shows the present situation of road development in West, Central and East Kalimantan.

Table 4.5.1 Road Length in West, Central and East Kalimantan

Province	Road Length (km)				Area (km2)	Road Density (km.km2)	Year
	State	Provincial	Regency/ Municipality	Total			
Kalimantan Barat	805	1,598	9,510	11,913	146,807	0.0811	1998
Kalimantan Tengah	1,708	523	7,049	9,280	153,564	0.0604	1999
Kalimantan Timur	1,641	1,543	4,802	7,986	210,985	0.0379	1999
Indonesia	27,977	47,863	279,523	355,363	1,922,570	0.1848	1998

Source: Statistic Indonesia 1999, BPS. West Kalimantan in Figures 1999, BPS of West Kalimantan
Central Kalimantan in Figures 1999, BPS of Central Kalimantan
East Kalimantan in Figures 1999, BPS of East Kalimantan

Road system of each province is depicted in Figure 4.5.1, 4.5.2 and 4.5.3.

Road stock in Kalimantan is not sufficient, because large area of the territory is swampy or mountainous. The road density is much less than Indonesian average.

Main road system is the Trans Kalimantan Highway, which plans to connect main cities in four provinces in Kalimantan. Connection between West Kalimantan and Central Kalimantan has not been completed, nor connections inside of both West Kalimantan and East Kalimantan. Although other inland highways are proposed, inland and coast-to-inland roads systems are very poor.

4.5.2 Airport

West Kalimantan has three airports with runway of 1,300 m or longer. The main airport is Supadio Airport (1,850 m x 30 m) at Pontianak.

Central Kalimantan has T. Jilik Riwut Airport with runway of 1,850 m at Palangkaraya and Iskandar Airport at Pangkalabun (Kumai) with 1,650 m runway.

In East Kalimantan, there are three airports with runway of 1,300 m or longer, Temindung Airport (Samarinda) with 1,850 m runway, Juwat Airport (Tarakan) with 1,650 m x 30 m runway and Sepingan Airport (Balikpapan) with 2,500 m x 30 m.

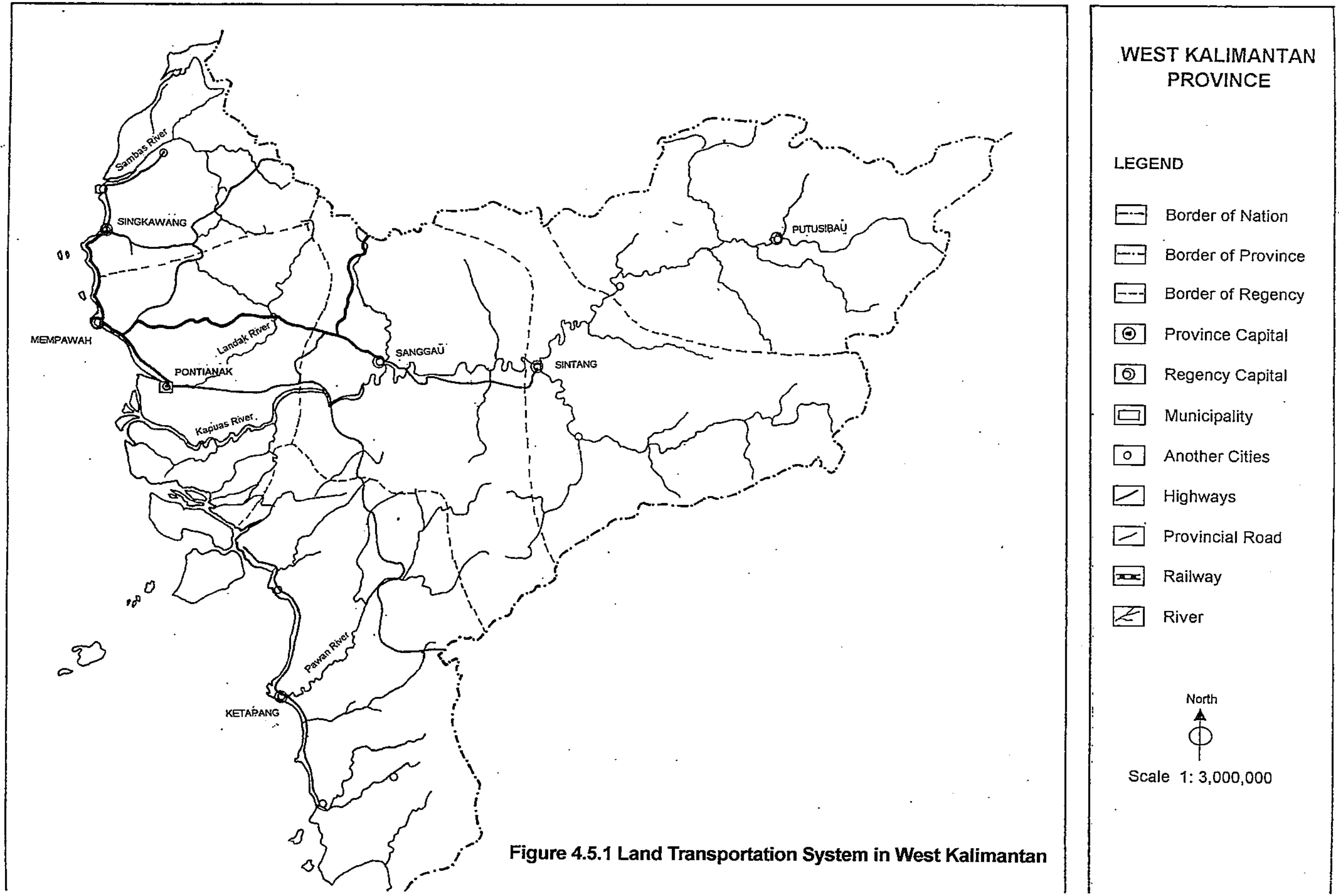

Figure 4.5.1 Land Transportation System in West Kalimantan

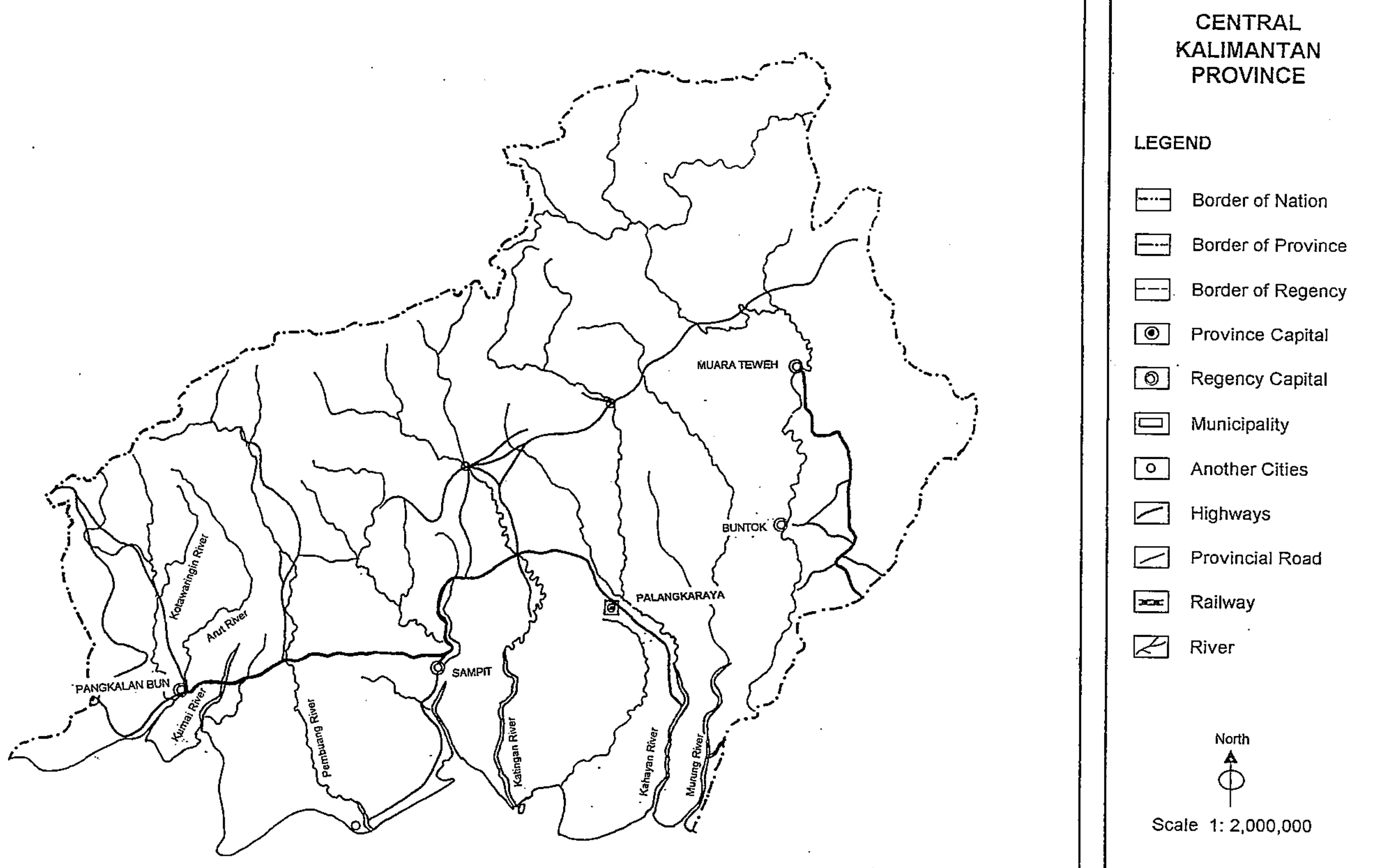

Figure 4.5.2 Land Transportation System in Central Kalimantan

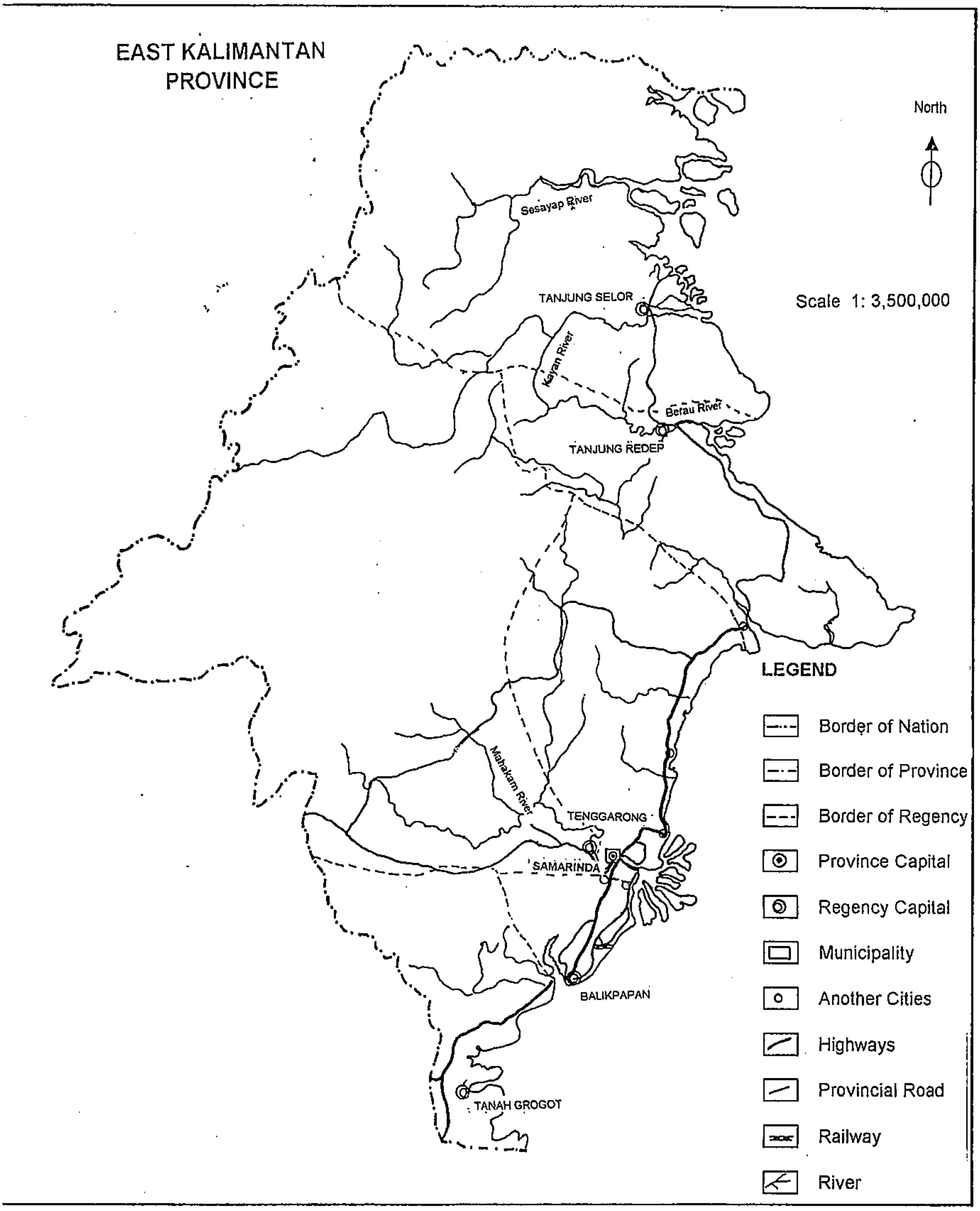

Figure 4.5.3 Land Transportation System in East Kalimantan

4.6 Port Cargo Throughput

4.6.1 Introduction

Of the four ports in Kalimantan, two are major river ports at Samarinda and Pontianak, and two are smaller ports in Central Kalimantan at Kumai and Sampit. All the four ports connect with outlying ports or smaller ports under Cabang, and Samarinda also has a nearby public port and major oil facility at Balikpapan.

4.6.2 Pontianak Cargo

(1) Total Traffic

Pontianak port consists of the main port and smaller (or Kawasan ports) located either along the coast or within the delta of the Kapuas (the main river south of Pontianak).

Total traffic at Pontianak port is not always clear as it sometimes includes the Kawasan or the smaller ports.

During discussions on port traffic, the type of cargoes and origins and destinations, it was suggested to the team that smaller port traffic is unlikely to divert substantially to Pontianak public port but some diversion could take place to a new port on the coast.

The following, therefore, shows our estimates of Pontianak port traffic including smaller ports.

Table 4.6.1 Cargo Traffic at Pontianak Port, 1994 to 2000

Port / Small Port under Cabang (In 000 tonnes)	1994	1995	1996	1999	2000
Pontianak	2,869	2,702	3,021	3,333	3,481
Ketapang	190	128	151	182	204
Sintete	198	201	192	102	109
Telok Air	169	162	125	60	54
Total	3,426	3,192	3,489	3,676	3,848

Source: Cabang

Total traffic grew marginally at under 1 percent per year, with the smaller ports losing traffic by nearly 7 percent per year, and especially Telok Air where water depth has been problem. Pontianak traffic has grown by nearly 1.5 percent per year.

(2) Public Port

Public port traffic increased by about 9 percent per year between 1994 and 2000 as shown below.

Port Area	1994	1997	1999	2000
Public	786	1,234	1,302	1,400

Source: Cabang

(3) Other Areas

Cargo traffic in all areas recovered in 2000, but Rede traffic remained substantially less than in 1994 as did cargo at special berths. Only traffic through special ports increased overall by about 5 percent per year over the period. Based upon the above data, cargo handled at private berths would amount to between 2.3 and 2.4 million tonnes.

(4) Handling Type

Of the 1.5 million tonnes of cargo handled in 2000 at the public berths over half or 900,000 tonnes is containerised, the remainder being mainly general cargo. In total, of the 3.5 million tonnes handled at Pontianak, 45 percent is general cargo including bags, 29 percent is liquid bulk and the remaining 26 percent is in containers.

(5) Container Traffic

The volume of cargo in containers has continued to grow every year and the longer term container growth in Teus has been over 40 percent per year on average. Presumably, the recent procurement of a gantry crane has made some contribution to this growth.

Table 4.6.2 Container Traffic at Pontianak Port, 1994-2000

Container Traffic	1994	1996	1998	2000
Tonnes (000s)	119	475	596	903
Teus	12,500	44,140	59,286	93,098
Tonnes/Teu	9.5	10.8	10.1	9.7
Boxes	11,160	41,521	55,994	89,005

Source: Cabang and IPC II

According to the shipping companies, most containers are domestic and are transported between Pontianak and Jakarta.

(6) Main Commodities

Total cargo amounts to about 3.5 m. tonnes in 2000 and exports make up 22 percent of the total, of which plywood makes up over 15 percent. Imports only make up 5 percent of total cargoes and the only significant import is fertiliser with about 1 percent of total cargoes.

Nearly 60 percent of all cargoes are domestic unloaded with fuel amounting to 25 percent, cement 4 percent and general cargo 27 percent.

Loaded domestic cargoes make up the remaining 13 percent, and CPO amounts to about 4 percent of total cargoes (138,000 tonnes), plywood 2.6 percent and general cargoes nearly 7 percent.

(7) Passengers

Passenger traffic grew over the period 1994 to 2000 by about 12 percent per year. This is consistent with most of Indonesia which has seen remarkable growth in sea passenger traffic. A considerable increase in passenger traffic was noticeable in 1998, 1999 and

2000 perhaps reflecting the high cost of air transport, the introduction of new high speed sea ferry services and the increased demand for inter island movement during the economic crisis. All sea passenger movements were domestic.

Table 4.6.3 Passenger Traffic at Pontianak Port

	1994	1995	1996	1997	1998	1999	2000
Passengers (in 000s)	422	446	455	447	588	686	828
% per year		6%	2%	-2%	31%	17%	21%

Source: DGSC/Cabang

(8) Existing Forecasts

Existing forecasts made in 2000 by IPC II, using 1999 as base year show a forecast of about 5 percent per year in both public and non public cargo traffic between 2001 and 2005, resulting in nearly 5 million tonnes of cargoes in total by the end year.

About 110,000 Teus are expected by 2005 or about 1.1 million tonnes, implying a similar growth rate per year as other cargoes between 2001 and 2005.

The forecasts appear very conservative, as the 2001 forecast has already been reached in some cases by 2000.

(9) Trends and Comments

Container cargo growth has been rapid and public port cargoes have increased substantially, perhaps reflecting container cargo growth.

Data and traffic information on the smaller ports will require more detailed review in future.

4.6.3 Kumai Cargo

(1) Total Traffic

The data for Kumai include the pelabuhan kawasan or smaller ports under Kumai Cabang. These ports are Pangkalan Bun and Sukamara which are understood to handle relatively large amounts of cargo. These two ports have wooden jetties of about 80 metres at each location.

Table 4.6.4 Cargo Traffic at Kumai, 1994 to 1999

(in 000 tonnes)	1994	1995	1996	1997	1998	1999
Public	-	-	-	-	-	469
(Including Rede)						
Non-Public Port Areas	-	-	-	-	-	227
(Loading Point)						
Total	-	-	-	-	-	696
Export/Import	227	176	184	234	244	228
Domestic	447	462	565	372	456	458
BBM	-	68	45	4	3	10
Total	774	706	794	610	703	696

Source: Cabang

(2) Public Port

Public port traffic reached 469,000 tonnes in 1999 but no further trend data was available by public facility.

(3) Other Areas

In 1999, 265,000 tonnes were handled in the public port, 187,000 tonnes at rede and 214,000 tonnes transhipped at sea.

(4) Handling Type

Of the 696 tonnes handled in 1999, 86 percent was general, bagged and unitised cargo, 3 percent dry bulk and 12 percent liquid bulk.

(5) Container Traffic

No containers are handled at Kumai.

(6) Main Commodities

Of the bulk cargoes, it is estimated that about 70,000 tonnes of CPO was handled in 1999. Other commodities include rubber, timber, rotan, Kaolin and sand.

(7) Passengers

Passenger traffic grew over the period 1994 to 1999 by 20 percent per year. A considerable increase in passenger traffic was noticeable during the economic crisis perhaps reflecting the high cost of air transport and the increased demand for inter island movement. This is consistent with most of Indonesia which has seen remarkable growth in sea passenger traffic.

All sea passenger movements were domestic.

Table 4.6.5 Passenger Traffic at Kumai Port, 1994 to 1999

	1994	1995	1996	1997	1998	1999	2000
Passengers	110	127	135	133	206	270	
% per year		15	6	-1	55	31	

(8) Existing Forecasts

The basis of the first stage Master Plan is a CPO terminal. This plan indicates that CPO throughput will reach 156,000 tonnes by 2001, 1.7 million tonnes by 2010 and 2.0 million tonnes per year by 2015. These data are based on forecasts by two major producers as well as about 48 smaller estates in the area.

The general cargo forecast for 2010 is about 675,000 tonnes, excluding CPO.

The container forecast is for 5,000 Teus by 2010.

(9) Trends and Comments

There has been substantial growth over the period in public cargoes but non-public cargoes stagnated in the early crisis years before recovering in 2000.

Container cargo suffered a minor set back in the crisis but seems to have recovered its longer-term growth trend in 2000.

The data for Kumai is not yet clear and appears not to be available in the format of other, larger Indonesian ports. The bases of the forecasts are similarly not clear. The cargo relationship between Kumai and its smaller ports is also not clear yet.

4.6.4 Sampit

(1) Total Traffic

Total traffic at Sampit stagnated since 1995, but appears to have increased rapidly from 1988 to 1995. The longer term trend from 1988 to 2000 is about 11 percent per year.

Table 4.6.6 Cargo Traffic at Sampit Port, 1994 to 2000

	1994	1995	1996	1999	2000
Public Port				202*	
(in 000 tonnes)					
Non Public Port				1,033	
Total Traffic	1,517	1,051	1,099	1,235**	1,433

Source : Cabang

* includes 47,000 tonnes in the smaller ports of Samuda, Kuala P. and Pagatan.

** excludes 115,000 tonnes of BBM

(2) Public Port

The public port handled about 155,000 tonnes of cargo in 1999, the other 47,000 tonnes being handled in smaller ports under the Sampit cabang,

(3) Other Areas

Over 1 million tonnes of cargoes are handled outside the public port. In 1999, about 350,000 tonnes was handled mid-stream (Rede), another 530,000 tonnes was handled at special berths and 150,000 tonnes was transhipped at sea.

(4) Handling Type

Of the 1.2 million tonnes handled in 1999, 44 percent was general, bagged and unitised, with the remaining 56 percent liquid bulk, largely palm oil.

(5) Container Traffic

The volume of cargo in containers has continued to grow rapidly at about 25 percent per year on average from1995 but only reached under 12,000 Teus in 1999.

Table 4.6.7 Container Traffic at Sampit Port, 1995 to 1999

Container Traffic	1995	1996	1997	1998	1999
Teus	4,957	9,134	7,424	7,425	11,971

Source: Cabang and IPC 2

(6) Main Commodities

The main commodities are palm oil and timber products.

(7) Passengers

Passenger traffic grew rapidly, with substantial fluctuations, over the period 1994 to 1999 at an average of 40 percent per year. This is consistent with most of Indonesia which has seen remarkable growth in sea passenger traffic. A considerable increase in passenger traffic was noticeable during the economic crisis perhaps reflecting the high cost of air transport and the increased demand for inter island movement.

All sea passenger movements were domestic.

Table 4.6.8 Passenger Traffic at Sampit Port, 1994-1999

	1994	1995	1996	1997	1998	1999
Passengers (In 000s)	99	137	160	116	212	482
% per year		38	17	-28	83	128

Source: DGSC

(8) Existing Forecasts

CPO throughput is projected to reach about 180,000 tonnes in 2001 and 1.0 million tonnes by 2010.

(9) Trends and Comments

As with Sampit, detailed data has not been available and there are questions about the growth in public cargoes, container growth and the cargo relationship with the smaller ports.

4.6.5 Samarinda

(1) Total Traffic

Total traffic at Samarinda increased by about 7 percent per year between 1988 and 2000. Data from 1993 in the table below shows the division between public and other cargo handling areas. It also indicates that total traffic from 1993 onwards increased on average by 6 percent per year to 2000.

Table 4.6.9 Total Cargo at Samarinda Port, 1993-2000

	1993	1995	1996	1999	2000
Public	711	812	954	1,038	1,237
Private	5,039	5,830	6,787	7,510	7,151
Total	5,750	6,642	7,741	8,548	8,388

Source: Cabang

(2) Public Port

Public port traffic increased by about 8 percent per year over the above period to 2000.

(3) Other Areas

Traffic in the non-public areas increased consistently up to 1999 by nearly 7 percent per year to 1999 but fell back to average 5 percent to 2000, due to a substantial fall in dry bulk (coal) traffic in 2000.

Nearly all the non public traffic was handled at special berths and by subsequent transhipment at sea.

(4) Handling Type

Of the 8.5 million tonnes per year handled in 1999, 33 percent was general, bagged and unitised. About 58 percent was dry bulk and 1 percent liquid bulk with 8 percent container cargo. With the fall in total cargo in 2000 and the continued rise in container traffic these percentages changed to 36 percent, 52 percent, 1 percent and 11 percent for general/bulk/unitised, dry bulk, liquid bulk and containerised cargo respectively.

(5) Container Traffic

The volume of cargo in containers has continued to grow every year even in the crisis years. The rate of growth is more than double each year since 1991 when the first containers were handled. The volume in 2000 is over 100 times more than 1991. Growth in any particular period is erratic presumably reflecting the addition of container shipping capacity.

Table 4.6.9 Container Movements at Samarinda Port, 1991-2000

Container Traffic	1991	1994	1996	1998	1999	2000
Tonnes (000s)	7,014	24,266	206,273	236,397	715,000	894,000
Teus	668	2,311	19,645	22,514	54,569	68,685
% pa		51 %	192 %	7 %	142 %	26 %
Tonnes /Teu	10.5*	10.5*	10.5*	10.5*	13**	13**
*Estimated ** Actual						

Source: Cabang and IPC II

(6) Main Commodities

Coal, logs, plywood and sawn timber make up the majority of the non public berth cargoes, amounting to 4.5, 1.3, 1.1 and 0.2 million tonnes respectively in 2000. All these commodities increased in 2000 except coal which decreased by about 300,000 tonnes, probably due to reduction in domestic demand.

However, since 1995 coal, logs and sawn timber showed strong growth per year with plywood fairly static since 1995.

(7) Passengers

Passenger traffic grew rapidly over the period 1988 to 2000 at about 11 percent per year on average. From 1993 to 2000 this growth reached 18 percent per year although 1993 was low traffic year. Growth from 1994 to 2000 was a more consistent 12 percent per year. This is consistent with most of Indonesia which has seen remarkable growth in sea passenger traffic. A considerable increase in passenger traffic was noticeable during the economic crisis. All sea passenger movements were domestic.

Table 4.6.10 Passenger Movements at Samarinda Port

	1993	1994	1995	1996	1997	1998	1999	2000
Passengers (in 000s)	64	102	144	153	171	139	187	197
% per year		60	42	6	12	-19	34	6

(8) Trends and Comments

There has been substantial growth over the period in both public cargoes and non public cargoes.

Container cargo has shown tremendous growth since 1991 although the number handled is still under 100,000 teus per year.

4.7 Calling Vessels

Table 4.7.1 shows the recent trend in ship calls at the subject ports. This table shows all vessels whether calling at public or private wharves.

Clearly however, in line with increasing port cargoes, the number of vessels has been increasing even including the crisis years of 1998 and 1999. There are however, exceptions such as Samarinda where calls decreased due to domestic coal demand. This has since recovered due to export demand.

Kumai and Sampit also show strong increases, from a low base due to the increase in CPO shipments.

Taking all seven ports together, the data shows that international calling vessels increased by 1 percent per year between 1995 and 1999, with average GRT increasing by nearly 4 percent. Domestic calls increased by just over 2 percent per year with average GRT increasing by nearly 8 percent.

These data reflect the two main situations:

(1) Where international bound vessels are already quite large (relative to the river/port capacity) whereas the domestic bound vessels are generally significantly smaller with much greater potential to expand. This can be quite clearly seen in Samarinda where the average GRT of international bound vessels is 12,000 tonnes nearing the maximum size possible for the channel.

(2) Further, due to its high cargo volumes, Samarinda dominates the data and as mentioned above, domestic coal demand fell in the crisis.

The trend is often difficult to establish clearly due to the impact of the economic crisis on port cargo and thus, port calls in the last two years of the data. These data will be disaggregated in the later stages of the study for the selected ports and related to the calls at public and private wharves.

4.8 Origin and Destination of the Major Cargo Items

Insufficient data has been so far collected on specific cargo destinations related to each port to give a very clear picture of cargo origins and destinations. General data was presented in Section 2 above on destinations of Indonesian exports.

Most container traffic from Samarinda and Sampit is feeder traffic to Surabaya, with Pontianak traffic focussed on Jakarta. General cargoes are shipped from Jakarta or Surabaya to the key ports, and increasingly in containers.

Palm oil is mainly sent to Semarang, Jakarta or Surabaya for processing.

Coal is exported to Asian destinations or sent to Java for power generation or the coal transhipment terminal in South Kalimantan.

Wood products including plywood are exported but usually transhipped at larger ports. Log exports have been prohibited for some time so all log movements should be domestic.

Table 4.7.1 Calling Vessels 1995 – 1999 for all the Ports in Kalimantan

Kumai

			1995	1996	1997	1998	1999	% 1995-1999
International	Call	Number	87	98	89	49	114	7%
	GRT	ton	872,547	879,238	871,418	765,390	1,250,010	9%
	Average GRT	ton	10,029	8,972	9,791	15,620	10,965	2%
Domestic	Call	Number	1,947	2,414	1,745	1,178	2,658	8%
	GRT	ton	949,230	971,744	806,614	411,860	2,665,051	29%
	Average GRT	ton	488	403	462	350	1,003	20%

Pontianak

			1995	1996	1997	1998	1999	% 1995-1999
International	Call	Number	885	872	871	993	953	2%
	GRT	ton	4,581,394	4,636,110	4,764,353	5,276,274	5,347,966	4%
	Average GRT	ton	5,177	5,317	5,470	5,313	5,612	2%
Domestic	Call	Number	6,948	6,808	6,077	5,854	5,137	-7%
	GRT	ton	3,916,203	4,392,872	4,267,352	4,091,824	4,423,664	3%
	Average GRT	ton	564	645	702	699	861	11%

Samarinda

			1995	1996	1997	1998	1999	% 1995-1999
International	Call	Number	876	855	784	947	816	-2%
	ton	GRT	8,217,000	8,709,000	8,303,000	9,089,000	9,805,000	5%
	ton	Average GRT	9,380	10,186	10,591	9,598	12,016	6%
Domestic	Call	Number	8,678	10,764	12,664	12,689	11,997	8%
	ton	GRT	5,714,409	6,126,666	9,246,102	8,595,139	8,338,000	10%
	ton	Average GRT	658	569	730	677	695	1%

Sampit

			1995	1996	1997	1998	1999	% 1995-1999
International	Call	Number	38	44	28	44	69	16%
	GRT	ton	292,632	273,042	174,190	206,452	262,441	-3%
	Average GRT	ton	7,701	6,206	6,221	4,692	3,803	-16%
Domestic	Call	Number	4,866	4,258	1,878	4,956	4,638	-1%
	GRT	ton	2,011,723	1,904,959	1,530,618	3,177,645	2,956,666	10%
	Average GRT	ton	413	447	815	641	637	11%

ALL 4 PORTS			1995	1996	1997	1998	1999	% 1995-1999
International	Call	Number	1,886	1,869	1,772	2,033	1,952	0.9%
	GRT	ton	13,963,573	14,497,390	14,112,961	15,337,116	16,665,417	4.5%
	Average GRT	ton	7,404	7,757	7,964	7,544	8,538	3.6%
Domestic	Call	Number	22,439	24,244	22,364	24,677	24,430	2.1%
	GRT	ton	12,591,565	13,396,241	15,850,686	16,276,468	18,383,381	9.9%
	Average GRT	ton	561	553	709	660	752	7.6%

4.9 Port Management Systems

4.9.1 Port Management System in Major Ports of Kalimantan

(1) Present Situation

Kalimantan Island consists of 4 provinces. As for public ports, Kalimantan has 22 commercial ports and 24 non-commercial ports.

The Indonesia Port Corporation (IPC) II manages 7 commercial ports located in West Kalimantan. IPC III manages 8 commercial ports located in Central Kalimantan and 2 commercial ports in South Kalimantan. IPC IV manages 5 commercial ports located in East Kalimantan. The branch office of IPC in each port is in charge of the daily operation.

The Port Administrator Office (ADPEL), which used to be a lower branch of the Province Office (KANWIL) until 2,001, is established in each commercial port categorized as class II, III and IV. The Port Administration Office (KANPEL), which was also the lower branch of KANWIL until 2001, is established in non-commercial ports.

IPC Ⅱ manages 1 major river port (Pontianak) in West Kalimantan.
IPC Ⅲ manages 8 major river ports (Pangkalan Bun, Sukamara, Kumai, Samuda, Sampit, Kuala Pembuang, Pulau Pisau and Kuala Kapuas) in Central Kalimantan and 1 major river port (Bonjak Musin) in South Kalimantan..
IPC IV manages 2 major river ports (Samarinda and Kampung Baru) in East Kalimantan.
Out of the 24 non-commercial ports in Kalimantan, 5 are river ports.

4.9.2 Management and Organization of Principal River Ports

(1) Pontianak River Port

Pontianak port is located 6 miles (11 km) upstream of the Kapuas Kecil River. IPC II Pontianak branch office is responsible for the construction, maintenance, and operation of port facilities.
The Organization Chart of IPC II Pontianak Branch Office is shown in Figure 4.9.1

Pontianak ADPEL is responsible for safe navigation. ADPEL also approves the installation of navigation and mooring facilities in Pontianak Port.

(2) Kumai River Port

Kumai port is located 20 miles (37 km) upstream of the Kumai River. IPC III Kumai branch office is responsible for the construction, maintenance, and operation of port facilities.

The Organization Chart of IPC III Kumai Branch Office is shown in Figure 4.9.2.

ADPEL office is responsible for safe navigation. ADPEL also approves the installation of navigation and mooring facilities in Kumai Port.

(3) Sampit River Port

Sampit port is located 35 miles (65 km) upstream of the Mentaya River. IPC III Sampit branch office is responsible for the construction, maintenance, and operation of port facilities.
The Organization Chart of IPC III Sampit Branch Office is shown in Figure 4.9.3.

ADPEL office is responsible for safe navigation. ADPEL also approves the installation of navigation and mooring facilities in Sampit port.

(4) Samarinda River Port

The Samarinda port is located 37 miles (69 km) upstream of the Mahakam River.
IPC IV Samarinda branch office is responsible for construction, maintenance, and operation of port facilities.
The Organization Chart of IPC IV Samarinda Branch Office is shown in Figure 4.9.4.

ADPEL office is responsible for the safe navigation. ADPEL also approves the installation of navigation and mooring facilities in Samarinda port.

The administration of the navigational facilities is done by the navigation office under the Directorate of Navigation (MOC).

4.9.3 Revenue and Expenditure of Four River Ports

Table 4.9.1 shows the revenue and expenditure of the above-mentioned 4 river ports during the past 5 years.

Table 4.9.1 Revenue and Expenditure of the River Ports in Kalimantan

(Unit：Rp.1,000)

Year	Pontianak Office		Kumai Office		Sampit Office		Samarinda Office	
	Revenue	Expenditure	Revenue	Expenditure	Revenue	Expenditure	Revenue	Expenditure
2,000	24,063,035	17,791,847	1,864,214	1,757,467	2,898,676	3,167,050	13,336,351	4,227,209
1,999	19,092,593	15,602,302	1,350,936	1,154,917	1,951,204	2,583,739	11,499,582	3,449,993
1,998	15,623,177	11,887,213	-	-	-	-	-	-
1,997	11,801,968	8,635,316	-	-	-	-	-	-
1,996	9,072,527	6,920,486	-	-	-	-	-	-

Source: IPC Branch Office

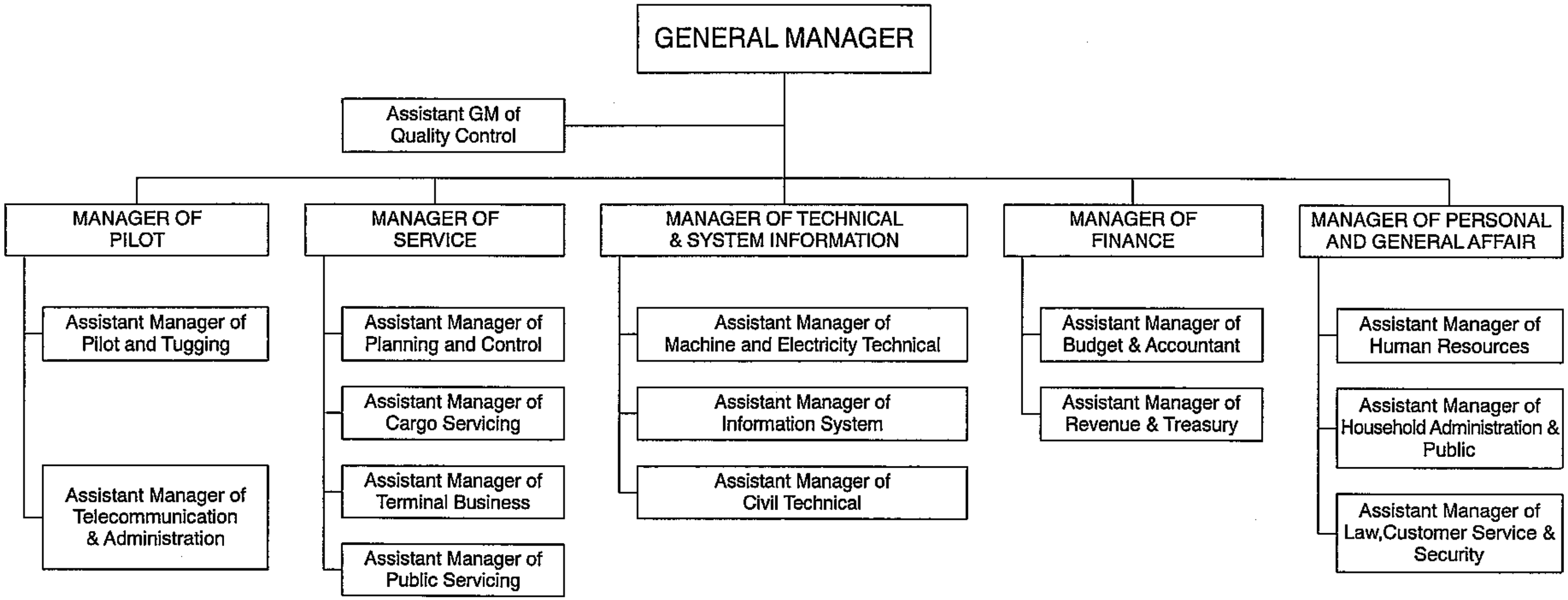

Figure 4.9.1 Organization Chart of IPC II Pontianak Branch Office

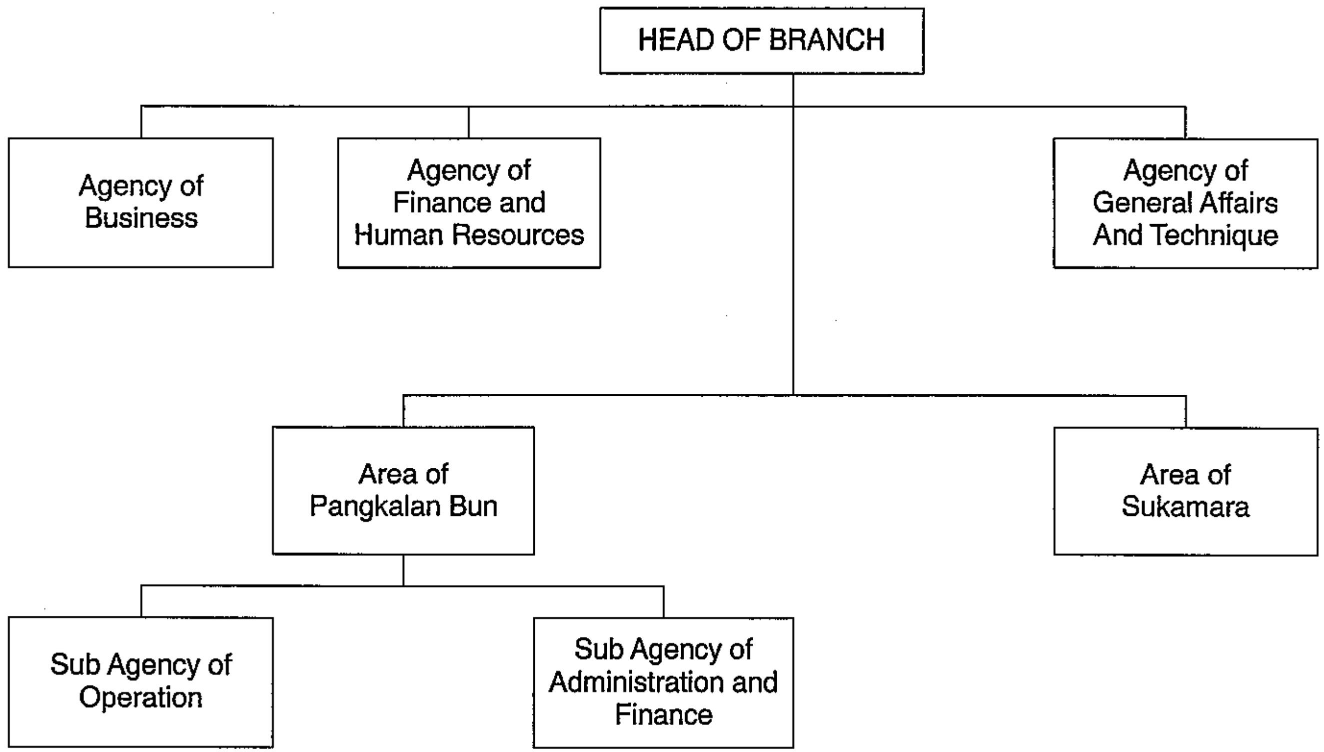

Figure 4.9.2 Organization Chart of IPC III Kumai Branch Office

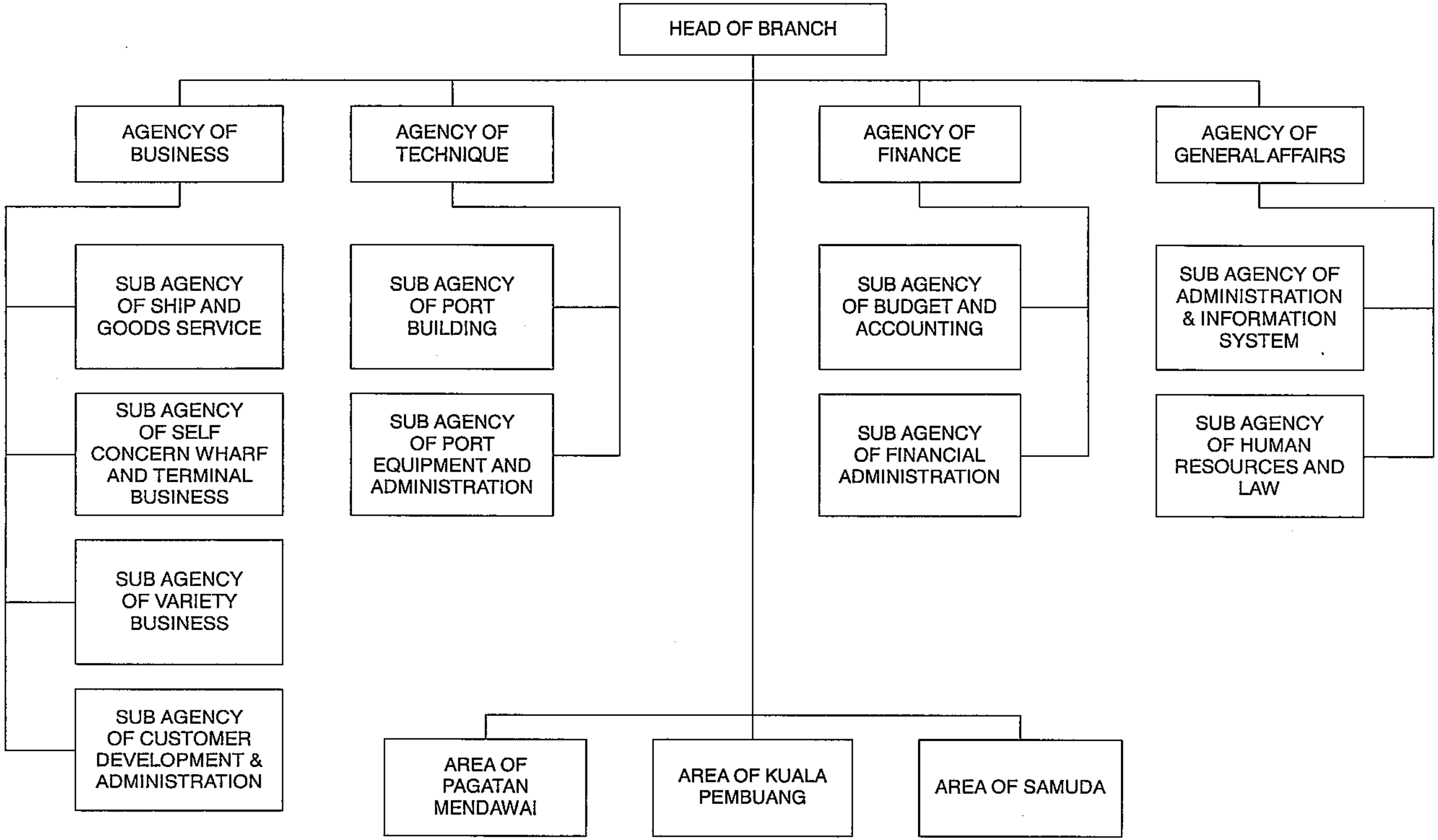

Figure 4.9.3 Organization Chart of IPC III Sampit Branch Office

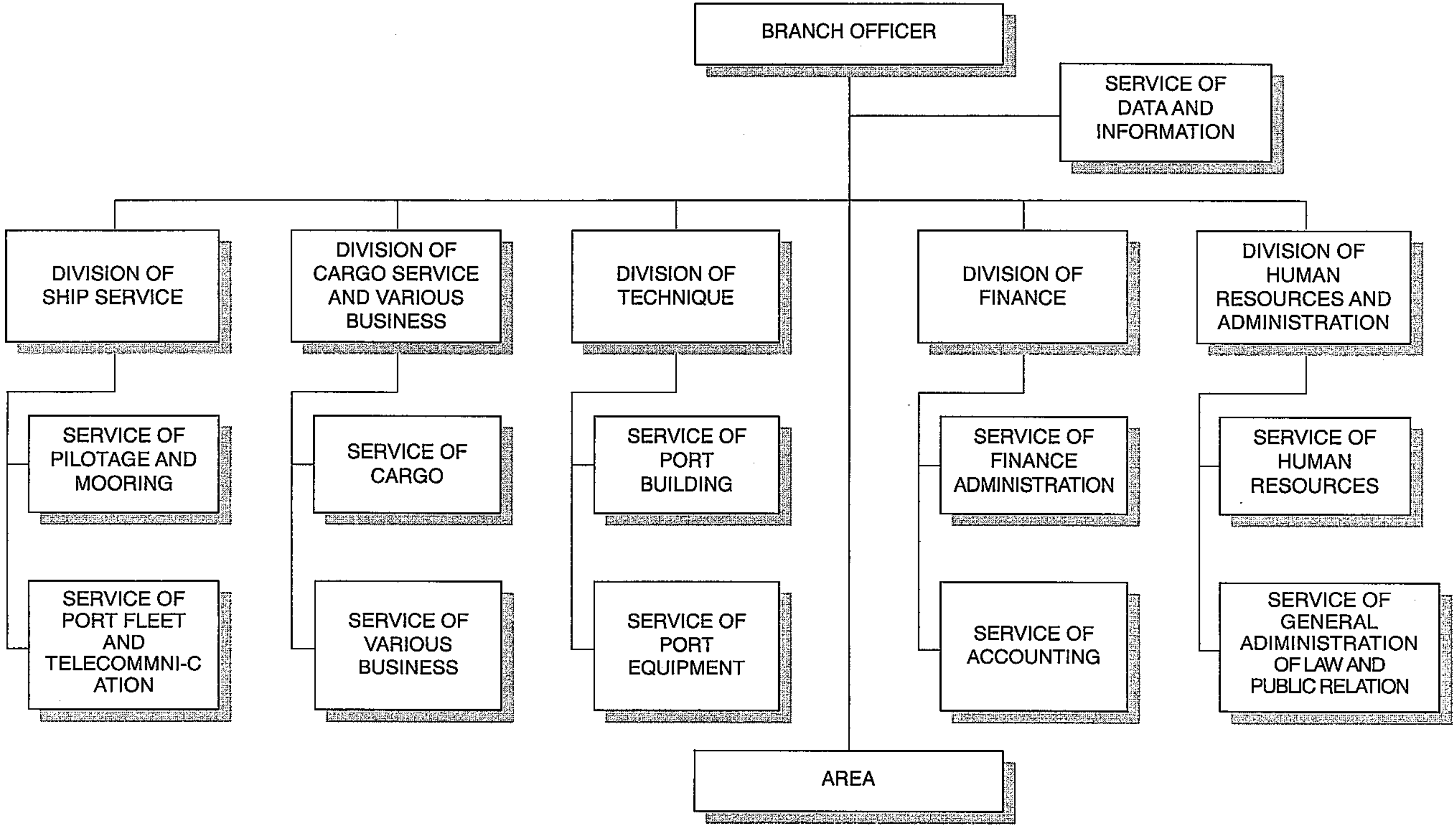

Figure 4.9.4 Organization Chart of IPC IV Samarinda Branch Office

4.10 Cargo Handling System and Productivity

4.10.1 Pontianak

(1) Cargo Handling System

To accelerate container handling efficiency, a gantry crane was introduced to N0.7 wharf of the port in February 2000. The crane is used for calling container vessels, on a first-come first-served basis. The gantry crane is a secondhand machine, imported from Japan and is now in good condition. Ship crane and mobile crane are also used for container loading/unloading operation at No.6 and No.4 container wharf, which are not sustainable for introduction of gantry cranes in terms of inferiority in structural strength. Yard operation of container is carried out by side loaders (2 units), top loaders (3 units) and forklifts (10 units). There is no more space for introducing straddle carriers or transfer cranes to the port to accelerate container handling efficiency. In addition, stuffing/unstuffing operation is carried out within the port, because full-loaded container boxes are not allowed to move on city roads due to weight limitation of land traffic. On the other hand, loading/unloading operation of general cargo and bulk cargo at conventional vessel wharves are carried out by ship crane or mobile crane. Yard operation of both general cargo and bulk cargo, is carried out by trucks and forklifts, but the efficiency of cargo movement on the yard is reduced by lack of cargo handling space at the busy port, because there exists a warehouse closely behind the conventional vessel wharf. Finally, human labor power is also fully mobilized in order to handle general cargo for Indonesian traditional vessels, including loading/unloading operation at the port.

Table 4.10.1 Cargo Handling Equipment at Pontianak

Equipment	No. of Unit	Remarks
Container Crane	1	30.5 ton
Mobile Crane	2	50 ton
Forklift	10	2,3 and 5 ton
Head Truck	4	40 ton
Chassis	6	20 and 40 ton
Side Loader	2	15 ton
Top Loader	3	40 ton

(2) Efficiency

Berth occupancy rate at the Pontianak Port is 71.5 %. And the cargo handling efficiency of international general cargo and international bag cargo, are 16.5 (Ton/Gang/Hour) and 28 (Ton/Gang/Hour), respectively. The cargo handling efficiency of domestic general cargo and domestic bag cargo is 14 (Ton/Gang/Hour) and 25 (Ton/Gang/Hour), respectively. On the other hand, the efficiency of container cargo handling is 20-25 (Box/Hour) by gantry crane, 10-12 (Box/Hour) by ship crane and 12-15 (Box/Hour) by mobile crane. The port is almost flooded with rapidly increasing container cargo, but is not provided with necessary yard space due to failure in land acquisition. In spite of the above-mentioned port conditions, the efficiency of container cargo handling at the Pontianak Port does reach the desirable level. Regarding the cargo handling efficiency of general cargo loaded/unloaded Indonesian traditional wooden vessels, is unbelievably low, because cargo handling is wholly dependent on human power.

4.10.2 Kumai

(1) Cargo Handling System

In general, a mobile crane is playing the most important role to load/unload cargo vessels at the Port of Kumai. When a calling vessel is equipped with a ship crane, that crane is also used for loading/unloading operation at the port. And yard operation of both general cargo and bulk cargo, is carried out by trucks and forklifts, but the efficiency of cargo movement on the yard is reduced by lack of cargo handling space at the port, because there exist warehouses and port office buildings closely behind the wharf. Finally, human labor power is also fully mobilized in order to handle general cargo for Indonesian traditional vessels, including loading/unloading operation at the port.

(2) Efficiency

Berth occupancy rate at the Kumai Port is 70 %. And the cargo handling efficiency of general cargo, bag cargo, dry-bulk cargo and liquid-bulk cargo, is 8.4 (Ton/Gang/Hour), 6 (Ton/Gang/Hour), 7.5 (Ton/Gang/Hour) and 18 (Ton/Gang/Hour), respectively. There are little efficient equipment introduced to the port. The port is also flooded with increasing cargo, but is not provided with necessary yard space due to failure in land acquisition. Accordingly, the efficiency of container cargo handling at the Kumai Port does not reach the expected level. Regarding the handling efficiency of general cargo loaded/unloaded Indonesian traditional wooden vessels, is unbelievably low, because cargo handling is wholly dependent on human power.

4.10.3 Sampit

(1) Cargo Handling System

In general, a mobile crane is playing the most important role to load/unload cargo vessels at the Port of Sampit. When a calling vessel is equipped with a ship crane, that crane is used for loading/unloading operation at the port. Container cargo handling is not exceptional as far as loading/unloading is concerned. Yard operation of container is carried out by forklift (1 unit) and trailer (1 unit). There is no more space for introducing straddle carriers or transfer cranes to the port to accelerate container handling efficiency. The efficiency of container handling operation is also reduced by lack of necessary space at the port. In addition, stuffing/unstuffing operation is carried out within the port, because full-loaded container boxes are not allowed to move on city roads due to weight limitation of land traffic. On the other hand, loading/unloading operation of both general cargo and bulk cargo at conventional vessel wharves, are carried out by ship crane or mobile crane. And yard operation of both general cargo and bulk cargo, is carried out by trucks and forklifts, but the efficiency of cargo movement on the yard is reduced by lack of cargo handling space at the busy port, because there exist warehouses and port office buildings closely behind the wharf. Finally, human labor power is also fully mobilized in order to handle general cargo for Indonesian traditional vessels, including loading/unloading operation at the port.

Table 4.10.2 Cargo Handling Equipment at Sampit

Equipment	No. of Unit	Remarks
Mobile Crane	1	40 ton
Forklift	1	5 ton
Trailer	1	

(2) Efficiency

Berth occupancy rate at the Sampit Port is 80 %. And the cargo handling efficiency of general cargo and bag cargo, are 16.8 (Ton/Gang/Hour) and 18.2 (Ton/Gang/Hour), respectively. On the other hand, the efficiency of container cargo handling is 12 (Box/Hour). There are few efficient cargos handling equipments introduced to the port. The port is also flooded with increasing container cargo, but is not provided with necessary yard space due to failure in land acquisition. Accordingly, the efficiency of container cargo handling at the Sampit Port does not reach the expected level. Regarding the cargo handling efficiency of general cargo loaded/unloaded Indonesian traditional vessels, is unbelievably low, because cargo handling is wholly dependant on human power.

4.10.4 Samarinda

(1) Cargo Handling System

In general, mobile cranes are playing the most important role to load/unload cargo vessels at the Port of Samarinda. When a calling vessel is equipped with a ship crane, that crane is used for loading/unloading operation at the port. And floating crane is also used for loading/unloading operation, when that crane is able to render more efficient services to cargo handling at the port. Container cargo handling is not exceptional as far as loading/unloading is concerned. Yard operation of container cargo is carried out by forklifts (21 units), super stackers (2 units) and trailers (7 units). There is no more space for introducing straddle carriers or transfer cranes to the port to accelerate container handling efficiency. The efficiency of container's yard operation is also reduced by lack of necessary space at the port, due to a number of damaged spots on container yards and roads. In addition, stuffing/unstuffing operation is carried out within the port, because full-loaded container boxes are not allowed to move on city roads due to weight limitation of land traffic. On the other hand, loading/unloading operation of general cargo and bulk cargo at conventional vessel wharves, are carried out by ship crane or mobile crane. Yard operation of both general cargo and bulk cargo, is carried out by trucks and forklifts, but the efficiency of cargo movement on the yard is reduced by lack of cargo handling space at the busy port, because there exists a warehouse closely behind the conventional vessel wharf. Finally, human labor power is also fully mobilized in order to handle general cargo for Indonesian traditional vessels, including loading/unloading operation at the port.

Table 4.10.3 Cargo Handling Equipment at Samarinda

Equipment	No. of Unit	Remarks
Mobile Crane	9	15 and 80 ton
Forklift	21	3 and 10 ton
Super Stacker	2	
Trailer	7	20 and 40 ton
Floating Crane	1	150 ton

(2) Efficiency

The cargo handling efficiency of general cargo, bag cargo, dry-bulk cargo and liquid cargo is 16 (Ton/Gang/Hour), 18 (Ton/Gang/Hour), 18 (Ton/Gang/Hour) and 17 (Ton/Gang/Hour), respectively. On the other hand, the efficiency of container cargo handling is only 7 (Box/Hour). There is no efficient equipment introduced to the port. The port is also flooded with rapidly increasing container cargo, but is not provided with necessary yard space due to failure in land acquisition. Accordingly, the efficiency of container cargo handling at the Samarinda Port does not reach the expected level. . Regarding the cargo handling efficiency of general cargo loaded/unloaded Indonesian traditional vessels, is unbelievably low, because cargo handling is wholly dependent on human power.