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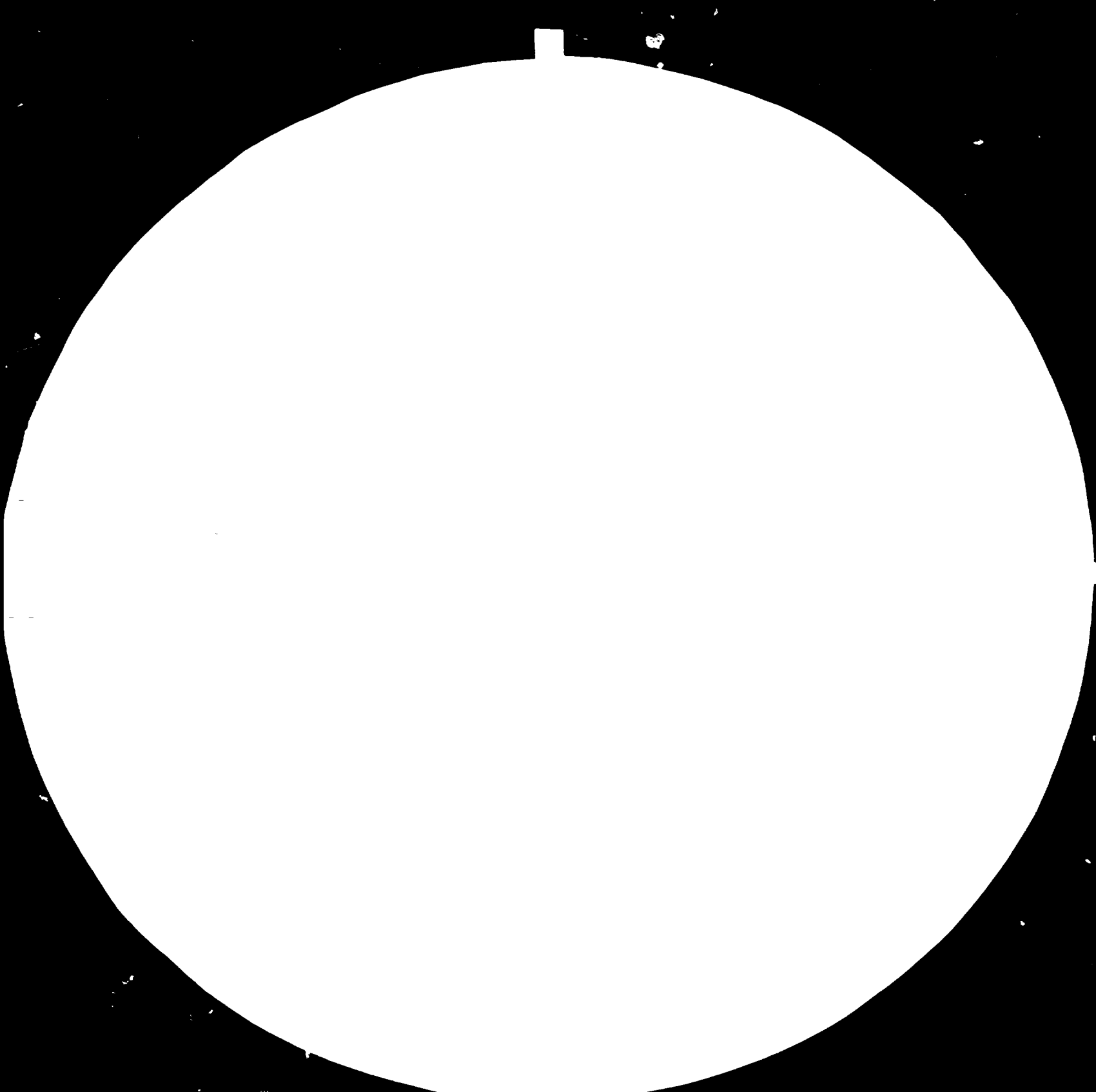
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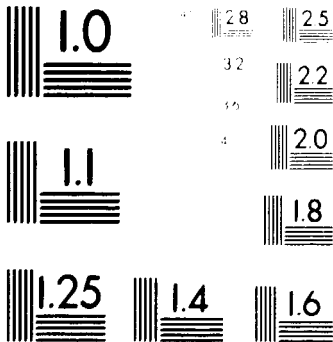
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MICROCOPY RESOLUTION TEST CHART  
 NATIONAL BUREAU OF STANDARDS-  
 STANDARD REFERENCE MATERIAL 1910a  
 (ANSI and ISO TEST CHART No. 2)

Indonesia.

**COMPREHENSIVE INVESTMENT PROFILE  
CENTRAL KALIMANTAN.**

14066

**FINAL REPORT**

**CONTRACT**

Between

**THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
(UNIDO)**

And

**PALANGKARAYA UNIVERSITY**

1984

2869

(R) Indonesia.

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**1984**

## P R E F A C E


In the cooperation with The United Nations Industrial Development Organization, UNIDO, Research team of the Palangka Raya University, based on the contract No. 83/102/RT, has done a research on Comprehensive Investment Profiles in Central Kalimantan concerning production and investment requirement up to 1990.

The research has been done since January 1984 it was expected to have been finished in four months time as soon as the contract was signed.

Thanks for the cooperation given to the research team in doing this research especially to those from the government staff whose duties are closely related to this research work, and last but not least to the BKPD and BKPA for the help of realizing and finishing the research work and its report.

Maybe this research report be useful for those investor who are interested in the investment prospect in Central Kalimantan.

Palangka Raya, July 1984.



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Team Leader

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## I. I N T R O D U C T I O N

Based on the contract between United Nations Industrial Development (here after referred to UNIDO) and Palangka Raya University No. 83/Project No. DP/INS/78/003. Activity Code : Dp/02/31.2 signed by both UNIDO Team Leader on December 23, 1983 and Team Leader of Palangka Raya University on January 30, 1984.

The research on Comprehensive Investment Profile in Central Kalimantan Province was officialty stated. This research was done under the out line of Research Proposal on Comprehensive Investment Profile arranged by Palangka Raya University and Terms of Reference proposed by UNIDO ( in this case, BKPM/UNIDO Project INS/078/003) which was agreed by both sides.

This research took four month to finish, with condition that the university as the 2<sup>nd</sup> side should have sent its Draft of Final Report to UNIDO as the 1<sup>st</sup> side in less than three month time period after the contract was signed. While the time left would be spent for correction of the draft after being discussed by both sides.

The draft was sent to BKPM/UNIDO in Jakarta on April 19, 1984, although it it had been discussed on Juni 20, 1983 in Palangka Raya. During the discussion, UNIDO as the 1<sup>st</sup> side suggested some corrections to the university, in this case to research team as the 2<sup>nd</sup> side, and the suggestion were confirmed in the letter of UNIDO proyect team leader received by the university on June 27, 1984. And based on those corrections as given in the letter, the Draft of Final Report was to be revised. The team hopes that this improved Draft Final Report would be really final.

Here are the personalia of the research team and their functions.

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6. Mr. Yansen Noky	Agriculture/Member
7. Others are specialist members.	

During the research various government institutions had contributed what the research team needed especially concerning the data needed, but not without Central Kalimantan's Governor's recommendations to make the data rather easily gained. The institutions, to which Governor recommended, are as follows :

1. Regional Planning and Development Board - BAPPELDA
2. Regional Investment Board - BPD
3. Regional Agriculture Department,
4. Regional Public Department,
5. Forestry Service,
6. Statistics Office,
7. And other institutions Services, both of the Region and of the districts and municipality, including those of the private sectors.

In this occasion, the research team would like to say "Thanks a lot" to those whose contributions given to make this research possible. Special thanks to UNIDO for suggestions and supports given to the team to arrange this final report.

The team realizes this report is not free from weakness or also mistakes and needs correcting, but the team also realizes that this has been the maximal efforts of ours besides daily duties unity ahead.

Palangka Raya, July 24, 1984.

Team Leader.

## SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

### 1. Food Crops

The progress of food crops areas during First Five Year Development Plan (PELITA I) up to Third Five Year Development Plan (PELITA III) in this region was mainly caused by the addition of newly opened areas through transmigration project which started with tidal area converted into tidal rice-field areas and dry-land areas opened to food crops plantation planning. It was possible because the potential areas for this purpose is available for developing agricultural areas supported by ever increasing ready-stock of production facilities provided by the government, and through BIMAS and INMAS Project, which helped the farmers to make use of (a) the applied technology of land cultivation system, and (b) improved variety of seed.

Despite all these efforts, as a matter of fact, if compared with national average production per hectare (Ha), the regional average production per Ha showed lower than that of Java Island. It was because of low level of soil fertility of the land areas of this region. In addition to this most part the agricultural areas here is tidal areas with (a) high level of acidity, and (b) very simple irrigation system.

Well-planned changes should be taken :

- a. To improve the present system of irrigation in order to be fully functioned.
- b. To encourage farmers to use (i) applied technology of soil cultivation and (ii) improved varieties of seeds, and (iii) provided production facilities.
- c. To provide intensive guidance for the whole farmers, especially participants BIMAS and INMAS.
- d. To provide public transports to and from production areas to help farmers easily sell their products to consumers.



## 2. Plantation Crops

The progress of plantation areas in this region tended to increase from to year since PELITA I, and expected that the addition of the areas can be doubled in PELITA IV, according to government's efforts to encourage commodity export of non-oil and gas products. But, products of the existing plantation crops, first of all, come from people's plantation areas. Those are : rubber, coconuts, and rattans; which depends very much on the reasons are (a) that the present crops have been too old to remain productive, and (b) that the crops have been traditionally managed by more than one generation without efforts of rehabilitation at all. Efforts which have been taken by the government are mainly focused to encourage commodity export of non-oil and gas products. The efforts, among other things, are :

- a. Kernel plantation of people, or in Indonesian, Perkebunan Inti Rakyat - PIR.
- b. Rehabilitation and Renewal of Export Quality Crops, or in Indonesian, Proyek Rehabilitasi Peremajaan Tanaman Ekspor - PRPTE.
- c. Diversification of Kinds of Plantation Crops.

This, of course, needs investment whether domestic or foreign, private or government, in high quantity.

It has been projected that, from PELITA IV up to 1990, the need of rice and maize for people in this region will have been fulfill. This projection is based on the ever increasing areas of agricultural production. If all things go well as planned, it is not impossible to be even surplus. But, the need for vegetables, nuts and fruits will not even reach the target.

Efforts have been taken to enlarge the areas for food crops especially around transmigration project areas, and to open new rice field. In order to reach the target projected, expected that the government will have to provide the addition of population,

especially to the areas developed for food crops, either through transmigration project or resettlement project. Besides this, government should also have to encourage :

- (a) the use of improved variety of seeds,
- (b) intensification of food crops,
- (c) the use of production facilities, and insecticides,
- (d) improvement of irrigation facilities,
- (e) intensive guidance for farmers of BIMAS and INMAS,
- (f) the distribution of production facilities directly to the farmers concerned,
- (g) support of management and investment,
- (h) plantation areas extensification and plantation crops diversification should be controlled by ( and in the connection with ) the PIR and PRPTE, and
- (i) the PIR and PRPTE should be provided inclusively for all potential areas in districts and sub-district of the region.

### 3. Livestock and Dairy Products

Small cattle breeding (such as chickens, ducks, pigs, goats sheep) which is now spreading through out the whole districts and municipality, is still beyond the total consumption need the region. It is just enough for the consumption of town people, or about 10 % of the total need.

The consumption need of livestock for the total population is felt not sufficient. It must be imported from other region in great number, or about 90 % of the total need.

Consumption need of meat, eggs, and milk per capita as recorded in 1983 reached only 3.247; 0.55 and 0.002.

Productivity grade, as recorded in 1982, reached Rp. 27,167. But it was limited to the small parts of the population.

Cattle breeding was traditionally done by common people but in small scale.

To answer the consumption need of meat, and milk per capita in 1990, requires : 958,153 cows for meat, and 14,886 cows for milk, with the exception of eggs which is considered sufficient in stock for home supply. In this case, it is clearly that the private investment is expected to participate in developing big cattle breeding (such as cows, buffaloes, horses) in both middle and large scales. Some areas in Kotawaringin Barat, Kotawaringin Timur, Kasongan, Kapuas, Barito Timur, Barito Selatan and Gunung Mas are very much considered available for this business. While small cattle breeding (such as chickens, ducks, pigs, goats and sheeps) can be done in urban areas of the districts and municipality.

### 4. Forestry and Forestry-Based Industries

Forestry production areas of this region covers 9,468,000 Ha consisting of permanent forest production areas covering 6,068,000 Ha, and forest limited production areas covering 3,400,000 Ha, with potential wood of more than 50 Cm diameter in average 71 - 87 Cu.m per Ha, which consists of Dipterocarpaceae species group, 48.43 Cu.m and non Dipterocarpaceae group 23.44 Cu.m per Ha.

From the existing forest areas, including conversion forest

areas covering 4,302,000 Ha, in the beginning of PELITA II there had been given licence of forest concession with 88 letters of agreement of forest concession which covered 8,297,000 Ha of the concession areas. In the beginning of PELITA III, the number of forest concession, including new application letters for forest concession reached totally 131 letters of agreement for forest concession with 9,503,000 Ha of the concession areas. But at the end of PELITA III that number went down to 112 forest concessions which consisted of 93 active forest concession and 16 non-active forest concession, and 3 not yet operating forest concession, with total 9,267,750, Ha of concession areas.

Production of logs during PELITA I reached 7,620,605 Cu.m, and in PELITA second 15,940,862 Cu.m (does 6,7 % decrease ).

Wood processing industries were started in PELITA II, and during this period (PELITA II) sawn timber production reached 628,002,59 Cu.m and in PELITA III reached 2,019,861.25 Cu.m consisting on sawn timber covering 1,714,579 Cu.m and plywood 305,282.25 Cu.m.

The progress of wood processing industries during PELITA III showed increase in number, reaching 160 units with intake capacity 3,852,416 Cu.m per year, consisting of 48 units of industries owned by concessionaires with intake capacity 2,796,500 Cu.m per year, 112 units of industries owned by non concessionaires with intake capacity 1,055,915 Cu.m per year.

The progress of processed wood production seemed to be the result of National Government's policy which steadily reduced the allowable log export and obliges all concessionaires to establish wood processing industries of their own or to sell their log production to the existing wood processing industries.

As a matter of fact, in actual progress, some domestic wood processing industries lacked or were having difficulty in getting raw materials, because some concessionaires shortened or even stopped their production.

To find the way out of this unwanted problem concessionaires were suggested to go on with their exploitation according to the

target of Annual Allowable Cut (AAC) as planned before.

Investment in forestry based industries in Central Kalimantan seems to be supported by potentials of forest production with AAC 18,082,962 Cu.m per year, and the government policy to stop log export in the end of 1985.

Besides, diversification of industries is very much in need, because of the market price fluctuation of sawn timber and plywood in the international markets even shows low tendencies. It is, therefore instantly recommended to give high priority in the investment for the sector, especially for pulp/paper industries, rayon industries, located in Pulang Pisau or Sampit. Joint enterprise among concessionaires is very much recommended.

Investment should also be directed towards non-wood forest industries, with stress given to integrated industries, such as rattan industries with meuble industries. The same is to terangkawang, etc.

#### 5. Fisheries

Based on the potentials of fishery, as recorded in 1982, fish catching in fresh water reached 57 % and in sea only 15 %. Fish consumption per capita in 1982 was 41 Kg which was considered far above the target of 27.5 Kg.

Level of production is still lower as recorded in 1982.

Looking for conclusions above, the recommendation is as follows :

- a. Consumption per capita must be in balance with other nutritional needs.
- b. It is expected that the investment in catching fish can be increased for export rather than for consumption need, especially in Samuda, Bahaur Hilir and Kumai which are considered potential as fish producing areas.

#### 6. Mineral, Mining and Chemical derivatives.

This region has plenty mining and mineral resources consisting of gold, diamond, coal, iron ore, limestone, kaolin, sand quartz and crystal quartz.

Only gold and diamond have been mined although in a traditional way. The other mining materials and minerals have not been done by people around the locations. Those are being generally surveyed and explored. From the general survey and exploitation :

- Coal is found in Barito Utara district, having high value of calory.
- Limestone is also found in Barito Utara district, and potentially to product.
- Caolin is found in Kereng Bangkirai and Palangka Raya municipality.
- Sand quartz is in Kotawaringin Barat district.
- Crystal quartz in Pangkut sub-district and Kotawaringin Barat district.

There is one lime industry in Kotawaringin Barat district to produce lime (glue for the consumption of plywood industry owned by PT. KORINDO).

Some important mining materials and minerals which needs mining so on are as the following :

- Coal and limestone, located in Barito Utara district.
- Caoline, sand quartz, and crystal quartz.mined

Those mined materials and minerals may anowable government and private sectors to start with Cement Portland Industry in Barito Utara district; and ceramic industries in Palangka Raya and Kotawaringin Barat district. Fortunately those places Barito Utara district, Palangka Raya municipality and Kotawaringin Barat district each have rivers used for transportation through the year long.

#### 7. Metal Working Industries

Iron ore processing industries owned and managed traditionally by local blacksmiths have been known to people especially farmers. Those industries are located in Kapuas District and Kotawaringin Barat District. The iron home industries produce tools used for households such as : horseback-modeled big knives (in local terms : lading and mandau) and devices for agriculture. In addition to there, in Kotawaringin Barat District there is a dockyard of wood-ship owned and managed by PT. Korindo.

To fulfill the need of agricultural devices traditional iron home processing industries should be financially support by government, in this case, by banking institutions.

To improve the present dockyard of wood-ship in Kotawari - ngin Barat requires guidance and financial support from both private and government sectors. All requirements needed by this business are of no problems whether seen from the material supply or from geographical condition : potential rivers for transportation.

Projection of both production and consumption is not presented here because of lack of data. The present iron processing industries owned by ordinary people and managed in traditional way.

In relation to this fact, both government and private sectors should support to enable them to help themselves and to improve their products, such tools for agricultural consumption , and well-planned and designed river-woodship for transportation of goods and people toward from production centres.

## 8. Basic Needs

### 8.1. Food

The nutritional standard for people in Central Kalimantan as planned by the local government in Book I Repelita III has not been reached yet.

Based on the nutritional standard people's needs in 1990 will consist of :

- rice	245,048,106 Kg
- meat	16,451,635 Kg
- fish	47,698,984 Kg
- eggs	4,468,345 Kg
- milk	4,468,345 Kg
- nuts	11,394,288 Kg
- vegetables	153,243,922 Kg
- fruits	175,300,100 Kg

Compared with production in 1990 and the people's consumption need there will be lack of :

- meat	14,372,292 Kg
- eggs	4,036,044 Kg

- milk	4,465,975 Kg
- nuts	8,106,288 Kg
- vegetables	39,471,922 Kg
- fruits	36,482,100 Kg.

Compared with rice production reaching only six tons in 1990, the people's consumption need for rice annually in the coming years seems unbalanced (since population growth is 3.24 %).

Fish production is always surplus but still far beyond the people's consumption need (according to national nutritional standard).

The investment cost for rice, maize or nuts consists of land rent, production cost, and labor force wage depends very much on the location, kinds of plants and the condition of the soil. The average cost per Ha is present as follow :

- wet rice field	Rp. 244,710.00
- tidal rice field	Rp. 211,350.00
- maize	Rp. 194,805.00
- peanuts	Rp. 196,960.00

The investment cost for cattle (cow meat, cow milk and fome) consist of :

- cow meat, Rp. 250,000.00 (needed 958,153 cows meat : Rp. 293,538,250,000.00)
- cow milk, Rp. 250,000.00 ( needed 14,886 cows milk : Rp. 4,465,800,000.00)
- fome, Rp. 1,750.00 (needed 40,366 fowls : Rp.70,640,500).

Looking for the conclusions above, it is recommended as follows :

- It is urgently recommended that the to extensification programs for food crops production should be encourage to fulfill the people's needs for nuts, vegetables, and fruits.
- Investment in livestocks is needed to fulfill the people's need for cattle's protein.
- To benefit the fisheries production, it is recommended to build cold storage, fish manufactory or canning industry. Recommended the location in Sampit and Kumai.



## 8.2. Housing

Existing houses in Central Kalimantan in 1980, 161,216 units; by Transmigration from 1981 up to 1983, 16,839 units; by Perumnas in 1983, 216 units and by B.T.N in 1982, 20 units. The total number of existing houses as much as 198,293 units.

Central Kalimantan supplies all the needs for housing materials, especially, wood of any species, rocks, grand stone, sand, bricks, tiles.

The housing needed until 1990 (without Transmigration during Pelita IV) in Central Kalimantan Province as much as 279,454 units.

The shortage of housing up to 1990 about 101,162 units.

Opportunity is now open to large investment for housing sector up to 1990.

For time being the possibilities upon to realization limited to subdistrict of the capital of the districts in Central Kalimantan Province.

The shortage housing up to 1990 in subdistricts in all capitals of the districts in Central Kalimantan as much as 31,930 units.

The investment needed to build the housing in subdistrict of the capitals of the districts in Central Kalimantan until 1990 on based constant price 1983 as follow :

- Type T 45 : with beton construction are Rp.193,964,750,000.00  
with wood construction are Rp.116,048,850,000.00
- Type T 36 : with beton construction are Rp.155,274,800,000.00  
with wood construction are Rp.96,007,885,000.00

Based on the conclusions above, the efforts to have to do soon that are :

- the housing problem must be solved with the way as soon as possible.
- the type of the house would be build must be according to consumers demand and need.
- according to the housing materials supplies in Central Kalimantan, it mentioned that the unit cost of wood construction is cheaper rather than beton construction (unit cost

of wood construction house's only about 60 % of unit cost for beton construction), to fulfill the shortage housing in Central Kalimantan, the great possible on its better be built the houses with wood construction.

- housing development is better be built in Palangka Raya, Sampit, Pangkalan Bun, Kuala Kapuas and Luara Teweh.

### 8.3. Clothing

There is not yet clothing industry producing either raw materials or textile/batik/sarong in Central Kalimantan. The only existing which process textile into clothes is sewing industry (taylor) with investment relatively small if it compare with its capacity or production value.

To get the main clothing people need in Central Kalimantan almost entirely depend on clothing goods supply imported from other province and the limited purchasing ability of people, there are very much influence of their clothing habit and pattern on their clothes consumption.

The fact that purchasing ability of the people is low, is an important reason to promote investment in other sectors/commodities especially in menerals and forest resources which have a good prospect to develop living standard of the people.

To fulfill the actual clothing needs up to 1990 may improve by :

- developing investment and people's entrepreneurship in sewing industry.
- importing clothing stuff from other province more in quantity as well as in quality and of the kind of items.
- To improve the capacity entrepreneurship of people of Central Kalimantan, particularly in sewing industry have to develop, built and tried to become ready made clothing industry by increasing the investment to the industries have been running.

### 9. Supply, Skill and Training

Compared with the total areas of Central Kalimantan has low population, six persons per one squares kilometer. The supplement is along the river sides areas; since rivers are mainly used for transportation of both goods and people.

To find the way out of labor force, its urgently expected:

- a. Private sectors participation in field of non-formal education such as to provide job training centres using applied technology for non employed youth made them ready for used in Palangka Raya and Sampit.
- b. Modern and attracted facilities must be established so that well trained and skilled workers from other regions may come here to joint managing and processing the existing production factors in this region in a professional way.

Based on the fact of wood resource in Central Kalimantan, it is considered that this region absolutely needs trained skilled workers for wood - based shipping in industries. And besides it needs, also well-prepared profesional managers to manage those industries. There two goals can be achieved if this region has been provided with what is called "Job - Training Centres" where its location in Sampit, and Kuala Kapuas.

Until now the existing job training centre provided by government only.

## 10. Development Effects/Results

Through development program realization during the FELITA I up to FELITA III, the income per capita gradually increased. Based on the price in 1975, the income per capita in 1975, Rp.74,671 raised with average growth 9.32 % per year. The highest growth was 26.37 % in 1980, and lowest growth was 0.52 % in 1981.

Agriculture seemed to be the main sector whether seen from its contribution to GRDP or from its labor force absorption. The contribution of the agriculture sector to GRDP reached 53.94 % in 1975 and 36.83 % in 1981, with the average growth 6.57 % per year. Labor force absorbed in this sector in 1971 reached 79.66 % and decreased to 73.52 % in 1980, although absolutely increased in reaching 101,660 persons.

Based on the constant price in 1975 trading average growth reached 15.68 % and seen from this fact trading was the second main sector after agriculture contributing 14.22 % in 1975 and 15.82 % in 1981 to the total GRDP. While the export from Central Kalimantan consist mainly of logs, rubber, rattan, processed timber, etc. And since 1970, the export started with logs, and then followed by sawn-timber 1972 with the over increasing export value. The other commodities such as food, industrial metal were out consideration. It was because of the trading in Central Kalimantan was directed export, and therefore it was sensitive to any changes of the international economic condition and prices. This so unbalanced situation affected very much the economic growth

as seen in 1981 reaching only 0.52 % which drastically decreased from 20.37 % in 1980, as the result of economic weakness of Central Kalimantan against external influences, since the quota export, which mainly consist of agricultural products, depended very much on international demand market prices.

Construction sector and processing industries and mining and mineral sectors remained not available to contributed to GRDP when agricultural product were in this advantageous condition. In agriculture sector, plantation sub-sector especially small holder plantation took the second place after the forestry sector. It was because of average growth of this sub-sector reached 6.75 % per year base on constant price in 1975. This was possible because the land areas and soil condition of Central Kalimantan is available for rubber plantation, rattan, oil palm, etc. This sub-sector is potential on future for further development program through investment on agro-industries in the plantation sub-sector. Until now, plantation in this region has been only cultivated by common people using traditional business management and production per capita of course is not sufficient.

Government should provide favourable climate for foreign and domestic investment. Plantation management using investment in great number with modern method and technology may encourage not only small holder plantation but also may cause GRDP to raise of higher, and in turn sooner or later, may help to maintain regional and national economic resistance.

#### Development Fund

Development fund by foreign and domestic investment during First Five Year Development Plan (PELITA I) up to Third Five Year Development Plan (PELITA III) showed increased. The investment during FELITA I reached Rp. 34,215,003,736.00 (consisting of public investment, Rp. 8,948,417,451.00 and private investment, Rp. 25,266,586,285.00).

And FELITA II the investment raised to Rp.152,629,313,146.00 (consisting of public investment, Rp. 54,726,407,906.00 and private investment, Rp.47,902,905,240.00). In FELITA III, the investment reached Rp. 522,317,972,407.40 (consisting of of public in -

vestment, Rp. 311,361,619,478.00 and private investmen, Rp.210,956,352,929.40). Both government and private investment from PELITA I up to PELITA III raised up with different levels of increase. During PELITA I and II private investment was higher than that of government. In PELITA III government investment was higher than that private sector.

In addition to this, private investment covered wood business such as forestry concession for logs and processing to be processed timber. Up to 1983, there had been 111 foreign and domestic investment based industries operating in Central Kalimantan out of which, 103 wood-based industries and it was projected that the number will be increased in years to come. As a matter of fact, private investors seemed not should interested in non-wood sectors, such as mining, plantation, etc. If only National and Regional Government can provide such favourable conditons for non wood based industries, much more private investment will be developed in the same among as that of the government investment.

Even in PELITA IV private participation investment will reach Rp.524,607,000,000.00 or 45 % of the total investment needed for above the real expectation. During the PELITA III which reached only 40 % of the total investment.

Some suggestions are to be given to reach that target :

- a. Improve the existing roads and built new roads to connect potential areas for plantation and further development.
- b. Encourage private investment in non-wood based industries.
- c. Simplicity the procedures of license and land-use of the areas.
- d. Provide job-training centres for unemployed persons to prepare than ready for use in new employment.

#### Project Realization

The realization and completion all projects during the PELITA I up to PELITA III had never been finished on time scheduled. During the PELITA I the projects, which could had been finished, reached 93.22 % of the total provided development fund.

During the PLITA II physical development reached only 57.13 % of the provided fund. For example, in one year expenditure in 1977/1978, physical development realization took only 37 % out of the total provided fund Rp. 2,317,530,000.00 for agriculture and irrigation sectors. All such mismanagement of the development fund happened in almost other sectors.

The same advantageous condition of occurred also in almost all sectors during the PLITA III. During the yearly expenditure 1983/1984 started on April 1, 1983 up to December 31, 1984 physical projects which were completed by sector covered between 0 - 64.24 % from the provided fund.

Due thing which seemed (to be) strange was in the one hand, Central Kalimantan lacked funds failed to be out used. It is in fact was clearly seen that the delay of physical development might be the delay of development effects enjoyed by society and altogether brought the delay caused by multiplier effect.

According to the informations given by some respondents saying that constraints in the realization of the projects are as follows :

- a. Planning and completion of financial administration could not work quickly and precisely because of the lack of skilled planning makers, banking institutions, and lability of prices.
- b. Some project leaders lived outside Central Kalimantan such as in Banjarmasin and Jakarta.
- c. Some projects could not be realized because the fund was not available, while the additional fund from Regional Government, was impossible because of lack of fund.
- d. The procedure the revision of projects financed with national fund took too much time when the unit cost raised or the location changed.
- e. The use of rivers for transportation does not last the whole year long because in dry, especially long dry season all rivers become shallow even very shallow in some parts of the main rivers, so that it is difficult to reach project locations.

- f. Lack of middle-leveled technicians and graduates who function as planning makers and agents of the development.
- g. Lack of capacity of construction industry as the working agents.

Here are some suggestion for the sake of acceleration of the project realization :

- a. The addition of development planning makers and upgrading of the existing development planning makers.
- b. Project leaders should be stationed near or in the project location.  
If the project is in a district, the project leader must be there too, and not in the capital city of the region more over outside Central Kalimantan.
- c. Revision procedure must be simplified.
- d. University of Palangka Raya should be encourage to provide a faculty of Technique of its own to answer the urgent need of middle class technicians.
- e. Regional Government or Construction Businessmen Association should take real efforts to raise the ability of doing business in the field of construction.

#### 11. Facilities

Up to now, rivers have played the most important role as the main of transportation from and to South - North or to the deep land areas. While, land, air and sea transportation has just been developed in different stages these last view year. Roads are limited to the capital city of the province and those of districts. The existing roads serve as land transportation in and around villages nearly, and not inter district capitals or between district capitals, province capital, not even between production centres. Air transportation between province capital and district capitals, except Kuala Kapuas District, is done through forerunning flight project of Kerpati Kusantara Airlines-KNA, usually by small size airplanes.



The air field of Panarung located in Palang Raya, after being improved, can be landed by big sized airplanes such Fokker Friendship 27.

Sea transportation has not been properly developed, show that loading and unloading goods to and from Central Kalimantan is done far away wood harbours in big river mouths. Small sized ships (usually less than 1,000 DWT ) can reach up-land areas during rainy season.

Facilities for telecommunication system are available reaching even sub-districts, with the exception of Post and Giro facilities which are provided in district only, some potential sub-districts.

Supporting facilities of transportation and telecommunication for development realization is considered absolutely necessary. It is, therefore, priorities should be given to road building for land transportation, such as the length roads between :

- |                    |   |                |          |
|--------------------|---|----------------|----------|
| a. Kasongan        | - | Sampit         | : 58 Km. |
| b. Palangka Raya-  |   | Palang Pisau   | : 60 Km. |
| c. Kasongan        | - | Tumbang Jutuh  | : 35 Km. |
| d. Tumbang Jutuh-  |   | Kuala Kurun    | : 54 Km. |
| e. Sei Hanyu       | - | Tumbang Lahung | : 30 Km. |
| f. Tumbang Lahung- |   | Puruk Cahu     | : 34 Km. |
| g. Muara Teweh     | - | Ampah          | : 54 Km. |
| h. Kuala Kurun     | - | Sei Hanyu      | : 24 Km. |

Land road development policy must be directed to the opening of the isolated but productive rural areas.

In addition to this, some new forrunning flight airfields should be built in Kuala Kurun and Tumbang Samba, because these two locations are economically potential for further development.

Improvement should be done to make river ports of Palang Pisau, Sampit, and Kumai available for loading and unloading goods all year long.

Only 5% of the population have enjoyed potable water provided by government, in this case, by "Perusahaan Air Minum Negara" - State Potable Water Company, as the only company running this business, and it is limited only to citizens of Palangka Raya municipality. As planned through a survey and feasibility study, potable water supply will be provided for people in Sampit, Pangkalan Bun, Buntok and Kuara Teweh.

Potable water supply will be provided in Palangka Raya, Sampit, Pangkalan Bun, and Kuara Teweh as considered economically potential locations.

As recorded in 1983, only 10,174 heads of household were potentially consumers provided with electricity, while the rest, were not (provided with electricity).

Based on the estimation of 450 watt of power supply per head of household, the need for electricity for 47,813 heads of households reached 21,515,585 watt or 26,895 KVA it is expected that during the running PELITA IV, government, in this case, "Perusahaan Listrik Negara" - the State Electricity Company - should, in one hand, provided with new power generators and improve the existing power generators, while on the other hand, provided power generators of medium voltage network with power distribution center boxes spread in Palangka Raya, Sampit, Pangkalan Bun, Kuara Teweh, Landomai, Fulang Pisau, Barimba and Anjir Sarapat.

There are totally 18, and only 18 banking institutions spread in five districts and municipality of the region. When compared with the present economic sector growth, these are for poor sufficient for financial service.

Seen from this unbalanced situation, more investment in providing new branches of banking institutions especially in economically potential sub districts throughout the region just to encourage the growth of the economic sector.

## 12. Spatial Industrial.

For the sake of acceleration and development extensification, Central Kalimantan region has been divided into four development zones which are as the following :

- 1). East Development Zone :
  - a. Centre : Buntok
  - b. Sub centres : - Kuara Teweh  
- Puruk Cahu  
- Tamiang Layang  
- Ampah  
- Jenamas
  
- 2). Central Development Zone:
  - a. Centre : Palangka Raya
  - b. Sub centres : - Kuala Kapuas  
- Katingan  
- Tumbang Lahang  
- Kuala Kurun  
- Pegatan  
- Sei Hangu

Notes : Central Development Zone includes Kapuas District, Palangka Raya municipality, and areas located between river Kahayan and river Kapuas, where Palangka Raya is considered central zone.

- 3). South Development Zone :
  - a. Centre : Sampit
  - b. Sub centres : - Kuala Pembuang  
- Parenggean  
- Kuala Kuayan  
- Kota Besi  
- Samuda

Notes : This zone covers Kotawaringin Timur District (Katingan is excluded).

- 4). West Development Zone :
  - a. Centre : Pangkalan Bun
  - b. Sub-centres : - Kumai

- Sukamara
- Marga Bulik
- Kotawaringin Lama
- Balai Riam

Notes : This zone covers Kotawaringin Barat District.

Investment Requirement in FELITA IV by Zones or Districts.

1). Kotawaringin Barat District

Sub-districts :

- a. Kuala Jelai : - Caolin Mining/Ceramic Industry  
- Plantation Project Unit (UPP)
- b. Bulik : - U P P ( IES )  
- Iron mining  
- Gold  
- Development Area for Technical Irrigation Rice-field Transmigration.
- b. Balai Riam : - Development Area for Technical Irrigation Rice-field Transmigration.
- c. Arut Utara : - Glasses Industry.
- d. K u m a i : - P I R (IES)  
- U P P (Plantation Project Unit)  
- Development area for Tidal Rice-field Transmigration.
- e. Sukamara : - Development for tidal rice-field transmigration.
- f. Kuala Jelai : - Caolin Mining/Ceramic Industry.  
- Development for tidal rice-field transmigration.
- g. Arut Selatan : - Hotel  
- Potable water  
- Handicraft, Getah Nyatu, Tudung Saji, Rattan Plaiting.  
- Housing.

2). Kotawaringin Timur District

Sub-district :

- a. Mentaya Hulu : - Gold and Coal.

- b. Kota Besi : - Caolin mining/Ceramic industry.  
- Transmigration Growth Area.
- c. Cempaga : - Glasses Industry.  
- Transmigration Growth Area.
- d. Parenggean : - P I R (IBS)
- e. Seruyan Tengah : - Dock Ship.
- f. Baamang : - Coal  
- Potable Water  
- Housing  
- Integrated Industry.
- g. Seruyan Hilir : - Transmigration Growth Area  
- Tidal Swamp.

### 3). Palangka Raya Municipality

#### Sub-district :

- a. Pahandut : - Caolin and Ceramic industry  
- Pulp and Paper industry  
- Quartz and glass industry

#### Kapuas District

#### Sub-district :

- a. Kahayan Hilir : - Integrated Industry
- b. Selat : - Potable water  
- Housing  
- Fishery Industry  
- Small Cattle  
- Coal  
- Development area for tidal rice field transmigration.
- c. Lentangai : - Sand quartz/glass industry.
- d. Kahayan Tengah : - Caolin
- e. K u r u n : - Big cattle
- f. Kapuas Hulu : - Caolin
- g. T e w a h : - Gold  
- Coal  
- Lime  
- Development area for plantation.

- h. Mahayan Kulu Utara : - Lica
- i. Lu ng a n : - Lime  
- Coal  
- Oil palm plantation  
- Development area for plantation.
- j. Mahayan Kuala : - Development area for tidal rice field transmigration.
- k. Pulau Petak : - Development area for tidal rice field transmigration.
- l. Kapuas Kuala : - Development area for tidal rice field transmigration.
- 4). Barito Utara District
- Sub-district :
- a. Teweh Tengah : - Gum based handicraft  
- Small cattle  
- Coal mining  
- Development area for technical irrigation rice field transmigration.  
- Housing  
- Potable water.
- b. Teweh Timur : - Lime  
- Coal
- c. Lahai : - Coal  
- Big Cattle  
- Development area for plantation.
- d. Montalat : - Coal  
- Development area for technical irrigation rice field transmigration.
- e. Lurung : - Lime  
- Diamond  
- Development area for technical irrigation rice field transmigration.
- f. Sumber Barito : - Gold

## Barito Selatan District :

## Sub-district :

- a. Dusun Timur : - Big cattle
  - Caolin
  - Development area for plantation.
- b. Dusun Tengah : - Gold
  - Development area for plantation.
- c. Gunung Bintang Awai : - Development area for plantation.
- d. K a r a u : - Development area for plantation.
- e. A w a n g : - Development area for plantation.
- f. Dusun Hilir : - Development for technical irrigation rice field transmigration.

## II. RESOURCES BASE AND EXISTING INDUSTRIES

### 1. Agriculture and Agro-industry : Food Crops

The objective of development of agriculture is to increase agro-products and increase per capita of farmers as producers of agricultural products and in so doing, to improve their living standard.

Approaches have been taken, such as through three units of integrated efforts in developing agriculture : (a) integrated effort of agriculture, (b) commodity integrated, and (c) areas integrated.

Eventhough the average production growth per year the five plants remained low, as seen in Table II.1.

#### 1.1. Resource Base.

##### 1.1.1. Climate

Climate condition in Central Kalimantan as classified by Schmidt and Ferguson belong to Type A climate having Q value, 14.3 percent (very wet). While a little part having Type B with Q value 33.3 percent (wet) in coastal areas.

##### 1.1.2. Rainfall

Average rainfall is between 2700 - 3400 mm per year consisting of 125 of rain. According to the test form of P4S University of Gadjah Mada, 1977, the highest density of vapour in the atmosphere with humidity of air reaching 70 - 80 percent (wet tropical climate).

Air temperature is relatively hot, 26' - 30'C in the day time and 15' - 20'C in the night.

The air velocity is more or less 7.2 knot per hour.

The implication of the climate is considered disadvantageous for :

- dry farm rice (less dry season resulting the areas filled with unwanted water and subjected to insects, etc.).
- Rice field crops (harvest time longer causing harm to riped paddi).
- nuts (rainfall in too high causing the the areas filled with too much water, etc.).
- Vegetables (the soil becomes too humid).



Table : IV.1.

Harvest areas and food Crops production in Central Kalimantan.

Year	Cereals			Maize			Nuts			Vegetables			Fruits			Exploration (XX:)
	Prequent l x			Prequent l x			Prequent l x			Prequent l x			Prequent l x			
	Area (Ha)	Production (Ton)	Production Aver (Ton)	Area (Ha.)	Production (Ton)	Production Aver (Ton)	Area (Ha)	Production (Ton)	Production Aver (Ton)	Area (Ha.)	Production (Ton)	Production Aver (Ton)	Area (Ha.)	Production (Ton)	Production Aver (Ton)	
1969	101,750	141,999	1.40	4,055	2,968	0.74	103*	72*	0.70	1,448	829	0.57	1,547	11,523	7.45	
1970	114,946	171,252	1.50	3,537	2,771	0.78	195*	140*	0.72	1,523	917	0.60	1,744	8,378	4.80	
1971	101,857	173,878	1.71	3,949	3,155	0.80	223*	149*	0.67	1,651	1,090	0.66	1,000	10,515	10.52	
1972	94,676	164,646	1.74	2,600	2,202	0.85	170*	137*	0.81	1,377	978	0.71	1,315	11,826	8.99	
1973	117,950	183,592	1.56	4,019	3,328	0.83	250*	150*	0.60	1,461	1,143	0.78	1,387	13,305	9.58	
1974	111,021	204,303	1.84	4,242	3,495	0.82	198*	101*	0.51	873	530	0.66	1,462	9,446	6.46	
1975	113,334	215,411	1.90	3,845	3,095	0.80	202*	109*	0.54	1,026	572	0.56	1,783	11,812	6.62	
1976	115,746	208,798	1.90	3,954	3,223	0.82	211*	137*	0.65	1,297	909.5	0.70	2,507	13,531	5.40	
1977	120,500	199,250	1.65	4,500	3,600	0.80	681	440	1.33	1,160	907.7	0.78	2,515	14,305	5.69	
1978	126,027	232,084	1.84	3,767	3,749	1.00	928	626	0.67	1,322	919	0.70	2,603	14,598	5.61	
1979	124,363	233,073	1.87	3,868	3,849	1.00	926	611	0.66	1,381	1,957	1.42	3,688	16,803	4.56	
1980	122,239	240,336	1.97	3,162	2,587	0.82	865	625	0.72	1,524	2,629	1.73	4,485	18,902	4.21	
1981	119,606	219,632	1.84	3,513	3,267	0.93	824	607	0.74	2,287	3,032.5	1.33	3,914	19,920	5.09	
1982	115,303	246,501	2.14	3,599	3,867	1.07	885	584	0.70	2,488	3,664	1.47	4,699	21,845	4.65	

Source : Agriculture Office Food Crops in Central Kalimantan.

3. Vegetables (bayam, cabbage, beans)

- fruits ( too much humidity for fruits to grow).

#### 1.1.3. Soil

Soil condition in this region consists mainly of low land profile, with exception in the Northern part where Muller Schwaner Mountains are located and in the Southern part consisting of Swamp Areas.

Based on mapping done by Soil Research Institution of Bogor the capacity of the soil is classified into four classes as seen in Table II.2. Figure II.1 shows possibility uses and problematic control of the soil.

#### 1.1.4. Water Supply

The region is divided river flowing areas big and small, from North to South, where Java Sea is located.

The big rivers are as follows :

- River Barito
- River Kapuas
- River Kahayan
- River Katingan
- River Seruyan
- River Mentaya
- River Kumai
- River Lamandau
- River Arut
- River Jelai
- River Sebangau

In addition to these, there are three main rivers connected to each other with canals functioning both as transportation main route and as source of water supply for tidal rice fields. During dry season, all the canals lose their function, because of the water debit. This situation is mainly caused by mud whether brought down from upland or because of the erosion from both sides of the canals.

#### 1.1.5. Land Use

The existing land uses according to the mapping done by Land Use Directorate of the Region 1979 as shown in Table II.3. Land areas of the region covers 15,380,000 Ha., used

Tbale II.2 : Class and Kind of Land in Central Kalimantan.

Class and kind of land	Area (Ha)	%	Locations	Obstacle factor
1. Land Class IV	: 1,071,000	: 9.8	: Besides flows of river	: - Physical and property is moderate less
- Alluvial	: 959,000	: 8.8	:	: - Essential material is poor
- Latosol	: 45,000	: 0.4	:	: - pH 2 - 2.5
- Podsolik	: 67,000	: 0.6	:	: - Ground water is shallow
2. Land Class V	: 4,469,000	: 41.0	: Hat until is low	: - pH is Alkaliz
- Regosol	: 151,000	: 1.4	: Hat until waves	: - C/H is rather high and low
- Podsolik red-yellow primary material and latevic	: 71,000	: 0.7	: Hat until waves	: - P and K material is low.
- Podsolik yellow-red with primary material cediment	: 1,819,000	: 16.7	: Hat until waves	: - Essential material is poor to mineral reserve.
- Latosol with primary sand	: 174,000	: 1.6	: Unflat until waves	:
- Yellow with primer hard stone	: 2,254,000	: 20.6	:	:
3. Land Class VI	: 4,605,000	: 42.3	: Hill until waves	: - Physical property is bad
- Association argosol plat glei	: 2,186,000	: 20.1	: Hat until waves	: Reaction to alkalic and mineral is poor
- Podsollic	: 2,419,000	: 22.2	: Plat	: - Ground water high.
4. Land Class VII	: 750,000	: 6.9	:	: - Physical property is bad.
- Podsollic with primary material hard stone and sedimentary material stone	: 750,000	: 6.9	:	: - Reaction to alkalic
	:	:	:	: - Essential material and mineral reserve is poor.

Source : Office of Agriculture Central Kalimantan Province.



Table : II. 3 Land use ( Ha ) Central Kalimantan.

Nu. District	Field - rice	Village	Plantati- on	Dry land Agriculture	Multi Plantati- tion Crop	Green	Swamps/Lake river	Forest			
								Dense	Brush - Wood	Speciali- ty.	Valley
1. Barito Selatan	15,812	4,597	103,225	10,887	2,345	16,897	18,868	1,498,914	1,629,070	-	105,030
2. Barito Utara	1,000	3,901	22,006	40,795	10,912	112	46,675	2,965,725	292,376	-	-
3. Kapuas	78,190	10,708	61,661	19,535	13,518	-	60,480	2,683,911	513,177	-	-
4. Palangka Raya	-	1,105	4,240	140	340	-	7,400	201,157	21,460	-	6,800
5. Kotawaringin Timur	16,596	12,280	51,713	31,516	80,043	26,320	105,455	3,875,701	455,700	18,560	451,436
6. Kotawaringin- Barat	19,800	4,400	11,220	17,560	2,500	90,140	36,090	1,315,540	222,450	2,920	101,630
T o t a l	131,398	36,991	254,005	120,433	109,658	133,469	274,968	11,540,946	1,674,233	21,480	664,996

Source : Directorate of Land - Use Central Kalimantan.

Title of book : Central Kalimantan areal Land use by Direktorat of Land-use Agraria Dirjen Home Affair Departemenet.

for rice fields 131,398 Ha or 0.85 percent. Dry farming agriculture 120,433 Ha, or 0.78 percent.

## 1.2. Agriculture Base

### 1.2.1. Paddy

The areas of paddy crops harvest (ricefield and dry farming rice) showed increase and decrease, as seen in Table II.1. The areas for rice fields depend on the irrigation condition, as shown in Table II.4 functioning as water supplier for rice fields; and closely related to weather condition. Table II.4 shows that since 1975 - 1981 the areas watered was unchanged from 82,927 Ha. In the following year the areas watered showed down, as the result of less care for the irrigation system which got badly damaged.

Despite the fact as mentioned above, production growth seemed to increase even reaching 1.05 percent with average production 1.77 tons per Ha or 1.04 percent growth. In 1976, 1977, and 1981, the production decreased because of too much rainfall.

The uses of fertilizers and insecticide were limited to participant farmers of BIMAS and IIRAS, and most part of the areas located in tidal areas where fertilization was different to arrange.

In tidal areas there was no intensification using improved variety of seed except improved variety of local seed. The uses of fertilizers was directed to intensification areas of rainfall based field and simply irrigated fields.

During Pelita, BIMAS realization showed increase of areas, but in Pelita III the total areas got down if compared with the areas during Pelita II. But IIRAS realization during Pelita I - III, tended to increase in number.

The following table, Table II.5 will show the realization BIMAS and IIRAS.

Table : II. 4 : The areas Condition of wet rice field Irrigation

Nu. Year	Irrigation Guarantee			Another Wet Rice Field		
	Technical	Semi-Technical	Simple	Dependent Upon: rain fall	T i d a l V e l l e y	Folder
1. 1969	-	-	-	-	-	-
2. 1970	-	-	-	-	-	-
3. 1971	-	-	-	-	-	-
4. 1972	-	-	-	-	-	-
5. 1973	770	-	46,074	8,150	20,400	5,233 : 2,300
6. 1974	770	-	43,774	23,350	38,964	5,233 : 2,300
7. 1975	-	-	13,060	10,399	55,469	1,699 : 2,300
8. 1976	-	-	13,060	10,399	55,469	1,699 : 2,300
9. 1977	-	-	13,060	10,399	55,369	1,699 : 2,300
10. 1978	-	-	13,060	10,399	55,469	1,699 : 2,300
11. 1979	-	-	13,060	10,399	55,369	1,699 : 2,300
12. 1980	-	-	13,060	10,399	55,469	1,699 : 2,300
13. 1981	-	-	13,060	10,399	55,469	1,699 : 2,300
14. 1982	-	-	400	8,602	19,959	1,699 : -
15. 1983	-	-	2,956	8,210	17,000	4,0 : -

Source : Agriculture food Crops Office Central Kalimantan.

Table II.5 : Realization areas of BIKAS and IIRAS during  
Felita I and III in Central Kalimantan Province.

Year	BIKAS ( Ha )	IIRAS ( ha )	Total
1974/75	651.2	8,040.5	8,691.7
1975/76	1,446.2	29,504.4	30,950.6
1976/77	8,972.4	31,975.8	40,948.2
1977/78	14,042.5	23,494	37,536.5
1978/79	10,105.5	25,158	35,263.5
1979/80	4,217.5	37,874	42,091.5
1980/81	1,679	20,549.5	22,228.5
1981/82	855.5	36,507.6	37,363.1
1982/83	75	43,247	43,322

Source : Foodcrops Agriculture Service, Central Kalimantan Province.

The decrease of realization areas of BIKAS and IIRAS was caused by :

- (i) The increasing number of unreturned credit and of farmers delaying repayment to the bank. This is the reason why creditor, in this case, the Bank Rakyat Indonesia (BRI) failed to debtor credit to farmers.
- (ii) Unwillingness of farmers to receive credit from the because of the Inpres No. 10/1981.

The increase of realization areas of IIRAS was caused by :

- (i) More and more farmers got reached of using new technology.
- (ii) The flow of participant farmers of BIKAS to IIRAS.

Irrigation is one of the factors supporting the progress of applied technology in intensification effort.

The use of varieties, soil condition, and technical culture used will affect the average income per Ha per capita. The average income per Ha per capita is shown in Table II.6.



Table II.6 : Average income by types of agricultural effort  
in Central Kalimantan Province.

No. :	District :	Type of effort :	Average income ( Rp./Ha ) :
1. :	K a p u a s :	a. rice field :	117,750
:	:	b. tidal rice field:	42,000
2. :	Barito Utara :	a. rice field :	264,765
:	:	b. dry farm rice :	100,250
3. :	Barito Selatan :	a. rice field :	32,050
:	:	b. - :	-
4. :	Kotawaringin Barat :	a. Tidal rice field:	32,750
:	:	b. - :	-
5. :	Kotawaringin Timur :	a. Tidal rice field:	84,300
:	:	b. - :	-

Source : Agriculture Service : Food Crops, Central Kalimantan  
Province.

#### 1.2.2. Nuts

Progress of average production of nuts and areas of harvesting during Pelita I - III showed increase (Table II.7)

Table II. 7 : Average production and area of harvesting nuts in  
Pelita I - II and in th first four years of Pelita III.

No. :	Kinds :	Pelita I :		Pelita II :		Pelita III	
		Ha :	Ton :	Ha :	Ton :	Ha :	Ton :
1. :	Maize :	3,632 :	2,884.8 :	4,061.6 :	3,432.4 :	3,535.5 :	3,392.5
2. :	Nuts :	188.2 :	129.6 :	444 :	222.6 :	875 :	606.75

Source : Agriculture Service : Food Crops, Central Kalimantan  
Province.

The extent of harvest areas followed by the increase of production was caused by the need of malnutrition improvement concerning mainly with the demand of nuts.

The use of production facilities (fertilizers, insecticide) was not much applied in this effort, because :

- ( i ) technical culture, such as soil cultivation remained traditional, especially in growing maize.
- ( ii ) farmers motivation to use fertilizers was still low.
- ( iii ) farming system of growing maize.

### 1.2.3. Horticulture

Developing horticulture commodities, such as vegetables and fruits, since Pelita I and II was paid attention if compared with paddy and nuts commodities as shown in Table II.8.

Table II.8 : Average production and harvest areas of horticulture during Pelita I, II and the first four years of Pelita III.

Kinds	Pelita I		Pelita II		Pelita III	
	Ha	Ton	Ha	Ton	Ha	Ton
Vegetables	1,492	991.4	1,135.6	598.04	1,920	2,820.5
Fruits	1,399	11,109.4	2,174	12,738.4	4,196	19,367.5

Source : Agri-culture Service : Food Crops, Central Kalimantan Province.

Since the beginning of Pelita III developing production of horticulture was started to be handle seriously as as the need increased and its role was felt important for food supply and improvement of malnutrition of the society.

### 1.3. Agro - Industries

1.3.1. The existing agro-industries in this region consist of Huller-milling and Drilling paddy machine, rice stock supervision, as shown in Table II.9.

1.3.2. The existing seed institution, which has been functioning and which are being used, are shown in Table II.10.

Table : II. 9 : Value and Capacity Rice Mill in Central Kalimantan

Nu.	District	Average Harvest rice:		150 day work/Years		175 day work/years		
		Production 1977/82 ( Ton )	Unit:	Capacity (ton)	Less/over (ton)	Unit:	Capacity (ton)	Less/over (ton)
1.	Barito Utara	: 17,605	: 78	: 12,190.0	: - 5,415.0	: 78	: 14,221.6	: -3,383.4
2.	Barito Selatan	: 15,903	: 96	: 10,760.0	: - 5,143.0	: 96	: 12,553.0	: -3,350.0
3.	Kapuas	: 77,479	: 253	: 98,340.0	: -19,139.0	: 253	: 68,063.0	: -9,416.0
4.	Kotawaringin Timur	: 28,005	: 24	: 29,539.5	: + 1,534.5	: 24	: 34,462.0	: +6,457.0
5.	Kotawaringin Barat	: 13,744	: 173	: 4,699.5	: - 9,044.5	: 173	: 5,482.0	: -8,262.0
6.	Palangkaraya	: 1,165	: -	: -	: -	: -	: -	: -
T o t a l		: 153,901	: 624	: 115,529.0	: 38,372.0	: 624	: 134,781.6	: 19,119.4

Source : Agriculture Office Central Kalimantan.

Table : II. 10 : Institutional seed in Central Kalimantan up to Pelita III

Nu.	District	Range Institutional				Value	Note
		CSI	PSI	BDP			
1.	Kapuas						
a.	Paddy	1 <sup>+</sup>	1 <sup>-</sup>	-	2	CSI : Control seeds Institutional	
b.	Second Crop	-	-	-	-		
c.	Horticulture	-	-	1	1	PSI : Primary seeds Institutional	
2.	Kotawaringin Timur						
a.	Paddy	-	1 <sup>+</sup>	-	1	Be fine functioned ( + )	
b.	Second Crop	-	-	-	-	Non functioned ( - )	
c.	Horticulture	1 <sup>o</sup>	-	-	1	prefers physical - building ( o )	
3.	Kotawaringin Barat						
a.	Paddy	1	1 <sup>+</sup>	-	1		
b.	Second Crop	-	-	-	-		
c.	Horticulture	-	-	-	-		
4.	Barito Selatan						
a.	Paddy	-	1 <sup>o</sup>	-	1		
b.	Second Crop	1 <sup>+</sup>	-	-	1		
c.	Horticulture	-	-	-	-		
5.	Barito Utara						
a.	Paddy	-	-	-	-		
b.	Second Crop	-	-	-	-		
c.	Horticulture	-	-	-	-		
6.	Kodya Palangka Raya						
a.	Paddy	-	-	-	-		
b.	Second Crop	-	-	-	-		
c.	Horticulture	-	-	-	-		

The existing seed institutions have not been fully used as seed suppliers with high quality. This is because of,

- (i) lack of skilled laborers (workers),
- (ii) seed qualification and certification institution has not been developed as the seed qualification tester, and
- (iii) cooperation between seed supervision and seed trading has not been well connected with each other.

1.3.3. Central Kalimantan does have fertilizing and insecticide industries of its own, so the total need of production facilities for agriculture must be imported totally from Java.

## 2. Agriculture and Agro-industries : Plantation Crops

The development progress of plantation sub sector is directed to encourage the increase of plantation production and export value of non oil and gas products, and in doing so, may help to raise the income per capita of the farmers.

Approaches have been taken, for example, through the effort of people's kernel plantation, or in Indonesian "Perkebunan Inti Rakyat - PIR" managed by PT Perkebunan (PTP) and unit of application projects (Unit Pelaksana Project - UPP) managed by rehabilitation and extensification of export plantation crops (Proyek Rehabilitasi dan Perluasan Tanaman Ekspor - PRPTE).

### 2.1. Resources Base

From the soil point of view, several plantation crops can be developed in several areas, as shown in Table II.11.

Tab III.11 : Kinds of Commodity Plantation Crops by District,  
Areas of Development and Extensification.

District :	Commodity :	Development areas :	Areas estimated ( Ha )
1 :	2 :	3 :	4 :
I	Coconut	Ktw. Barat District	105,000
		Seruyan Subdistrict	114,000
		Ktw. Timur District	244,500
		Katingan Subdistrict	202,500
		Gunung Mas District	198,000
		Kapuas District	180,000
		South Barito District	13,500
		North Barito District	22,500
II	Rubber, Coconut,	Ktw. Barat District	409,500
	Oil palm trees	Seruyan Subdistrict	165,000
		Ktw. Timur District	298,000
		Katingan Subdistrict	9,000
III	Rubber, Coconut,	Ktw. Barat District	33,000
	Oil palm Trees,		
	Pepper		
IV	Rubber, Coconut,	Ktw. Barat District	13,500
	Oil palm trees,	Seruyan Subdistrict	10,500
	Coffee		
V	Rubber, Coconut,	Seruyan Subdistrict	76,500
	Oil palm trees,		
	Coffee, Pepper		
VI	Rubber, Coconut	Seruyan Subdistrict	34,500
		Ktw. Timur District	4,000
		Municipal P. Raya	19,500
VII	Rubber, Coconut,	Ktw. Timur District	9,000
	Coffee, Spice		
VIII	Rubber, Coconut,	Ktw. Timur District	33,000
	Oil palm trees,		
	Chocolate		

Continued (Table II.11)

1	2	3	4
IX	Rubber, Coconut,	Katingan Subdistrict	12,000
	: Oil palm trees,	South Barito District	42,000
	: Coffee, Pepper,	East Barito Subdistrict	85,000
	: Spice	:	:
X	Rubber, Coconut	Katingan Subdistrict	16,500
	: Spice	Kapuas District	51,000
XI	Coconut, Sugar-	Katingan Subdistrict	39,000
	: cane	Kapuas	489,000
	:	South Barito District	63,000
XII	Rubber, Coconut,	South Barito District	7,500
	: Oil palm trees,	East Barito Subdistrict	51,000
	: Spice, Sugarcane,	:	:
	: Chocolate	:	:
XIII	Rubber, Coconut,	South Barito District	52,500
	: Oil palm trees,	:	:
	: spice	:	:
	:	T o t a l	3,139,500

Source : Plantation Office, Central Kalimantan Province.

## 2.2. Agriculture Base

Development areas, production and average production per Ha per year of several plantation crops commodities are shown in Table II.12. From this table, during the Pelita I up to Pelita III, only coffee commodity production showed decrease. The other commodities showed increase. The decrease of coffee production in Pelita III is shown in Table II.13.

Table : II. 12 : Areal wide and production of plantation people food crops Central Kalimantan.

Year	Rubber			Coconuts			Coffee			Chocolate		
	Wide	Production	Average	Wide	Production	Average	Wide	Production	Average	Wide	Production	Average
1969	-	-	-	-	-	-	-	-	-	-	-	-
1970	54,722	16,822.00	307.41	18,019.00	10,621.45	589.46	1,556.0	230.73	148.28	-	-	-
1971	55,269	16,980.00	307.12	19,019.00	11,640.80	612.06	1,714.0	261.72	152.70	-	-	-
1972	60,119	17,849.00	296.92	20,573.50	12,540.85	609.56	1,881.0	298.16	158.51	-	-	-
1973	65,113	19,573.00	300.60	21,276.00	13,829.00	649.98	2,050.0	228.78	160.38	-	-	-
1974	67,138	20,644.30	307.49	22,125.00	15,786.60	713.52	2,250.0	396.81	176.36	-	-	-
1975	69,916	20,991.20	300.23	24,158.50	13,666.50	565.70	2,276.5	431.60	189.59	-	-	-
1976	71,346	21,083.00	295.50	25,665.00	13,034.00	507.85	2,344.5	384.60	164.04	-	-	-
1977	72,662	22,209.40	305.65	26,794.50	14,107.10	526.49	2,292.5	287.00	125.19	-	-	-
1978	73,829	24,766.30	329.61	27,486.00	14,494.30	527.33	2,295.0	254.90	111.07	-	-	-
1979	89,396	32,117.50	359.27	30,482.00	16,821.10	551.84	2,228.0	270.70	121.50	-	-	-
1980	91,615	35,514.23	365.82	31,026.00	17,191.72	554.12	2,225.0	273.90	123.10	-	-	-
1981	96,475	34,029.14	352.72	33,148.00	17,472.67	527.11	2,313.0	275.10	118.94	-	-	-
1982	110,895	17,465.88	157.50	31,308.00	12,301.21	392.91	3,739.0	223.93	59.89	-	-	-
1983	116,039	36,283.00	312.68	32,594.00	19,183.00	588.54	3,841.0	280.00	72.90	432	-	-



Page 2 Table : II. 12.

Year	Pepper			Sugar - beet			Rattan		
	Wide	production	Average (kg)	Wide	production (ton)	Average (kg)	Wide	production ( ton )	Average ( kg )
1969	-	-	-	-	-	-	-	-	-
1970	2,0	-	-	-	-	-	-	-	-
1971	4,0	-	-	-	-	-	-	-	-
1972	17,0	-	-	-	-	-	-	-	-
1973	24,0	0.63	26.25	-	-	-	-	-	-
1974	29.0	1.37	47.24	-	-	-	-	-	-
1975	30.0	2.05	68.33	-	-	-	-	672	-
1976	33.0	2.10	63.64	-	-	-	-	11,277	-
1977	37.5	2.07	55.20	-	-	-	-	6,470.31	-
1978	37.5	2.15	57.33	-	-	-	-	3,163.60	-
1979	36.5	2.16	59.18	70	-	-	-	4,663.00	-
1980	36.5	2.29	62.74	70	-	-	-	9,078.50	-
1981	38.5	2.30	58.97	49	-	-	-	3,768.40	-
1982	37.0	9.60	25.53	46	-	-	-	3,675.75	-
1983	37.0	11.34	30.08	46	23	500	-	1,129.02	-

Source : Other Forest production, office of Forestry Central Kalimantan.

Table II.13 : Average production of some plantation crops  
commodities during Pelita I - III.

No.:	Commodity :	Pelita I ( ton )	Pelita II ( ton )	Pelita III ( ton )
1.	Rubber	17,806	21,938.84	31,031.95
2.	Coconut	12,158.03	14,217.7	16,593.98
3.	Coffee	279.85	350.98	264.73
4.	Pepper	0.63	1.95	5.54

Source : Plantation Office, Central Kalimantan Province.

The decrease of coffee commodity production was because all of coffee trees nowadays have reached their bearing fruit capacity, or in the other words, have been too old to be productive, so that they have to be rehabilitated soon.

The plantation crops cultivated by people are usually managed in a traditional way, using no production facilities such as fertilizers and insecticide.

Production facilities are used only by UPF farmer participants with total supply of fertilizers and pesticide provided for UPF taken from national expenditure fund 1983/1984 as seen in Table II.14.

UPF as the guidance and seed supplying unit for farmers participants can do much to help because the stock provided is limited in quantity. Table II.15 shows the reality that the number of "UPP" and "PIR" is not available to answer the increasing need of the society for fertilizers and seeds in great number besides guidance needed to develop plantation crops production and to improve their living standard.

The estimation of average income per Ha per year of the commodities is as follows :

a. Rubber	: Rp. 50.000,-
b. Coconut	: Rp. 75.000,-
c. Coffee	: Rp. 50.000,-
d. Chocolate	: Rp. 30.000,-
e. Pepper	: Rp. 60.000,-
f. Kattan	: Rp. 100.000,-

Table : TT.14 : Volume and Inventory Material Stons

Nu :	Name of Material	: Unit	: Activity 1983 / 1984	
			: DTP / DIPP	: Adjustment
1.	Fertilizers( manure )			
	- U r e a ( 306,438 Kg )	: Kg	: 27,579,420	: 27,579,429
	- T S P ( 181,881 Kg )	: Kg	: 16,369,290	: 16,369,290
	- M O P ( 121,224 Kg )	: Kg	: 10,910,160	: 10,910,160
	- K C L ( 18,150 Kg )	: Kg	: 1,633,500	: 1,633,500
	- Kiserit ( 53,561 Kg )	: Kg	: 8,034,150	: 8,034,500
	- Pupuk dasar ( 106,020 Kg )	: Kg	: 15,048,000	: 9,541,000
	- Hormon ( 160 Kg )	: Kg	: 5,060,000	: 3,208,400
	- Benih CC ( 27,900 Kg )	: Kg	: 132,000,000	: 83,700,000
	- Pupuk CC ( 279,000 Kg )	: Kg	: 39,600,000	: 25,110,000
	- Racun pohon ( 6,975 Kg )	: Kg	: 66,000,000	: 41,850,000
2.	Chemicals ( drug )			
	- Insektisida ( 1,549 Kg )	: Kg	: 9,294,000	: 9,294,000
	- Coolter ( 110 Kg )	: Kg	: 66,000	: 66,000
3.	- Plastic	: Lembar	: 3,872,000	: 3,872,000
4.	- Transportation	: -	: 19,996,240	: 19,996,240
5.	- Other ( 07 )	: Macam- 2	: 8,968,960	: 8,968,960
6.	- Conversion ( 622 Ha X Rp.7,500)	: Ha	: 4,665,000	: 4,665,000
7.	- Certificat ( 2,280 Ha X Rp.28,750):	: Ha	: 65,550,000	: 65,550,000
T o t a l		: -	: 434,646,820	: 340,345,770

Source : Plantation Office Central Kalimantan.

## Coconut

Page 2

Nu	: Name of Material	: Unit	: Activity 1983/1984	: Adjustment
			: DIP / DIFP	
1.	: Fertilizers ( manure )			
	- U r e a ( 250,965 Kg )	: Kg	: 22,586,850	: -
	- T S P ( 238,005 Kg )	: Kg	: 21,420,450	: -
	- M O P ( 457,240 Kg )	: Kg	: 41,151,600	: -
	- Kiserite ( 274,344 Kg )	: Kg	: 41,151,600	: -
	-			
2.	: drug ( 2,687 Kg )	: Kg	: 16,122,000	: -
3.	: Others			
	- transportation		: 6,024,700	: -
4.	: Certificare ( 840 Ha )	: 28,750/Ha	: 24,150,000	: -
5.	: Conversion cost ( 993.75 Ha )	: 7,500/Ha	: 703,125	: -
T o t a l		: -	: 173,310,325	: -

## Coffee

Page 3

Nu	Name of Material	Unit	Activity 1983 / 1984	
			DTP / DIPP	Adjustment
1.	Materials	:	:	:
	-			
	-			
	-			
2.	Fertilizers			
	- Urea ( 212 Kg / Ha x 475 )	: Kg	: 9,063,000	:
	- T S P ( 68 Kg / Ha x 475 )	: Kg	: 2,907,000	:
	- K C L ( 145 Kg / Ha x 475 )	: Kg	: 6,198,750	:
3.	Chemicals			
	- Insektisida ( 2 Kg / Ha x 475 Ha )	: Kg / ltr	: 5,700,000	:
4.	Others			
	- Transportation ( 475 Ha )	: Rp. 1,650/ Ha	: 783,750	
T o t a l		:	-	: 24,652,500

Table : II.15 : Volume UPP and PIR during Pelita III Central Kalimantan.

Nu. Commodity	1979/1980		1980/1981		1981/1982		1982/1983		1983/1984	
	UPP	PIR	UPP	PIR	UPP	PIR	UPP	PIR	UPP	PIR
1. Rubber	1	-	2	-	4	1	4	2	4	2
2. Coconut	3	-	4	-	4	-	4	-	4	-
3. Coffee	-	-	2	-	7	-	7	-	7	-
4. Chocolate	-	-	1	-	1	-	1	-	1	-
5. Pepper	-	-	1	-	1	-	1	-	1	-

Source : Office Plantation Crop Central Kalimantan.

## Pepper

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Nu	: Name of Material	: Unit	: Activity 1983 / 1984	
			: DTP / DIPP	: Adjusmant
1.	: Fertilizers			
	- Urea ( 81,000 Kg ) x Rp.	90: Kg	: 7,290,000	: 7,290,000
	- T S P ( 81,000 Kg ) x Rp.	90: Kg	: 7,290,000	: 7,290,000
	- K C L ( 67,500 Kg ) x Rp.	90: Kg	: 6,075,000	: 6,075,000
	-			
2.	: Chemicals			
	- Insektisida ( 1,700 Kg )	: Kg	: 10,200,000	: 10,200,000
	- Fungisida ( 1,825 Kg )	: Kg	: 10,950,000	: 10,950,000
	- Herbisida ( 437 Kg )	: Kg	: 2,625,000	: 2,625,000
	-			
3.	: Others			
	- Transportation ( Rp. 3,000,-/ Ha )	: Rp/Ha	: 375,000	: 375,000
T o t a l			: -	: 44,805,000
				: 44,805,000

Table : II.15 : Volume UPP and PIR during Pelita III Central Kalimantan.

Nu. Commodity	1979/1980		1980/1981		1981/1982		1982/1983		1983/1984	
	UPP	PIR	UPP	PIR	UPP	PIR	UPP	PIR	UPP	PIR
1. Rubber	1	-	2	-	4	1	4	2	4	2
2. Coconut	3	-	4	-	4	-	4	-	4	-
3. Coffee	-	-	2	-	7	-	7	-	7	-
4. Chocolate	-	-	1	-	1	-	1	-	1	-
5. Pepper	-	-	1	-	1	-	1	-	1	-

Source : Office Plantation Crop Central Kalimantan.



### 2.3. Agro-Industry

The existing processing industries of plantation commodities in the region are as the following :

#### 2.3.1. Rubber

Rubber based processing industry is limited to produce crumb rubber and remilling, as shown in Table II.16.

#### 2.3.2. Coconut based processing industry is limited to produce frying oil, as shown in Table II.17.

#### 2.3.3. Rattan

Rattan based processing industry is limited to produce household furniture and meuble, see Table II.18.

Table : IT.16 : Rubber Industry

Year	Region	Cramb Rubber			Remilling		
		Unit	Capacity ( Kg )	Owner	Unit	Capacity ( Kg )	Owner
1975	: Kotawaringin Timur	: 1	: 5,097,975	: private	: 1	: 1,632,963	: private
	: Kotawaringin Barat	: 1	: 115,000	: private	: 1	: 565,000	: private
1976	: Kotawaringin Timur	: 1	: 1,838,520	: private	: 1	: 2,345,920	: private
	: K a p u a s	: 1	: 6,891,120	: private	: -	: -	: -
	: Kotawaringin Barat	: -	: -	: -	: 1	: 539,900	: private
1977	: Kotawaringin Timur	: 1	: 1,520,724	: private	: 1	: 2,066,848	: private
	: K a p u a s	: 1	: 6,545,190	: private	: -	: -	: -
	: Kotawaringin Barat	: 1	: 13,600	: private	: 1	: 640,200	: private
1978	: Kotawaringin Timur	: 1	: 1,266,658	: private	: 1	: 2,299,208	: private
	: K a p u a s	: 1	: 7,235,370	: private	: -	: -	: -
	: Kotawaringin Barat	: 1	: -	: -	: 1	: 645,900	: private
1979	: Kotawaringin Timur	: 1	: 445,422	: private	: 1	: 2,762,616	: private
	: K a p u a s	: 1	: 5,028,470	: private	: -	: -	: -
	: Kotawaringin Barat	: -	: -	: -	: 1	: 668,300	: private
1980	: Kotawaringin Timur	: 1	: 235,770	: private	: 1	: 2,685,800	: private
	: K a p u a s	: 1	: 4,491,060	: private	: 1	: 722,200	: private

Table : II.17. a. KMK Industry /fry oil

Nu. Name of manufature	: License Number
1. Cahaya berdua Kp. Jaya Karet Samuda Sampit	: 040/3111/Al.0118/XI/81 2 Nopember 1981
2. Tanjung Mas	: 045/3115/Al.0118/XII/X/81 28 Oktober 1981
3. Berkat Uasana Kp. Samuda Sampit	: PP/052/3115/Al.0113/XI/81 28 Oktober 1981
4. Pusaka Jaya Desa Samuda Kecil Sampit	: PP/053/3115/Al.0113/XI/81 13 Nopember 1981
5. Tanjung Harapan Kp. Basirih Hilir Samuda Sampit	: 046/3115/Al.0118/XII/81 : 28 Desember 1981
6. Budi Setia Desa Jaya Karet Samuda Sampit	: 041/3115/Al.0118/XI/1981 2 Nopember 1981
7. C e m p a k a Pulau Hanaut Desa Jaya Kelapa Samuda Sampit	: 039/3115/Al.0118/X/1981 28 September 1981

	Production	Investment	Note
: VMK	: MK = 360 ton/year	: 17,600,000	: 5
:	: BK = 200 ton/year		
: sda	: MK = 216 ton/year	: 14,545,000	: 9
	: BK = 21.60 ton/year	:	
: sda	: MK = 302,5 ton/year	: 26,375,000	: 5
: sda	: MK = 600 ton/year	: 21,500,000	: 5
	: BK = 180 ton/year		
: sda	: MK = 480 ton/year	: 30,000,000	: 5
: sda	: MK = 480 ton/year	: 80,000,000	: 7
: sda	: MK = 540 ton/year	: 30,000,000	: -
	: BK = 420 ton/year		

Table : II. 17 b. Plantation Crops Industry

Industry	Name of Manufacture :	Lisensi Number	production :	capacity:	Investment/ capital labor-force:	Foreign	Notes
Coconut mill	:1. Harapan Baik	: 072/3115/AT.0118/X/82	: Coconut oil:	290 ton/	25,500,000:	-	: 11
	: Bahaur Hilir Kec.	: 22 Oktober 1982	:	: year			
	: Kahayan Kab. Kapuas	:	: Coconut oil:	180 ton/			
	:	:	:	year	:		
	:2. Berkat Sabar	: 056/3115.03/4/77	: Coconut oil:	240 ton :	6,000,000:	-	: 12
	: Ko. Mambulau Kec.	:					
	: Selat Kabupaten	:					
	: Kapuas	:					
	:3. Kawan Anda	: PP/016/3115/AT.0118/N/80:	Coconut oil:	1,360 ton:	67,765,500:	-	: 5
	: Muara Handel	: 18 April 1980					
	: Bahan Kapuas	:					

Table : II. 18 : Fumigation Rattan Industry/Rattan Sortage

Nu. Name Manufacture	: Licency Number	: Production	: Investment:	: Note
1. P.T. Korindo Jaya Sampit	: PP/016/3312.04/Al./X/81 25 September 1981	: Finished: 12,200 ton/year Rattan	: 96,230,000:	
2. C.V. Trinas Kembang (Pengasapan rotan) Strith Iskandar Sampit	: 030/3312-/1981 16 Mei 1981	: Rattan : 30,000Ton/year	: 41,000,000:	
3. P.T. hatanesia lama (P.T Sampit Rattan industry) Sampit, Kalimantan Tengah	: 154/T/PMDN/1981 13 Oktober 1981	: Skin core 12,000 Ton/year	: 918,726.250:	

Source : Office Industry Departement, Central Kalimantan.

### 3. Existing Livestock and Dairy Product

Animal husbandry development is one of many instrument to achievement national development final that is just and prosperous society based on Pancasila and The 1945 Constitution. According to the situation of natural resources, area for livestock and available pasture/grass-land, three policy in namely : intensification, extensification and diversification have been established in Central Kalimantan animal husbandry development to step up livestock population, employment opportunity and farmer's income, focussed mainly on the improving of land productivity and natural resources. Data about the population situation of livestock in Central Kalimantan during 1969 - 1982 which in general showed some increase and are given in table II. 19 show the population of livestock every year, and table II. 20 shows the distribution of livestock population per district in 1982, where small cattles have been grown in almost districts while big cattle development has been located in Kotawaringin Barat, Kotawaringin Timur, Kasongan, Kapuas, and Barito Timur and Barito Selatan and Gunung Mas.

Inspite of the population increase there is still shortage of livestock in Central Kalimantan, for this reason importation of livestock is needed (See table II.21). Table II. 22 shows the livestock supplied to other province. Data about the growth of livestock products are given in table II.23. Animal husbandry in Central Kalimantan mainly raised by small-holders with traditional technique. No livestock farm raised by the government and private company. Based in livestock production compare with livestock population, consumption per capita in Central Kalimantan is calculated (See table II. 24). There is still no livestock products, Origin stuff products of livestock is only leather, that is because no finish leather goods industry. Leather preservation is being done by seen drying.

Leather are sold in Java with the price of wet leather Rp. 2, 850 per piece.

Table : II. 19. Livestock Population by in Central Kalimantan 1969 - 1982 ( head )

Y e a r	Cattle	Da'ry cattle	Buffalo	Goat	sheep	Pig	hen	d u c k
1969	10,472	9	2,400	3,500	-	85,000	120,000	100,000
1970	15,321	9	2,490	4,700	-	74,000	235,500	287,000
1971	22,547	12	4,196	5,500	-	83,000	340,000	423,325
1972	28,198	19	5,354	4,244	561	66,559	461,000	546,000
1973	28,354	19	5,354	4,414	579	103,965	849,000	726,000
1974	32,672	25	3,708	6,587	679	90,731	848,093	199,993
1975	33,305	20	3,879	6,944	674	80,067	930,000	213,000
1976	33,512	25	4,021	8,455	846	112,538	1,067,000	435,000
1977	36,892	21	4,390	12,240	603	134,856	863,510	235,521
1978	39,050	33	8,382	21,383	1,313	171,005	1,030,473	178,187
1979	41,696	50	8,985	26,641	645	188,535	1,293,357	185,132
1980	42,492	56	9,625	25,112	942	189,999	1,372,660	215,011
1981	43,294	36	10,065	26,441	1,225	191,463	1,481,903	215,223
1982	44,846	40	10,266	26,270	1,229	143,171	1,430,203	227,262

Source: Veterinary office Central Kalimantan



Table : II. 20. Livestock Populations by District in Central Kalimantan 1982 ( head )

Nu	D i s t r i c t	Horse	Cattle	Dairy Cattle	Buffalo	Goat	Sheep	Pig	H e n	Duck
1.	Kodya Palangka Raya	4	239	5	57	85	38	1,559	183,725	7,335
2.	Kotawaringin Barat	-	4,080	-	35	995	377	11,780	152,830	56,120
3.	Kotawaringin Timur	-	3,164	-	564	1,867	229	9,035	222,935	15,365
4.	K a t i n g a n	-	6,329	28	27	897	225	6,250	49,545	3,710
5.	K a p u a s	-	2,382	4	295	2,695	360	54,330	470,800	57,000
6.	Gunung Mas	-	23,397	-	1,553	1,162	-	8,167	154,378	1,220
7.	Bari to Selatan	-	205	-	1,819	951	-	2,925	42,091	28,401
8.	Bari to Timur	-	436	-	403	867	-	16,160	78,799	31,166
9.	Bari to Utara	-	560	-	3,740	6,450	-	5,565	63,100	9,445
10.	Murung Raya	-	2,654	-	1,639	10,300	-	27,400	57,000	17,500
T o t a l		4	43,846	37	10,132	25,373	1,267	143,171	1,430,203	227,262

Source : Veterinary Office, Central Kalimantan.

Table : II.21. Coming in Livestock to Central Kalimantan 1969 - 1982

Year	Cattle	Buffalo	Goat	Sheep	hen	duck egg	Hen egg	duck egg
1969	1,438	-	-	222	-	-	-	-
1970	2,833	-	-	505	-	-	-	-
1971	3,365	7,	128	430	-	-	-	-
1972	1,786	5	140	-	-	5,180	92,000	546,000
1973	1,234	108	-	-	-	9,215	117,000	533,000
1974	1,621	46	285	84	-	24,917	164,000	872,000
1975	949	7	232	41	-	23,249	564,000	980,000
1976	1,055	60	189	22	82,000	47,167	673,000	1,902,000
1977	2,210	325	384	15	36,000	54,510	623,000	2,207,000
1978	3,124	198	553	191	46,000	36,495	632,000	2,323,000
1979	1,918	-	452	117	244,000	42,374	976,500	2,499,800
1980	1,581	27	625	53	325,000	55,949	833,300	2,052,270
1981	4,070	335	625	108	215,000	34,597	435,430	2,411,750
1982	3,918	168	4,060	174	109,000	120,960	993,879	3,812,419

Source : Veterinary Office, Central Kalimantan.

Table II.22 : Coming out livestock from Central Kalimantan  
1969 - 1982 (head).

Year :	Cattle	:	Buffalo	:	Pig
1969 :	-	:	-	:	-
1970 :	-	:	-	:	-
1971 :	-	:	148	:	1,457
1972 :	19	:	-	:	2,284
1973 :	179	:	47	:	1,599
1974 :	69	:	-	:	-
1975 :	22	:	241	:	1,457
1976 :	-	:	-	:	1,915
1977 :	-	:	-	:	-
1978 :	-	:	-	:	187
1979 :	-	:	-	:	99
1980 :	-	:	-	:	87
1981 :	-	:	-	:	116
1982 :	-	:	-	:	-

Source : Veterinary Office, Central Kalimantan.

Table : II. 23 : Condition of livestock and its product in Central Kalimantan

Year	Meat (Kg)	Egg (grain)	Fresh Milk (Kg)	Leather (Sheet)		
				Cattle	Buffalo	Goat/Sheep
1969	865,675	890,000	-	722	-	-
1970	1,056,149	1,100,000	-	840	-	-
1971	1,121,267	1,050,000	-	970	-	-
1972	1,320,267	1,153,000	-	1,810	-	69
1973	528,228	4,036,000	450	2,059	12	295
1974	958,299	5,118,000	1,677	2,365	10	377
1975	1,291,271	5,009,000	1,735	2,178	14	286
1976	1,164,481	4,619,000	1,680	2,991	12	305
1977	1,345,528	3,264,000	768	3,920	99	512
1978	1,705,464	2,382,000	522	3,252	137	419
1979	1,332,036	4,177,756	869	2,614	21	695
1980	1,446,658	4,633,379	1,300	2,169	61	231
1981	2,245,500	4,824,783	736	2,777	103	964
1982	3,079,342	8,634,031	2,378	4,241	-	451

Source : Veterinary Office Central Kalimantan.

Table : II. 24. Consumption Growth per-Capita in Central Kalimantan 1978 - 1982

Year	Meat (Kg/Capita/year):			Egg (Capita/Year)			Milk (Litre/capita/year)		
	: Demand:	Supply:	Shortage:	Demand:	Supply	: Shortage	: Demand	: Supply	: Shortage
1978	: 8.1	: 1,225	: 6,875	: 2.2	: 0,19	: 2.02	: 2.2	: 0,0007	: 2,1993
1979	: 8.1	: 1,455	: 6,647	: 2.2	: 0.20	: 2.00	: 2.2	: 0,0009	: 2,1991
1980	: 8.1	: 1,659	: 6,441	: 2.2	: 0.22	: 1.98	: 2.2	: 0,0014	: 2,1986
1981	: 8.1	: 2,449	: 5,651	: 2.2	: 0.41	: 1.79	: 2.2	: 0,0008	: 2,1992
1982	: 8.1	: 3,247	: 4,853	: 2.2	: 0.55	: 1.65	: 2.2	: 0,002	: 2,194

Source : Veterinary Office, Central Kalimantan.

No data available about number of person/entrepreneur dealing with leather preservation, because this business is done by family/person who live in slaughtering region. In livestock regions, many home/handicraft industry. Livestock development investment in government national and regional budget amounting to Rp. 2,546,877,850 (See table II. 25).

Table : II.25 Realization of Development Budget 1969 - 1982 (Rp.)

! Y e a r !	National Budget	! Regional Budget !
! 1969 !	200,000	! 7,500,000 !
! 1970 !	-	! 8,000,000 !
! 1971 !	-	! 7,500,000 !
! 1972 !	1,320,000	! 15,000,000 !
! 1973 !	6,233,000	! 22,000,000 !
! 1974 !	-	! 21,000,000 !
! 1975 !	-	! 17,821,500 !
! 1976 !	-	! 29,500,000 !
! 1977 !	20,000,000	! 70,000,000 !
! 1978 !	27,000,000	! 115,750,000 !
! 1979 !	157,000,000	! 202,000,000 !
! 1980 !	190,509,000	! 275,000,000 !
! 1981 !	288,708,000	! 275,000,000 !
! 1982 !	301,115,000	! 187,000,000 !
! 1983 !		! !
! Pelita I !	7,753,000	! 52,000,000 !
! Pelita II !	47,000,000	! 161,137,850 !
! Pelita III !	1,319,237,000	! 959,750,000 !
! Total !	1,373,990,000	! 1,172,887,850 ! 2,546,877,850.

Source : Veterinary Office Central Kalimantan.

Problems faced in animal husbandry development in Central Kalimantan are as follows :

- (1) Shortage of technical officials, so guidance and counselling to farmers are not properly done.
- (2) Farmers have traditional/limited skill and knowledge, so it is urgent that the farmers get more guidance.

- (3) Private sector take little interest in animal husbandry investment.
- (4) Up to the present time consumption needs, livestock products and slaughter animals still imported to Central Kalimantan.
- (5) Shortage of capital and production facilities for farmers.
- (6) Shortage of animal feed.
- (7) Shortage of facilities and working equipment of the livestock (Veterinary) Service either in province level or in district level.

To fulfill per capita consumption in Central Kalimantan, projection in 1990 needs 14,372,292 kg meat, 4,036,644 kg egg and 4,465,975 kg milk. See table II. 26.

Table : II.26 Demand Projection for meat, egg and milk in Central Kalimantan up to 1990 (in Kg).

No.	Demand	1990
1.	Meat	14,372,292
2.	Egg	4,036,044
3.	Milk	4,465,975

The meat need comes primarily from cattle, there will be 958,153 heads of cattle needed with the assumption that the weight of cattle slaughtered is 100 Kg/head and the total number of cattle slaughtered are 15 % of population. Data about total investment needed is given in table II.27.

Table : II.27 Population Projection for Cattle, Milk and Investment in Central Kalimantan up to 1990.

No.	Livestock Items	1990	
		Total (head)	Investment (Rp.)
1.	Cattle	958,153	239,538,250,000
2.	Dairy Cattle	14,886	4,465,800,000

Source : Livestock Office Central Kalimantan.

Investment needed either from government sector or private sector. General pattern of animal husbandry development policy in Central Kalimantan are as follows :

(1) Introduction development pattern :

- Integrated farm development
- Livestock company development
- Nucleus estate small holder development.

(2) Production Improvement pattern.

- Improvement and distribution of animal breed.
- Improvement of animal feed and pasture.
- Intensification of guidance and counselling (transfer of applied technology).
- Development of animal product trade and production facilities.
- Improvement animal protection and its health.
- Investment improvement
- Improvement of manpower and working facilities procurement.
- Regional Growth of meat production, egg and milk.
- Improvement of coordination among institution/agency concerned.

Large animal can be raised as middle and large scale farm in some districts of Kotawaringin Barat, Kotawaringin Timur, Kapuas, Barito Timur and Barito Selatan. Small animal can be raised in towns or capital of district/municipal. Data about productivity of livestock and its products during 1975 - 1982 in Central Kalimantan are given in table II.28.

Value of productivity in 1982 amounting to Rp. 27,167 per man power. This, as planned, is expected to be increased in years to come, as the results of the private and Government investment, beside that of people although small in number. The increase was also caused by the development of the infrastructure and other supporting facilities.

4. Agriculture-related industries (specify)

Existing industries.

Central Kalimantan province does not have any product processing industries for input need in agriculture up to Pelita III even up to the end of Pelita IV.



Table II.28 : Livestock and Dairy Sub-Sector Productivity  
in Central Kalimantan 1975 - 1982.

Illustration	1975	1976	1977	1978	1979	1980	1981	1982
1. Value added bruto	1,208,311	1,585,185	1,985,029	3,178,114	3,452,224	2,184,656	2,855,655	2,689,457
2. Labor force total	64	69	74	79	84	89	94	99
3. Productivity	18,879	22,974	26,825	40,229	41,098	35,783	30,379	27,167

Resource : Livestock Office Central Kalimantan Province.

It is considered that importing from other region is much more profitable. It is because the so limited potential of raw material for industry and the condition of area which are difficult to reach by transportation, so that when the industries should be established will take a high unit cost and this results that the products can not be in competition with products from other region.

To support the input supply in agriculture such as seed, fertilizers feeds, and chemical substances, buffer zones spread in production centre in each district which are managed. In this way it is expected to support government effort to increase agricultural production.

The problem is that there is not any product processing industries such as fertilizer, feed and chemical substances needed to supply the farmers whenever they need and therefore they are.

## 5. Forestry and Forestry-based Industries

### 5.1. Resources base

#### 5.1.1. Forest areas and distribution

A large part of the Central Kalimantan i area is covered by forest about 95.2 % of the whole area. The rest is for settelent, agriculture, irrigation, etc.

The width of the forestry areas based on the land use in Central Kalimantan is given (See table II.29).

Table II.29. Forest Areas in Central Kalimantan

No.	Intended Use	Areas ( Ha )	%
1.	Protection Forest	729,919	4,76
2.	Nature Reserves	800,000	5,22
3.	Production Forest	6,068,000	39,66
4.	Limited Production Fo- : rest	3,400,000	22,23
5.	Production Forest can be Converted and others : used.	4,302,000	28,13
: T o t a l		15,300,000	100,00

Source : Forest Service in Central Kalimantan.

Distribution of forest areas by district in Central Kalimantan can be seen in table II.30.

Table II.30. Distribution of forest areas in Central Kalimantan, 1983.

No.	Forest District	Areas (Ha)	%
1.	Sumber Barito	2,392,500	15.63
2.	Barito Utara	1,386,700	9.06
3.	Barito Selatan	1,130,125	7.38
4.	Kapuas	915,000	5.98
5.	Kahayan	2,200,000	14.37
6.	Katingan	1,732,000	11.32
7.	Kotawaringin Timur	2,000,000	13.07
8.	Sarayan	1,508,375	9.85
9.	Kotawaringin Barat	1,525,300	9.96
Total		15,300,000	100.00

Source : Forest Service in Central Kalimantan.

Distribution of forest areas in Central Kalimantan, according to forest use which has been agreed to be divided on limited production forest, permanent production forest and conversion forest and others which seen in table II. 31.

#### 5.1.2. Forest standing stock

Standing stock production forest in Central Kalimantan of kinds of commercial wood average 71.87 Cu.m/Ha, consists of Dipterocarpaceae 48.43 Cu.m/Ha and Non Dipterocarpaceae 23.44 Cu.m/Ha (See table II. 32).

Beside wood products, forest in Central Kalimantan produce also non-wood forest products of the very potential values as trading commodities, and have brought valuable contributions for the region's foreign exchange. The most important species are rattans, gum, tembakau and many others.

Table : II.31. Forest utilization based on the Forest Use Agreement in Central Kalimantan

Nu. Forest Distric	Limited Production Forest		Production Forest		Conversion Forest		T o t a l	
	Ha	%	Ha	%	Ha	%	Ha	%
1. Sumber Barito	: 1,085,671	: 31,93	: 104,692	: 1,73	: 102,786	: 3,43	: 1,293,149	: 10,37
2. Barito Utara	: 400,000	: 11,78	: 564,657	: 9,31	: 234,092	: 7,80	: 1,199,264	: 9,62
3. Barito Selatan	: -	: -	: 343,136	: 5,65	: 257,507	: 8,58	: 600,643	: 4,82
4. Kapuas	: -	: -	: 496,472	: 8.18	: 244,266	: 8.14	: 740,738	: 5,94
5. K a h a y a n	: 620,537	: 18.25	: 880,457	: 14.51	: 608,051	: 20.27	: 2,109,045	: 16.92
6. K a t i n g a n	: 272,055	: 8.00	: 1,146,156	: 18.89	: 507,565	: 16.92	: 1,925,776	: 15.44
7. Kotawaringin Timur	: 459,398	: 13.52	: 796,298	: 13.12	: 248,648	: 8.29	: 1,504,244	: 12.07
8. S e r u y a n	: -	: -	: -	: -	: -	: -	: -	: -
9. Kotawaringin Barat	: 561,823	: 16.52	: 1,736,134	: 28.61	: 797,085	: 26.57	: 3,095,042	: 24.82
<b>T o t a l</b>	<b>: 3,400,000</b>	<b>: 100.00</b>	<b>: 6,068,000</b>	<b>: 100.00</b>	<b>: 3,000,000</b>	<b>: 100.00</b>	<b>: 15,300,000</b>	<b>: 100.00</b>

Source : Directorate General of Forestry, 1980.

Table II. 32. Estimated standing stock of forest production in Central Kalimantan ( Cu.m/Ha).

No.	Forest District	Commercial species	Non-Commercial species	Total			
1.	Sumber Barito	138.65	78.95	36.95	21.84	175.00	100
2.	Barito Utara	18.56	9.00	187.70	91.00	206.26	100
3.	Barito Selatan	15.17	13.71	95.29	86.29	110.62	100
4.	Kapuas	62.35	65.67	32.59	34.32	94.94	100
5.	Kahayan	115.21	76.80	34.80	23.20	150.01	100
6.	Katingan	85.24	69.36	37.66	30.64	122.90	100
7.	Kotawaringin Timur	58.41	71.85	22.88	28.15	81.29	100
8.	Sarayan	-	-	-	-	-	-
9.	Kotawaringin Barat	56.30	61.40	35.39	38.15	91.69	100
	Average	73.83	58.81	51.71	41.19	125.54	100

Source : Forest Service in Central Kalimantan.

### 5.1.3. Forest utilization

Forest utilization in Central Kalimantan has rapidly developed - since the First Five Year Plan Programs. In the beginning of the Second Five Year Plan Programs, there have been 88 application letters for forest concession with the total areas of about 8,297,000 Ha which consists of 45 that have got the Ministry Decree for Forestry Right of Exploitation (SK HPH) with the areas of 4,500,000 Ha, 26 remaining in the process of Forestry Agreement (FA) with the areas of 1,335,000 Ha and 17 still in the Areal Survey with the areas of 1,335,000 ha. In the last year of the Pelita II, there are 87 application letters The Forestry Right of Exploitation with the areas of 8,567,500 ha, 22 in the process of FA covering the areas of 1,952,000 Ha and 27 in the Areal Survey covering the areas of 990,655 Ha. In the beginning of the PELITA III, the application letters for Forestry Concession in Central Kalimantan have been increased to 131 in number which cover the areas of 11,933,200 ha. The areas in details are as the following; 20 in the Forestry Agreement process with the areas of 681,700 ha; and 15 still in Areal Survey covering the areas of 681,700 ha.

The development of the forest exploitation in Central Kalimantan, according to the licence process since 1974/1975 until 1980/1981, can be seen in table II.33.

The Forestry Right of Exploitation Development in each Forest District in 1983 - 1984 period, there are 93 remaining active covering out the forestry areas of 7,969,250 ha, running out forestry district covering the areas of 1,670,000 ha.

There are 16 Right Forestry of Exploitation holders which are non active in the areas of 960,500 ha of high density forest and 184,500 ha of non productive forest. While there are 3 Right Forestry of Exploitation holders which of 318,000 ha of productive forest and 31,000 of non productive forest.

The total general of the whole Right Forestry of Exploitation holders in Central Kalimantan in 1983/1984 are about 112 concession covering the areas of 9,267,750 ha of productive forest, and 1,855,550 ha of non-productive forest (see table II.34).

#### 5.1.4. Productions

Logging production in Central Kalimantan during the First and Second Five Year Plan Programs tended to increase in according with the increase of the demand for logs for the needed of export and domestic industries. In the Third Five Year Plan Programs the demand showed sharp decrease because of the Government Policy of log export limitation.

Kinds of wood export remain limited to Meranti (shores species), ramin (Conistyllus barceanus), keruing (Dipterocarpus sp), and agathis (Agathis sp), while the rest of kinds of wood remain very limited.

Log production development in the First Five Years Plan Programs reached 7,620,605 m<sup>3</sup>, in the Second Five Year Plan Programs, 16,061,794 Cu.m (or 110 % increase), and during the Third Five Year Plan Programs 18,213,904 Cu.m (or 12 % increase) in comparison with that of the Second Five Year Plan Programs log production.

The data of log production Central Kalimantan be seen in table II.

Table : 11 33. Forest Concession development in Central Kalimantan ( 1974/1975 - 1980/1981.

Y e a r s	:Concessionaires		: Forestry Agreement		: Survey Areal		: T o t a l	
	: Units:	Ha	: Units:	Ha	: Units :	Ha	: Units:	Ha
1974/1975	: 45 :	4,850,000	: 26 :	2,112,000	: 17 :	1,335,000	: 88 :	8,297,000
1975/1976	: 60 :	5,874,500	: 21 :	1,188,000	: 7 :	575,000	: 88 :	8,297,500
1976/1977	: 71 :	6,871,100	: 18 :	1,676,000	: 28 :	2,377,000	: 117 :	10,924,100
1977/1978	: 79 :	7,371,600	: 21 :	1,858,000	: 27 :	1,894,000	: 127 :	11,336,500
1978/1979	: 87 :	8,567,500	: 22 :	1,952,000	: 27 :	990,655	: 131 :	11,510,155
1979/1980	: 95 :	9,503,000	: 22 :	1,811,000	: 11 :	681,700	: 128 :	11,933,200
1980/1981	: 107 :	10,587,000	: 11 :	957,000	: 5 :	255,000	: 123 :	11,899,000
1981/1982	: 112 :	11,054,000	: 6 :	715,000	: 3 :	167,500	: 121 :	11,936,500
1982/1983	: 112 :	11,054,000	: 6 :	715,000	: 3 :	167,500	: 121 :	11,936,500
1983/1984	: 112 :	11,054,000	: 6 :	715,000	: 3 :	167,500	: 121 :	11,936,500

Source : Forest Service in Central Kalimantan.

Table II. 34. Concession areas owned Concessionaires by status in Central Kalimantan ( 1983/ 1984 )

Forest District	Active			Not active			Not operational			T o t a l		
	Units	Forested	Unforested	Units	Forested	Unforested	Units	Forested	Unforested	Units	Forested	Unforested
1. Sumber Barito	10	844,000	127,000	-	-	-	1	89,000	23,000	11	933,000	150,000
2. Barito Utara	6	552,000	217,000	2	157,000	25,000	-	-	-	8	709,000	242,500
3. Barito Selatan	6	382,500	132,000	2	152,000	34,000	-	-	-	8	534,500	166,000
4. K a p u a s	7	690,750	148,000	3	157,500	37,500	-	-	-	10	848,250	186,250
5. K a h a y a n	18	1,415,500	246,000	3	136,000	21,000	-	-	-	21	1,551,500	267,500
6. K a t i n g a n	16	1,283,000	106,300	2	170,000	-	1	32,000	8,000	19	1,485,000	114,300
7. Kw. Timur	13	1,285,000	412,000	1	35,000	5,000	-	-	-	14	1,320,000	417,000
8. Kw. Barat	3	242,000	11,000	1	60,000	15,000	1	197,000	-	5	499,000	26,000
9. S e r u y a n	14	1,274,500	269,000	2	113,000	47,000	-	-	-	16	1,387,500	316,000
T o t a l	93	7,969,250	1,670,050	16	980,500	184,500	3	318,000	31,000	112	9,267,750	1,855,550

Source : Forest Service in Central Kalimantan, 1983.



## 5.2. Existing Forestry-based Industries

### 5.2.1. The development of Timber Processing in Central Kalimantan.

In the Decree of the Right Forestry of Exploitation, it is clearly stated that each holder is burdened with duties to run timber processing industry, minimally the saw mills.

Since the beginning of the Second Five Year Plan Programs in Central Kalimantan, there have been 51 saw mills with the capacity of 1,353,212 Cu.m of logs per years, 35 saw mills of the Right Forestry of Exploitation with the intake capacity of 1,111,332 Cu.m per year and 36 saw mills of Non Right Forestry of Exploitation with the intake capacity of 241,880 Cu.m per year.

After the 1980 Government Policy which takes control on the limitation of log export and the duty of running timber processing industries especially plywood mills, the development of the saw mills increased in number to 160 with the intake capacity of 2,796,500 Cu.m per year, and 112 sawmills of the Non-Right Forestry of Exploitation with the intake capacity of 1,055,915 Cu.m per year (See table II.36).

From 54 sawmills of the Right Forestry of exploitation holders, there have been 44 sawmills in the production process with full capacity of 1,064,750 Cu.m per year, while the two others are still in the construction with 42,000 Cu.m per year; and 8 ones are in the application process with the capacity of 206,000 Cu.m per year. Besides these, there are 212 saw mills of Non Right Forestry of Exploitation with the capacity production of 527,958 Cu.m per year, the details are as the following : 112 units having had the licence of Exploitation with the production capacity of 88,944 Cu.m per year.

Together with the progress of sawmills industries mentioned above, from the beginning of the Third Five Year Plan Programs until the year 1983/1984 in Central Kalimantan, there have been 21 units of plywood mills with the totally expected production capacity of 946,400 Cu.m per year which are divided into 4 units are in the process of production with the production capacity of 98,000 Cu.m per year, and 14 are in the application with the production capacity of 558,400 Cu.m per year.

Table II. 35. Timber production in Central Kalimantan  
( 1969 / 1970 - 1983 / 1984 )

PELITA	Y E A R S	Timber Production (cu.m logs)
I.	1969 / 1970	474,300
	1970 / 1971	731,714
	1971 / 1972	1,341,274
	1972 / 1973	1,958,372
	1973 / 1974	3,114,367
T o t a l		7,620,605
II.	1974 / 1975	2,192,140
	1975 / 1976	2,271,781
	1976 / 1977	3,361,644
	1977 / 1978	3,971,862
	1978 / 1979	4,364,367
T o t a l		16,061,794
III.	1979 / 1980	4,725,734
	1980 / 1981	4,381,174
	1981 / 1982	2,920,785
	1982 / 1983	3,156,565
	1983 / 1984	756,604
T o t a l		15,940,862

Source : Forest Service in Central Kalimantan, 1983 / 1984.

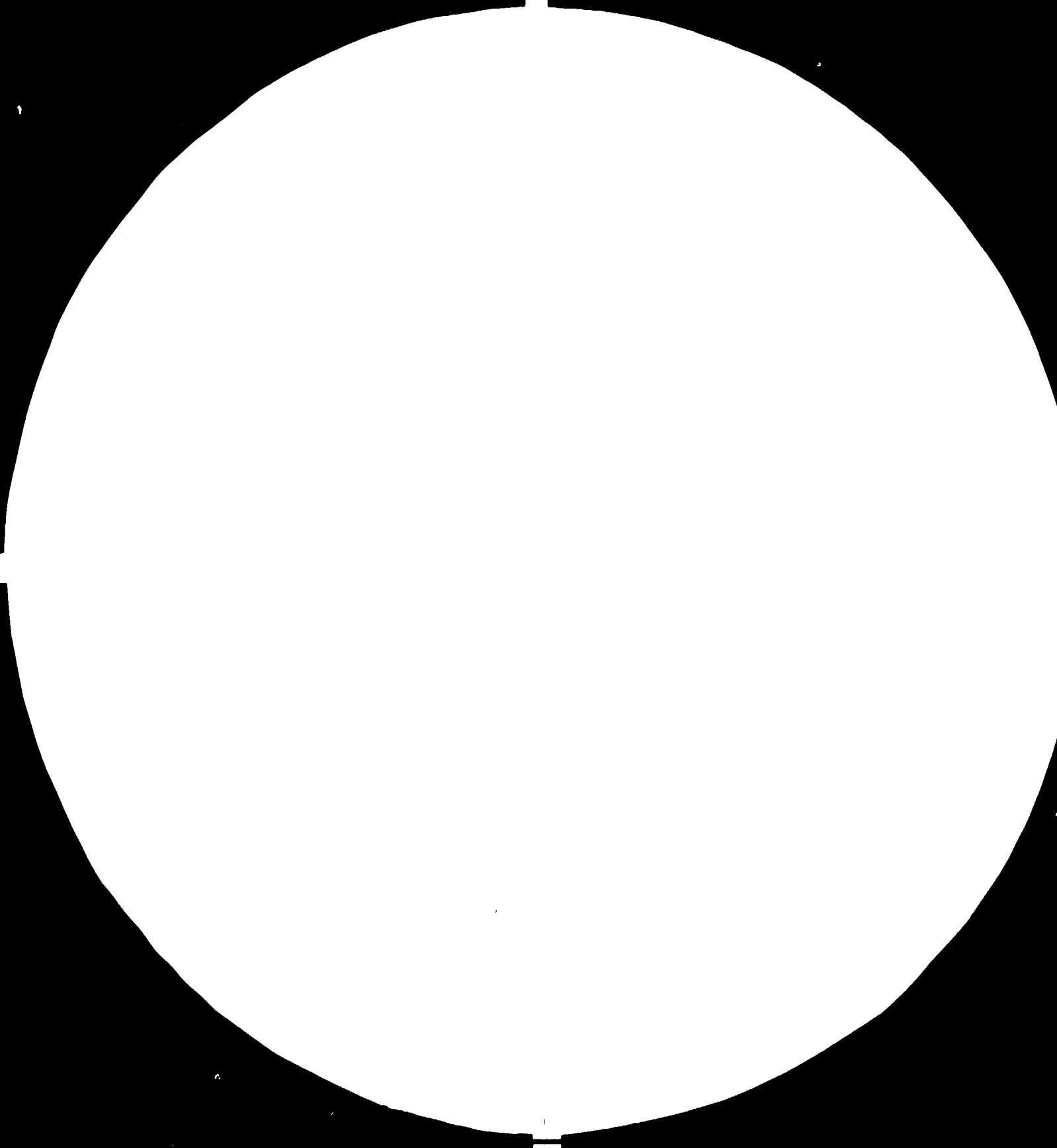
Table : II.36. Progress of Sawmill Industry of Forest Concessionaires and others in Central Kalimantan ( up to December 1983 )

YEAR	Owned by Concessionaires		Others		Total	
	Units	Capacity intake (Cu.m)	Units	Capacity intake (Cu.m)		
1974/1975	35	1,111,332	16	241,880	51	1,353,212
1975/1976	40	1,426,132	18	357,195	58	1,783,327
1976/1977	43	1,875,768	18	357,395	61	2,233,163
1977/1978	45	2,317,767	18	357,395	63	2,675,162
1978/1979	47	2,612,276	18	357,395	65	2,969,671
1979/1980	48	2,654,576	27	545,095	75	3,199,671
1980/1981	54	2,986,848	42	706,369	96	3,693,217
1981/1982	49	3,047,100	71	798,450	120	3,845,550
1982/1983	48	2,796,500	112	1,055,915	160	3,852,416
1983/1984	46	2,796,500	112	1,055,915	160	3,852,416

Source : Forest Service in Central Kalimantan, 1984.



**84.12.19**





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS  
STANDARD REFERENCE MATERIAL 1010a  
(ANSI and ISO TEST CHART No. 2)

The progress situation of the sawmills in Central Kalimantan in 1983 - 1984 in accordance with their location of the Right Forestry of Exploitation and their activities stages are shown in table II.37.

To fulfill raws material intake capacity of the processed timber will be in need of 7,243,350 Cu.m logs per year consisting of 2,846,000 Cu.m per year for saw mills owned by concessionaires, and 844,733 Cu.m per year for plywood mills owned by non-concessionaires. It is estimated that the total need of raw materials which are based on the assumption that for the sawmills rendement is 50 %, plywood 40 % and the production capacity is estimated to maximally 80 %.

Besides the timber processing industries located in Central Kalimantan, there are also processing timber industries located outside Central Kalimantan which get their supplies from the same wood resources, i.e., from Central Kalimantan.

In the coming Fourth Five Year Plan Programs, the needed of wood supplies of logs for processing timber industries will totally reach 4,083,008 cub-motres per year. The supplies in details are : 2,787,108 Cu.m per year for those located in Central Kalimantan itself; and 1,295,900 Cu.m per year for the rest located outside Central Kalimantan. The plans, therefore, for logging production will be, as estimated, produced by and from Central Kalimantan during the Fourth Five Year Plan Programs.

#### 5.2.2. Sawn-timber production

Sawn-timber production produced by saw mills located in Central Kalimantan has been begun since the beginning of the Second Five Year Plan Programs, although plywood mills have just started in the begining of the Third Five Year Plan Programs (1980/1981) until the year 1983/1984 sawn-timber products reach 2,770,670.26 Cu.m per year, and 465,513.78 Cu.m plywood per year.

The progress of sawn-timber production in a year long in Central Kalimantan can be seen in table II.38.

Table : II.37. The Distribution of Sawmills and Plywood Mills by stage and production capacity in Central Kalimantan (1983/84).

Owned by Concessionaires

Forest District	S a w m i l l s								P l y w o o d m i l l s							
	Prod.		Constr		Applc		T o t a l		Prod.		Constr		Applc.		T o t a l	
	Units	Capacity	un	Capacity	un	Capacity	un	Capacity	un	Capacity	un	Capacity	un	Capacity	un	Capacity
1. Sumber Barito	: 2 :	60,000	;-	-	: 1 :	40,000	: 3 :	100,000	;-	-	;-	-	: 3 :	300,000	: 3 :	160,000
2. Barito Utara	: - :	-	: 1 :	12,000	:-	-	: 1 :	12,000	:-	-	;-	-	:-	-	:-	-
3. Barito Selatan	: 1 :	24,000	:-	-	: 1 :	24,000	: 2 :	48,000	:-	-	;-	-	:-	-	:-	-
4. Kapuas	: 6 :	156,000	:-	-	:-	-	: 6 :	156,000	: 1 :	40,000	:-	-	: 2 :	66,000	: 3 :	106,000
5. Kahayan	: 11 :	100,000	: 1 :	30,000	: 4 :	82,000	: 36 :	292,000	:-	-	: 1 :	18,000	: 5 :	322,000	: 6 :	199,500
6. Katingan	: 9 :	189,550	:-	-	:-	-	: 9 :	189,550	:-	-	;-	-	:-	-	:-	-
7. Ktw. Timur	: 9 :	315,200	:-	-	:-	-	: 9 :	315,200	: 1 :	330,000	: 1 :	40,000	: 1 :	40,000	: 3 :	210,000
8. Saruyan	: - :	-	:-	-	: 1 :	24,000	: 1 :	24,000	:-	-	;-	-	:-	-	:-	-
9. Ktw. Barat	: 6 :	140,000	:-	-	:-	-	: 7 :	176,000	: 2 :	120,000	: 1 :	40,000	: 3 :	110,900	: 6 :	270,900
<b>T o t a l</b>	<b>: 44 :</b>	<b>1,064,750</b>	<b>: 2 :</b>	<b>42,000</b>	<b>: 8 :</b>	<b>206,000</b>	<b>: 54 :</b>	<b>1,312,750</b>	<b>: 4 :</b>	<b>490,000</b>	<b>: 3 :</b>	<b>98,000</b>	<b>: 14 :</b>	<b>558,900</b>	<b>: 21 :</b>	<b>946,400</b>
10. Located out side: of the Central Kalimantan	: 9 :	292,000	:-	-	: 5 :	174,000	: 14 :	366,000	: 8 :	540,000	: 3 :	325,000	: 3 :	364,900	: 14 :	849,900
<b>Grand total</b>	<b>: 53 :</b>	<b>1,356,750</b>	<b>: 2 :</b>	<b>42,000</b>	<b>: 13 :</b>	<b>300,000</b>	<b>: 68 :</b>	<b>1,778,000</b>	<b>: 12 :</b>	<b>830,000</b>	<b>: 6 :</b>	<b>223,600</b>	<b>: 17 :</b>	<b>723,800</b>	<b>: 35 :</b>	<b>1,776,300</b>

Note.: un= units ; Cap. = production Capacity ; Prod. = Production ; Constr = Construction ; Applc = application

Source : Forest Service in Central Kalimantan, 1983/1984.



Table 11.37 page 2.

No. Forest District	O t h e r s					
	S a w m i l l				T o t a l	
	legal		illegal		un	Cap.
	un	Cap.	un	Cap.	un	Cap.
1. Sumber Barito	: 1	: 36,000	: -	: -	: 1	: 36,000
2. Barito Utara	: 3	: 10,200	: 2	: 350	: 5	: 10,570
3. Barito Selatan	: 162	: 25,020	: 15	: 22,740	: 27	: 47,760
4. K a p u a s	: 41	: 88,815	: 37	: 35,714	: 78	: 324,729
5. K a h a y a n	: 17	: 56,030	: 46	: 23,440	: 63	: 84,070
6. K a t i n g a n	: 4	: 2,040	: -	: -	: 4	: 2,040
7. Kotawaringin Timur	: 12	: 137,100	: -	: -	: 12	: 137,160
8. S a r u y a n	: 4	: 23,460	: -	: -	: 4	: 23,460
9. Kotawaringin Barat	: 18	: 60,229	: -	: -	: 18	: 60,229
T o t a l	: 212	: 499,514	: 100	: 88,444	: 212	: 527,958
10. Located out side the Central Kalimantan	-	-	-	-	-	-
Grand Total	: 312	: 499,514	: 100	: 88,444	: 212	: 527,959

Table II.3<sup>a</sup> Progress of sawn timber and plywood production in Central Kalimantan (1969/70 - 1983/84).

: Pelita :	Year :	Production ( in Cu.m )	
		Sawn timber :	Plywood :
: I :	- :	- :	- :
: II :	1974/75 :	5,907.51 :	- :
:	1975/76 :	77,261.03 :	- :
:	1976/77 :	110,476.88 :	- :
:	1977/78 :	148,151.68 :	- :
:	1978/79 :	286,205.40 :	- :
	Total :	628,002.50 :	- :
: III :	1979/80 :	391,118.62 :	- :
:	1980/81 :	423,280.95 :	47,285.23 :
:	1981/82 :	476,748.93 :	137,217.48 :
:	1982/83 :	423,430.46 :	120,079.54 :
:	1983/84 :	428,088.80 :	160,931.53 :
	Total :	2,142,667.76 :	465,513.78 :

Source : Forest service in Central Kalimantan, 1984.

### 5.2.3. Marketing of timber products

#### 5.2.3.1. Export

The progress of logs from the Central Kalimantan province since the First Five Year Plan Programs until the Second Five Year Programs showed sharply significant increase, but in the Third Five Year Plan Programs, the log export showed decrease. This was caused by the Government Policy which, on one hand, promotes the development of sawn timber industries in Indonesia and on the other hand, tends to keep gradually control of logs exporting.

Logs export from Central Kalimantan during the First Five Year Plan Programs reached 6,602,114.40 Cu.m, with devisa valued US \$ 167,558,337.93 and in the Second Five Year Plan Programs reached 11,103,450.87 Cu.m with devisa valued US \$ 502,292,564.30 ( or 190 % increase).

Table : II.39. The export of logs, Sawn Timber, Plywood and non-wood forest products from Central Kalimantan Kalimantan (up to- December 1983 ).

Felita/Years :	L o g s		Sawn Timber		P l y w o o d		Non-wood Forest Products	
	:Volume (Cu.m)	V a l u e (US \$ )	: Volume (Cu.m)	: Value (US \$ )	: Volume (Cu.m)	: V a l u e (US \$ )	: Weight (Ton)	: Value (US \$ )
I. -	: 6,602,111.40	: 167,558,337.93:	-	-	-	-	-	-
II. -	:11,103,450.87	: 502,292,564.30:	439,983.19	: 45,706,592.78:	-	-	: 35,020.10	: 8,362,300.46
III. 1979/1980 :	2,460,621.09	: 268,925,316.73:	290,392.57	: 69,100,909.81:	-	-	: 19,004.50	:11,641,572.50
1980/1981 :	1,707,598.05	: 209,401,595.26:	286,368.80	: 64,440,998.60:	24,161.37	: 4,024,905.99	: 13,668.50	:14,389,655.88
1981/1982 :	810,613.39	: 96,202,492.79:	332,174.34	: 62,533,213.59:	116,167.48	: 25,649,681.14	: 14,199.96	:15,740,940.20
1982/1983 :	538,646.91	: 64,005,069.25:	285,038.18	: 52,307,412.07:	106,076.18	: 24,869,386.55	: 10,774.76	:10,291,174.06
1983/1984 :	356,537.90	: 36,176,345.66:	214,572.52	: 43,666,913.55:	43,000.00	: 10,230,000.00	: 6,168.95	: 4,048,672.50
T o t a l :	5,874,417.34	: 674,770,819.69:	193,973.80	: 356,843,427.30:	289,405.03	: 64,793,973.59	: 59,116.67	:56,112,015.14

Source : Forest Service in Central Kalimantan, 1984.

During the Third Five Year Plan Programs logs export volume reached only 5,874,417.34 Cu.m, with devisa valued US \$ 674,770,819.69 ( or 30 % higher than in Pelita II, although the volume showed decrease). This increase was caused by market cost that period was available.

Sawn-timber export during the Pelita II periods reaches 439,982.19 Cu.m with devisa valued US \$ 45,706,592.78 and is period of Pelita III sawn-timber export volume reach 1,193,973.80 Cu.m., (or 170 % increase) with devisa valued US.\$248,382,540.30 (or 440 % much higher increase than that of the Pelita II periods).

Plywood export has just begun since the beginning of the Pelita III ( 1980/1981), where the export realization in Central Kalimantan until December 1983 reached 289,405.03 Cu.m with devisa valued US \$ 64,793,973.68

Besides logs exporting and sawn-timber Central Kalimantan also exports non-wood forest product, such as rattans, gum, jelutung pressed. Non-wood forest product export from Central Kalimantan during the Pelita I period reached 35,026.10 tons with devisa valued US \$ 8,362,300.46 and in the Pelita III period until December 1983 reached 59,116.67 tons (60 % increase) with devisa valued US \$ 56,112,015.14 (570 % increase in comparisson with the commodities export values during the Pelita II). Progress data of forest product export from Central Kalimantan is shown in table II.39.

#### 5.2.3.2. Domestic marketing

Central Kalimantan is one of the most important supplies for wood and other forest products for domestic/home consumption. Non Concession sawmills in Banjarmasin, for example, depends very much on wood supply from Central Kalimantan as raw materials. This situation has lasted since long even, far before The Pelita I. From Banjarmasin processed timber is marketed to consumption centres especially to Java. Besides that, Central Kalimantan supplies a great deal of processed timber directly sent to Java via local ports such as Sampit, Kuala Kapuas, Kumai, Pangkalan Bun, Sukamara, and Pulang Pisau.

Forest products marketed to consumption centres from Central Kalimantan usually in the forms of logs, sawn timber, and other non-wood forest products such as rattans, gums, copal, resin, ilipe-nut, shingle (sirap), etc.

In Pelita II the progress of marketing logs from Central Kalimantan to other provinces and interinsular markets, as recorded, reached 1,336,118.47 Cu.m sawn-timber. And in Pelita III until November 1983, Central Kalimantan threw 8,555,143.17 Cu.m. logs.

The progress of processed timber from this region which consists of sawn timber and plywood. In the Pelita II Central Kalimantan threw 188,019.34 Cu.m processed timber to domestic markets; and in Pelita III until 1983, this region threw 719,634.18 Cu.m. processed timber, (or almost 400 % increase).

Non-wood forest product marketing from Central Kalimantan for domestic consumption reached 33,719.18 tons during the Pelita II periods. And in Pelita III until November 1983 Central Kalimantan threw 45,977.21 tons.

The data progress report in this case is shown in table.II. 40.

Table II. 40 Market Domestic logs, sawn-timber, plywood, and other forest products from Central Kalimantan

Pelita /Year	Logs (Cu.m)	Sawn-timber (Cu.m)	Ply-wood (Cu.m)	Non-wood fo- rest products (Tons)
I.	-	-	-	-
II.	1,336,118.47	188,019.34	-	33,719.81
III. 1979/80	1,065,417.29	100,766.05	-	7,239.40
1980/81	1,723,768.15	136,912.14	23,124.00	12,569.20
1981/82	2,235,562.39	114,574.60	21,751.00	8,914.49
1982/83	1,844,240.04	138,392.29	12,369.00	9,841.55
1983/84	916,522.73	75,398.62	2,578.00	7,412.57
Total	8,555,143.17	896,044.01	59,578.00	45,977.21

Source : Forest service in Central Kalimantan, 1984.

## 6. Fisheries

### 6.1. Resource base

Fishery sub-sector in Central Kalimantan has high potential and plays an important role in Regional and National Agricultural Development sector.

Potential fishery development in Central Kalimantan consist of:

- Rivers : 323,500 Ha
- Swamp : 1,811,500 Ha.
- Lakes : 132,800 Ha
- Sea zones along the : 750 Km.  
coast

### 6.2. Existing Fisheries - based industries

Based on the potential areas as mentioned above fishery production development since 1984, the production has increased out because of the too long dry season can be seen in table II.41.

Table II.41. Fisheries Product in Central Kalimantan 1969-1982(ton wet).

: Year :	Fresh Water Fishery :	Sea Fishery :	T o t a l :
: 1969 :	50,960	: 20,331	: 71,291 :
: 1970 :	44,510	: 17,852	: 62,762 :
: 1971 :	46,000	: 25,389	: 71,389 :
: 1972 :	51,736	: 19,920	: 71,656 :
: 1973 :	37,132	: 11,457	: 48,589 :
: 1974 :	46,589	: 15,308	: 61,897 :
: 1975 :	41,629	: 10,215	: 51,844 :
: 1976 :	39,555	: 14,478	: 54,473 :
: 1977 :	43,908.8	: 15,192.5	: 59,098.3 :
: 1978 :	59,857.4	? 21,877.7	: 81,735.1 :
: 1979 :	51,574	: 28,659.7	: 80,233.7 :
: 1980 :	53,584	: 29,949	: 83,533 :
: 1981 :	47,286.6	: 29,055.6	: 76,345.2 :
: 1982 :	44,391.1	: 31,219.5	: 75,610.6 :
: Total :	659,532.9	: 290,907	: 950,456.9 :

Table : II.42. Fisheries product by Location, 1982 ( ton wet )

No. Locations	: Fresh Water Fishery.	: Sea Fishery
1. Kapuas	: 4,393.9	: 1,844.9
2. Katingan	: 2,073.0	: 622.3
3. Kotawaringin Timur	: 9,769.2	: 11,393.0
4. Seruyan	: 2,565.2	: 6,427.8
5. Kotawaringin Barat	: 2,173.5	: 10,981.5
6. Gunung Mas	: 664.7	: -
7. Barito Selatan	: 12,332.5	: -
8. Barito Timur	: 1,623.0	: -
9. Barito Utara	: 976.3	: -
10. Palangka Raya	: 7,804.7	: -
T o t a l	: 44,391.1	: 31,219.5

Source : Fishery Office, Central Kalimantan.

Table : II 43. Number of Fisherman Families in Central Kalimantan.

Years	: Fresh water fishery:	: Seas Fishery	: T o t a l
1969	: 69,300	: 6,287	: 75,587
1970	: 64,800	: 6,301	: 71,101
1971	: 64,800	: 6,981	: 70,981
1972	: 66,640	: 7,209	: 73,849
1973	: 63,951	: 7,545	: 71,496
1974	: 64,100	: 8,516	: 72,616
1975	: 62,696	: 6,780	: 69,476
1976	: 58,565	: 8,022	: 66,587
1977	: 40,084	: 8,022	: 48,106
1978	: 16,690	: 4,038	: 20,728
1979	: 15,828	: 2,930	: 18,758
1980	: 16,382	: 3,019	: 19,401
1981	: 12,429	: 3,750	: 16,179
1982	: 10,445	: 3,319	: 13,964
	625,910	82,919	808,829

Source : Fishery Office, Central Kalimantan.

Fishery products processing is done traditionally by families, such as : salting, sun drying, fish-preserves, crisply, etc., also showed some increase, as shown in table II.44.

Table : II.44 Production of fry fishmilk by year, Central Kalimantan (ton, dry ).

! Year !	Fresh water Fishery :	Sea Fishery	! Total !
! 1969 !	1,720.2	! 1,993.0	! 3,713.2 !
! 1970 !	2,061.1	! 2,538.9	! 4,600.0 !
! 1971 !	1,705.8	! 2,785.2	! 4,491.0 !
! 1972 !	3,062.9	! 2,033.1	! 5,096.0 !
! 1973 !	2,495.7	! 1,235.6	! 3,731.3 !
! 1974 !	6,641.3	! 1,455.0	! 8,096.3 !
! 1975 !	3,547.3	! 1,890.2	! 5,437.5 !
! 1976 !	3,937.9	! 2,270.0	! 6,207.9 !
! 1977 !	4,324.8	! 3,460.3	! 7,785.1 !
! 1978 !	13,971.3	! 6,967.4	! 20,938.7 !
! 1979 !	12,775.4	! 9,692.5	! 22,467.9 !
! 1980 !	14,130.1	! 7,780.5	! 21,910.6 !
! 1981 !	11,594.9	! 12,302.2	! 23,897.1 !
! 1982 !	11,410.4	! 9,071.2	! 20,481.6 !

Source : Fishery Office Central Kalimantan.

Fishery investment national and Regional budget from 1969- 1983 reached Rp. 2,303,553,207.00 and the data in details can be seen in table II. 45. Fresh and preserve

Some increase, based on fish detail data after being sold outside Central Kalimantan, fresh and preserve fish consumption per capita as recorded in 1982 reached 41 Kg. This amount overcome the consumption target per capita 22.5 Kg.



Table II.45 : Total fund of fisheries development budget in Central Kalimantan, 1969- 1983 (Rp.)

! Year !	National Budget !	Regional Budget !	T o t a l !
! 1969 !	1,050,000	! 26,850,000	! 27,900,000 !
! 1970 !	-	! 18,400,000	! 18,400,000 !
! 1971 !	-	! 14,400,000	! 14,400,000 !
! 1972 !	-	! 16,500,000	! 16,500,000 !
! 1973 !	-	! 25,000,000	! 25,000,000 !
! 1974 !	-	! 34,762,000	! 34,762,000 !
! 1975 !	228,000,000	! 19,876,907	! 247,876,907 !
! 1976 !	60,000,000	! 21,371,000	! 81,371,000 !
! 1977 !	125,000,000	! 68,000,000	! 193,300,000 !
! 1978 !	88,000,000	! 73,300,000	! 161,300,000 !
! 1979 !	59,000,000	! 115,000,000	! 174,000,000 !
! 1980 !	80,000,000	! 214,500,000	! 294,500,000 !
! 1981 !	140,500,000	! 252,000,000	! 392,000,000 !
! 1982 !	154,250,000	! 185,000,000	! 339,250,000 !
! 1983 !	160,793,000	! 135,000,000	! 295,793,000 !
! Total !	1,096,593,000	! 1,219,959,907	! 2,316,552,907 !

Source : Fishery Office Central Kalimantan.

The problems and constrain faced in fishery development are :

- 1) Fish and shrimp farming still lacks, because fisher families payless attention to improve fish and shrimp farm. They prefer catching fish in rivers and sea.
- 2) Irrigation system for fish-shrimp pond is not available and the present pond depends on rain fall.
- 3) Fishery public services does not have tyuni-fish centre so that they can not fulfill tyuni-fish demand from society or ponds owners.
- 4) The lacks of skilled official in fish farming.
- 5) No research especially done for fish and shrimp farming in saltfish water damp.

Fresh fish and processed fish product in 1983 based on primary data of average price in markets of district and municipality in Central Kalimantan showed margin (including profit and transportation) high enough as; margin between producer price and grocer reached about 13 - 33 %, grocer price and retailer price reached 33 - 100 %; that the detail can be seen in Table II.46.

Based on the marketing reality as mentioned above it is clearly that there was a gap between producer price and price cost unit, so that this situation must be properly tackled to keep the price cost unit available.

Based on the Gross Value Added (VAB) and total labor force, fishery sub-sector productivity in Central Kalimantan as recorded in 1975 - 1982 (can be seen in Table II.47), its showed some increase for fishermen as an addition value to their income. It is expected that in the future this condition value on plus value, can be increased as the result of the investment by Government and private sectors beside that of the fishermen themselves. This increased was also caused by the improvement of the fishery supporting facilities.

Table : II. 46. Marketing of Fisheries Product, Central Kalimantan, 1983,-

No. Specification	Price ( Rp/Kg )			Margin ( % )		
	Producer	Grocer	Price Cost Grocer	Producer-Grocer	Grocer-Retailer price	Producer-retail price
1. Gabus ( fresh )	800	1,000	1,200	25	20	50
2. Lais (fresh )	500	600	750	20	25	50
3. Sepat ( fresh)	700	800	1,000	14	25	43
4. Kakap ( fresh )	500	600	750	20	25	50
5. Shrimp( fresh )	1,500	2,000	3,000	33	50	100
6. Gabus (dry) )	1,000	1,200	1,550	20	29	55
7. Lais ( dry)	1,500	1,700	2,000	13	18	33
8. Kakap (dry)	800	1,000	1,250	25	25	56
9. P i n d a n g	800	1,000	1,250	25	25	56
10. Kerupuk Udang	1,500	1,700	2,000	13	18	33
11. W a d i	1,500	1,700	2,000	13	18	33
12. T e r a s i	1,000	1,200	1,500	20	25	50

Source : Producer price and margin of fisheries product in Central Kalimantan, 1983.

Table : II. 47. Man power of fishery Sector in Central Kalimantan, 1975-1982

Details	Y e a r							
	1975	1976	1977	1978	1979	1980	1981	1982
1. Gross Value Added ( Rp.)	7,302,254	9,817,001	11,377,439	17,410,402	24,660,444	36,312,017	34,468,360	35,129,651
2. Total Man power	69,476	66,587	48,106	20,723	18,758	19,401	16,179	13,964
3. Productivity	106	147	236	839	1,315	1,872	2,130	2,516

Source : Fishery Office, Central Kalimantan.

## 7. Mineral, Mining and Chemical Derivates

### 7.1. Resources Base

Of the total land surface area of 153,000 Km<sup>2</sup> are 99.2% consist of forest. Besides the vast forest land, Central Kalimantan has also potential a mining and mineral deposit of coal, limestone, iron, sand quartz, crystal quartz, caolin, gold, diamond and oil. Results of mining and mineral survey and study that had been carried by Department Mining and Energy, and also private companies has indicated its deposit potency (See table II.48 ) and distribution of mining and mineral see figure II.2. Tabel II.48 shows no data available on deposit of gold, diamond and crystal quartz but it's known that gold and diamond have been mined by people using traditional and simple equipment. It's shown in table II.49 that the region is rich in mining and mineral resources.

#### a. Coal.

Potential of coal resource is found in Barito Utara district including sub districts nearly such as Teweh Tengah, Teweh Timur, and Lahai and Permata Intan, and Gunung Timang located along the river bank. The coal resources is between 2 - 5 layers with thickness between 0.1 - 11.5 metre.

The other coal resources found in Kapuas district is being surveyed and explored.

#### b. Iron ore

Potential of iron resource is found in Kotawaringin Barat, Kotawaringin Timur and Barito Selatan districts. The iron resource in Kotawaringin Barat is estimated to reach 1,452,200 tons.

#### c. Gold

Potential of gold resource is found in Kapuas districts dispersed in various locations usually in up-land areas. All the resource is being explored by PT. DONISTANI. But the total potential of gold resources in both districts is classified to primary type of gold.

#### d. Diamond

Potential diamond resource found in Kapuas and Barito Utara districts, which have been mined by people living nearby the lo-

cations.

e. Crystal quartz.

Potential of crystal quartz is found in Kotawaringin Barat, classified to alluvial layer with total resource reading 18,755,640 tons and it is being explored by PT. Cakapa Bintang Jakarta.

f. Sand quartz.

Potential of sand quartz resource is abundantly found in and around Palangka Raya, in Pahandut and Bukit Batu sub-districts. This potential belongs to alluvial type.

While the potential of sand quartz in Kotawaringin Barat is being explored by Mining and Energy Office of Central Kalimantan Province and estimated to reach 21,060,000 tons, and in Kapuas district the resource reaches 7,825,000 tons; and in Barito Utara district, the potential is being explored by PT. Bumi Raya, Banjarmasin.

g. Caolin

Caolin mining has been done in municipality of Palangka Raya in some separated areas as in Pahandut, and Bukit Batu sub-districts and Kereng Bangkirai village. The potential is estimated to reach 13,040,000 tons and in Kotawaringin Barat, it reaches 5,750,000 tons.

h. Limestone

Potential of limestone resource is found in Barito Utara district with the layer type of Paleogen, and estimated to reach 121,966,000 tons spread in several villages in Teweh Tengah sub district, and in Teweh Timur sub district, the potential is totally estimated to reach 261,000,000 tons spread in several villages nearby. But it is being explored by Mining and Energy Office of Central Kalimantan Province.

7.2. Existing Mining and Chemical Derivates.

a. Production

Central Kalimantan has potential of mining material resource and minerals are found in almost all districts, located in up land but along the rivers banks.

Efforts of mining the resource material have not been taken yet;

Table : 11.48. Distribution of Potency Mineral Deposit in Central

Mineral	District	Sub District
1. C o a l	Barito Utara	<ol style="list-style-type: none"> <li>1. Teweh Tengah</li> <li>2. Teweh Timur               <ol style="list-style-type: none"> <li>a. Village Sabuh Penauk River Tahutang River Balausieng River</li> <li>b. Panain Village Banangin River</li> <li>c. Village Liang Buah</li> </ol> </li> <li>3. L a h e i               <ol style="list-style-type: none"> <li>a. Village Muara Babah</li> <li>b. Village Tanjung Sanggar</li> <li>c. Village Rakaden</li> </ol> </li> <li>4. Permata Intan Behaun River</li> <li>5. Gunung Timang Montalat River</li> </ol>

## Kalimantan

Type of Deposit	Potency	Note
Neogin	X	Thickness of deposit 1.2 - 2.0 m
Neogin	X	2 layer, Deposits thick 1 m.
Neogin	X	5 layer, deposits thickness 0.1 - 1.0 m
Neogin	X	3 layer, deposits thick 0.15 - 0.8 m
Neogin	X	2 layer, Deposit thick 0.5 - 1.0 m
Neogin	X	2 layer, Deposits thick 0.5 - 11.5 m
Neogin	X	Thickness of Deposit 3 - 4 m
Neogin	X	3 layer, Deposit thickness 1 - 2 m
Neogin	X	Thickness deposit 1 - 70 m
Neogin	X	2 layer, Deposit thickness 1.60 - 1.75 m
Neogin	X	Thickness of Deposit 1 - 1.50 m



Mineral	District	Sub District	Type Of Deposit	Potency	Note	
2. Iron	Kapuas Kotawaringin Timur	1. Kurun	Neogin	X	Thickness of Deposit 1 m	
		1. Cempaga	Neogin	X	thick of Deposit 1.50 m	
		2. Samuda Village Tanjung Kalap	Neogin	X	Thick of Deposit 0.50 m	
	Kotawaringin Barat	3. Katingan Tengah	Neogin	X	Thick of Deposit 1 - 1.50 m	
		1. Jelai Pinang River	Neogin	X	Thick of Deposit 0.50 m	
	Kotawaringin Barat	Lampandau	a. Bukit Karin	Levalit magnetit	1,452,000	-
			b. Bukit Segulang	limatit/ magnetit	200	-
	Kotawaringin Timur	Barito Selatan	1. Mentaya Hulu Sepanjang River	Arsidic	X	Exploration by Dip Mining Energy
			2. Samuda Natai Nangka	Limaitic	X	-
			3. Sanaman Mantikei Tumbang Manggu	Limaitic	X	-
3. Gold	Kapuas	1. Tewah	1. Gunung Mas	Limaitic	X	Exploration by PT Darulshan
			2. Pegangoi River, Manggu River, Jelangin River, Payaharen River, Pasangon River	Placer	X	Exploration by Departement Mineral and Energy South Kalimantan

Mineral	District	Sub District	Type of Deposit	Potency	Note
	Kotawaringin Barat	Ismandou Bukit Kuryut, Petonihan, Sambi River	Placen	X	Exploration by von Lamlechoven
4. Diamond	Barito Utara	1. Lunung	Alluvial	X	Mined by people
		2. Permata Intan	Alluvial	X	Mined by people
	Kapuas	Kapuas Hulu	Alluvial	X	Mined by people
5. Cassiterite Quartz	Kotawaringin Barat	Pangkut	Alluvial	18,755,640 ton	Exploration by PT Cahaya Bintang Jakarta
6. Sand Quartz	Palangka Raya	Pahandut	Alluvial	X	Exploration by dif mining
		Bukit Batu	Alluvial	X	Energy
	Kotawaringin Barat	1. Jelai Takah River, Pinang River, Danau River	Alluvial	21,060,000 ton	Energy
		2. Kumai Pulau River Village Sakuai, Village Kraja, Village Kubu	Alluvial	X	Energy
	Kapuas	1. Petak Village Petak Puti, Village Aruk	Sediment/ Alluvial	7,825,000 ton	Energy
		2. Martangai Harui River, Mangkutup River Tabare River	Alluvial	X	Exploration by PT Bumi Raya
		3. Kahayan Tengah	Alluvial	X	Banjarmasin
	Barito Utara	Toweh Tengah	Alluvial	X	Banjarmasin
	Barito Selatan	Dusun Tengah	Alluvial	X	Banjarmasin

Mineral	District	Sub District
	Barito Utara	<ul style="list-style-type: none"> <li>3. Bengaris River, Pejon River Luhing River</li> <li>2. Kahayan Hulu               <ul style="list-style-type: none"> <li>1. Kahayan River, Mohuroi River, Hamputung River</li> <li>2. Piton River, hapan River</li> </ul> </li> <li>3. Kapuas Hulu               <ul style="list-style-type: none"> <li>Nandam River, Dukit Masupa Bulit Kahampi</li> </ul> </li> <li>1. Sumber Barito               <ul style="list-style-type: none"> <li>1. Ucang River</li> <li>2. Telingan River, Kunyi - River, Sebnut River , Homi River</li> </ul> </li> <li>2. Manung               <ul style="list-style-type: none"> <li>1. Gunung Murio, Gunung - Bonuh</li> <li>2. Menowing River, Kulu River, Mihing River</li> </ul> </li> </ul>
	Kotawaringin Tinar	<ul style="list-style-type: none"> <li>1. Montaya Hulu               <ul style="list-style-type: none"> <li>Monte River, Konyut River Mangkoop River Montaya, Village Jamangan</li> </ul> </li> <li>2. Katingan Hulu</li> <li>3. Parenggean</li> <li>4. Seruyan Hulu</li> <li>5. Seruyan Tengah</li> <li>6. Katingan Tengah</li> <li>7. Monikut</li> </ul>

Type of Deposit	Potency	Note
Primeir	X	Exploration by Departement Mineral and Energy South Kalimantan
Placen	X	Exploration by Departement Mineral and Energy South Kalimantan
Primeir	X	Exploration by Departement Mineral and Energy South Kalimantan
Primeir	X	Exploration by Departement Mineral and Energy South Kalimantan
Primeir	X	Exploration by Departement Mineral and Energy South Kalimantan
Placen	X	Exploration by Departement Mineral
Primeir	X	Exploration by Departement mineral and Energy South Kalimantan
Placen	X	Exploration by Departement mineral and Energy South Kalimantan
Placen	X	Exploration by von Hamicheoven
Placen	X	Exploration by von Hamicheoven
Placen	X	Exploration by von Hamicheoven
Placen	X	Exploration by von Hamicheoven
Placen	X	Exploration by von Hamicheoven
Placen	X	Exploration by von Hamicheoven

Mineral	District	Sub District
7. Caolin	Palangka Raya Municipality	1. Pahandut Kereng Bangkirai Village 2. Bukit Batu
	Kotawaringin Barat	1. Jelai Tabuk River, Pinang River, Janang River. 2. Mentaya Hulu Jarengau cape Paherangan Village
	Kotawaringin Barat	Timpah Petak Puti Village
8. Limestone	Barito Utara	1. Teweh Tengah. a. Wonorejo Village b. Pendirih Village c. Sepayang River d. Muara Jelai

Type of Deposit	Potency	Note
Sediment/ Alluvial	13,000,000 ton	Exploration by Departement Mining
Alluvial	40,000 ton	Energy South Kalimantan
Sediment/ Alluvial	5,750,000 Ton	Energy South Kalimantan
Residual	30,856 Ton	Energy South Kalimantan.
Sediment	3,500,000 Ton	Energy South Kalimantan.
Sediment	640,000 Ton	Energy South Kalimantan
Paleogen	52,000,000 Ton	Possible one
Paleogen	11,466,000 Ton	Possible one
Paleogen	19,500,000 Ton	Possible one
Paleogen	39,000,000 Ton	Possible one

Mineral	District	Sub District
		2. Teweh Timur a. Angah Mount b. Teweh River 3. Gulung Timang Tangka 4. Murung a. Bukit Sarang b. Bukit Gali

Source : Mining and Energy, Office Central Kalimantan

Type of Deposit	Potency	Note
Paleogen	1,000,000,000 Ton	Possible one
Paleogen	7,800,000 Ton	Possible one
Paleogen	260,000,000 Ton	Possible one
Paleogen	500,000 Ton	Exploration by Dep Mining and energy South Kalimantan.
Paleogen	500,000 Ton	Exploration by Dep Mining and Energy South Kalimantan

- Exploration : X = No. data available.



Scala. 1 : 3.000.000

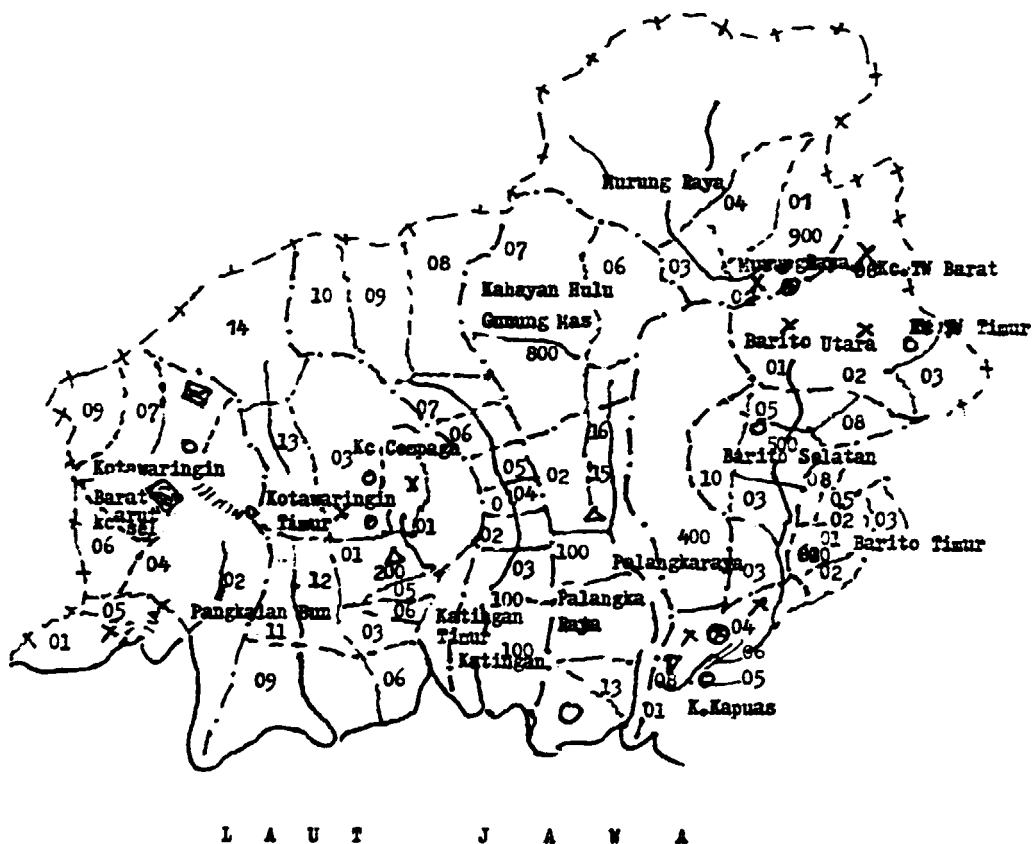


Fig. II. 2. Laying of Distribution Location Mineral and Mining in Central Kalimantan.

Legend :

- |              |            |
|--------------|------------|
| : Coal.      | : Col.     |
| : Diamond.   | : Iron.    |
| : Limestone. | : Caolin.  |
| : Quartz.    | : Cristal. |

the present mining proxies are done traditionally which are directly sold on the spot, especially gold and diamond.

The other minerals such as coal, iron ore, limestone, sand quartz, and caolin are waiting to be mined,

Coal resource in Barito Utra district had been explored during the Dutch colonization in 1902 -1941 followed with mining efforts in 1910-1921 with capacity of 7,000 tons per year. But now it has been left uncared.

According the survey is done by Mining and Energy Department Office of the region, the production of gold reached 20,023 grams valued Rp. 106,534,000.00 and 57 karat of diamond valued Rp.2,565,000; 6,190 Cu.m of coal valued Rp. 83,353,000 and 13,493 Cu.m of sand quartz valued Rp. 45,476,000 and 100 Cu.m of clay valued Rp. 150,000 or total production value done by people reached Rp. 238,078,000.00 1980, as shown in table II.49.

**b. Mining of materials.**

Mining materials such as gold, diamond, stones and sand are usually done by people living around the locations. The production of these minerals are directly sold to whoever pays in cash, thus, on the spot. And then Gold traders sell them to Banjarmasin or Jakarta. There are 39 companies mining stones, 14 units mining sand, 83 units mining gold, 3 units diamond, 1 unit mining clay, as shown in table II.50

Table II 50 shows how many companies running business of mining and minerals. out of 148 companies running such business, only 7 units have licence from local government and 133 units running this business without mining proxies. Government, in this case, Department of Mining and Energy has published a letter of statement number ref Po 49/Kpts/M/Pertamb/1980 on

Table : II.49. Number of Mining Licency Central Kalimantan, 1980.

Nu.	District	Minerals	Unit	Production	Value (Rp)
1.	Kotawaringin Timur	: Rook	: Cu.m	: 11,540	: 64,476,000
		: Sand	: Cu.m	: 8,963	: 34,835,000
2.	Katingan	: Rook	: Cu.m	: 916	: 2,247,000
		: Glod	: Gram	: 9,721	: 50,489,000
		: Sand	: Cu.m	: 2,099	: 5,249,000
3.	Kapuas	: Gold	: Gram	: 1,732	: 12,424,000
		: Sand	: Cu.m	: 2,166	: 4,332,000
4.	Barito Selatan	: Sand	: Cu.m	: 265	: 1,260,000
		: Gley	: Cu.m	: 100	: 150,000
5.	Barito Timur	: Rook	: Cu.m	: 3,419	: 13,795,000
6.	Gunung Mas	: Rook	: Cu.m	: 315	: 2,835,000
		: Gold	: Gram	: 8,570	: 43,921,000
		: Diamont	: Karat	: 57	: 2,565,000

Source : Mining and Office Central Kalimantan, 1980

Table: TT . 50. The Production of Mining in Central Kalimantan , 1980.

D i s t r i c t	: Minerals	: Regional Mining Licence	: Non Regional Mining Licence	: T o t a l ( unit )
1. Palangka Raya	: Rock	: 7	: 2	: 9
2. Kotawaringin Timur	: Rock	: -	: 21	: 21
	: Sand	: -	: 7	: 7
3. K a t i n g a n	: Rock	: -	: 3	: 3
	: Sand	: -	: 3	: 3
	: Gold	: -	: 70	: 70
4. K a p u a s	: Sand	: -	: 3	: 3
	: Gold	: -	: 9	: 9
5. Barito Selatan	: Sand	: -	: 1	: 1
	: Clay	: -	: 1	: 1
6. Barito Timur	: Rock	: -	: 5	: 5
7. Gunung Mas	: Rock	: -	: 1	: 1
	: Gold	: -	: 4	: 4
	: Diamond	: -	: 3	: 3
T o t a l	: -	: 7	: 133	: 140

Source : Mining and Energy Office, Central Kalimantan.

July 21, 1980 on licence of mining proxy. for gold mining in Barito Utara district, and a letter of statement numbered Po. 1421/Kpts/M/Pertamb/1980 on mining coal in Barito Utara district. Regional Government had also published a letter of licence for regional level in 1983. There are 35 companies running mining business with areas of 24,070 Ha, as shown in table II.51

c. Mining proxy

The policy of Mining and Energy Department concerning the efforts of mining and mineral exploitation, is to give licence to mining proxies to provide general survey and mineral exploitation in Central Kalimantan limited to concession areas. As the follow up of the policy, there have been 91 companies doing the exploitation on concession areas of 643,528 Ha, as shown in table II.52

Table II.52 shows that total mining proxy as recorded in 1983, owned 91 units with total concession areas of 643,528 Ha, 13 of which were active with 438,392 Ha of concession areas, two of which were owned by "PT. Aneka Tambang", Jakarta with 388,792 Ha concession areas.

Gold diamond and mineral supplant exploitation was owned by 78 mining proxy with 204,736 Ha of concession areas.

Seen from the real activities, only 15 mining proxies were active with total areas of 422,884 Ha. While 49 mining proxies were incidentally active with the total areas of 136,644 Ha; 10 new mining proxies with areas of 35,000 Ha.

A large post mining of 91 proxies will total areas of 643,528 Ha, were on survey and exploitation stages; only two mining proxies under a three year licence were actively exploring gold in the concession areas of 732 Ha.

d. Marketing.

Gold and diamond are sold by local people to collection who give them capital for living costs, then the

Table : II.51 Number of Regional Mining Licence Holder and Total area licenci, 1983.

Nu.	D i s t r i c t	: Sub District	Minerals	Area (Ha)	:	Number of Licence Holder Regional Mining (SIPD)/unit.	Type of Licence
1.	Kotawaringin Timur	: -	: Coal'in and sand Quarz	9,870	:	5	: Exploration 3 year
2.	K a p u a s	: -	: sda	2,000	:	1	: sda
3.	Kotawaringin Barat	: - 1)	: sda	10,030	:	11	: sda
4.	Kotawaringin Timur	: - 2)	: sda	10	:	2	: SIPD 10 years
5.	K a p u a s	: Mentaya	: Coal'in	1,950	:	1	: Exploration 3 year
6.	Barito Utara	: Teweh Tengah	: S a n d	25	:	1	: SIPD 10 year
7.	Barito Selatan	: Dusn Selatan	: sda	45	:	3	: sda
8.	Kotawaringin Timur	: Mentaya Hulu	: sda	35	:	6	: sda
				5	:	1	: sda
9.	K a p u a s	: Mantanga'	: Sand Quartz	100	:	4	: sda
T o t a l				24,070	:	35	: -

Source : Mining and energy Central Kalimantan south, 1983.

Table : II. 52. Number of Mining Praxy ( KP ) and its area in Central Kalimntan, 1983.

Nu.	District	Name of KP	Number of KP	Type of Licence	Area	Note
1.	PARTO UTARA	: 1. PT. Aneka Tambang	: 2	: General Survey	: 333,092	: Active
		: 2. CV. Krida Utama Banjar Masin	: 1	: Gold and Supplement Mineral Exploration	: 2,000	: Incidentally
		: 3. PT. Cipta Kaya Indah Jakarta	: 1	: Coal Exploration	: 2,000	: Active
		: 4. Hartman Assan Banjar Masin	: 2	: Diamond Exploration	: 4,000	: Active
		: 5. PT. Resta Kumala Jaya Kapuas	: 1	: Coal Exploration	: 2,000	: Non Active
		: 6. CV. Tri Artha Jaya Banjar Masin	: 1	: Coal Exploration	: 2,000	: Incidentally
		: 7. PT. Buniar Jakarta	: 5	: Gold Exploration	: 9,980	: Incidentally
		: 8. Sujohutomo Jakarta	: 5	: Gold Exploration	: 9,910	: Incidentally
		: 9. Sumarman Jakarta	: 5	: Gold Exploration	: 9,890	: Incidentally
		: 10. CV. Long Intan Sakti Jakarta	: 2	: Gold Exploration	: 4,000	: Incidentally
		: 11. PT. Yunawati Perdana Jakarta	: 2	: Gold Exploration	: 4,000	: Incidentally
		: 12. CV. Jaya Sumber Mas Banjarmasin	: 5	: Gold Exploration	: 10,000	: Incidentally
		: 13. CV. Borneo Sakti Banjarmasin	: 5	: Gold Exploration	: 10,000	: Incidentally
		: 14. PT. Gunung Lahung Jakarta	: 5	: Gold, Diamond Exploration	: 10,000	: Non Active

No. District	: Name of KP	: Number of KP:
	: 15. Pt. Sungai Duna Jakarta	5 :
2. Kotawaringin Timur	: 1. CV. Barito Sakti Banjar Masin	5 :
	2. CV. Kahayan Sakti Banjar Masin	5 :
	3. CV. Long Trom Sakti Samarinda	3 :
	4. Endong Surapati S. Jakarta	5 :
	5. Zaidah Zura'ida Banjar Masin	5 :
	6. Pt. Indo Land Pulau-Mas Jakarta	5 :
3. Kapuas	: 1. Yohanes Amol Pisy	4 :
	2. CV. Pujon, Palangka-Raya	5 :
	3. Hartman Assan	1 :
	4. Pt. Aneka Tambang. Jakarta	1 :
	5. Pt. Palmakin Mining Jakarta	1 :



Type of Licence	Area	Note
Gold, Diamond Exploration	10,000	Non Active
General Survey	25,000	Incidentally
General Survey	25,000	Incidentally
Gold Exploration	15,000	Incidentally
Gold Exploration	25,000	Non Active
Gold Exploration	25,000	New KP
Gold Exploration	10,000	New KP
Gold Exploration	8,000	Incidentally
Gold Exploration	10,000	Active
Coal Exploration	2,000	Non Active
Gold Exploration	11,360	Active
Gold Exploration	1,864	Incidentally

Nu.	District	Name of KP	Number of KP	Type of Licence	Area	Note
		6. PT. Tambang Tawah Per- kasa. Jakarta	2	Gold Exploration	732	Active
4.	Kapuas and Barito Utara	1. PT. Aneka Tambang Ja- karta	1	General Survey	55,700	Active
		2. PT. Aneka Tambang Ja- karta	1	Gold Exploration	6,000	Active
T o t a l		-	-	-	643,528	-

Source : Mining and Energy Office, Central Kalimantan.

collectors sell it to Banjarmasin, Surabaya and Jakarta. But no data available concerning production and price of the gold and diamond so far. On the other hand, stone and sand are used locally for construction of building, roads etc.

In the district of Kotawaringin Barat, for construction purpose stone even imported from Semarang (Central Java). While the exploitation of minerals and mining such as coal, iron ore, limestone, caolin, sand quartz and crystal quartz has been done at all.

#### e. Chemical Industry.

Glue industry in Kotawaringin Barat is the only chemical industry in Central Kalimantan with an investment US \$ 17,350,000 in 1982/1983, average production capacity of 15,000 ton/year and providing employment to 943 persons (93 foreign personnel and 850 Indonesian).

Seen from the potentials of raw materials resources such as coal, iron ore, caolin, limestone, sand quartz and crystal quartz are plenty in stock. These potentials must be properly used for chemical industries, especially Portland cement industry and fertilizer using raw material of sand quartz in Palangka Raya municipality.

### 8. Metal Working Industries.

#### 8.1. Resource Base

Central Kalimantan plenty of iron ore resource of which potential has been known. In Kotawaringin Barat district, for example the total resource reaches 1,452,200 tons. In District of Kotawaringin Timur and Barito Selatan, there are also iron ore resources but the potentials have been unknown yet, as given in table II.48

#### 8.2. Existing metal working industries.

##### 1). Small industries

Iron processing industries here are usually of small types, such as home industry owned and managed by blacksmiths, as shown in table II.53

Table : II.53. Number of Companies by group of industries in Central Kalimantan, 1980.

No.	District	Various Industries	Small scale household industry		Total		
			Production	Employment	Production	Employment	
1.	Kotawaringin Barat	23	4,157	81	317	104	4,474
2.	Kotawaringin Timur	72	3,930	279	862	351	4,792
3.	Kapuas	53	2,519	122	341	175	2,860
4.	Barito Selatan.	7	40	124	225	131	265
5.	Barito Utara	5	77	52	114	57	191
6.	Palangka Raya	12	57	219	601	231	658
Total		172	10,780	877	2,460	1,049	13,240

Source : Regional Office of Mining and Energy Department Central Kalimantan.

From tabel II.53 it's clearly seen that there are 1049 companies with 13,240 worker, which consists of 172 various industries employing 10,780 workers and 877 small scale industries with 2,460 workers.

From 877 small scale industries there are 73 units of blacksmith, found in Kapuas Districts, 23 units of word ship body building, found in Kotawaringin Timur employing 335 workers, and 4 units employing 24 persons, found in Kotawaringin Barat.

Figures of products of the local iron workshops and workshop body building are shown in table II. 54

Table : II.54. Production Value Industry in Central Kalimantan, 1981.

Group of Industry	Capacity	Small-scale	Total
Group of Industry	Miscellaneous	Industry	(Rp.)
	(Rp.)	(Rp.)	
1. Goods and equipment metal industry	-	82,145,250	82,145,250
2. Non metallic industry	-	427,706,000	427,706,000
3. Miscellaneous and other small scale industry	-	1,416,940,800	1,416,910,800
<b>T o t a l</b>		<b>1,926,792,050</b>	<b>1,926,792,050</b>

Source : Mining and Energy Office Central Kalimantan, 1983.

## 2. Heavy Industries.

A dock-yard in Kotawaringin Barat is the only existing steel industry in Central Kalimantan, owned by PT. Korindo. Whereas iron smith is a common small-scale industry of metal industry in Central Kalimantan. Iron smith generally making household wares and agricultural tools.

### 2) Existing Metal Working Industries.

Number of iron smith are 73, all located in the district of Kapuas. The small-scale industry produce household wares and agricultural tools. Datas on average production are not available, as it's products sold directly to market or ordered by purchaser. In Kotawaringin Barat capital amounting Rp. 1,850 million had been invested in steel dock-yard with average production 12 ships year and providing employment to 296 persons (6 foreign and 290 Indonesians). The ships of production are market to Forest concessioners

## 9. Basic Needs Requirements

### 9.1. Food (Specify)

In order to reach the National nutritional standards, the Local Government in Book I Repelita III planned that the basic needs of the people in Central Kalimantan, are as follows :

- a. rice 120.65 Kg per capita per year
- b. meat 8.1 Kg per capita per year
- c. fish 22.5 Kg per capita per year
- d. eggs 2.2 Kg per capita per year
- e. milk 2.2 Kg per capita per year
- f. nuts 5.61 Kg per capita per year
- g. vegetables 75.45 Kg per capita per year
- h. fruits 84.34 Kg per capita per year.

According to the nutritional standard the table II.55 was set up. The peoples need for cattle's protein is very low, beyond the normal nutritional standard (meat, egg and milk).

But people's need for protein is fulfilled by fish, because the fish eries product in Central Kalimantan is always surplus, as shown in table IV.55

### 9.2. Existing housing and construction materials.

#### 9.2.1. Housing

Based on the total number of houses as recorded ini 1980 and the estimated on of the need for housing for the next decade can estimated how many houses will be built from now until 1990. The total number of the existing houses in Central Kalimantan in 1980 , 161,216 units. By Transmigration Department there are :

- 4,054 units built in 1981
- 7,262 units built in 1982
- 5,523 units built in 1983.

Added to these, 216 units were built by State Housing Company (Perumnas) and 20 units built by State Saving Bank (B.T.N) ( See housing data in table II.56 ).

Table II.55 : Food Need According to Nutritional Standard (kgs).

! Kinds	! Y e a r s		! Year 1990		! Total
	! 1980	! 1985	! Population	! Transmigran	
! Rice 1)	! 115,121,330	! 139,202,590	! 168,580,740	! 76,467,366	! 245,048,
! Meat 2)	! 7,728,826	! 9,345,553	! 11,317,895	! 5,133,740	! 16,451,
! Fish 3)	! 21,468,960	! 25,959,870	! 31,438,597	! 14,260,387	! 45,689,
! Eggs 2)	! 2,099,187	! 2,538,298	! 3,073,996	! 1,394,349	! 4,468,
! Milk 2)	! 2,099,187	! 2,538,298	! 3,073,996	! 1,394,349	! 4,468,
! Nuts 1)	! 5,532,927	! 6,472,661	! 7,838,690	! 3,555,590	! 11,394,
! Vegetables <sup>1)</sup>	! 71,992,579	! 87,052,097	! 105,424,090	! 47,819,832	! 152,243,
! Fruits	! 80,475,203	! 97,309,130	! 117,845,830	! 53,454,270	! 171,300,

Source : 1. Census in 1980,

Rice = 120.65 kg per capita per year

Nuts = 5.61 Kg per capita per year

Vegetables: 75.45 kg per capita per year

Fruits: 84.34 kg per capita per year

2. Book I Repelita III Central Kalimantan Provinces,

Meat = 8.1 kg per capita per year

Eggs = 2.2 kg per capita per year

Milk = 2.2. kg per capita per year

3. Fisheries Office of Central Kalimantan Province,

Fish = 22.5 kg per capita

4. Repelita IV Central Kalimantan Province,

during Pelita IV 126,759 heads of households (633,795 persons) will be transmigrated to Central Kalimantan.

Table : II. 56. Existing housing in Central Kalimantan in 1980, by Transmigration, Perumnas and BTN during 1981/1982 till 1982 in Central Kalimantan.

Years	Existing housing					Total
	Existing house	By Transmigration	Perumnas	BTN		
1980	161,218	-	-	-	-	161,218
1981	-	4,054	-	-	-	4,054
1982	-	7,262	216	20	-	7,498
1983	-	5,523	-	-	-	5,523
<b>Total</b>	<b>161,218</b>	<b>16,839</b>	<b>216</b>	<b>20</b>	<b>-</b>	<b>178,293</b>

Source : 1. Population Cencus Central Kalimantan 1980.  
 2. Transmigration Office Central Kalimantan.  
 3. Presidents Responsibility/MPR's Landataris 1983.

Especially, in subdistricts of the capitals of the district in Central Kalimantan there are 280,348 population, 54,389 families and 49,926 units of houses (see in table II. 57).

#### 9.2.2. Construction materials.

Central Kalimantan supplies almost all the needs for housing materials, although the data of how its potentials really are, for time being is still unknown yet. The materials needed cover :

- 1) wood of any species
- 2) sirap/shingle
- 3) rocks
- 4) grand stone
- 5) sand
- 6) bricks
- 7) tiles

Data about processes timber in Central Kalimantan from 1977 up to 1982/1983 as much as : meranti 422,355,7222 Cu.m, ramin 1,693,120,997 Cu.m., agathis 6,001,5228 Cu.m., keruing 116,347,7263 Cu.m., other comercial 195,676,6131 Cu.m, and plywood 326,096,96 Cu.m (see table II. 58 )



Table : II.57. Population, total families existing housing in 1980 and the houses which to be built by Government in 1981/1982 and by BIN in the sub districts of the capitals of the capitals of the districts in the Central Kalimantan Propinche.

Districts	Sub-districts	1980 *)			1981/1982 **)		Total
		Population	Family	Existing	Government	B T N	
Kotawaringin Barat	Arut Selatan	28,863	5,888	5,357	-	-	5,357
Kotawaringin Timur	1. Baamang	22,760	4,689	4,583	-	-	4,583
	2. Ketapang	36,386	7,225	6,564	-	-	6,564
Katingan	Katingan Hilir	6,065	1,079	880	-	-	880
Kapuas	Selat	48,499	9,069	8,428	-	-	8,428
Gunung Mas	Kuala Kurun	7,779	1,466	1,087	-	-	1,087
Barito Selatan	Dusun Selatan	23,191	4,025	4,252	-	-	4,252
Barito Utara	Teweh Tengah	25,300	5,461	4,077	-	-	4,077
Barito Timur	Dusun Timur	12,950	2,597	2,032	-	-	2,443
Murung Raya	Murung	12,950	2,597	2,032	-	-	2,032
Palangka Raya	Pahadut	55,572	10,434	9,987	216	20	10,223
<b>Total</b>		<b>280,348</b>	<b>54,389</b>	<b>149,690</b>	<b>216</b>	<b>20</b>	<b>149,926</b>

Source : \*) Population Census in Central Kalimantan 1980.

\*\*) Presidents Responsibility/MPR's Mandataris 1983.

Table : II.58. Realization Product of Manufacturing wood by years in Central Kalimantan. ( Cu.m).

Nu. Year	Manufacturing wood							
	Sawing Wood				Other product	T o t a l	Plywood	T o t a l
	Meranti	R a m i n	Agatis	Keruing				
1. 1971/1975	:	:	:	:	:	16,000.0000	-	16,000.0000
2. 1975/1976	:	:	:	:	:	77,261.0100	-	77,261.0100
3. 1976/1977	: 10,727,630	: 97,581,121	: 119,857	: -	: 8,899,826	: 117,325,4340	-	: 117,325,4340
4. 1977/1978	: 89,169,0305	: 116,364.8898	: 939.3810	: 3,519,3730	: 14,028.9306	: 224,075.6049	-	: 224,4075.6049
5. 1978/1979	: 27,957,3140	: 265,693,8093	: 615,6678	: 6,634.7269	: 14,012.1800	: 314,914.1980	-	: 314,914.6049
6. 1979/1980	: 58,153,2900	: 350,104.4164	: 660,9590	: 15,023.2362	: 19,653.4272	: 461,600.3288	-	: 451,600.3288
7. 1980/1981	: 88,176,9400	: 308,177.0896	: 2,069.8946	: 33,974.4711	: 55,084.7001	: 487,483.0984	: 75,126.25	: 562,609.3454
8. 1981/1982	: 95,129.3306	: 272,241.5367	: 441,4453	: 27,130.1248	: 41,499.3162	: 436,541.7536	: 123,979.53	: 560,521.2836
9. 1982/1983	: 53,041.6871	: 274,858.1345	: 1,154.3181	: 30,065.7943	: 42,493.2330	: 401,614.1670	: 126,991.1300	: 528,605.3170
<b>T O T A L</b>	<b>422,355.7222</b>	<b>1,693,120.9973</b>	<b>6,001.5228</b>	<b>116,347.7263</b>	<b>195,676.6131</b>	<b>2,536,815.5917</b>	<b>326,096.96</b>	<b>2,853,012.017</b>

Source : Forestry office Central Kalimantan

Data about shingle production is as follow :

1975/1976, ulin as much as 28,356,000 hp.  
 1976/1977, ulin as much as 34,150,000 hp.  
 1977/1978, ulin as much as 27,520,725 hp.  
 1978/1979, ulin as much as 17,949,400 hp and others 2,824,050 hp.  
 1979/1980, ulin as much as 17,357,800 hp and others 3,300,800 hp.  
 1980/1981, ulin as much as 12,163,500 hp and others 3,300,800 hp.  
 1981/1982, ulin as much as 10,110,500 hp and others 3,003,000 hp.

Production of shingle ulin, since 1977/1978 up to 1981/1982 shown decrease. Its causes of there are open new opportunity of works which give income more than to make shingle.

Data about rocks and sand in 1980, it as follow :

In Palangka Raya rocks there are 14,612 Cu.m. and sand 3,107 Cu.m.

In Kapuas sand 2,166 Cu.m.

In Katingan rocks 916 Cu.m., and sand 2,099 Cu.m.

In Kotawaringin Timur rocks 11,540 Cu.m. and sand 8,963 Cu.m.

In Barito Selatan sand 265 Cu.m.

In Barito Utara rocks 315 Cu.m (See table II. 59).

Table : II.59. Volume and value of rocks and sand production  
 in Central Kalimantan Province 1980

District	Rocks		Sand	
	m <sup>3</sup>	:	m <sup>3</sup>	:
Palangka Raya	14,612	: 79,987	3.107	: -
Kapuas	-	: -	2.166	: 4.332
Katingan	916	: 2.247	2.099	: 5.249
Kotawaringin Timur	11.540	: 65.130	8.963	: 34.874
Barito Selatan	-	: -	265	: 1.060
Barito Utara	315	: 5.495	-	: -
Gunung Mas	3.419	: 13.795	-	: -
<b>Total</b>	<b>30.802</b>	<b>: 160.654</b>	<b>16.600</b>	<b>: 45.515</b>

Source : Mining Office Central Kalimantan 1980.

Data about, bricks, rocks, and tegel/trasso production from 1981 up to 1982 in Central Kalimantan see table II.60.

Table : II.60. Bricks, rocks, tegel/trasso production in Central Kalimantan 1981/1982.

District	Kind of material	Year	
		1981 (Cu.m)	1982 (Cu.m)
Palangka Raya	: Bricks	: 950,000	: 8,835,000
	: Rock	: 9,700	: 43,200,000
	: Tgel puss/trasso	: 680,000	: 432,000
Kotawaringin Timur	: Bricks	: 3,984,000	: 99,820,000
	: Tegel	: -	: 490,000
Kotawaringin Barat	: Bricks	: 489,000	: 2,094,400
	: Tegel	: -	: 56,600
Barito Utara	: Bricks	: 436,000	: 436,000
Barito Selatan	: Bricks	: 720,000	: 2,592,000

Source : Report of data collecting result by Project IPID in Central Kalimantan in 1982/1983.

See also table II.61 concerning the data, and the location of materials.

Table : II.61. Potential of housing primary materials in Central Kalimantan.

No.:	Kind of Materials	Districts and Sub Districts	Potential
1 :	2	3	4
1.:	R o c k	: Palangka Raya	: 50,428,000 Cu.m
:	:	: Barito Utara	:
:	:	: Kotawaringin Barat	:
:	:	: - Bulik	:
2.:	S a n d	: 1. Palangka Raya	:
:	:	: 2. K a p u a s	:
:	:	: 3. Barito Utara	:
:	:	: 4. Barito Selatan	:
:	:	: 5. Kotawaringin Timur	:
:	:	: 6. Kotawaringin Barat	:

continued (Table II.61)

1.	2.	3.	4.
3.	Clay	1. Palangka Raya	
		2. Kapuas	
		3. Barito Utara	
		4. Barito Selatan	
		5. Kotawaringin Timur	
		6. Kotawaringin Barat	
4.	Rime	Barito Utara	
		1. Sub District Teweh Tengah.	
		2. Wotorejo	52,000,000 ton
		3. Basau	
		4. Penyungkat Laung	
		5. Pandirih	11,466,000 ton
		6. Muara Bumbai	
		7. Sungai Tening	
		8. Sungai Sepayang	19,500,000 ton.
		9. Muara Joloi	39,000,000 ton
		Sub District Teweh Timur	
		1. Gunung Angah	1,000,000,000 ton
		2. Sungai Teweh	7,800,000 ton
		Sub District Tamiang	
		- Tungka	260,000,000 ton.
		Sub District Murung	
		1. Puruk Cahu	
		2. Batu Putih	
		3. Sungai Manawung	
		4. Bukit Sarang	500,000 ton.
		5. Bukit Sala	500,000 ton.

Source : Departement of Energy Central Kalimantan

### 9.3. A study on Clothing Needs.

A study on clothing needs of people in Central Kalimantan will be more focused on "actual clothing habits" and "pattern of consumption". In order to study the matter, we have to consider how the development of clothing industry and trade play the role in meeting the people needs in Central Kalimantan.

#### (1) Industry Situation

There is not yet clothing industry producing either clothing raw materials or textile/batik/sarong in Central Kalimantan. The only existing industry which process textile into clothes is sewing industry (tailor) (see table II.62). It shows number of sewing industry, investment situation, capacity and production value in 1982. The data indicate the general tendency that investment in sewing industry relatively small compare with its capacity or production value. This fact is very important as idea to develop investment and improve people's entrepreneurship in sewing industry.

#### (2) Trader Situation

Number of retailers of batik and clothes are 2,022 in 1980/1981, retailed which are not registered each district government office (60 %) are excluded. According to the size of investment, clothing trader can be classified as follows :

- Clothing trader with investment ranging from Rp. 1.5 million to Rp. 3 million.
- Clothing trader with investment ranging from Rp. 5 million to Rp. 10 million.
- Clothing trader with investment more than Rp. 10 million.

There are many sorts of cloth stuff traded in markets. Observations conducted at markets in the six districts/municipals capital indicate general illustrations of :

- Textiles with various sorts and qualities.
- Batik with low and medium quality
- Sarong with low and medium quality.
- Ready-made men, ladies and children clothes.

Table II.62. Number of Enterprise, Investment, Capacity and Production value of Small Scale Industry  
in Central Kalimantan.  
Varity : Tailor/Ready made Clothing Industry

Nu	: Year	: Registered	: Active	: Investment value	Production			: Volume
					: ( Rp )	: Expenditure	: Unit	
1.	: 1980	: 214	: 136	: 53,761,250	: Ready made clothes	: pair	: 82,640	: 326,380,000
2.	: 1981	: 214	: 180	: 123,055,500	: Ready made clothes	: pair	: 130,235	: 615,349,000
3.	: 1982	: 264	: 210	: 78,162,250	: Ready made	: pair	: 195,944	: 1,280,696,000

Source : Office Industrial Departement Central Kalimantan Province.

Most textiles and ready-made clothes traded are domestic product imported into Central Kalimantan and for the smaller part are textiles of foreign product as materials for making men trousers. The incoming clothing goods generally come from Java, imported through : Banjarmasin (mostly), Palangka Raya (smaller part) and ports of Sampit, Pulang Pisau and Kumai. No information available about volume and value of incoming clothing goods.

### (3) Actual clothing habits and consumption pattern

Observation on people with regard to their actual clothing pattern and consumption pattern come to conclusion as follows :

#### Men clothing habits :

- trousers : products of ready-made clothing industry and local products of sewing industry.
- shirts : products of ready-made clothing industry and local products of sewing industry.
- t-shirts : products of ready-made clothing industry.
- striped sarong : products of ready-made clothing industry.

#### Ladies clothing habits :

##### a. Ladies in villages :

- Batik Sarong : products of ready-made clothing industry.
- Kebaya coat : local products of sewing industry.



## b. Ladies in towns :

- lady's batik sarong : products of ready-made clothing industry.
- Kebaya coat : local products of sewing industry.
- Lady's dress/shirt : products of ready-made clothing industry and local products of sewing industry.

## Children clothing habits :

Children generally wear ready-made clothes (products of ready made industry).

Consumption per capita of clothing in 1980 is ratio between total population (adult men and women) and total real production (local products of sewing industry), is as follows :

$$\frac{\text{total real production}}{\text{total population (adult)}} = \frac{82,640}{521,819} = 0.19$$

So that the consumption of clothing per capita per year would be 0.19 pair only in 1980. This data parallel to the average clothing expense per capita on population outside Java (inclusive Central Kalimantan), which 67 % of it for ready-made clothes expense and 33 % for made to measure clothes (material + sewing wage) it is shown in the table II.63.

Table II.63 : Average per capita yearly expenditure of clothing  
items Central Kalimantan 1980

No.	Expenditure items	Yearly average per capita expenditure (Rp.)	Percentage
1.	Ready-made clothes:	2,292	67
2.	Clothes material :	780	23
3.	Charges for making garments/for repair	360	10
Total :		3.432	100

Source : Processing data from Book of Consumption People out of Java (Susenas) February 1980.

Actual clothing habits and pattern of consumption depend on kind/sort of clothing goods traded, which indicate that people in Central Kalimantan meet their main clothing needs almost entirely depend on clothing goods supply imported from other province. However the relatively higher price (retailer price) of clothing stuff in Central Kalimantan than other province and the limited purchasing ability of people, very much influence the clothing habit and pattern. The following calculation shows the limited purchasing ability of the people :

$$\frac{\text{Average expence per capita for clothing}}{\text{Regional income per capita (based on the constant price 1975)}} = \frac{\text{Rp. } 3,432}{\text{Rp. } 125,726} \times 100 \% = 2.73 \%$$

The fact that purchasing power of the people is low, an important reason to promote investment in other sectors/commodities, especially in minerals and forest resources which have a good prospect to develop in Central Kalimantan, may improve living standard of the people.

Note : Products of ready-made clothing industry mean the products imported into Central Kalimantan.

### III. ECONOMIC POTENTIALS AND INFRA STRUCTURAL SUPPORTS FACILITIES.

#### 1. Supply, Skill and Training.

##### Existing Labor Force.

##### 1.1. Population and Population Growth.

According to the Population Census in 1980 reach 954,176. This means that in the last ten years population growth rate 3.84 % see (See table III.1).

Compared with population growth rate in other provinces, Central Kalimantan Propince is seventh. Population density per  $\text{Km}^2$  is six person. And the Palangka Raya municipality was considered the most density ( 25 person per  $\text{Km}^2$ ). Based on the population density Central Kalimantan can be devided into : Palangka Raya municipality, Barito Selatan, Barito Utara, Kotawaringin Barat, Gunung Mas, Katingan and Kurung Raya. Population sex ration is 106.

##### 1.2. Settlement spread.

Population spread pattern in Central Kalimantan settles along the river bank areas. It is because rivers play important roles as economics and transportation infrastructure (see fig. III.1).

##### 1.3. Man power

Based on the Population Census 1980 there were 650,237 man power persons, or 68.14 % out of 954,176 persons. While 452,932 employed persons, age between 15 - 49 years (or 47.46 %) and over 50 years about 8.41 % (See table III.2).

In 1980 labor force participation rate was 57.77 %, higher than 50.2 % national rate labor force participation. Labor force by urban and rural areas and sex were participation of male and female manpower in rural areas 59.66 % higher than rate participation of labor force in urban areas.

Table : III. 1. Population by age and sex

Nu.	: Year	: 1971		: 1972		: 1973		: 1974	
		: Male	: Female	: Male	: Female	: Male	: Female	: Male	: Female
1.	: 0 - 4	: 62,342	: 62,799	: 68,439	: 68,341	: 70,886	: 71,206	: 69,993	: 73,090
2.	: 5 - 9	: 59,243	: 59,736	: 65,036	: 65,010	: 67,363	: 67,740	: 69,365	: 69,530
3.	: 10 - 14	: 44,668	: 42,165	: 49,034	: 45,888	: 50,788	: 47,812	: 52,299	: 49,077
4.	: 15 - 19	: 33,438	: 34,920	: 32,084	: 33,315	: 33,842	: 35,402	: 34,911	: 36,261
5.	: 20 - 24	: 21,134	: 25,484	: 20,276	: 24,014	: 21,387	: 25,402	: 34,911	: 26,463
6.	: 25 - 29	: 24,992	: 29,649	: 23,980	: 28,286	: 25,294	: 30,017	: 26,093	: 30,788
7.	: 30 - 34	: 22,413	: 21,700	: 21,505	: 20,700	: 22,684	: 21,999	: 23,400	: 22,533
8.	: 35 - 39	: 22,624	: 21,536	: 21,708	: 20,548	: 22,896	: 21,832	: 23,619	: 22,361
9.	: 40 - 44	: 17,358	: 14,116	: 16,657	: 13,468	: 17,567	: 14,312	: 18,121	: 14,660
10.	: 45 - 49	: 14,360	: 11,538	: 13,778	: 11,010	: 14,533	: 11,695	: 14,991	: 11,981
11.	: 50 - 54	: 11,709	: 8,798	: 11,234	: 8,394	: 11,853	: 8,918	: 12,225	: 9,136
12.	: 55 - 59	: 5,262	: 3,948	: 5,049	: 3,765	: 5,325	: 4,003	: 5,492	: 4,098
13.	: 60 - 64	: 5,366	: 4,545	: 5,147	: 4,334	: 5,428	: 4,607	: 5,602	: 4,719
14.	: 65 - 69	: 3,395	: 2,373	: 3,255	: 2,264	: 3,437	: 2,406	: 3,546	: 2,463
15.	: 70 - 74	: 2,962	: 1,946	: 2,842	: 1,856	: 2,997	: 1,972	: 3,091	: 2,021
16.	: 75 - 79	: 2,744	: 2,678	: 2,633	: 2,556	: 2,778	: 2,715	: 2,867	: 2,781
Total		: 354,010	: 347,926	: 362,657	: 354,049	: 379,058	: 372,514	: 390,677	: 381,962

Source : Statistic Office Central Kalimantan.

Nu	: Year	: 1975		: 1976		: 1977		: 1978		: 1979	
		: Male	: Female	: Male	: Female	: Male	: Female	: Male	: Female	: Male	: Female
1.	: 0 - 4	: 75,064	: 76,314	: 77,375	: 77,765	: 80,492	: 80,947	: 81,092	: 76,268	: 76,430	: 76,268
2.	: 5 - 9	: 71,332	: 72,596	: 73,528	: 73,979	: 76,491	: 77,004	: 76,849	: 78,496	: 77,854	: 77,840
3.	: 10 - 14	: 53,783	: 51,241	: 55,438	: 52,218	: 57,670	: 54,352	: 58,939	: 59,504	: 62,218	: 63,267
4.	: 15 - 19	: 36,501	: 38,035	: 39,362	: 40,483	: 41,288	: 42,520	: 46,811	: 46,100	: 49,058	: 47,805
5.	: 20 - 24	: 23,071	: 27,758	: 24,878	: 29,544	: 26,095	: 31,030	: 31,025	: 34,779	: 34,010	: 37,131
6.	: 25 - 29	: 27,281	: 32,293	: 29,416	: 34,371	: 30,858	: 36,101	: 28,842	: 37,091	: 29,277	: 36,710
7.	: 30 - 34	: 24,466	: 23,637	: 26,383	: 25,157	: 27,676	: 26,423	: 27,683	: 29,880	: 27,901	: 31,842
8.	: 35 - 39	: 24,695	: 23,457	: 26,632	: 24,966	: 27,935	: 26,222	: 27,458	: 27,327	: 27,500	: 28,212
9.	: 40 - 44	: 18,947	: 15,375	: 20,433	: 16,363	: 21,434	: 17,188	: 20,315	: 12,335	: 21,070	: 15,191
10.	: 45 - 49	: 15,674	: 12,567	: 16,904	: 13,375	: 17,731	: 14,049	: 14,507	: 13,427	: 15,625	: 13,546
11.	: 50 - 54	: 12,781	: 9,586	: 13,783	: 10,199	: 14,459	: 10,713	: 12,370	: 10,121	: 12,498	: 10,700
12.	: 55 - 59	: 5,745	: 4,301	: 6,195	: 4,576	: 6,498	: 4,807	: 7,861	: 4,606	: 8,759	: 5,683
13.	: 60 - 64	: 5,858	: 4,949	: 6,316	: 5,267	: 6,625	: 5,534	: 5,106	: 5,549	: 5,766	: 5,355
14.	: 65 - 69	: 3,706	: 2,584	: 3,996	: 2,751	: 4,191	: 2,889	: 6,995	: 1,421	: 6,661	: 2,213
15.	: 70 - 74	: 3,223	: 2,119	: 3,488	: 2,257	: 3,656	: 2,369	: 2,789	: 3,178	: 3,632	: 2,287
16.	: 75 - 79	: 2,995	: 2,916	: 3,230	: 3,104	: 3,387	: 3,261	: 2,339	: 943	: 2,427	: 1,445
Total :		405,132	499,728	427,357	416,375	446,413	435,409	450,981	441,525	450,686	456,004

Source : Statistic Office Central Kalimantan.

#### 1.4. Employed person.

Employed persons in Central Kalimantan in 1980 reached 364,980 persons consisting of 336,802 persons (92.3 %) in rural areas and only 7.7 % in urban areas. Employed person by sex 234,534 persons were males (64.3 %) and 130,446 persons (35.7 %) were females.

Employed persons by occupation a large part of the population in Central Kalimantan work in agriculture sector (73.52 %), see table III.2.

#### 1.5. Migrant population

Beside the spontan migrants coming to Central Kalimantan there are also migrants operated by government. Migrant provided by government are usually known as transmigrants, see table III.3. The transmigration projected in Pelita IV consists of 231,350 head household or 1,156,750 persons. With the assumption that one head household consists of five persons.

#### 1.6. Labor Force

In the last ten years agriculture sector has been the main contribution for labor force employment, see table III.4.

#### 1.7. Training facilities and job training centre

One of the duties of labor force departement is to provide training facilities and job training activities just to improve skills of the national labor force, including labor force in Central Kalimantan. The locations are in Palangka Raya and in some districts, see table III.5.

#### 1.8. Labor force projection

It has been projected that the labor force in Central Kalimantan up to 1990 reaches 952,190 persons with the assumption that the population in 1990 will reach 1,397,271 persons. The transmigration sector during Pelita IV is expected to reach 633,795 persons or 68 % will be labor force.

Table : III. 2. Total of Force by Sector ( Person )

Y e a r	: Agriculture	: Trade	: Industry	: Service	: T o t a l	: Others
1969	: -	: -	: -	: -	: -	: -
1970	: -	: -	: -	: -	: -	: -
1971	: 149,958	: 6,317	: 8,271	: 12,019	: 209,254 1)	: 29,936
1972	: -	: -	: -	: -	: -	: -
1973	: -	: -	: -	: -	: -	: -
1974	: -	: -	: -	: -	: -	: -
1975	: -	: -	: -	: -	: -	: -
1976	: 255,534	: 26,111	: 10,269	: 21,382	: 319,418 2)	: 6,122
1977	: -	: -	: -	: -	: -	: -
1978	: -	: -	: -	: -	: -	: -
1979	: -	: -	: -	: -	: -	: -
1980	: 268,347	: 24,484	: 19,410	: 35,035/ 6,392	: 364,980 3)	: 9,699
1981	: -	: -	: -	: -	: -	: -
1982	: -	: 58,043	: 66,248	: 90,501	: -	: 59,390

Source : 1. Population Census, 1971 and 1980

2. Susenas, 1976

3. Processed from Population of Central Kalimantan

Table : III. 3. Location of Transmigration in Central Kalimantan

Year	Palangka Raya	Kapuas	Kotawaringin Barat	Kotawaringin Timur	
1969/70 :	-	477	-	-	
1970/71 :	-	488	-	-	
1971/72 :	-	1,144	-	-	
1973/74 :	-	2,908	-	-	
1974/75 :	-	750	-	-	
1975/76 :	-	-	865	-	
1976/77 :	-	-	-	-	
1977/78 :	-	1,155	1,084	-	
1978/79 :	-	-	-	-	
1979/80 :	2,112	4,423	-	-	
1980/81 :	-	15,920	-	-	
1981/82 :	-	22,995	7,551	1,577	
1982/83 :	-	9,175	10,668	4,115	Total
<b>Total</b>	<b>2,112</b>	<b>59,435</b>	<b>20,165</b>	<b>5,692</b>	<b>= 87,404</b>

Source : Regional Office of Transmigration Departement Central Kalimantan.



Table : III. 4. Percentage of Employed Population in Central Kalimantan by occupation.

Nu :	age	: Agriculture	: Industry	: Trade	: Social and pu - blic service	: Others	: T o t a l
1. :	10 - 29	: 24.35 %	: 4.44 %	: 2.99 %	: 4.97 %	: 3.61 %	
2. :	30 - 34	: 19.29	: 3.47	: 2.83	: 4.90	: 3.13	
3. :	45 - 59	: 13.34	: 1.34	: 1.55	: 2.61	: 1.16	
4. :	60 - more	: 4.25	: 0.34	: 0.77	: 0.29	: 0.48	
T o t a l		: 61.23	: 9.56	: 8.19	: 12.77	: 8.38	: 100.13

Source : National Socio Economic survey, Statistic Office Central Kalimantan.

Table : III. 5. Situation of Facility on 1982

Nu :	Location	: Facility	: Investment	: Private/Government Sector
1.	Palangka Raya	: Cooperation Training	: Pelita I Less Than ions/year Pelita II ----- ions/year Pelita III More Than ions/year	Rp 10 mill- : Government Rp 10 mill- : Rp 10 mill- :
2.	: Sampit	: Workshop	: Regional Office of Departement up to 1983 Rp. 37,900,000	:

Source : 1. Trade and Cooperation Departement Office  
 2. Regional Departement Industrial Office, Central Kalimantan.

### 1.8. Investment projection for labor force training.

It has been projected up to 1990 the need for labor force will increase higher in number out of nonagriculture sector such as housing and motor boat industries. To support those two industries out of skilled labor force will be very much wanted.

To provide labor force training and the facilities needed requires a lot of investment.

### 1.9. The existing situation.

In table III.5a it is shown that the most of labor force in Central Kalimantan seems to be of low graduate even with no required skills. It was estimated 67.28 %, as in details : 10.00 % never attended school, not completed or not yet completed primary school, and only 12.72 % completed or not yet completed junior high schools.

When seen from the point of styles of the main occupations and education as shown in table III.5b it is **clear** that managers and administrators are senior high school graduates, while farmers and agricultural workers are of poor educational background, even never attended primary school 24.07 %, not completed or not yet completed primary school 47.19 % and 24.13 % primary school; and only 4.61 % graduated from junior high school.

Despite those although with poor formal educational background as mentioned above, there are some of the labor force had been trained in Job Training Centres provided by Government or Private. Projection for labor force up to 1990.

Through school enforcement for children aged between 7 up to 12 it was expected that the unemployment labor force will have had better formal educational background, minimally 75 % of the labor force in 1990 will have n been graduated from elementary school. More investment in the field of education and job training for carrier progress and work productivity. In this case it is expected that the private participation may play a greater part in human investment to prepare trained, educated workers.

Table : III. 5.a.

Population 10 years of age and over who worked during the previous week by educational attainment and main industry Central Kalimantan 1980.

Educational Attainment	Main industry										T T	Total
	1	2	3	4	5	6	7	8	9	0		
Never attended school	64,406	364	3,171	-	447	3,955	1,786	-	1,829	35	448	76,441
Not completed/not yet completed primary school	125,890	965	6,414	80	1,989	8,521	1,894	184	4,367	83	383	150,770
Primary school	65,270	1,310	5,951	28	2,100	8,202	1,957	127	5,922	-	359	91,226
Junior high school (general)	9,118	357	1,934	17	591	2,613	526	180	5,944	-	165	21,445
Junior high school (Vocational)	918	-	329	-	167	437	24	-	1,534	-	48	3,457
Senior high school (general)	1,705	59	948	-	254	439	145	140	5,095	-	-	8,785
Senior High School (Vocational)	1,040	-	581	-	207	239	60	102	8,477	-	-	10,706
Academy	-	-	15	-	56	51	-	-	732	-	-	854
University	-	14	45	-	-	27	-	53	1,135	-	-	1,274
Not Stated	-	-	22	-	-	-	-	-	-	-	-	22
<b>Total</b>	<b>1268,347</b>	<b>3,069</b>	<b>19,410</b>	<b>125</b>	<b>5811</b>	<b>24,484</b>	<b>6,392</b>	<b>786</b>	<b>35,035</b>	<b>118</b>	<b>1,403</b>	<b>364,980</b>

Source : Population Census.-

Note : 1. Agriculture, forestry, Hunting, Fishery.

2. Mining and Quarrying

3. Manufacturing industry

4. Electricity, Gas and water.

5. Construction

6. Whole sale trade, retail trade, restaurants

7. Transportation, storage, communication

8. Financing, insurance, real estate and business-service

9. Public services

10. 0 = Others.

Table III.5.b. Population 10 years of age and over who worked during the previous week by educational attainment and type of main occupation Central Kalimantan.

Educational Attainment	Type of main occupation										Total
	0/1	2	3	4	5	6	7/8/9	x / 00	W. T.		
1. Never attended school	102	-	21	3,848	1,222	63,889	6,817	-	539	70,441	
2. Not completed/not completed: primery School	390	77	581	8,300	1,803	125,249	13,318	299	753	150,770	
3. Primery School	409	-	1,279	8,362	2,118	64,046	13,470	848	694	91,226	
4. Junior High School (General)	849	-	1,904	2,718	565	8,691	4,118	2,436	164	21,445	
5. Junior High School (Vocational)	893	-	401	383	42	860	609	213	56	3,457	
6. Senior High School (General)	1,152	18	3,448	467	173	1,698	1,037	727	65	8,785	
7. Senior High School (Vocational)	5,863	-	2,210	189	137	926	761	520	100	10,706	
8. Academy	257	-	366	51	-	-	82	77	21	654	
9. University	384	-	705	27	-	-	-	158	-	1,274	
<b>T o t a l</b>	<b>10,299</b>	<b>95</b>	<b>10,918</b>	<b>24,345</b>	<b>6,060</b>	<b>265,359</b>	<b>40,234</b>	<b>5,278</b>	<b>2,392</b>	<b>364,960</b>	

Note : 1. Professional, technical and related workers  
 2. Managers and administrators  
 3. Clerical and related workers  
 4. Sales and related workers  
 5. Service workers  
 6. Farmers and agricultural workers  
 7/8/9 Production, transport equipment operators and related workers  
 x / 00 Others



## 2. Planning, Economic Growth and Investment

### 2.1. The Province's Development Plans

#### 1) Achievements

The accomplishment of the development in Five Years Plans Development (REPELITA) I, II and III have increased the income per capita, according to the given data, the income presented here is taken from 1975 to 1981.

Based on the current price 1975, the income per capita in 1975 was Rp. 74,671,000 in 1976 it was Rp.96,264.00 in 1977 it was Rp. 117,387.00; in 1978 it was Rp. 152,259.00; in 1979 it was Rp. 231,567.00; in 1980 it was Rp. 308,422,00 ; and in 1981 it became Rp.326,367.00 The annual average growth is 28.61 %.

Based on the 1975 constant price, the real growth of income per capita is 9.32 % per year, in which the annual growth is subsequently 9.06 %; 7.7 %; 10.16 %; 8.11 %; 20.37 % and 0.52 % beginning from 1975 to 1981.

The other achievements are :

Job opportunity extension has grown well due to the capital investment coming from private companies and also due to the government initiative that is carried out systematically.

The private business in the forms of Domestic Investment (P M D N ) and Foreign Investment (P M A), and other small business have increased the number of job opportunities.

The increasing number of PMA and PMDN every year has absorbed the growing number of skilled and unskilled workers. The number of workers absorbed in PELITA II was 10,967 people, consisting of 482 foreign workers and 10,215 Indonesian workers. During the PELITA III the number increased 22,238 people consisting 807 foreign workers and 21,431 domestic workers. This means that the number of workers and 21,431 domestic workers. This means that the number of workers that absorbed during the PELITA III increase 11,541 people or 107.9 % from the number of the workers at the end of the PELITA III (see table III.6).

Table III.6 : Labor Force Growth by Foreign Investment (FI) and Domestic Investment (DI) Project in Central Kalimantan

Year	Labor Force	
	Foreign	Domestic (Indonesia)
Pelita II	482	10,215
Pelita III		
1979/1980	99	4,056
1980/1981	128	3,742
1981/1982	71	1,384
1982/1983	23	1,354
1983/1984	4	180
Total	807	21,431

Source : Regional Investment Coordinating Board (RIPD) Central Kalimantan.

The absorption of man power in small and home industry units grows slowly. In 1979/1980 the absorbed manpower was 11,270 people. In 1980/1981 the number decreased to 7,382. In 1981/1982 it was 6,691 people, and in 1982/1983 the number it become 19,743 people. So in 1982/1983 the number of manpower increased 8,473 compared with that of in 1979/1980, though the number of small and home industry unit increased by 3,227 from 930 in the year of 1979/1980 and became 4,157 units in 1982/1983 (see Table III.7)



Table III.7 : The sum of Firms and Labor Force by Small Scale Industry and Home Industry.

Year	Firms (units)	Total Labor Force
1979/1980	930	11,270
1980/1981	967	7,382
1981/1982	982	6,891
1982/1983	4,157	19,743

Source : Office of Industrial Department, Central Kalimantan.

The number of manpower based on the job vacancy available in Central Kalimantan from 1971 to 1980 increased by 209,254 to 364,980 so the increased was 155,726 people.

Agriculture sector takes the biggest number of manpower. In 1980 the number increased 101,660 from that of in 1971, although the percentage number decreased from 79.66 % in 1971 to 73.52 % in 1980. Both the number of manpower and the percentage number in other job vacancy increased, such as in trade, restaurants and hotels, from 6,557 to become 24,484 people in 1980, the increased was 17,927. The change also occurred in services agencies, from 7.5 % in 1971 to 9.6 % in 1980, and the number of manpower absorbed here was 19,328 people (see Table V.1).

The population of Central Kalimantan in 1971 was 701,936 and 1980 was 961,834. So the manpower participation in 1971 was 29.81 % and in 1980 was 37.95 %.

Besides the availability of job opportunity extension, the project of PMA and PIDN have also giving some other advantages to Central Kalimantan region, they are :

- (1) to provide some working activity for local tradesmen, such as :
  - to supply basic needs for the local place
  - to transport logs and take care of sawntimber for ship owners.
- (2) PMA and PIDN also provide jobs training for the employees.
- (3) to establish schools and polyclinic on the industrial locations.

#### Problems

The general problems faced in the accomplishment of the development in Central Kalimantan are : the separate small population.

The limited number of manpower, the limited facilities for transportation and communication. Beside the problems as mentioned above, some other problems have also been found since Pelita I, they are :

1. The limited fund for development.
2. The process of planning accomplishment, general administrative arrangement and finances from a project have not worked fluently, it's because of the lack of skilled labours, of the very limited number of banking institutions in some regions, of the late report delivery, of unstable price and of the limited number of good partners/contractor/good suppliers, or the lack of executive knowledge and skills due to the experience in the new experience in the system of development accomplishment according to Five Year Plan (Repelita) particularly the application of DUP and DIPDA system.
3. Some of the project managers do not live in project locations and even some of them live outside Kalimantan, especially those coming from agencies whose working areas as well as the authority cover central, south, and east Kalimantan Province.
4. Because of the existing project managers who live outside Central Kalimantan, so all the financial matter are arranged through the Government Treasury Office (KPN) in outside Central Kalimantan, so that the project accomplish report often come late.
5. Some project do not work because of insufficient fund, and it is difficult to get the support from regional governments because the regional capabilities to provide the fund are very limited.
6. The revision procedure of the Central Project Fund (DIP) due to the rise in prices, the changes of the project location, takes quite a long time.

Up to The third Five Year Plan (Repelita III) the problems that are still under consideration are :

- 1) The use of river transportation cannot pass for the whole year because in dry season the water level becomes very shallow, and the land transportation has not yet reached the development locations.
- 2) The lack of technical under-graduates and the graduates for industrial development. The number of skilled labors as brick layers, carpenters is also insufficient.
3. The limited capabilities of constructive industrial companies.

The description of the regional capability of Central Kalimantan to complete the development projects in this province may be explained by the accomplishment of the 1983/1984 development project that began from April 1, 1983 up to December 31, 1983 (table III.8).

Table : III.8.

Finance and physic results of Development Project Sectoral budget 1983-1984 Central Kalimantan (Condition April, 1 until Desember 1983).

: No.: Institution and Department	: Budget Growth (Rp.) :		
	: Expenses on DIP:	% Physic:	Total :
: 1.: Attorney General	: 233,150,300:	33.4 :	0.43 :
: 2.: Non Department	: 690,717,000:	64.24:	1.27 :
: 3.: Home Affairs Department	: 2,589,136,000:	16,58:	4.75 :
: 4.: Yustice Department	: 409,155,000:	3,19:	0.75 :
: 5.: Information Department	: 1,027,912,000:	15,00:	1.88 :
: 6.: Financial Department	: 167,325,000:	0,02:	0.31 :
: 7.: Trade and Coperation Depart-	: 365,865,200:	64,95:	0.67 :
: 8.: <sup>ment</sup> Agriculture Department	: 6,927,841,315:	17,43:	12.70 :
: 9.: Industrial Department	: 159,916,000:	43,01:	0.29 :
: 10.: Public Work Department	: 16,763,830,000:	39.07:	30.72 :
: 11.: Transportation Department	: 1,711,468,000:	19.55:	3,14 :
: 12.: Education and culture Depart-	: 5,661,942,100:	18.53:	10.38 :
ment.			
: 13.: Health Departement	: 2,353,835,000:	21,56:	4.30 :
: 14.: Religion Department	: 459,394,000:	17.75:	0.84 :
: 15.: Labor Fores and Transmigrati-	: 13,868,846,000:	18,91:	25,42 :
on Department.			
: 16.: Social Department	: 1,172,007,000:	41,92:	2.15 :
: : T o t a l	: 54,562,339,915:	:	100.00 :

Source : Progres Report National Project and Sectoral Quarter III  
Budget Years 1983/1984 Central Kalimantan.

In that year the Department Public Work got the biggest fund as much as 16.7 million rupiahs or 30.72 % of the whole government fund provided for all sectors. The completed physical work done in nine months time was only 39.7 %.

This means that only a little part of the fund was used and the rest was not yet used. The time still 3 months left. In the Department of Man Power affairs, the completed physical development was only 18.91 % of its whole physical project, and it was carried out in the same length of time as that of in the Department of Public Work. The other department got smaller funds than those two the Department used above. The Department of Trade Affairs and Cooperation could finish 64.95 % of its physical project.

Based on description above we may say that the Department in Central Kalimantan that receive a large fund conclude to be incapable to finish their projects on time if compared with the Department receiving smaller funds.

## 2. The Projects Started and Completed in Every Period.

The development project carried out from The First Five Year Plan (Pelita I) up to The Third Five Year Plan (Pelita III) are financed with the fund from national budget, regional government and presidential budget. During Pelita I the development budget that come from APBN, and from the Inpres is Rp. 8,948,417,451.00 and Rp. 10,000,000.00 as the subsidy from the president for the establishment of the Palangka Raya mosque. The total was Rp. 8,958,417,451.00 The first year fund was Rp. 719,509,425.00 and in the fifth year it was Rp. 3,454,563,000.00 It means that the development funds in the fifth year was 4800 % from the first year fund, and the big increase of the regional fund its was Rp.730,875,000.00 approximate 50.40 % from the 1972/1973. During Pelita I, the development funds that come from the regional funds was approximately 64.79 % from the whole development fund (See table III.9).

Although the regional government of the Central Kalimantan estimated the Rp. 5,797,875,000.00 development funds for Pelita I, but the realization was only Rp. 5,327,308,000.00 approximately only 91.88 % The available funds compared with the estimated fund from the first up to the fifth year were 91.22 % ; 84.46 % ; 90.67 % ; 93.10 % and 94.22 % (Table III.10.)

Table : III.9. Development Expenses Government budget in Central Kalimantan During Pelita I by Source of Fund

Y e a r :	National Budget(Rp)	: Regional Budget (Rp)	: Presidential Aid			: T o t a l ( Rp )
			: Rural aid	: District aid	: Elementary : Shool aid(Rp)	
1969/70:	146,869,425.00:	462,000,000.00:	110,700,000.00:	-	-	: 719,569,425.00
1970/71:	301,108,375.00:	740,000,000.00:	110,700,000.00:	36,900,000.00:	-	:1,188,708,375.00
1971/72:	319,708,610.00:	965,000,000.00:	110,700,000.00:	56,100,000.00:	-	:1,451,508,010.00
1972/73:	495,923,675.00:	1,450,000,000.00:	110,700,000.00:	77,444,972.00:	-	:2,124,068,602.00
1973/74:	833,432,800.00:	2,180,875,000.00:	110,700,000.00:	116,055,239.00:	213,500,000.00:	3,454,563,039.00
<b>Total</b>	<b>: 2,097,042,285.00:</b>	<b>5,797,875,000.00:</b>	<b>553,500,000.00:</b>	<b>286,500,166.00:</b>	<b>213,500,000.00:</b>	<b>8,948,417,451.00</b>

Source : Report on Development Activities during Pelita I in Central Kalimantan.

Table : III.10.

Budget and Realization of Regional Budget (APBN) in Central Kalimantan during Pelita I.

! Year !	Budget	! Realization !	Percentage (%)
: 1969/70 :	462,000,000.00!	421,448,800.00 !	91.22
: 1970/71 :	740,000,000.00!	624,984,200.00 !	84.46
: 1971/72 :	965,000,000.00!	875,000,000.00 !	90.67
: 1972/73 :	1,450,000,000.00!	1,350,000,000.00 !	93.10
: 1973/74 :	2,180,875,000.00!	2,054,875,000.00 !	94.22
! Total	! 5,797,875,000.00!	5,327,808,000.00 !	91.88

Source : Report of Development Activity during Pelita I National and Regional; in Central Kalimantan.

The available funds from regional budget for annual use could not completely be used or spent as it had been planned. In 1969/70 only Rp. 350,697,000.00 could be used from was Rp. 421,448,800.00 available fund for all sectors. It means that the completed project value was only 83.21 %. This also worked in the other years, that no project could be completely finished, In total, the value of the project that could be completed during Pelita I was 93.22 %.

The regional budget funds spent on economic sector from the first to the fifth year 55.0 %; 56.4 %; 67.1 %; 73.0 % and 69.6 % (table III.11).

The Regional Government of Central Kalimantan realizes the importance of the fund allocation, especially for the development of economic sector. In Pelita II, the development budget that came from national budget, regional Budget and Impres was Rp. 45,761,259,350.00 (Table III.12). It was added with the subsidiary funds from the president during Pelita II. These subsidiary funds were \$ 29,942,394.00 for dredging up for the mud in the estuary of Kahayan river, Rp. 25,000,000.00 for developing the great mosque of Palangka Raya and Rp. 191,608,000.00 for public resettlement. So the development funds in Pelita II were Rp, 45,977,867,350.00 and \$ 29,942,394.00

Table : III. 11. Total and Realization of Regional Development Budget (APBD) in Central Kalimantan During Pelita I by Field of Development (thousand rupiah )

Field of Development :		1969/70	:	1970/71	:	1971/72	:	1972/73	:	1973/74	
Economic	A	: 231,851	' -	: 352,500	' -	: 647,565	' -	: 1,058,217	' -	: 1,517,938	' -
	B	: 194,345	' 83.32	: 241,220	' 68.43	: 457,197	' 79.60	: 697,000	' 65.96	: 1,451,125	' 95.60
Social	A	: 114,613	' -	: 221,600	' -	: 206,250	' -	: 232,199	' -	: 372,610	' -
	B	: 89,575	' 73.15	: 186,575	' 84.17	: 134,765	' 89.59	: 214,689	' 90.13	: 294,211	' 78.96
General	A	: 74,984	' -	: 70,884	' -	: 111,185	' -	: 153,582	' -	: 290,280	' -
	B	: 66,779	' 89.60	: 63,266	' 89.40	: 119,989	' 102.52	: 160,538	' 104.53	: 277,749	' 95.68
Total	A	: 421,448	' -	: 624,984	' -	: 965,000	' -	: 1,450,000	' -	: 2,180,875	' -
	B	: 350,697	' 83.21	: 491,161	' 78.77	: 755,951	' 72.34	: 1,054,277	' 72.71	: 2,033,067	' 93.22

Source : Report on Development Activities during National and Regional Pelita I in Central Kalimantan.

A. Budget

B. Realization.

Table : III. 12. Regional Development Fund by Source in Central Kalimantan, during the Second Five year Development ( Pelita II )

Y e a r	National Budget:	I n p r e s ( Presidential Aid )				:Regionanl budget	: T o t a l
		: Dati II : (District Aid )	: SD (Elementary : school Aid)	: Health facili- : ties Aid	: market develop- : ment Aid		
1974/75	: 1,315,413,750.	: 242,992,500	: 213,500,000	: 95,500,000	: -	: 1,756,732,600	: 3,624,138,850
1975/76	: 4,156,885,550	: 330,276,000	: 454,350,000	: 262,478,000	: -	: 1,563,884,150	: 6,767,873,700
1976/77	: 5,130,855,700	: 357,137,000	: 465,000,000	: 299,874,000	: 240,000,000	: 2,952,719,300	: 9,445,586,000
1977/78	: 5,834,844,200	: 399,022,000	: 828,500,000	: 199,778,000	: 300,000,000	: 4,902,198,600	: 12,464,342,800
1978/79	: 6,717,837,000	: 437,558,000	: 1,005,000,000	: 188,923,000	: 360,000,000	: 4,750,000,000	: 33,459,318,000

Source : Report on Development in Pelita II, 1974/1975 - 1978/1979, Central Kalimantan.



The development budget coming from national, regional and Inpres budget increased gradually from around 3.6 million rupiahs in 1974/75 to 13.5 million rupiahs in 1978/79. The average was 41.6 % per year.

Compared with the development fund coming from national, regional and Inpres budget in Pelita I that was as much as 9 million rupiahs, the Pelita II development fund increased much and reached almost 46 million rupiahs. In Pelita II the development fund coming from regional budget was Rp. 15,925,534,650.00 or as much as 34.8 % of the whole development fund coming from national, regional and Inpres budget.

In Pelita I the regional budget was 64.8 %. The number of the development fund from regional budget in Pelita I was Rp. 5,797,875,000.00 that increased to Rp. 15,925,534,650.00 So the increase was Rp. 10,127,659,650.00 or as much as 174.68 %. As for the development fund from national budget in Pelita I was Rp. 2,097,042,285.00 and increasing to Rp. 123,155,836,000.00 So the increase was Rp. 121,058,793,715.00 or as much 5,773 %. We may draw a conclusion from the information as mentioned above that in Pelita II the total of the development fund from regional budget gets smaller than the total of the fund in Pelita I, but the total number of the fund increases. In other words, during Pelita II the development fund from national budget plays a more important role than the funds from regional budget.

The development fund from national budget for Central Kalimantan is distributed to 15 sector (table 3.1). From 1974/75 to 1977/78 in Pelita II, the realization of physical development was around 57.13 % of the available budget. For example, the realization of the development budget accomplishment in agricultural and irrigation sector was 85.57 % of the Rp. 320,218,000.00 budget, and in 1977/1978 the realization of using the development expense was only 37 % of the Rp. 2,317,530,000.00 budget.

These cases also occurred in many other sectors. So we may say that the increase of the development budget cannot be completely realized.

In E every year, the realization even tends to get smaller. This is caused by many factors, such as difficult transportation and the lack of specialists and skilled workers as the development executors.

In Pelita III the number of the budget for the government investment was Rp. 155,353,000,000.00 (Table III.13 )

Table : III.13.

Total Public and Private Investment during Pelita III 1979/  
1980 - 1983/1984 on basic current price (million rupiahs)

! No. !	! Investment !	Y e a r s					! Pelita ! ! III !
		! 1979/80 !	! 1980/81 !	! 1981/82 !	! 1982/83 !	! 1983/84 !	
! 1. !	! Public !	! 20.073 !	! 24.489 !	! 29.876 !	! 36.448 !	! 44.487 !	! 155.353 !
! 2. !	! Private !	! 29.987 !	! 36.583 !	! 44.632 !	! 54.452 !	! 66.431 !	! 232.085 !
! !	! Total !	! 50.060 !	! 61.072 !	! 74.508 !	! 90.900 !	! 110.898 !	! 387.438 !

Source : Regional Investment Coordinating Board.

The figures shown above indicate that the government development fund in Central Kalimantan has increased gradually since Pelita I. But the budget for the development cannot be completely realized in every year. The realization of the 1983/84 government investment particularly the development financed with the fund of national budget goes from 0 % to 64.24 % of the available budget (see again table III.8).

### 3. Direction for development in Pelita IV.

Regional development direction of Central Kalimantan for The Fourth Five Year Plan (Repelita IV) equals to the national development direction that is, development high economic growth and social and politics stability and realization of eight stream spread.

The problem now is that the soil of Central Kalimantan consists of IV, V, VI, VII classes. The productivity of the soil is, therefore low. The rice field productivity per Ha was only 1.99 ton as recorded in 1971 and 2.3 ton per Ha in 1981.

The dry farm rice productivity was even lower per Ha. In 1971 the productivity was 1.31 ton per Ha and in 1981, 1.32 ton per Ha. Based on the foreign and domestic investment law, the investment run by government and private during the Pelita I, II and III, has absorbed 14,410 manpower in 1980, or 5.32 % out of total manpower in Central Kalimantan.

In 1983 government and foreign investment absorbed 19,743 manpower. The government and foreign investment had absorbed 41,981 manpower. Showed an increase of manpower employment higher than that of manpower in 1980, that is 25,571 or 191 % in the last three years. It was recorded that wood processing industries sector contributed 12.32 % of the GDP of Central Kalimantan. Seen from development in 1975 - 1981, including a very rapidly increasing sector together with development construction sector.

Manufacturing industries sector which continually raised up to 3.87 % in 1975 to 12.32 % in 1981 and construction development sectors raised from 5.85 % in 1975 to 14.16 % in 1981. Agricultural products (especially forestry products) in Central Kalimantan region was a large parts of which was exported. The other products especially mining product are still waiting for further investment in Pelita IV.

The development policies in Pelita IV are stated as the following :

- 1) The development of production industry manufacturing sector for processing raw materials into goods in process and finished goods by using labor intensive industries besides capital intensive industries which open to employment.
- 2) Improvement and development infrastructure such as land and air transportation, telecommunication, electricity, potable water, etc.
- 3) Development of agriculture sector in broad sense is directed to production growth to supply product for industries and export, to increase farmer income and employment.

## 2.2. Trend of Economics Growth

The description of Economic Growth would be explained in turn the trend of Gross Regional Domestic Product (G.R.D.P.), Main Economic Sector, Value added and Trade Growth. (Was published on February 1983 by Statistical Office ).

### 1). Trend of G.R.D.P.

The latest data of G.R.D.P of Central Kalimantan for year of 1975 till 1981, in constant price 1975 and Current Price.

Based on constant Price 1975, GRDP was Rp. 64,9 million and become Rp. 138.2 million in 1981 (Table III.14).

The average growth was 13.52 % per years. Rate of increase in 1976, 14.6 % from 1975. In 1977 was 12.72 % from 1976. In 1978 was 13.6 % from 1977. In the year 1979, 1980 and 1981 the rate was 10.81 %, 22.75 % and 6.65 % per years.

The lowest rate was 6.65 % and the highest rate 22.75 % (Table III.14). Increasing rate of GRDP in 1981 was smaller than the last year because the contribution rate of Agricultural and Mining/Minerals was decreased.

In the agricultural sector the Forestry was sector has the highest decreased because of the just decree of 3 Minister, Agriculture, Trade and Industry regarding that the Firms who was forestry exploitation licence must process their log. The firms that could not fulfill these regulation is compelled to decrease or stopped cutting logs.

Base on current Market Price, GRDP in 1975 nearly Rp. 65 million and in 1981 Rp. 359 million.

The rate of growth from year to year was 35.9 %; 21.1 %; 33.7 %; 55.7 %; 36.8 % and 12.3 % per year 1976, 1977, 1978, 1979, 1980 and 1981 compare with the year before. In the average rate of growth per year was 33.6 %.

Table III.14. Gross Regional Domestic Product in Central Kalimantan by Business Field on Basic constant Price 1975 (thousand Rp)

Ku. Business Field	1975	1976	1977	1978	1979	1980	1981
1. Agriculture	35,034,578	39,245,542	42,356,517	47,093,302	49,337,214	53,001,377	50,917,429
1.1. Food Crops	16,105,604	17,422,104	17,691,262	16,938,471	10,792,978	22,582,137	25,391,073
1.2. Plantation Crops	4,356,555	4,239,006	4,499,500	4,777,603	5,846,532	6,036,799	6,131,642
1.3. Livestock and dairy product	1,203,311	1,280,251	1,355,700	1,766,740	1,706,740	1,250,576	901,479
1.4. Forestry and hunting	5,903,854	8,864,495	10,533,500	11,665,393	11,904,233	11,653,603	7,985,538
1.5. Fishery	7,382,254	7,430,886	8,276,406	11,945,095	11,086,731	11,478,262	10,420,899
2. Mineral and Mining	102,065	239,294	267,345	347,059	360,253	632,987	21,976,125
3. Processing Industry	2,514,000	2,635,013	2,873,661	3,642,619	5,631,723	15,951,917	19,532,389
4. Electricity and potable	12,052	13,196	54,724	76,007	115,942	132,794	17,028,391
5. Building/Construction	3,798,067	4,991,920	5,577,100	7,256,716	7,515,266	13,204,780	19,099,781
6. Trade Restaurant and Hotels	9,234,452	11,184,768	12,494,230	14,508,621	17,403,784	20,767,704	8,928,019
7. Transportation and Comunication	4,444,952	6,078,279	7,064,230	8,347,098	9,653,317	9,937,452	6,109,606
8. Bank and other Financial Institution	208,770	398,995	559,492	767,197	672,704	891,448	2,947,638
9. Rent House	1,881,832	1,967,935	2,049,683	2,106,174	2,154,962	2,207,833	1,133,472
10. Government	4,487,709	4,375,016	6,036,682	7,268,583	8,394,936	8,519,642	938,704
11. Services	3,067,052	3,287,010	3,761,151	3,886,099	4,163,155	4,383,117	191,647
12. Regional Domestic Product	64,946,409	74,428,576	83,094,869	95,300,955	105,603,256	129,631,059	138,253,209

Source : Statistic Office Central Kalimantan 1983, Regional Domestic Product Central Kalimantan 1975 - 181,-

2) The growth of the main economic sector.

On the average the real increase of GDP per year/sector was : Agriculture was 6.57 %; Mineral and Mining was 33.47 %, Manufacturing Industry was 47.54 %; Electricity and Water was 77.94 %, Building and Construction was 28.84 % ; Trade/Restaurant/Hotel was 15.68 %; Transportation and Communication 13.74 %; Bank & Other Financial Institution was 26.43 %; Rent house was 3.76 %; Government and Defense was 12.94 % and Services sector was 12.78 % (Table III.15).

Those figure indicated that Mineral and Mining, Manufacturing Industry, Water and Electricity; Building and Construction; Trade Hotel/Restaurant sector has average increasing rate over 13.52 %.

Base on the contribution sector, the ranking is :

First : Agricultural sector  
 Second : Trade sector  
 Third : Construction sector and  
 Forth : Processing industry

Relatively the distribution of each sector showed that a Agricultural sector have the dominant contribution although it was decrease from year to year, in 1975 it was 53.94 % and in 1981 was 36.83 % from total GRDP.

Followed by Trade/restaurant/Hotel, which have increasing trend, in 1975 was 14.72 % and in 1981 was 16.46 % from total GRDP. The smaller contribution was Mineral and Mining sector which are increasing continually, in 1975 was 0.28 % and in 1981 was 0.68 % from total GRDP (See-table III.16)

2.1. Value Added

The growth of value added of four main sector is calculated as follows :

Gross Production Value minus intermediate Cost is Gross Value Added.  
 Gross Value added minus Depreciation is net Value Added.

(1) Value Added of Agricultural Sector.

Table : III. 15. Sequent Index of GRDP Central Kalimantan, by Business Field on Basic Constant Price 1975

Number :	Business Field	: 1975 :	1976	: 1977	: 1978	: 1979	: 1980	: 1981	: r %
:	1	: 2	3	: 4	: 5	: 6	: 7	: 8	: 9
1.	: Agriculture	: -	: 112.02	: 107.93	: 111.13	: 104.76	: 107.43	: 96.07	: 6.65
	1.1. Foed Crops	: -	: 108.19	: 101.54	: 95.74	: 110.95	: 120.16	: 112.44	: 3.17
	1.2. Plantation	: -	: 97.32	: 106.13	: 106.13	: 122.37	: 103.25	: 101.57	: 6.14
	1.3. Livestock and dairy product	: -	: 105.95	: 105.89	: 130.32	: 96.90	: 73.27	: 78.48	: 1.56
	1.4. Forestry and hunting:	-	: 148.14	: 118.83	: 110.33	: 102.05	: 97.89	: 68.52	: 7.70
	1.5. Fishery	: -	: 100.77	: 111.26	: 144.33	: 92.81	: 103.54	: 90.34	: 7.26
2.	: Mineral and Mining	: -	: 131.43	: 111.72	: 130.12	: 103.56	: 175.71	: 148.90	: 33.47
3.	: Manufacturing Industry	: -	: 104.84	: 109.02	: 126.76	: 154.61	: 283.25	: 106.75	: 47.54
4.	: Electricity and potable water	: -	: 102.68	: 414.70	: 139.14	: 152.38	: 114.53	: 144.32	: 77.94
5.	: Building/conetruction	: -	: 103.43	: 111.72	: 130.12	: 103.56	: 175.71	: 148.30	: 28.81
6.	: Trade, Restaurant and - Hotels	: -	: 121.12	: 111.71	: 116.12	: 119.95	: 119.33	: 105.82	: 15.68
7.	: Transportation	: -	: 136.75	: 129.78	: 103.15	: 115.64	: 102.94	: 91.57	: 13.74
8.	: Bank and other Financial Institution	: -	: 138.17	: 140.23	: 130.12	: 113.75	: 102.15	: 127.15	: 26.43
9.	: Rent ( hause )	: -	: 104.58	: 104.15	: 102.76	: 102.32	: 102.45	: 106.33	: 3.76
10.	: Governmental	: -	: 97.49	: 137.98	: 120.01	: 115.50	: 101.49	: 104.79	: 12.94
11.	: Services	: -	: 107.52	: 112.72	: 113.80	: 110,81	: 122.75	: 106.65	: 12.78
12.	: Gross Regional Domestic Product	: -	: 11.60	: 112.72	: 113,60	: 110.81	: 122.75	: 106.65	: 13.52

Source : Regional Income Central Kalimantan by Statistic Office Central Kalimantan 1983

Table : III.16. Distribution Percentase of gross Regional Domestic Product Central Kalimantan by Business Field on Fasic  
Constant price 1975

1 : Business Field	2	3	4	5	6	7	8	9	r %
1.: Agriculture :	53.94	52.73	50.49	49.42	46.72	40.89	36.83	47.28	
1.1. Food Crops	24.79	34.41	21.09	17.77	17.79	17.42	18.37	-	
1.2. Plantation Crops	6.71	5.70	5.36	5.01	5.54	4.66	4.43	-	
1.3. Livestock and dairy - product	1.86	1.72	1.61	1.86	1.62	0.96	0.71	-	
1.4. Forestry and hunting	9.21	11.91	12.56	12.24	11.27	6.99	5.78	-	
1.5. Fishery	11.37	9.99	9.87	12.54	10.50	8.86	7.54	-	
2.: Mineral and mining	0.28	0.32	0.32	0.37	0.34	0.49	0.68	-	
3.: Manufacturing industry	6.91	3.54	3.43	3.82	5.33	12.31	14.16	-	
4.: Electricity and potable water	6.84	0.02	0.06	0.08	0.11	0.10	12.32	-	
5.: Building/Construction	5.85	6.71	6.65	7.61	7.12	10.19	6.58	-	
6.: Trade Restaurant and Hotels	14.22	15.03	14.89	15.22	16.48	16.02	16.46	-	
7.: Transportation and Comosica- tion	3.83	8.17	9.37	8.76	9.14	7.66	4.42	-	
8.: Financial and Bank	3.90	0.53	0.67	0.80	0.83	0.69	1.70	-	
9.: Hause Hire	9.45	2.64	2.44	2.21	2.04	1.70	0.82	-	
10.: Governmental	0.18	5.88	7.20	7.63	7.95	6.57	0.68	-	
11.: Services	0.02	4.43	4.48	4.08	3.94	3.38	0.14	-	
12.: Gross Regional Domestic - Product	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	

Source : Regional Income Central Kalimantan by statistik office Central Kalimantan, 1983  
r : Annual rate of growth.



Agriculture sector consists of five sub-sector that are :

- 1). Food Crops
- 2). Plantation Crops
- 3). Livestock
- 4). Forestry and Hunting
- 5). Fishery

#### 2.1.1. Food Crops

Since 1975 up to 1981 the production volume of food crops sub-sector continually increase either on current price or base on constant price 1975. On 1975 base on constant price the Gross Production Value was Rp. 17,119,570,000.00 and 1981 become Rp. 51,717,473,000.00

The average growth per year was 21.33 % while the growth of Gross Value Added 21.27 % per year. In 1975 Netto Value Added was Rp. 15,973,519,000.00 and 1981 Rp. 47,942,852,000.00 and the average growth per year was 21.12 % (table III.17 ).

Base on constant price ( 1975) the Bruto Product Value Rp.17,119,570,000 and in 1981 Rp. 27,010,085,000.00 Growth of Gross Value Added per year 8.17 % and Net Value Added average growth rate 8.17 % per year.

#### 2.1.2. The Value Added of Small Holder Plantation.

The variety of Plantation crops among other things is latex, coffee, coconut, crumb-rubber, slabs, copra. The production value shown in table III.18.

Base on production value the main commodity is coconut and than followed by later and blanked sheet.

In 1975 production value of coconut was Rp.1,980,609,000.00 in 1981 as Rp. 2,532,261,000.00 Production value of later in 1975 was Rp.1,468,356,000.00 and in 1981 was Rp. 2,380,420,000.00

The production value of the small holder plantation based on constant price 1975, in 1975 was Rp. 6,008,298,000.00 and in 1981 was Rp.8,730,256,000.00 with 6.75 % annual growth rate.

Based on current price the production value in 1975 was Rp. 6,008,298,000.00 and in 1981 was Rp. 15,472,380,000.00 with annual growth rate was 26.3 %.

Table : III. 17. Value added of sub - sector food crops on basic current price and on basic constant price 1975 (thousand Rp)

Ma : Specification	: 1975	: 1976	: 1977	: 1978	: 1979	: 1980 <sup>x)</sup>	: 1981 <sup>x)</sup>	: r %
1 :	2	3	4	5	6	7	8	9 : 10
<b>I. : Basic current price :</b>								
1.1. Gross value product	17,119,570	19,379,974	20,473,555	20,926,406	25,283,034	36,863,955	51,717,473	21.33
1.2. Intermediats cost	1,015,966	1,103,661	1,172,363	1,232,780	1,525,455	2,263,459	3,297,156	-
1.3. Gross value Added	16,103,604	18,276,313	19,301,187	19,693,626	23,757,579	34,600,496	49,420,317	21.27
1.4. Depreciation	130,085	129,890	141,812	164,917	206,351	304,389	477,465	-
1.5. Netto value added	15,973,519	18,146,423	19,159,375	19,508,709	23,551,228	34,296,107	47,942,852	21.12
<b>II. : Basic constant price</b>								
2.1. gross value product	17,119,570	18,478,503	18,776,599	17,989,167	19,964,512	23,998,734	27,010,085	8.20
2.2. Intermediats cost	1,015,966	1,056,399	1,025,337	1,050,696	1,171,534	1,416,597	1,618,212	-
2.3. Gross value Added	16,103,604	17,422,104	17,691,262	16,938,491	18,792,978	22,532,137	25,391,873	8.17
2.4. Depreciation	130,085	124,298	128,496	138,039	144,771	156,792	206,496	-
2.5. Netto value Added	15,973,519	17,297,806	17,562,766	16,800,438	18,648,207	22,425,345	25,185,377	8.17

Source : Regional Income Central Kalimantan 1975 - 1981, by statistic office Central Kalimantan, 1983  
r : rate of growth.

Table : III. 18. Gross Value Product of Small Holders Plantation on basic current price ( thousand Rp )

No	Specification	1975	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7	8	9
1.	Latex	1,468,356	1,470,117	1,558,313	1,032,129	2,246,566	2,344,362	2,380,420
2.	Coconut	1,930,699	1,888,943	2,044,460	2,100,575	2,437,783	2,491,505	2,532,261
3.	Coffee	180,126	160,564	120,152	106,416	113,013	114,015	114,808
4.	Clove	12,249	12,377	13,054	13,604	14,871	14,697	14,898
5.	Pepper	1,439	1,474	1,454	1,512	1,519	1,049	1,144
6.	Sheet rubber	1,405,332	1,411,512	1,486,908	1,658,094	2,150,228	2,243,752	2,278,257
7.	Slabs rubber	249,739	250,886	274,482	294,712	382,221	398,820	404,940
8.	Copra	164,032	156,576	169,496	174,140	202,062	206,416	209,868
9.	Total 1 to 8	5,462,039	5,352,449	5,668,308	6,081,482	7,548,263	7,814,616	7,936,596
10.	Mark - up	546,209	535,245	566,831	603,148	754,826	781,462	793,660
11.	Total 9 + 10	6,008,299	5,887,694	6,235,139	6,689,630	8,303,089	8,596,070	3,730,256

Source : Regional Income Central Kalimantan 1975 - 1981, by statistic office Central Kalimantan, 1983.

So the Gross Value Added and Net Value Added base on current price has average increasing rate per year 24.8 % and 24.17 % (See table III. 19 and III. 20).

### 1.3. Livestock Sub-sector.

The production of livestock sub sector comes from cattle breeder and butchering.

Cattle breed consists of cattle breeding, poultry husbandry and forestry breeding. Livestock product in the form of eggs, milk and meat; and the production value are shown in table III. 21. Base on current price production value in 1975 was Rp.1,649,141,000.00 and in 1981 was Rp.4,074,792,000.00 and the yearly Growth rate was 18.96 %.

Base on Constant Price 1975. Gross Production value in 1975. Was Rp.1.649.141.000.00 and in 1981 was Rp.1,366,133,000,00 with average growth rate minus 1,2 % ( Table III. 22 ). Base on Current Price, Gross Value Added increased 17.84 % and Net Value Added 17.7 %. Based on Constant Price 1975, the annual growth rate of gross and net value added that is - 1.58 % and - 1.6 % (See Table 22 ).

### 1.4. Forestry and Hunting sub sector.

The commodity of Forest Product, consists of log, swantimber, rattan shingled, resin etc. Production value of commodity from 1975 until 1981 base on constant price 1975 shown on table III. 23.

Log is the main product of Forest Sub Sector. In 1975 log production value is 74.15 % of the total production value, and in 1981 become 79.49 %. In 1975 log production value was Rp. 5,079,546,000.00 and in 1981 was Rp. 7,381,058,000.00 which 9.71 % growth rate.

Base on current price the growth per year of Gross Production Value, Gross Value Added and net Value Added was 47.05 %; 46.58 % and 46.62 %. And base on Constant Market Price ( 1975 ), the growth per year was 9.71 %; 8.02 % and 7.68 % ( Table III. 24 ).

Table : III. 19 . Gross value Product of Small Small holders plantation on basic current Price (Thousand Rp).

No	Specification	1975	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7	8	9
1.	Latex	1,468,356	2,311,200	2,813,882	4,608,639	10,777,839	5,763,106	3,610,447
2.	Coconut	1,980,607	2,868,496	3,452,067	4,840,192	6,229,095	6,293,543	5,769,928
3.	Coffee	180,186	360,450	397,236	415,893	579,824	676,021	271,399
4.	Clove	12,289	17,522	18,717	21,069	20,771	17,314	25,696
5.	Pepper	1,439	1,754	3,058	3,438	3,117	2,022	3,476
6.	Sheet rubber	1,405,332	2,220,048	2,685,096	4,410,852	10,166,612	4,999,864	3,511,391
7.	Slabs rubber	249,798	420,603	670,059	849,464	2,135,885	1,578,623	609,435
8.	Copra	164,032	121,220	153,084	168,523	238,564	230,826	264,028
9.	Total No 1 s/d 8	5,642,089	8,139,293	10,193,999	15,318,069	30,152,512	19,561,319	14,065,800
10.	Mark - up	546,209	813,929	1,019,400	1,531,807	3,015,251	1,956,132	1,406,580
11.	Gross value Product	<u>6,008,298</u>	<u>8,953,222</u>	<u>11,213,399</u>	<u>16,849,876</u>	<u>33,167,762</u>	<u>21,517,451</u>	<u>15,472,880</u>

Source : Regional Income Central Kalimantan 1975 - 1981, by statistic office Central Kalimantan, 1983

Table : III.20. Value Added of Sub-Sector of Small Holders Plantation Crop on basic current price and on basic constant price 1975 ( thousand Rp )

No	Specification	1975	1976	1977	1978	1979	1980	1981	r %
1	2	3	4	5	6	7	8	9	10
1. : on Basic Current Price:									
1.1.	Gross value Product	6,008,293	8,953,222	11,213,399	16,849,876	33,167,762	21,517,451	15,472,380	26.30
1.2.	Intermediats cost	1,651,743	2,566,663	3,183,099	5,001,778	11,366,696	6,138,685	4,033,356	
1.3.	Gross value Added	4,356,555	6,386,559	8,023,301	11,848,098	21,301,066	15,378,766	11,439,024	24.80
1.4.	Depreciation	99,171	143,195	180,419	272,771	532,829	350,750	257,028	
1.5.	Netto value added	4,257,384	6,243,364	7,844,922	11,575,327	21,268,237	15,028,016	11,181,996	24.77
2. : on Basic Current Price:									
2.1.	Gross value Product	6,008,298	5,887,694	6,235,139	6,689,630	8,303,089	8,596,070	8,730,256	6.25
2.2.	Intermediats cost	1,651,743	1,647,838	1,735,551	1,912,027	2,456,557	2,559,279	2,598,614	
2.3.	Gross value Added	4,356,555	4,239,806	4,499,588	4,777,603	5,846,532	6,036,799	6,131,642	6.13
2.4.	Depreciation	99,171	97,199	104,054	111,640	138,267	143,087	145,346	
2.5.	Value added	4,257,384	4,142,607	4,395,534	4,665,963	5,708,265	5,893,712	5,986,296	6.11

Source : Regional Income Central Kalimantan 1975 - 1981, statistic office Central Kalimantan, 1983

r : rate Figure of growth.

Table : III. 21. Gross Value Product of Livestock and dairy Product on Basic Current Price ( thousand R p )

No	Specification	1975	1976	1977	1978	1979	1980	1981
1	2	3	4	5	6	7	8	9
I.	Rearing Expense	952,667	1,523,033	1,903,085	3,866,316	3,381,023	2,760,447	1,858,865
1.1.	Cattle	189,177	141,547	397,920	357,983	310,779	334,047	736,632
1.2.	Buffalo	5,551	12,903	34,332	350,988	494,439	107,395	20,312
1.3.	Goat	8,038	27,868	49,822	154,278	120,396	16,743	12,075
1.4.	Sheep	544	3,100	2,392	15,925	2,081	6,670	5,267
1.5.	Pig	55,080	461,188	396,278	694,276	434,513	116,285	82,572
1.6.	Hen	581,961	778,787	430,786	1,509,943	1,843,497	1,950,504	984,423
1.7.	Duck	113,316	97,640	541,555	184,423	175,369	198,803	17,584
II.	Slaughter	330,156	448,142	629,707	949,055	778,274	1,259,871	1,250,134
2.1.	Meat	285,272	387,517	541,521	821,175	673,069	1,069,858	1,076,235
2.2.	Bowels	41,898	55,870	80,773	124,609	102,429	187,876	165,969
2.3.	Leather	2,986	4,755	7,413	3,272	2,776	2,137	7,930
III.	Egg And Milk	287,787	254,760	212,404	189,491	363,946	418,910	771,755
3.1.	Hen egg	113,347	100,727	94,996	67,514	119,879	159,865	320,607
3.2.	Duck egg	168,583	148,132	115,647	110,313	232,165	258,005	450,494
3.3.	Fresh milk	5,857	5,901	11,826	11,664	11,902	1,040	654
IV.	Total : I + II + III	1,570,610	2,225,935	2,745,196	4,405,463	4,523,243	4,439,228	3,880,754
V.	Mark - Up 5%	78,531	111,297	137,260	220,273	226,162	221,961	194,033
VI.	Gross Value Product	1,649,141	2,337,232	2,882,458	4,625,736	4,749,405	4,661,130	4,074,792

Source : Regional Income Central Kalimantan 1975 - 1981, by statistic office central Kalimantan, 1983.

Table : III. 22. Gross Value Product of Livestock and Poultry

No	Specification	1975	1976
1	2	3	4
I.	Rearing Expense	952,667	1,187,595
	1.1. Cattle	188,147	109,966
	1.2. Buffalo	5,551	10,080
	1.3. Goat	8,038	21,101
	1.4. Sheep	544	2,263
	1.5. Pig	55,080	360,575
	1.6. Hen	581,961	607,173
	1.7. Duck	110,316	76,437
II.	Slaughter	<u>330,156</u>	<u>384,629</u>
	2.1. Fresh meat	285,272	332,687
	2.2. Bowels	41,898	48,408
	2.3. Leather	22,986	3,534
III.	Egg and Milk	287,787	230,068
	3.1. Hen egg	113,347	90,124
	3.2. Duck egg	168,583	134,043
	3.3. Fresh milk	5,857	5,901
IV.	Total I + II + III	1,570,610	1,802,292
V.	Mark - Up 5 %	78,531	90,115
VI.	Gross Product Value	1,649,141	1,892,407

Source : Regional Income Central Kalimantan, 1975



and dairy Product on basic Constant Price 1975 ( thousand Rp )

1977	:	1978	:	1979	:	1980	:	1981
5	:	6	:	7	:	8	:	9
1,274,582	:	1,826,877	:	1,668,344	:	1,065,413	:	606,834
287,158	:	226,226	:	171,845	:	118,216	:	208,567
23,666	:	137,105	:	212,706	:	33,600	:	6,355
34,900	:	84,364	:	52,021	:	6,656	:	4,800
3,619	:	7,921	:	883	:	2,668	:	2,107
257,827	:	362,228	:	188,733	:	36,364	:	16,405
295,884	:	898,810	:	951,287	:	788,435	:	362,016
373,448	:	110,219	:	90,869	:	79,474	:	6,494
<u>423,354</u>	:	<u>469,705</u>	:	<u>328,951</u>	:	<u>365,909</u>	:	<u>381,241</u>
364,756	:	403,503	:	283,403	:	310,074	:	326,634
54,215	:	61,606	:	41,829	:	52,019	:	50,672
4,383	:	4,596	:	3,719	:	3,016	:	3,935
163,030	:	121,021	:	197,763	:	226,721	:	313,004
63,326	:	46,467	:	77,422	:	90,590	:	125,748
94,185	:	69,111	:	115,151	:	135,676	:	187,026
5,519	:	5,443	:	5,190	:	455	:	230
1,860,966	:	2,417,603	:	1,195,058	:	1,658,043	:	1,301,079
93,048	:	120,880	:	109,753	:	82,902	:	65,054
1,954,014	:	2,538,483	:	2,304,811	:	1,740,945	:	1,366,133

Table III.23. Gross Production value of forestry and hunting on basic constant price, 1975 ( thousand Rp ).

Nu.	Specification	1975	1976	1977	1978	1979 x )	1980 x )	1981
1.	Sleepers	5,079,546	7,901,353	9,484,220	10,816,098	10,879,378	10,934,139	7,381,058
2.	Sawn timber	19,374	29,713	60,661	91,746	131,056	150,256	141,543
3.	Pire wood	142	112	117	120	139	126	134
4.	Tree bark ( pasak Bumi )	3,020	60,580	41,420	78,725	466,605	186,011	64,360
5.	Charcoal	15,340	15,863	16,497	17,020	17,356	17,804	5,673
6.	Forest rubber	60,827	85,593	97,476	24,701	72,057	80,184	31,900
7.	Rattan	863,503	1,073,907	1,152,078	1,068,071	997,839	870,539	513,407
8.	Resin	614	-	-	927	1,360	7,439	3,493
9.	Dipterocarpaceae	-	-	64,554	27,407	50,567	6,512	260,336
10.	Iron Wood roof tik	81,244	101,986	111,969	139,097	30,713	47,349	42,143
11.	Roof palm leaves	3,540	2,518	2,765	3,435	4,715	2,437	309
12.	Others	-	126	6,207	7,794	10,295	13,473	6,698
13.	Total 1 up to 12	6,227,140	9,271,756	11,037,964	12,275,141	12,662,080	12,316,271	8,441,054
14.	Mark up 10 %	622,714	927,756	1,103,796	1,227,514	1,266,208	1,231,627	44,105
15.	Product value ( 13 + 14 )	6,849,854	10,199,512	12,141,760	13,502,655	13,928,288	13,547,898	9,285,159

Revised figure.

Source : Regional Income Central Kalimantan 1975 - 1981, Statistic Office Central Kalimantan, 1983,-

Table III. 24. Value Added of forestry and Hunting on basic current price and basic constant price 1975 ( thousand Rp. )

Nu. Specification	1975	1976	1977	1978	1979 ")	1980 ")	1981	r %
<b>I. BASIC CURRENT PRICE :</b>								
1.1. Gross value product	: 6,849,854	: 12,921,823	: 21,769,229	: 32,396,969	: 59,239,070	: 65,694,849	: 54,307,093	: 47.05
1.2. Intermediate Cost	: 866,000	: 1,644,363	: 2,844,430	: 2,407,692	: 8,276,613	: 9,193,671	: 7,572,374	
1.3. Gross value Added	: 5,989,654	: 11,277,460	: 13,724,799	: 27,989,277	: 50,962,457	: 56,501,178	: 46,734,719	: 46.58
1.4. Depreciation	: 84,387	: 159,338	: 270,499	: 411,809	: 759,744	: 849,430	: 691,254	
1.5. Net value added	: 5,899,467	: 11,118,122	: 27,654,300	: 27,577,468	: 50,202,713	: 55,651,748	: 46,043,465	: 46.62
<b>II. BASIC CONSTANT PRICE YEAR 1975 :</b>								
2.1. Gross value Product	: 6,849,854	: 10,199,512	: 12,141,760	: 13,502,655	: 13,828,288	: 13,547,898	: 9,285,159	: 9.71
2.2. Intermediate Cost	: 866,000	: 1,355,017	: 1,608,251	: 1,837,262	: 1,924,055	: 1,894,295	: 1,299,623	
2.3. Gross value Added	: 5,983,854	: 8,864,495	: 10,533,509	: 11,665,393	: 11,904,233	: 11,653,604	: 7,985,536	: 8.02
2.4. Depreciation	: 84,387	: 127,234	: 152,079	: 127,068	: 176,128	: 174,614	: 118,255	
2.5. Net value Added	: 5,899,467	: 8,737,261	: 10,381,430	: 11,493,325	: 11,728,105	: 11,478,989	: 7,867,281	: 7.68

"Revised figure.

Source : Regional Income Central Kalimantan 1975 - 1981, Statistic Office Central Kalimantan, 1983.

r=annual growth.

(2) Value Added of Trade, Restaurant and Hotel sector.

This sector is the second ranking after Agricultural sector of all economic sector. Since 1975 up to 1981 the growth rate was 15.68 % per year.

Base on Current Price Gross Value Product in 1975 was Rp. 11,947,965,000.00 and in 1981 increased into Rp. 78,387,113,000.00 and the yearly average growth rate was 37.73 % (Table III.25). With constant price (1975), the growth was 14.74 % per year, where in 1975 Gross Production Value Rp. 11,947,965,000.00 per year, and in 1981 increased into Rp. 27,108,823,000.00 Value Added per yearly average growth rate is 15.58 % (table III.26).

(3). The Value Added of Construction/Building Sector.

This sector is the third ranking in the Economic of Central Kalimantan from the point of view of his contribution to GRDP. The yearly average growth rate is 28.81 %. Base on Current Price the Gross Production Value in 1975 was Rp. 5,508,547,000.00 and from 1975, till to 1981 the average growth of Gross Value Added and Net Value Added is 33.47 % (Table III.27).

(4). Value Added of Manufacturing Industry.

This is the fourth ranking with yearly growth in 47.54 %. Base on current price, the gross value product in 1975 was Rp. 5,836,944,000.00 and in 1981 increased into Rp. 85,633,593,000.00 with 61.53 % growth per year.

Large and medium scale industry has the main contribution per industrial sub sector that is about 81.61 %. In 1975 the contribution of small scale industry is 14.47 % and handicraft/home industry is 4.37 %; while in 1981 the contribution of each sub sector was 86.38 %; 13.72 % and 0.90 %.

It means that the role of large/medium scale industry has increased and small/handicraft/home industry becomes less.

Table : III. 25. Value Product and Value added of Trade Sector, Restaurant and Hotel on Current Price ( thousand Rp )

No	Specification	1975	1976	1977	1978	1979	1980	1981	r %
1.1	Gross Product	11,947,965	17,833,528	23,002,818	31,391,101	54,474,928	71,561,571	76,387,113	37.73
	a. Wholeseller	10,196,480	15,509,405	20,363,021	28,412,867	50,793,728	66,251,568	69,303,135	
	b. Restaurant	1,721,100	2,289,361	2,913,520	3,522,520	3,522,721	4,622,012	6,190,423	
	c. Hotel	30,385	34,762	56,654	64,714	158,929	687,991	893,555	
1.2	Intermediats cost:	2,713,513	3,445,763	3,875,990	4,449,589	5,388,981	6,846,559	8,220,427	
	a. Wholeseller and Retailer	1,455,513	1,773,821	1,985,925	2,317,624	2,795,037	3,344,531	3,535,751	
	b. Restaurant	1,251,584	1,664,823	1,878,462	2,118,712	2,561,395	3,361,127	4,501,676	
	c. Hotel	6,223	7,119	11,603	13,253	32,549	140,901	183,000	
1.3	Gross value added:	9,234,452	13,950,733	18,213,649	25,214,649	44,659,662	53,632,471	61,835,484	38.93
	a. Wholeseller and Retailer	8,740,774	13,298,522	17,463,830	24,368,380	43,572,406	56,324,496	59,436,182	
	b. Restaurant	469,516	624,538	704,681	794,808	960,876	1,260,885	1,688,747	
	c. Hotel	24,162	27,623	45,951	45,461	126,380	547,090	710,555	
1.4	Depreciation	500,055	750,639	991,992	1,377,047	2,448,339	3,204,787	3,369,273	
	a. Wholeseller and Retailer	482,014	726,796	964,614	1,346,145	2,408,777	3,139,785	3,282,975	
	b. Restaurant	17,211	22,894	25,831	29,135	35,223	46,220	61,904	
	c. Hotel	830	949	1,547	1,767	14,339	18,782	24,394	
1.5	Net value added	8,734,397	13,200,094	17,221,570	23,837,602	42,211,323	55,427,684	58,466,211	15.66
	a. Wholeseller and Retailer	8,258,760	12,571,756	16,499,216	23,022,235	41,163,629	53,684,711	56,153,207	
	b. Restaurant	452,305	601,644	678,850	765,673	925,653	1,214,665	1,262,843	
	c. Hotel	23,332	26,694	43,504	49,694	122,041	528,308	686,161	94.00

Source : Regional Income Central Kalimantan, statistic office Central Kalimantan, 1983

Table : III. 26. Value Added of Trade Sector, Restaurant and

Nu	Specification	:: 1975	:	1976	:	1977	:
1.1	Gross value Product:	11,947,965	:	14,274,560	:	15,852,930	:
	a. Whoeller and Reta: Retailer	10,196,480	:	12,440,208	:	13,931,901	:
	b. Restaurant	1,721,100	:	1,799,953	:	1,874,695	:
	c. Hotel	30,385	:	34,399	:	46,073	:
1.2	Intermediate cast	2,413,513	:	3,089,792	:	3,358,692	:
	a. Whoelier and retailer	1,455,706	:	1,773,821	:	1,985,925	:
	b. Restaurant	1,251,534	:	1,308,926	:	1,363,378	:
	c. Hotel	6,223	:	7,045	:	9,489	:
1.3.	Gross Value Added	9,234,452	:	11,184,768	:	12,494,233	:
	a. Whoeller and reta: iler.	8,740,774	:	10,666,397	:	11,945,976	:
	b. Restorant	489,320	:	491,027	:	511,417	:
	c. Hotel	24,162	:	27,354	:	36,845	:
1.4.	Depriciation	500,055	:	607,576	:	679,382	:
	a. Whoeller and reta: iler	482,014	:	533,638	:	659,370	:
	b. Restorant	17,111	:	17,999	:	18,747	:
	c. Hotel	330 330	:	939	:	1,265	:
1.5.	Net Value Added	8,734,397	:	10,577,192	:	11,814,356	:
	a. Whoeller and reta+ iler	8,253,760	:	10,077,749	:	11,286,606	:
	b. Restorant	452,305	:	437,028	:	492,670	:
	c. Hotel	23,332	:	26,415	:	35,580	:

R= Growth rate on %

Source : Regional Income Central Kalimantan. Statistic Off



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Hotel on basic current Price 1975 ( Thousand Rp )

1978	:	1979	:	1980	:	1981	:	r %
13,236,330	:	21,644,214	:	25,605,874	:	27,108,323	:	14,74
16,264,130	:	19,614,073	:	23,463,098	:	24,801,837	:	
1,926,137	:	1,970,942	:	2,019,139	:	2,152,442	:	
46,339	:	59,199	:	123,637	:	154,544	:	
3,727,799	:	4,220,430	:	4,838,170	:	5,132,698	:	
2,317,024	:	2,795,037	:	3,344,531	:	3,535,791	:	
1,400,729	:	1,233,260	:	1,433,318	:	1,565,256	:	
9,436	:	12,124	:	25,321	:	31,651	:	
14,508,622	:	17,403,784	:	20,767,704	:	21,976,125	:	
23,946,526	:	16,819,036	:	20,119,567	:	21,266,046	:	
525,453	:	537,673	:	550,621	:	587,189	:	
36,637	:	47,075	:	98,316	:	122,839	:	
790,463	:	949,836	:	1,134,034	:	1,199,462	:	
769,943	:	928,511	:	1,110,468	:	1,173,719	:	
19,262	:	16,707	:	10,191	:	21,524	:	
1,253	:	1,616	:	3,375	:	4,219	:	
13,718,161	:	16,453,948	:	19,633,670	:	20,776,663	:	15.58
13,178,583	:	15,890,525	:	19,008,099	:	20,092,327	:	
506,194	:	517,964	:	530,630	:	565,662	:	
35,377	:	45,459	:	94,941	:	118,674	:	

Table III. 27 Value Added of Building/Construction sector on basic current and Constant 1975 (thousand Rp )

Nu	Specification	1975	1976	1977	1978	1979	1980	1981
<b>I. Basic current price</b>								
1.1.	Gross Production value	: 5,500,547	: 7,510,124	: 3,160,458	: 12,534,005	: 17,005,877	: 36,307,246	: 55,098,759
1.2.	Intermediate Cost	: 1,710,480	: 2,331,997	: 2,751,224	: 3,891,902	: 5,260,559	: 11,277,006	: 17,106,925
1.3.	Gross value Added	: 3,798,067	: 5,176,127	: 6,109,164	: 9,642,023	: 11,725,318	: 25,040,240	: 37,989,334
1.4.	Depreciation	: 119,789	: 163,315	: 192,680	: 272,564	: 369,810	: 789,755	: 1,190,175
1.5.	Net value Added	: 3,678,278	: 5,014,012	: 5,916,484	: 8,369,459	: 11,355,508	: 24,250,405	: 36,791,656
<b>II. Basic Constant Price 1975</b>								
2.1.	Gross Production Value	: 5,508,547	: 7,240,069	: 8,088,700	: 10,524,317	: 10,399,806	: 19,151,635	: 28,401,422
2.2.	Intermediate Cost	: 1,710,460	: 2,248,141	: 2,511,680	: 3,208,101	: 3,304,540	: 5,946,847	: 8,819,033
2.3.	Gross value Added	: 3,798,067	: 4,991,928	: 5,577,108	: 7,256,716	: 7,515,266	: 13,204,706	: 19,582,389
2.4.	Depreciation	: 119,789	: 157,442	: 175,899	: 228,873	: 237,027	: 416,471	: 617,617
2.5.	Net value Added	: 3,678,278	: 4,834,486	: 5,401,209	: 7,027,843	: 7,278,239	: 12,788,317	: 18,964,772

Source : Regional Income Central Kalimantan, statistic office Central Kalimantan, 1983.



Table : III.28 Value Added of Manufacture Industry on Current price

No.	Specification	1975	1976	1977
1.	Gross Production value	5,836,944	9,592,616	11,386,979
1.1.	Big/medium Industry	4,737,022	1,963,359	9,055,195
1.2.	Small Industry	844,799	1,304,760	2,014,155
1.3.	Home Industry	255,123	324,497	367,629
2.	Intermediate Cost	3,312,864	6,326,483	7,638,415
2.1.	Big/medium Industry	2,724,616	5,409,058	6,239,696
2.2.	Small Industry	473,400	758,247	1,158,383
2.3.	Home Industry	124,848	159,178	120,336
3.	Gross Value Added	2,514,080	3,266,133	3,778,564
3.1.	Big/medium Industry	2,012,406	2,554,301	3,765,499
3.2.	Small Industry	371,399	546,513	625,772
3.3.	Home Industry	130,275	165,319	167,293
4.	Depreciation	142,598	232,533	289,648
4.1.	Big/medium Industry	92,602	151,070	170,559
4.2.	Small Industry	42,240	65,238	160,708
4.3.	Home Industry	12,756	15,225	18,361
5.	Net Value Added	2,366,482	3,033,600	3,488,916
5.1.	Big/medium Industry	1,919,804	2,403,231	2,594,940
5.2.	Small Industry	329,159	481,275	725,064
5.3.	Home Industry	117,519	149,094	168,912

Source : Regional Income Central Kalimantan 1975 - 1981, Statistic Office  
 r = rate of growth.

( thousand Rp )

1978	1979	1980	1981	r %
14,637,078	:30,614,413	: 68,297,852	: 85,633,593	: 61.53
11,130,747	:23,361,414	: 58,805,272	: 73,967,280	
3,108,387	: 6,768,049	: 8,868,345	: 10,894,035	
197,944	: 484,950	: 624,235	: 772,278	
9,542,112	:16,687,958	: 34,127,544	: 48,460,709	
7,493,119	:14,971,865	: 28,835,275	: 81,227,718	
1,853,787	: 4,478,222	: 4,946,058	: 6,854,161	
195,206	: 227,871	: 306,211	: 378,830	
5,094,066	:10,944,455	: 33,170,308	: 37,172,884	
3,637,628	: 8,389,549	: 29,929,997	: 32,739,562	
1,254,600	: 2,307,827	: 2,922,287	: 4,039,874	
202,738	: 247,079	: 318,024	: 393,448	
423,161	: 913,700	: 1,720,335	: 2,137,490	
247,844	: 550,148	: 1,245,605	: 1,553,725	
155,420	: 339,304	: 443,518	: 545,151	
19,897	: 24,248	: 31,212	: 38,614	
4,671,805	:10,030,755	: 31,449,973	: 35,035,394	: 69.45
3,389,784	: 7,839,401	: 28,684,392	: 31,185,832	
1,094,180	: 1,968,523	: 2,478,769	: 3,494,723	
182,841	: 222,831	: 286,112	: 354,834	

Office Central Kalimantan, 1983

Table III. 29. Value added of Manufacturing Industry on basic constant price 1975 ( thousand Rp )

Nu. Specification	1975	1976	1977	1978	1979	1980	1981	r %
1. Gross Production Value	5,836,944	7,547,893	8,505,394	10,293,398	14,957,236	31,143,142	38,386,959	23.30
1.1. Big/Medddium Industry	4,737,022	6,149,531	6,700,504	7,933,489	10,877,682	26,712,342	33,709,713	
1.2. Small Industry	844,799	1,131,503	1,527,018	2,074,350	3,787,387	4,131,454	4,358,969	
1.3. Home Industry	255,123	266,659	277,872	285,559	292,167	299,167	318,277	
2. Intermediate Cost	3,322,864	4,912,080	5,631,733	6,650,779	9,325,513	15,191,225	21,258,568	
2.1. Big/Medddium Industry	2,724,616	4,140,064	4,623,314	5,313,941	6,781,475	12,480,529	18,524,028	
2.2. Small Industry	473,400	640,212	872,113	1,196,761	2,400,728	2,563,856	2,678,414	
2.3. Home Industry	124,848	130,904	136,306	140,077	143,310	146,840	156,126	
3. Gross Value Added	2,514,080	2,635,813	2,873,661	3,642,619	5,631,723	15,951,917	17,028,391	47.54
3.1. Big/Medddium Industry	2,012,406	2,008,567	2,077,190	2,619,548	4,096,207	14,231,613	15,185,685	
3.2. Small Industry	371,399	491,291	654,905	877,589	1,386,659	1,567,598	1,680,555	
4. Depreciation	147,598	189,087	219,251	294,073	462,607	779,618	932,825	
4.1. Big/Medddium Industry	92,602	119,168	129,006	176,077	258,630	558,079	698,962	
4.2. Small Industry	42,240	56,576	76,351	103,718	189,369	206,572	217,949	
4.3. Home Industry	12,756	13,343	13,894	14,278	14,608	14,967	15,914	
5. Net Value Added	2,266,482	2,446,726	2,654,410	3,348,471	5,169,116	15,172,299	16,095,566	48.66
5.1. Big/Medddium Industry	1,919,804	1,889,399	1,948,164	2,443,471	3,437,577	13,673,734	14,486,723	
5.2. Small Industry	329,159	434,715	578,554	773,871	1,197,290	1,361,028	1,462,606	
5.3. Home Industry	117,519	122,612	127,672	131,204	134,249	137,539	146,237	

Source : Regional Income Central Kalimantan 1975 - 1981, Statistic Office Central Kalimantan, 1983

r = Growth rate on %.

Net Value Added in 1975 was Rp. 2,366,482,000.00 and in 1981 increased into Rp. 35,035,394,000.00 with growth rate 69.45 % per year (table III.28).

Base on Constant Price (1975) the Growth of Gross value added and net Value Added was 23.30 %; 47.54 % and 48.66 %, look table III.29.

## 2.2. Productivity.

The productivity was calculated by dividing GRDP with total worker.

The population census in 1980 showed that total worker was 364,980. In 1980 the average worker productivity in Central Kalimantan was Rp.876,020.00 The amount and percentage of worker by sector in 1980 were shown in table III.30.

Table : III.30.

Total and Percentage worker by sector 1980.

No.	Sector	Total	Percentage (%)
1.	Agriculture	268,347	73.52
2.	Mining	3,069	0.84
3.	Industry	19,410	5.32
4.	Electricity, gas and potable water.	125	0.03
5.	Building	5,811	1.59
6.	Trade	24,484	6.72
7.	Transportation	6,392	1.76
8.	Banking and others	786	0.11
9.	Service	35,035	9.60
10.	Others	1,521	0.42
	Total	364,980	100.00

Source : Population Census 1980, Serie 3. Number 2.

In agricultural sector there was 73.52 % of total active worker. The worker productivity in Central Kalimantan and Indonesia at the year of 1980 is shown in table III.31.

Table : III.31. Labor force productivity in Central Kalimantan  
and Indonesia 1980 (in Rupiahs )

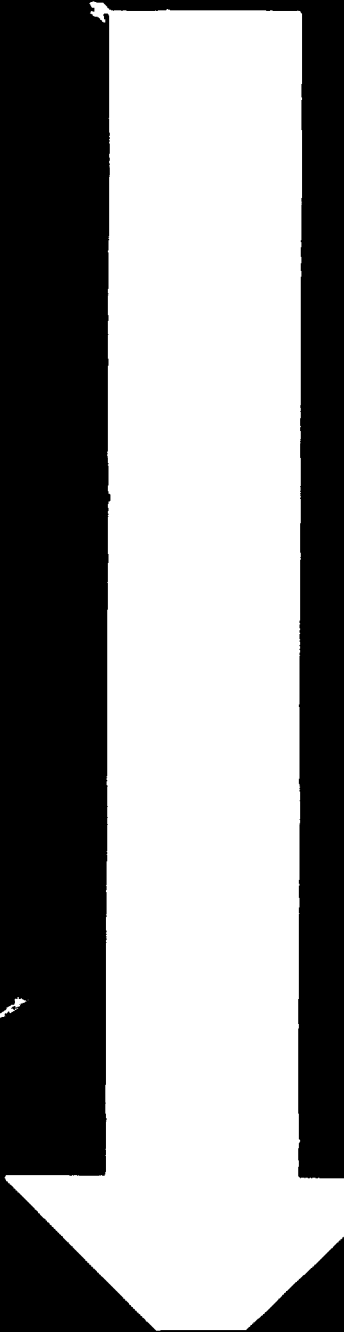
S e c t o r s	Central Kalimantan	Indonesia
1. Agriculture	543,986	390,250
2. Mining	390,643	30,616,393
3. Industry manufacture	1,708,928	821,679
4. Electricity and potable water	1,853,312	3,406,013
5. Building	4,309,110	1,522,978
6. Trade	2,394,726	included service 866,818
7. Transportation	3,459,253	1,161,861
8. Bank	2,822,725	866,818
9. Service and others	254,935	866,818
A v e r a g e	876,020	848,930

Source : 1. Population Census Series No. 2.

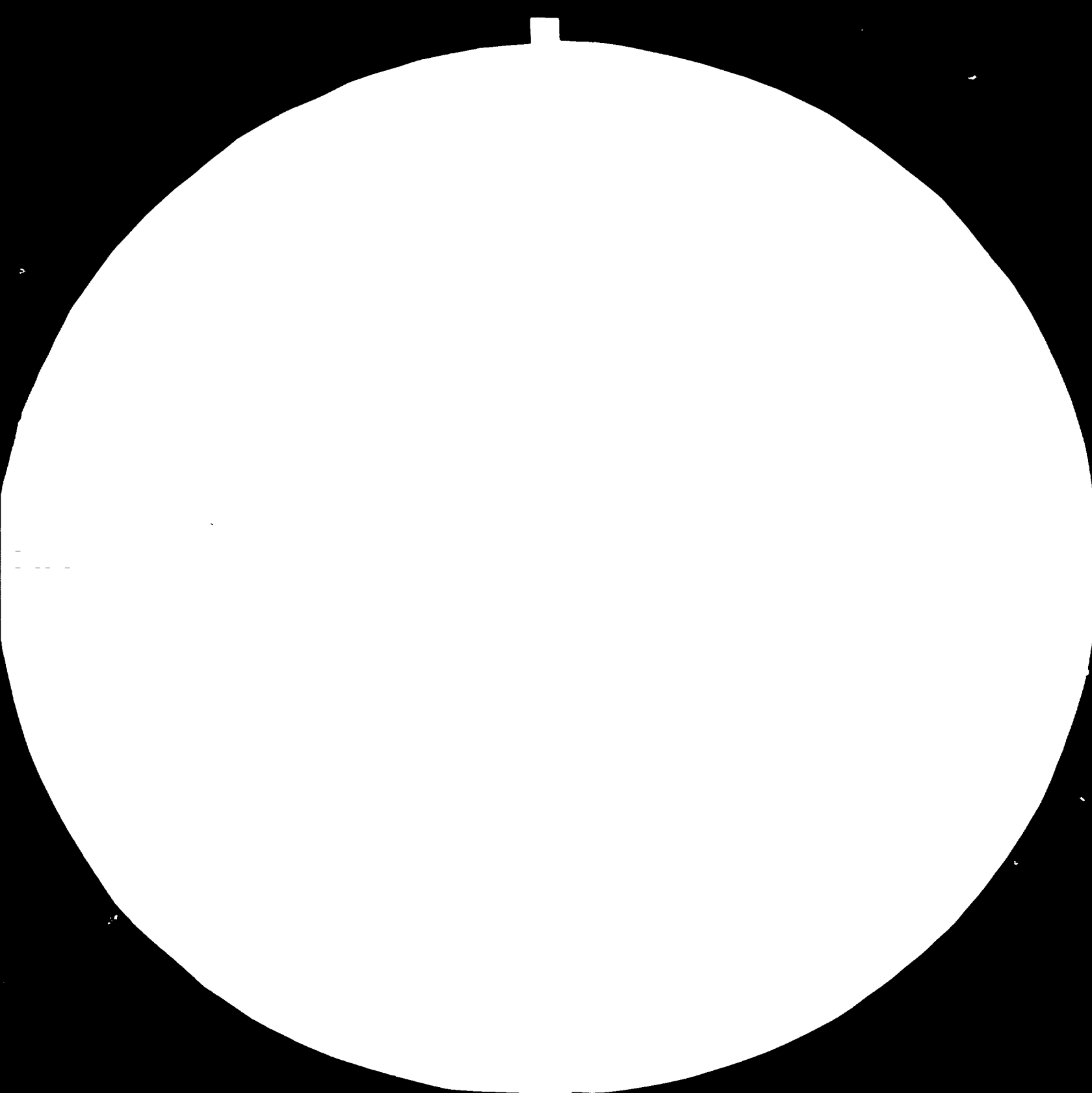
2. Prepare from Regional Income Central Kalimantan,  
1975 - 1981.

The highest productivity of labor force in Central Kalimantan was in building sectors, Then followed by transportation and banking sectors.

Indonesian figure for the same year was Rp. 848,930.00 the highest is in mining sectors, followed by electric and building sectors.



**84.12.19**





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS  
STANDARD REFERENCE MATERIAL 1010a  
(ANSI and ISO TEST CHART No. 2)



### 2.3. Trade s

Trade activities in Central Kalimantan consists of national Trade and International trade has been developed into 3 trade centre, that is :

- Pangkalan Bun Trade Center, services the West Development area.
- Sampit Trade Centre, services the south development area.
- Kapuas Trade Centre, services Kapuas area.

#### International Trade.

1.1. The export trade was more dominant then import trade. The main export especially logs. Since 1970 up to 1973 was 2,914,998,99 Cu.m with value US \$ 286,295,330,95 From 1979 to 1983 : 4,728,384.4 Cu.m with value US \$ 515,825,259.94

The export volume of logs in Peljita III was decreased compared with Peljita II, but the value still increased.

The decreased in volume because the decree of 3 Minister, where all company which by forest licence must processes its logs to be finished product to fulfill domestic market.

Sawn timber initially export 1972. The volume has increased from year to year in form of finished product or semi finished product (see table III. 32). In 1979 until 1983, the export volume of sawn timber continually increased compare with the year before.

Its increase because of :

- 1) The decision of Trade Ministry No. 124/KP/VII/78 dated on Mei, 27 1978 about the product of export Ramin Logs, and this logs should be processed into sawn timber, moulding and others finished product for export.
- 2) The price stability of export commodity has made by Trade Department.

Other commodity exported for year was rubber, rottan. Plywood has been exported until 1980 and the volume was increased continusly.

From the list of export commodity in table III.32 its shows that the export of Central Kalimantan only in the form of forest product.

Table III. 32. Volume, Value and growth of export, Central Kalimantan 1970 - 1973.

No. : Commodity	1970		1971		1972	
	: Volume	: Value US \$	: Volume	: Value US \$	: Volume	: Value US \$
1. Logs ( m3 )	: 513,630.33	: 8,120,652.29	: 406,930.60	: 5,714,114.87	: 502,471.07	: 8,479,987.9
2. Saw Timber ( m3 )	: -	: -	: -	: -	: 3,354.87	: 57,150.6
3. Rubber ( Ton )	: 10,170.03	: 3,067,199.34	: 9,970.44	: 3,446,779.75	: 9,454.65	: 2,191,091.1
4. Latex ( Ton )	: 9,178.52	: 149,203.05	: 6,122.40	: 374,120.55	: 7,835.82	: 96,568.6
5. Jelutong pressed ( Ton )	: 2,619.51	: 264,137.22	: 1,482.60	: 121,057.08	: 1,127.20	: 44,288.3
6. Red rubber ( Ton )	: 29.71	: 1,541.58	: 36.82	: 2,203.46	: 48.70	: 1,145.5
7. Dry rubber ( Ton )	: 9.00	: 162.67	: -	: -	: -	: -
8. Tengkuang seeds ( Ton )	: -	: -	: 60.00	: 12,080.00	: -	: -
<b>Total</b> : m <sup>3</sup> .	: 513,630.35	: 11,622,896.15	: 406,930.69	: 9,670,295.71	: 503,825.94	: 10,872,232.0
Ton	: 22,006.77	: -	: 17,672.26	: -	: 18,466.37	: -

Nu. Commodity	1973		1974		1975	
	Volume	Value US \$	Volume	Value US \$	Volume	Value US \$
1. Logs ( m3 )	1,491,966.90	49,754,999.85	995,141.40	37,540,126.80	979,815.50	32,658,635
2. Sawn Timber ( m3 )	26,174.74	1,432,402.16	8,172.76	472,890.26	24,831.87	1,527,153
3. Rubber ( Ton )	13,732.00	6,223,005.33	13,419.05	7,755,181.17	13,522.43	5,762,194
4. Kattan ( Ton )	6,589.33	37,615.01	7,701.10	77,946.45	13,169.50	253,254
5. Jelutung Pressed ( ton )	977.00	32,362.77	1,902.50	220,026.41	884.60	157,800
6. Red Rubber ( Ton )	-	-	2.30	41.36	32.43	4.365
7. Ketiaw Rubber ( Ton )	-	-	1.30	10.80	7.00	1,400
8. Tengawang Seeds ( Ton )	962.20	22,749.17	-	-	-	-
9. Gambor back ( Ton )	-	-	-	-	-	-
10. Moulding ( m3 )	-	-	-	-	-	-
<b>T o t a l : M3</b>	<b>1,518,141.64</b>	<b>57,503,134.29</b>	<b>1,003,314.16</b>	<b>46,066,222.53</b>	<b>1,004,617.37</b>	<b>40,364,803</b>
<b>          Ton</b>	<b>22,260.53</b>	<b>-</b>	<b>23,026.25</b>	<b>-</b>	<b>27,615.96</b>	<b>-</b>

Nu.	Commodity	1976		1977		1978	
		: Volume	: Value US \$	: Volume	: Value US \$	: Volume	: Value US \$
1.	Logs (m3)	: 1,301,128.96	: 56,156,974.23	: 1,540,348.92	: 76,914,728.92	: 1,756,278.17	: 83,024,866
2.	Sawn Timber (m3)	: 65,588.45	: 3,811,539.90	: 34,172.01	: 6,372,631.27	: 170,433.74	: 18,699,490
3.	Rubber (Ton)	: 13,005.29	: 8,258,527.28	: 10,580.72	: 7,212,361.57	: 11,483.81	: 8,824,416
4.	Rattan (Ton)	: 10,712.55	: 499,548.60	: 11,492.55	: 1,113,753.60	: 10,654.65	: 3,582,235
5.	Jelutung Press (Ton)	: 1,087.50	: 217,100.00	: 1,518.00	: 398,100.00	: 395.44	: 125,600
6.	Red Rubber (Ton)	: 37.85	: 211,300.42	: 2.90	: 2,125.00	: 1.00	: 450
7.	Katiaw Rubber (Ton)	: 4.00	: 800.00	: -	: -	: -	: -
8.	Tengkawang Seeds (Ton)	: -	: -	: 912.00	: 520,800.00	: 387.04	: 193,520
9.	Gembor back (Ton)	: -	: -	: -	: -	: -	: -
10.	Moulding ( )	: -	: -	: -	: -	: -	: -
T o t a l M3		: 1,366,717.41	: 69,155,790.43	: 1,624,520,934	: 92,534,500.43	: 1,926,854.65	: 114,468,614
Ton		: 25,147.19	: -	: 24,512.17	: -	: 22,966.94	: -

Nu. Commodity	1979		1980		1981		
	Volume	Value US \$	Volume	Value US \$	Volume	Value US \$	
1. Logs ( m3 )	1,347,488.95	123,681,183.61	1,471,646.49	180,992,010.03	826,064.24	96,772.370	
2. Sawn Timber ( m3 )	290,988.65	60,937,902.79	271,596.25	64,579,620.76	290,536.05	53,004,396.03	
3. Rubber ( Ton )	10,437.24	10,562,649.31	8,264.44	9,463,861.50	22,971.74	7,928,768.13	
4. Rattan ( Ton )	11,327.33	8,417,295.05	13,952.92	15,213,650.91	34,255.00	11,594,023.51	
5. Jelutung Pressed ( Ton )	1,273.00	1,010,075.00	740.00	1,503,350.00	509.35	1,265,600.00	
6. Red Rubber ( Ton )	-	-	-	-	-	-	
7. Ketaw Rubber ( Ton )	-	-	-	-	-	-	
8. Tengkwang seeds ( Ton )	-	-	67.00	43,500.00	2,115.20	1,591,990.00	
9. Gembor back ( Ton )	177.00	44,995.00	-	-	400.00	212,500.00	
10. Moulding ( m3 )	2,788.35	433,127.03	499.17	100,046.70	4,485.63	558,297.94	
11. Plywood ( m3 )	-	-	19,838.82	3,177,577.73	58,845.89	13,132,343.62	
T o t a l	M3	1,641,265.95	205,086,237.79	1,763,580.73	275,073,637.63	1,175,539.17	-
	Ton	23,214.57	-	23,024.36	-	60,201.85	186,059,489.51

Nu.	Commodity	1982		1983		: Increasing/decreasing	
		: Volume	: Value US \$	: Volume	: Value US \$	: Volume	: %
1.	Logs ( m3 )	: 569,690.27	: 51,428,572.63	: 513,486.45	: 52,891,123.67	: 9.97	: 2.7
2.	Sawn Timber ( m3 )	: 270,220.17	: 44,414,474.02	: 307,456.95	: 55,437,133.62	: 13.78	: 31.5
3.	Moulding ( M3)	: 2,675.11	: 1,053,341.29	: 1,188.32	: 325,194.42	: - 55.59	: - 69.1
4.	Playwood (m3)	: 79,628.75	: 18,305,545.42	: 120,410.91	: 29,562,196.83	: 51.22	: 63.4
5.	Venner ( m3)	: 2,604.84	: 455,847.49	: 1,678.60	: 297,633.33	: - 35.56	: - 34.7
6.	Rubber (Ton )	: 3,288.84	: 3,096,936.14	: 8,285.91	: 6,906,732.43	: 151.98	: 123.0
7.	Rattan ( Ton )	: 8,955.08	: 12,090,635.40	: 7,830.95	: 10,419,622.09	: - 12.56	: - 13.8
8.	Jelutung Pressed ( Ton )	: 511.11	: 1,047,853.80	: 431.30	: 778,381.00	: - 20.33	: - 25.7
9.	Pengkawang seeds ( Ton )	: 577.12	: 345,413.80	: 1,021.68	: 470,572.00	: 76.95	: 36.2
10.	Timber back ( Ton )	: 450.00	: 50,210.00	: 1,821.50	: 152,315.50	: 304.67	: 203.0
11.	Red Rubber (Ton )	: -	: -	: 1,50	: 1,50	: 100.00	: 100.0
T o t a l		M3 : 924,835.14	: 132,349,829.99	: 944,221.13	: 161,191,509.39	: + 2,10	: 21.8
		Ton : 13,811,74	: -	: 19,392.04	: -	: +40,41	: -

Source : Annual Report of Trade Office, Central Kalimantan,-

Other export commodity as Food Crops product, metal industries product were not yet.

Base on the nature and geographical condition with transportation system, the export commodity moving from north to south via river and flows into the mouth of the river in the south.

The export sea port in :

- |                                    |   |                      |
|------------------------------------|---|----------------------|
| 1). District of Kapuas             | : | 1. Teluk Sebangau    |
|                                    |   | 2. Kuala Kapuas      |
|                                    |   | 3. Pulang Pisau      |
| 2). District of Kotawaringin Barat | : | 1. Kuala Jelai       |
|                                    |   | 2. Pangkalan Bun     |
|                                    |   | 3. K u m a i         |
| 3). District of Kotawaringin Timur | : | 1. Sampit            |
|                                    |   | 2. Kuala Pembuang    |
|                                    |   | 3. Pegatan Mendawai. |

The export volume and volume by sea port since 1975 until 1983 are shown in table 3.3. From the figure in this table, base on export volume, the main port : Kuala Kapuas, Pulang Pisau, Sampit, Pangkalan Bun and Kumai.

All of this port beside nearly with the coast also located in big river which are as main transportation in Central Kalimantan, that is :

- Kuala Kapuas in the side of Kapuas river.
- Pulang Pisau in the side of Kahayan river.
- Pangkalan Bun in the side of Arut/Lamandau river.
- Kumai in the side of Kumai river and located in Kumai sea.

- I m p o r t

Import commodity comes from Pangkalan Bun, Kumai, Kuala Kapuas, Pulang Pisau port. Import volume and value has a continuous increased since 1973 until 1981 (table III.33).

Table : III.33.

## Volume and Value of Import Central Kalimantan 1973-1981.

! Y e a r s !	V o l u m e (Kg.)	! V a l u e (US.\$)	!
! 1973 !	1,345,000.00	! 1,275,000.00 !	!
! 1974 !	14,361,000.00	! 16,977,000.00 !	!
! 1975 !	1,382,000.00	! 3,000.000.00 !	!
! 1976 !	1,170,013.00	! 3,488,000.00 !	!
! 1977 !	2,005,886.00	! 3,953,094.00 !	!
! 1978 !	3,149,411.00	! 6,182,377.00 !	!
! 1979 !	3,132,342.00	! 6,171,514.00 !	!
! 1980 !	7,343,420.00	! 12,500,627.00 !	!
! 1981 !	9,673,629.00	! 10,290,257.00 !	!

Source : Regional Trade Office Central Kalimantan.

In 1980, import volume and value increased about 134 % and 103 % compared with 1979. In 1979 the largest import volume was in Pangkalan Bun and followed by Kuala Kapuas. Import volume and value from 1973 to 1981 by harbour are shown in table 3.4.

When compare export volume and value by harbour it is clearly seen that export value is much higher than import value. Export and import volume and value in 1979 from Kuala Kapuas harbour, in for example, showed that the export volume and value each reached 24,189,783 Kg and US \$ 10,512,162 while the import volume and value reached each 169,468 Kg and US 160,842,00. The same as to other harbours where import commodities for Central Kalimantan considered of Capital goods, spare parts and wood chemicals.

- Inter-insular Trade.

Inter-insular trade cover commercial goods into and from Central Kalimantan, Goods imported from other islands consists of sugar, flour mills, cement, karosin, solar and premium. All kinds of commodities as mentioned above haven't been produced yet in this region. Volume import of every commodities imported to Central Kalimantan from other regions/island among other things are : textiles, shoes, iron goods, Such as frame iron, motor vehicles etc. Inter-island trade volume and value from/to Central Kalimantan from 1975 up to 1981 can be seen in table III.34 and III.35.



Table : III. 34.

Volume of Import by Commodity to Central Kalimantan 1977-1980.

! Year !	! Sugar !	! Grain !	! Cement !	! Fuel !		
				! Gasoline !	! Solar !	! Premium !
! 1977 !	3,223 !	2,191 !	4,187.4 !	15,069 !	- !	- !
! 1978 !	8,865 !	68,050 !	4,063.8 !	16,315 !	8,510 !	4,020 !
! 1979 !	9,975 !	14,220 !	4,169.8 !	23,318 !	9,200 !	7,130 !
! 1980 !	1,439.25 !	458,725 !	5,851.48 !	32,770 <sup>*)</sup> !	8,510 <sup>*)</sup> !	4,645 !

\*) drum = 200 litre

Source : Trade Office Central Kalimantan.

Table : III.35.

Realization Interinular Trade 1975 - 1981.

! Year !	! Entered Goods !		! Out Goods !	
	! Volume (Kg.) !	! Value (Rp.) !	! Volume (Kg.) !	! Value (Rp.) !
! 1975 !	19,173 !	1,793,173 !	14,943 !	7704,077 !
! 1976 !	36,081 !	3,781,477 !	86,164 !	1,336,037 !
! 1977 !	346,793 !	6,080,764 !	232,510 !	2,400,372 !
! 1978 !	64,711 !	3,009,985 !	75,844 !	1,659,290 !
! 1979 !	627,741,524 !	23,748,092,379 !	700,357,397 !	14,989,166,585 !
! 1980 !	250,890,809 !	25,039,418,204 !	1,373,942,376 !	15,806,082,585 !
! 1981 !	251,331,820 !	25,629,412,204 !	1,363,490,291 !	24,718,150,394 !

Source : Trade Office Central Kalimantan.

## 2.4. Projection Growth up to 1990.

In above part of this report as it has been stated that the annual GDP growth of Central Kalimantan from 1975 up to 1981 is 13.53 %.

Annual growth of it each sector is as follows :

- 1) Agriculture : 6.57 %
- 2) 1.1. Food crops : 8.17 %
- 1.2. Plantation crops : 6.14 %
- 1.3. Livestock and other products : -1.56 %

1.4. Forestry and hunting	:	7.70 %
1.5. Fisheries	:	7.25 %
2) Mining	:	33.47 %
3) Processing Industries	:	47.54 %
4) Electricity and Potable water	:	77.94 %
5) Building and construction	:	28.81 %
6) Trade, Restaurants and Hotels	:	15.68 %
7) Transportation and communication	:	13.5 %
8) Bank, other financial institution	:	20.43 %
9) House renting	:	3.76 %
10) Government	:	12.78 %
11) Services	:	12.78 %
12) G R D P	:	13.52 %

Based on growth of previous years and fluctuation of GRDP, shortage of direct influence of government investment on private investment sector and recession on national economic from 1981 upto 1984 as a part of mondial economic recession combined with the growth of other sectors economic growth can be estimated or GRDP growth during 1982 - 1990 periods is expected to reach 8 % per year.

This growth is based on the growth of agriculture sector lacking optimism and is estimated to reach 7 % per years. This is caused by the condition disadvantages agricultural locations. Agricultural sectors can be considered as the starting point to project the economic growth because agricultural sector remains very dominant in economy, where almost a larger part of the man power absorbed and this sector is most important contributed to GRDP growth.

Population growth during the 1982 up to 1990 periods is projected to reach 3.84 % according the population growth of previous years.

With economic growth 8 % per year and population growth 3.84 % per year, income per capita is really expected to increase 4.16 %. The income per capita, therefore, is based on the constant price in 1981 as the following :

Year	Rupiahs
1982	339,943.00
1983	354,085.00
1984	368,815.00
1985	384,815.00
1986	400,139.00
1987	416,785.00
1988	434,123.00
1989	452,183.00
1990	443,994.00

### 2.3. Problems and Prospect of Regional Investment.

#### 1. Trends of Regional, Government and Private Investment.

##### 1.1. Government Investment in Central Kalimantan.

The Government and Non-Government Investment in the region is estimated to reach 1,206,791 million rupiah, consisting of the Government Investment and 542,627 million rupiah of the Private Investment.

From the data of Government and Private Investment, especially concerning the Domestic and Foreign Investment during the Repelita I, II and III, it is clearly seen that Domestic and foreign Investment during the three Pelitas estimate each 73.8 %; 64.1 % and 40.3 % of the total Private and Government. **Private Investment** tended to relatively decrease although absolutely tended to increase in volume. The estimation of the Private Investment for the Repelita IV reaches 542,607 million rupiahs (See table III.36), or 2.5 folded when compared with the investment during the Pelita III ( 211 million rupiahs).

Table : III.36.

Public and Private Investment Estimation on Repelita IV on  
Basic Current Price ( million rupiahs).

Investment :	Years				
	1984/85	1985/86	1986/87	1987/88	1988/89
Public	87,457	105,823	158,496	154,936	137,472
Private	71,556	86,583	104,315	126,766	153,387

Source : Repelita IV Central Kalimantan.

This amount seems very hard to be achieved, because of various problems.

The problems faced during the Repelita IV in investment development in Central Kalimantan seemed to be :

- 1) The so limited physical facilities and infrastructure, such as roads, bridges, ports and harbours, air ports, canals, post, telegraph and telecommunication, electricity, potable water, etc.
- 2) The so limited financial institution, such as banks.
- 3) The so low population and the lack of skilled and trained workers.

In stead of so many limited facts, the so large investment remains not impossible because of some reasons :

- 1) That the private investment during these periods has been concentrated on logs business and log processing industries.
- 2) Besides the existing logs processing industries with increasing capacity there is still logs export minimally 500,000 Cu.m per year. This amount, when processed in Central Kalimantan, the progress of the existing forestry based industries seems possible, or the chance to establish new unit of wood processing industries remain open wide.
- 3) Other sectors or sub-sectors such plantation, fishery and mining still wait for investment.

In brief, the large amount of Private Investment still attracts to be reached, if only the Indonesian Government and Regional Government try hard to take fixed steps to help private investors help themselves through workable policies, such as :

- 1) To improve land transportation, especially the present road condition and to build new economical roads, to and from production centres; and to improve telecommunication system and its devices.
- 2) To direct new investment in the sub-sectors of plantation, fishery, and fishery processing, cattle breeding, mining and energy.
- 3) To open the opportunity for investment on wood processing industries.
- 4) To simplify the procedures of licence for running new business.
- 5) To establish job training centres followed by localizing transmigrants in areas based on land use capacity and fertility.
- 6) To pool all project leaders from the whole development projects in Palangka Raya or in district where the locations are near to the development projects.

### 3. Facilities

This field covers the roads for surface transportation, electrification for developing small industries or home industries, harbours for ship industries, airport, and telecommunications for fluency of communication, information, etc.

#### 3.1. Transportation sub-sector

The transportation in Central Kalimantan province (land, sea, and air) is not yet felt adequate if compared with the largeness of Central Kalimantan Province. This always, indeed, gets particular attention from the central and regional government.

##### 3.1.1. Roads

The road and bridge length that are built in the region of Central Kalimantan and are built with the fund from the central as well as regional government and private company (Forestry Exploitation License is available in table III.37. The number of road length according to the surface of every district can be seen in table III. 38. and the road length at the end of third plan (Pelita III) is presented in table III. 39.

#### Problems.

The challenging problems that must be faced by the central and regional to build appropriate roads and **bridges** based on the society need are :

- a. The nature condition of Central Kalimantan Propince that consists of forest 84 %; swamps 12.5 % rivers, lakes and **Stagnant** water areas 2.8 % and land areas 0.7 %.
- b. Unequal spreads of settlement areas.
- c. Habitual actions done by the inlanders who have no permanent jobs and always move from one settlement area to another.
- d. The relatively low education level of the society.
- e. Inadequate number of **technical** workers, quantitatively aswell as qualitively.
- f. The available fund for road construction is very limited.

The supporting elements for road and bridge constructions in the province of Central Kalimantan are :

The difference between urban area and rural area.

In urban areas, cars and motorcycles can pass and most of their roads on which only motorcycles can run. So, the roads and the bridges that meet the requirements for motor vehicles to pass on are only available in urban areas. The plan of road- bridge construction by the government in Central Kalimantan Propince will be held in the fourth plan (Pelita IV).

National Budget Program.

- a. Supporting program covers : preservation of the existing roads, the objective is to restore the critical road condition to a better one. The target is 3.045 kilometers long (cumulative).
- b. Improvement program covers : To improve the existing roads that are in poor condition to become better and make new roads that connect: Kasongan - Sampit; Tangkiling - Kasongan; Sampit - Pangkalan Bun. The total length is 1977 kilometers.
- c. Bridge replacement program covers : to replace all the bridge that are in critical condition. The target is 1.820 meters long.

Regional Budget Program.

- a. The program of road and bridge support, The target is 9,489.5 kilometers long.
- b. The program of road and bridge improvement. To target is 250.4 kilometers long.
- c. The program of road and bridge construction. The target is 540 kilometers long.

(Note : The above information got from Department of Publik Works in Central Kalimantan - temporary data).

Investment fund of central and regional government for road and bridge transportation sub-sector in Central Kalimantan Province First Plan up to Third Plan see table III. 39.

Table : III.37. Length of road by Government authority in Central Kalimantan 1969 - 1983 ( Km )

Nu.	Year :	Level of Government Authority					: Total
		: State	: Province	: District	: Municipality	: H P H	
1.	1969	: 79.00	: 76.00	: 55.00	: 60.00	: -	: 270.00
2.	1970	: 115.00	: 76.00	: 55.00	: 60.00	: -	: 280.00
3.	1971	: 225.00	: 64.00	: 71.00	: 65.00	: -	: 425.00
4.	1972	: 225.00	: 64.00	: 71.00	: 65.00	: -	: 425.00
5.	1973	: 129.00	: 64.00	: 71.00	: 54.00	: -	: 318.00
6.	1974	: 129.00	: 64.00	: 71.00	: 54.00	: -	: 318.00
7.	1975	: 274.00	: 93.00	: 71.00	: 60.00	: -	: 493.00
8.	1976	: 274.00	: 64.00	: 560.00	: 204.00	: -	: 1,102.00
9.	1977	: 274.00	: 71.00	: 560.00	: 204.00	: -	: 1,109.00
10.	1978	: 274.00	: 64.00	: 1,778.30	: 184.00	: -	: 2,300.30
11.	1979	: 360.17	: 448.99	: 1,565.28	: 212.00	: -	: 2,395.43
12.	1980	: 368.67	: 103.99	: 1,565.28	: 212.00	: -	: 2,249.94
13.	1981	: 305.17	: 379.00	: 1,331.46	: 212.00	: -	: 2,227.63
14.	1982	: 142.00	: 442.00	: 1,616.21	: 128.90	: 624.80 <sup>x)</sup>	: 2,755.91
15.	1983	: 242.17	: 656.50	: 202.70	: 212.00	: 570.00 <sup>xx)</sup>	: 7,013.37

Source : Statistic Bureau of Central Kalimantan

x): BAPPEDA Office of Central Kalimantan.

xx): Public work Office of Central Kalimantan.



Table : III. 38. Length road by surfaves and District in Central Kalimantan (Km.) 1983/1984.

Nu.	Municipality / District	Type surtage			: Total
		: Asphalt	: Gravelstone	: Step road	
1.	Palangka Raya	: 56.00	: 35.10	: 23.60	: 114.70
2.	Kotawaringin Timur	: 3,47	: 96.31	: 305.07	: 369.30
3.	Kotawaringin Barat	: 15.00	: -	: 265.60	: 395.60
4.	Barito Selatan	: 9.00	: 30.10	: 64.95	: 124.35
5.	Barito Timur	: 67	: 72.00	: 74.40	: 213.07
6.	Barito Utara	: -	: 23.35	: 205.45	: 228.30
7.	Murung Raya	: 4.00	: 19.22	: 80.00	: 103.22
8.	Katingan	: 4.50	: 23.00	: 447.00	: 474.50
9.	Kapuas	: -	: 26.00	: 67.10	: 93.10
10.	Gunung Mas	: -	: -	: 60.00	: 60.00
T o t a l		: 164,64	: 284,98	: 1,593.17	: 2,042.99

Source : Public Work Office, Central Kalimantan.

Note .: Not include HPH road.

Table : III. 39. National and Regional Government Investment Fund in Transportation Sector : Road and Bridges during Pelita I - Pelita II.

Nu.	Explanation	: Pelita:	Regional Budget:	T o t a l:	Nu.:	Explanation	: Pelita:	National Budget
1.	Road and bridges exploitation and maintenance	I :	184,984,000:	-	1 :	Roads and bridges exploitation and maintenance	I :	202,439,500: -
2.	Road and bridges contraction	I :	19,500,000:	284,484,000	:	:	:	208,439,500
3.	Road and bridges exploitation and maintenance	II :	690,853,000:	:	2 :	Road and bridges rehabilitation and maintenance	II :	1,352,367,000:
4.	Road and bridges improvement	II :	361,853,000:	:	:	:	:	:
5.	Road and bridges construction and maintenance	II :	317,916,000:	1,370,611,760	:	:	:	1,352,367,000
6.	Road and bridges exploitation and maintenance	III :	4,749,800,000:	:	3 :	Road and bridges Rehabilitation and maintenance	III :	4,627,533,000:
7.	Road and bridges improvement	III :	1,513,475,000:	:	:	:	:	:

## The Plan of Road Improvement and Construction

### 1. Ampah is situated 283 kilometres from Banjarmasin.

The trouble that usually happens in between two places is caused by the bad condition of the road between Amuntai - Kuala especially in rainy season the road is out off and badly damaged by rain water, the location of this poor place is around South Kalimantan but the result of this poor condition is felt by the people in Central Kalimantan.

In order to overcome their trouble, and make the economic stream run fluently between the two provinces, attention from the regional government of South Kalimantan really needed to take care of damaged road.

#### 1.1. The road between Ampah - Kuara Teweh

Before 1980, only motorcycles could run on this road. But in 1981 this 127.50 kilometres road, after having been built with ANCAS system, could facilities cars to pass on it, this road is equipped with its different kinds of bridge construction, such as concrete be composed type, acrow panel, Australian steel construction, ulin wood, etc.

#### 1.2. The road between Muara Teweh - Kalimantan Timur

There has been logging road start from Muara Teweh and reaches the border East Kalimantan, this road was built by a forest concession to transport its wood. So, the road from Muara Teweh to East Kalimantan is actually no longer becoming a problem anymore, that is to make use of the existing road for public facilities. The road goes throught to East Kalimantan and passes Benangin - Lampeong villages. A problem is now coming up because there is no cooperation between the regional government of East Kalimantan and Central Kalimantan to connect the two areas by the help of the road. The supporting elements from the road networks are irrigation projects the establishment of transmigration resettlement and the potentiality of natural resources in the form of mining and others such as :

#### a. Irrigation

- |                                |                     |          |
|--------------------------------|---------------------|----------|
| 1) E and F Project             | :                   |          |
| - rice field in Barito Selatan |                     | 3,040 Ha |
| - rice field in Barito Timur   |                     | 1,900 Ha |
| - rice field in Barito Utara   |                     | 1,822 Ha |
| 2) Small scale irrigation      | : in Talohen        | 1,000 Ha |
| 3) Simple irrigation           | : - in Tanjung Jawa | 392 Ha   |
|                                | - in Montalat       | 410 Ha   |
|                                | - in Trinsing       | 687 Ha   |
|                                | - in Tumpung Laung  | 521 Ha   |
| 4) Swamp development           | : in Ampah          | 2,500 Ha |

#### b. Transmigration

- |   |                |
|---|----------------|
| 1) Transmigration settlement in Kuara Teweh | 1,650 families |
| 2) Transmigration settlement in Patas       | 500 families   |

#### c. Plantation

The plantation area is located along the road between Ampah - Kuara Teweh.

#### d. Mining

Lime resources are found in Teweh and its surrounding.

- 1) Primary gold : Gold in Teweh (the beginning of Kahayan river), with the spread covering 2,000 Ha. The gold reserves are 938,839 tons of gold ore with the degree of 20 to 30 grams of gold per ton.
- 2) Lime : In the village of Wonorejo and its surrounding within the subdistrict of Teweh Tengah 50,000,000 tons .
  - In the village Pendreh and its surrounding, with the sub-district of Teweh Tengah 11,466,000 tons.
  - In Sei Sepoyang 19,500,000 tons.
  - In Kuara Jambi 39,000,000 tons.
  - In Gunung Anjal 1,000,000,000 tons.
  - In Sei Teweh 7,800,000 tons.
  - In Tunga Barat 260,000,000 tons.

2. The road connecting Palangka Raya - Tangkiling - Kasongan - Sampit - Fangkalan Bun - Sukamara - Ketapang (West Kalimantan).

This highway network is planned in order to connect the cities planning as the Central Area Development, they are Palangka Raya, Sampit and Pangkalan Bun. This highway then goes through West Kalimantan. The economic potential that run along this highway are big enough because of the strong supported elements for the development in their future. They cover the areas of irrigation, transmigration, forest product, wood industry, mining and also harbor.

The following are some information :

Based on the condition and the construction of this highway :

- 2.1. The road between Palangka Raya - Tangkiling (Ruas 001).  
This 34 kilometres road was built by PROJAKAL with the help and fund from Rusia, finished in 1965 with good asphalt.
- 2.2. The road between Kasongan - Tangkiling (Ruas 006).  
This 48.5 kilometres road was built for the first time in 1976, and in 1982 was finished with AWCAS system and improved with asphalt.
- 2.3. The road between Kasongan - Sampit (Ruas 010).  
The road length is 127.5 kilometres. Until 1982/1983 it had been completed/was still under construction as long as 65 Km, with AWCAS system.
- 2.4. The road between Sampit - Pangkalan Bun (Ruas 011).  
The road length is 127.5 kilometres. Until 1982/1983, the construction reached 45 kilometres long.
- 2.5. The road between Pangkalan Bun - Sukamara - Ketapang (West Kalimantan).  
The road length is 91 kilometres. Until 1982/1983, the construction reached 51 kilometres long. There has been step road going from Sukamara (Central Kalimantan) to Ketapang (West Kalimantan). Now people in border area between the two provinces make use of this road as their transportation track. Therefore, in order to realize this highway, we only wait for the mutual agreement between the regional government of Central Kalimantan and **west Kalimantan**.

The supporting elements of this highway network are as following :

## a. Irrigation

1) E and F Project	: rice field in Katingan	1,875 Ha
	rice field in Kotawaringin Timur	4,000 Ha
	rice field in Kotawaringin Barat	3,255 Ha
2) Simple Irrigation	: in Sei Bamban	297 Ha
	in Tepahas	432 Ha
	in Manga Bulik	178 Ha
	in Kuala Jelai	250 Ha
3) Swamp development	: in Kumpai Batu	2,000 Ha
	in Palangsian	2,376 Ha

## b. Transmigration

Already/still being done in third plan :

in Hanjalipan/Kuala Kuayan	9,200 families
in Katingan	2,500 families
in Jangkit	600 families
in Sampit	900 families
in Sukamandang	1,700 families
in Seruyan Hulu	900 families
in Palangsian	1,000 families
in Samuda/Hantipan	300 families
in Kumai/Kondang	9,050 families
in Kumpai Batu	500 families

## c. Mining

- 1) Iron ore (magnetitic) ; found in the beginning of Belantikan river (Kotawaringin Barat) with the number of iron reserves approximately 1,000,000.00 tons.
- 2) Kaolin :
  - in Pahirangan (Kotawaringin Timur) 2,500,000.00 tons
  - in Sei Lunak area (Kotawaringin Timur) 48,300.00 tons
  - in Tanjung Jerangan (Kotawaringin Timur) 30,000.00 tons
  - in Kampung Gohong (Palangka Raya) 13,000,000.00 tons
  - in Sei Pinang (Kotawaringin Barat) 5,750,000.00 tons
- 3) Quartz, in Sei Pinang (Kotawaringin Barat) 21,060,000.00 tons

- 4) Quartz crystal, in the area of Kotawaringin Barat 21,755.00 tons.

3. The road connecting Palangka Raya - Pulang Pisau - Kuala Kapuas.

This highway network is planned to connect Palangka Raya and Kuala Kapuas it is very important to support Palangka Raya with the highly economic potentiality from Kapuas because Kapuas region is the main rice-barn for the whole Central Kalimantan. There are many rice fields, most of the field areas are tidal rice field areas.

The following information is given based on the road condition and construction.

3.1. The road between Palangka Raya - Pulang Pisau (Ruas 020)

The road length is 85 kilometres. In 1982 the road was made as long as 12 kilometres in the swamp areas. Pulang Pisau is a port city, as a hinterland and will function as the support of Palangka Raya as this road is finished.

3.2. The road between Pulang Pisau - Kuala Kapuas

The road length is 40 kilometres. At this moment the road has reached as long as 40 kilometres going through Mandomai and Basarang.

The following are the supporting elements of this highway network : (See Fig III.2; III.3)

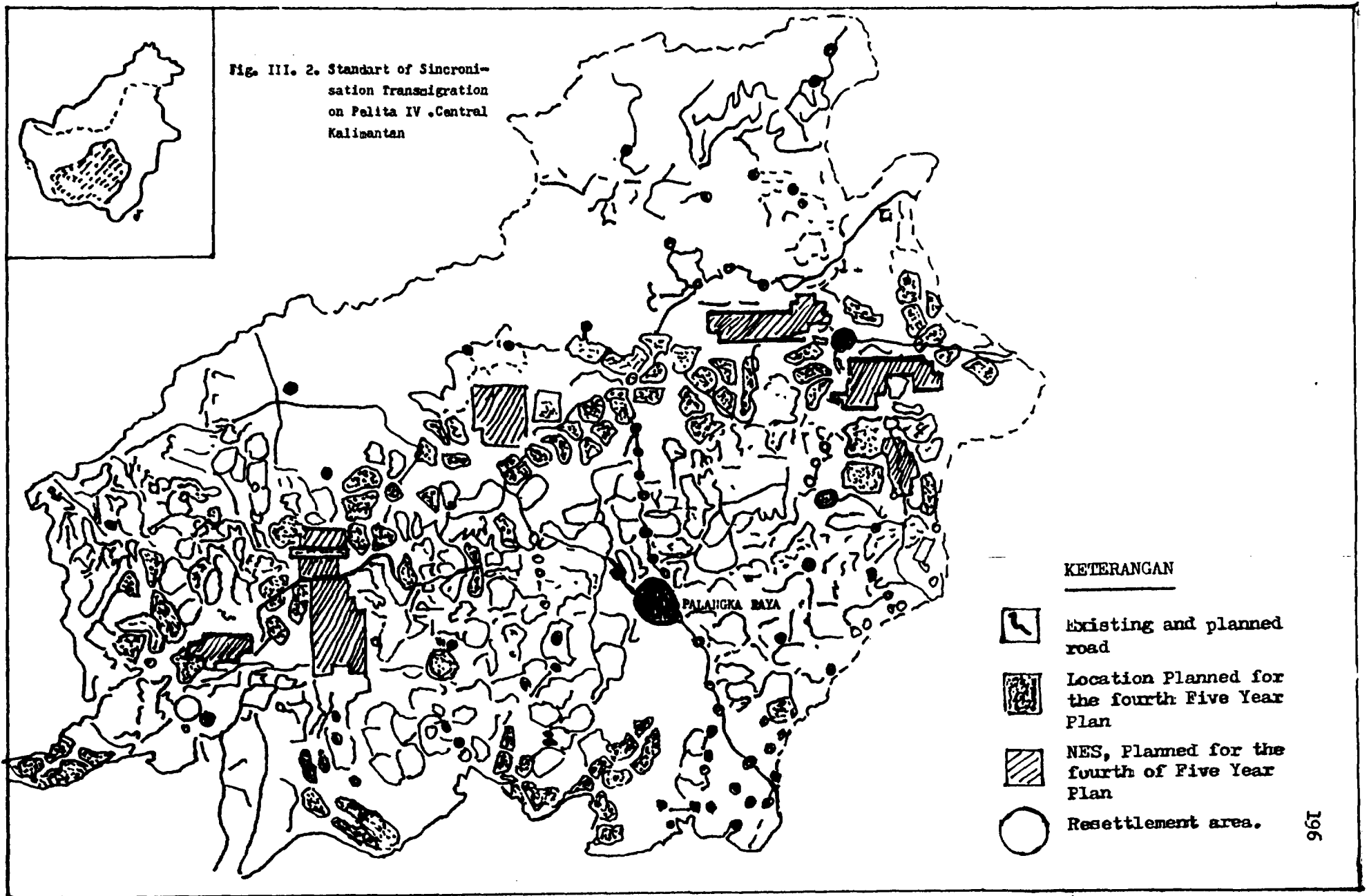
a. Irrigation

1) E and Projects	: - rice field in Palangka Raya	2,500 Ha
	- rice field in Kapuas	50,979 Ha
2) Simple irrigation Project	: - In Bereng Bengkel	2,500 Ha
	- in Sei Fitung	290 Ha
3) Swamp development	: - in Mentaren	2,435 Ha
	- in Jabiren	936 Ha
4) Tidal rice field areas		13,551 Ha

b. Transmigration

Already/still being done in the Pelita III :

- in Terusan Tengah	1,600 families
- in Pangkoh I (Folio)	1,130 families
- in Pangkoh II (Pangkoh)	1,520 families





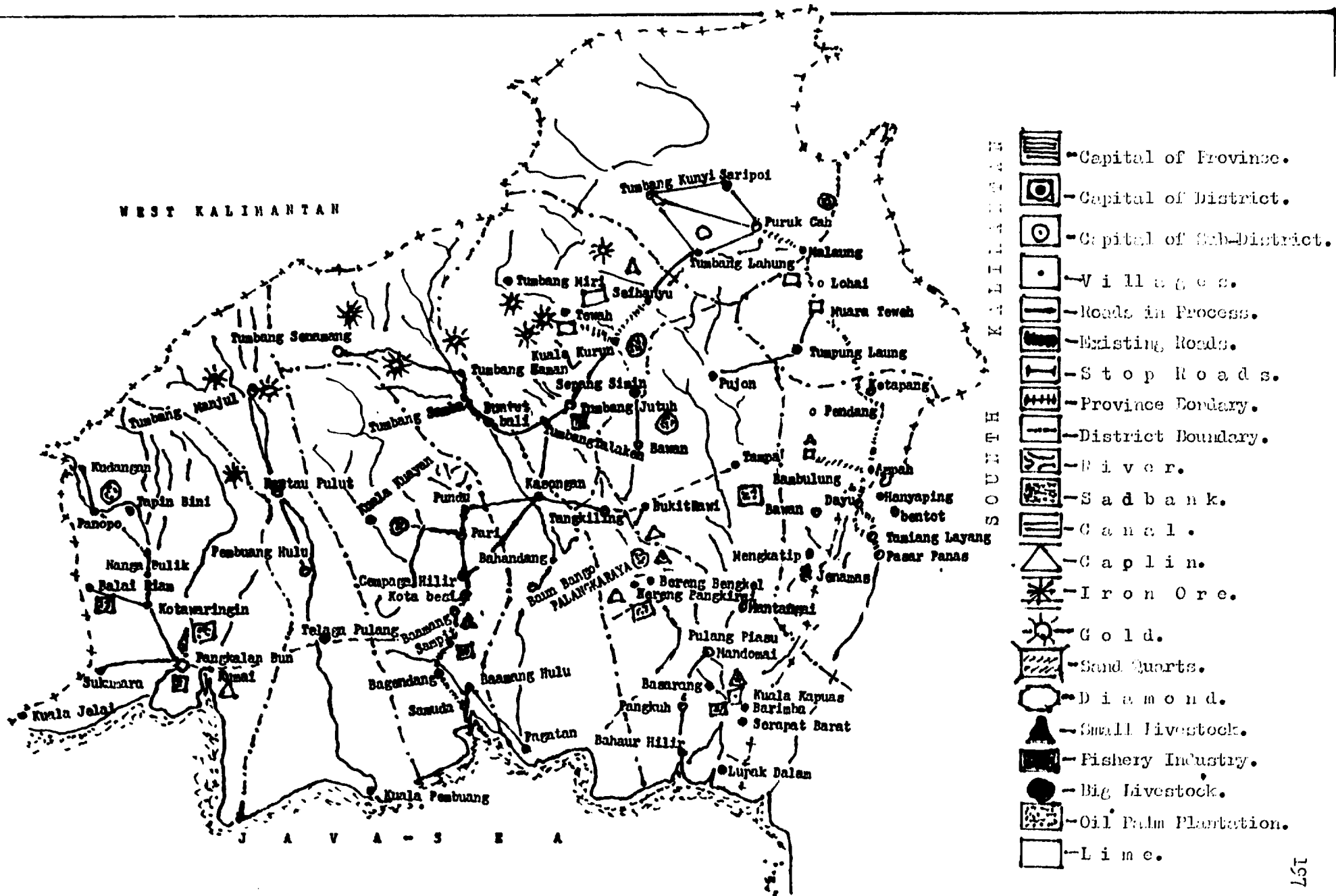


Fig. III. 3. Mining, Livestock, Plantation and Fishery Area

- in Pangkoh III (Kantan)	1,500 families
- in Pangkoh IV (Tahai)	1,170 families
- in Pangkoh V (Maliku Miri)	1,600 families
- in Pangkoh VI (Maliku Kanan)	1,600 families

c. Mining

- 1) Kaolin : - in Kereng Bangkirai area 13,000,000 tons  
(Palangka Raya)  
- in Petak Putih area (Kapuas) 640,000 tons
- 2) Quartz : - in Petak Putih area (Kapuas) 7,825,000 tons

4. The alternative road connecting Tumbang Talaken - Tumbang Samba - Tumbang Manjul - Kudangan - The border between Central and West Kalimantan.

This highway network is planned to connect the capital city of Palangka Raya through the Northern road that goes to West Kalimantan. This road also function as a unifying instrument for isolated inland areas. The following information is given based on the road condition and construction.

Some places are flat and some others are sloping with their wavy and even hilly soil surfaces. The data got from a preliminary survey held in 1981 are the total approximate length is 262 kilometres , consisting of :

- the road of the Forestry Exploitation lisenca	: 94 Km.
- the step road	: 61 Km.
- forest	: 107 Km.

In followings are the supporting elements of this road :

a. Agriculture

In subdistrict areas in which this road runs, the agricultural potentiality is good enough, especially for food agriculture. But the support from irrigation project to improve the agricultural products has not reached the areas. That is why it is expected that the irrigation project can reach the areas in the years to come.

### b. Transmigration

As an effort of spreading people and of increasing the number of workers around the areas, the settlement for transmigration is now preparation in :

1) Manjalipan	: VI b/E, Pelita III	:	1,200 families
	Pelita IV	:	800 families
	VI b/D, Pelita III	:	2,200 families
	Pelita IV	:	200 families
	VI b/F, Pelita IV	:	2,000 families
	VI b/K, Pelita IV	:	2,000 families
	VI b/R, Pelita IV	:	2,000 families
2) Seruyan	: XII/A, Pelita I	:	1,300 families
	Pelita IV	:	200 families
	XII/B, Pelita IV	:	1,400 families
	XII/C, Pelita IV	:	1,400 families
3) Manga Bulik	: XI/D, Pelita I	:	1,250 families
	Pelita IV	:	750 families
	XI/B, Pelita IV	:	1,400 families
	XI/E, Pelita IV	:	2,000 families
	XI/F, Pelita IV	:	2,000 families

### c. Mining

- 1) Gold : In Marikit Area (Hiran River), Karangan River, Sana-mang river, Tumbang Manjul, Malanaman, Rangat river , Langkup river.
- 2) Quartz : In Balai Riam area (Ajang, Kotawaringin Barat).
- 3) Kaolin : In Pahirangan area.

#### 3.1.1. River, Lake and Ferry

The transportation facilities in Central Kalimantan Province that connect one urban area with another, an urban with a rural area, or a rural area with another rural are land transportation, river transportation, lake transportation and ferry. The river and lake transportation, as well as ferry are the main trade transportation in the inland areas of Central Kalimantan. The transportation are for transporting woods and passengers in order to meet the daily society needs in the river flow region. The Detail explanation about these transportation available (see table III.40).

Table : III. 40. Long of the river be sailed on Central Kalimantan

Nu.	Name of the river	: Long	: 1974	: 1975	: 1976	: 1977	: 1978	: 1979	: 1980	: 1981	: 1982
1.	Sungai Kapuas	: 600 Km	: 420 Km	: 420 Km	: 420 Km	: 420 Km	: 420 Km	: 420 Km	: 420 Km	: 420 Km	: 420 Km
2.	Sungai Kahayan	: 650 Km	: 500 Km	: 500 Km	: 500 Km	: 500 Km	: 500 Km	: 500 Km	: 500 Km	: 500 Km	: 500 Km
3.	Sungai Barito	: 900 Km	: 780 Km	: 780 Km	: 780 Km	: 780 Km	: 780 Km	: 780 Km	: 780 Km	: 780 Km	: 780 Km
4.	Mentaya/ Katingan	: 650 Km	: 520 Km	: 520 Km	: 520 Km	: 520 Km	: 520 Km	: 520 Km	: 520 Km	: 520 Km	: 520 Km
5.	Mentaya	: 400 Km	: 270 Km	: 270 Km	: 270 Km	: 270 Km	: 270 Km	: 270 Km	: 270 Km	: 270 Km	: 270 Km
6.	Pembuang/ Seruyan	: 550 Km	: 350 Km	: 350 Km	: 350 Km	: 350 Km	: 350 Km	: 350 Km	: 350 Km	: 350 Km	: 350 Km
7.	Kumai	: 175 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km
8.	Lapandau	: 300 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km
9.	Jelai	: 200 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km	: 100 Km
10.	Sabangau	: 200 Km	: 150 Km	: 150 Km	: 150 Km	: 150 Km	: 150 Km	: 150 Km	: 150 Km	: 150 Km	: 150 Km
11.	Laut	: 250 Km	: 190 Km	: 190 Km	: 190 Km	: 190 Km	: 190 Km	: 190 Km	: 190 Km	: 190 Km	: 190 Km

Source : Meteorology Office Central Kalimantan, Belgis Survey.

2) The supporting potentiality

The good factors for development of river, lake and ferry transportation in Central Kalimantan Province are :

- a. the area of production forest in Central Kalimantan is very large. This forest produced commodities such as logs, boards for the body construction of ship and ferries.
- b. as water resources for the need of the regional society.
- c. besides as the means of transportation, river, lake, and feery can also be developed for fresh water fisheries,
- d. to develop electricity power.
- e. to develop tourism sector and many able sectors that can be develop with the potentiality of rivers, lakes, and ferries available in Central Kalimantan.
- f. the more the population growth goes up in Central Kalimantan province the more demand for services in transportation of persons and goods arises.
- g. the more conciousness of the society for education in Central Kalimantan Province the more facilities for realizing duties and improving skills of the manpower. The more the income per capita of the society arises the more the demand of the consumption need of goods will also arises.

Realization of government investment for the sea harbour in Central Kalimantan Province : Rp. 216,023.10 in Pelita I, Rp.173, 847,640.00 in Pelita II and Rp. 225,117,000.00 in Pelita III.

3) Differences between rural and urban areas.

In rural areas mobility of people depend very much on the river transportation; this is because of the lack of land transportation. In turn the urban and habitants do not depend so much on the river transportation; this is because of the air transportation is available.

The government investment for river transportation realized covered Rp. 390,467,000.00 in Pelita I then Rp. 256,100,000.00 in Pelita III.

### 3.1.2. Sea harbour.

Sea harbour seem to be one of the supporting infrastructure for sea transportation. There have been 10 harbours built by Central and the Region Government up to Pelita III in Central Kalimantan Province. Five of which have been used by ocean ship. Those five harbours are :

1. Sampit
2. Pulang Pisau
3. Kumai
4. Pangkalan Bun
5. Kuala Kapuas

The five others are used by inter-insular ship such as :

6. Pagatan
7. Mendawai
8. Kuala Pembuang
9. Sukamara
10. Samuda

As a matter of fact, locations of harbour development in Central Kalimantan are located at rivers banks relatively near to the river mouth of big rivers where the depths of the river seems possible for the ocean ships to lay anchors.

The data of ships visiting harbour as mentioned above can be seen in table 3.5 and 3.6; 3.7, 3.8.

#### P r o b l e m s

The problems for harbour development faced by Regional Government are :

- a. The lacks of the skilled technicians.
- b. Very limited investment fund of Central and Regional Government for financing the harbour the development and maintenance after.

#### Supporting Potentials.

The supporting potentials which accelerate the development program in Central Kalimantan both for Government and Private are as the following :

- a. The security condition is favourable for development activities.
- b. Region areas are available for various activities of Government and Private (including location for transmigrants).
- c. Large parts of natural resources are still unexploited.

3.1.5. Air transportation infrastructure.

Up to 1982 there have been 8 airfields in Central Kalimantan, with the explanation as follows :

- a. Panarung air port :
  - Length : 1,540 x 30 m.
  - Capacity : F. 27
- b. Iskandar air port :
  - Length : 1,500 x 15 m.
  - Capacity : DC - 3.
- c. Haji Asan air port :
  - Length : 900 x 15 m.
  - Capacity : BW.2.
- d. Beringin air port :
  - Length : 800 x 15 m.
  - Capacity : BW. 2.
- e. Sanggo air port :
  - Length : 600 x 16 m.
  - Capacity : BW. 2.
- f. Kuala Pembuang air port :
  - Length : 475 x 23 m.
  - Capacity : in process
- g. Tumbang Samba air port :
  - Length : 475 x 23 m.
  - Capacity : in process
- h. Tewah air port :
  - Length : 1,000 x 10 m.
  - Capacity : in process

Transportation inter-district/municipality can be practically reached by forerunning flight. Land transportation remains unable to connect district/municipalities.

Transportation infrastructure and facilities are still in shortage up to the end of Pelita III and therefore, this attracts Central Government attention.

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The Panarung Air port in Palangka Raya for example has been able to be landed by aircraft of F - 27 type. While the other air port are the forerunning air port such as Haji Aban Air port in Sampit, Beringin airport in Muara Tewah, Isanjar Air port in Pangkalan Bun, Sanggo airport in Buntek.

Flight frequencies at those airport are shown in tables : 3.9, 3.10, 3.11 and 3.12.

#### Problems

The problems in development and improvement of the airport in Central Kalimantan province are :

- The lack of skilled technicians
- Expensiveness of raw materials for airport development and improvement.
- The minimum of Central and Regional Government fund.

#### Supporting Potentials

The supporting potentials needed for airport development and improvement are :

- Region areas are available for various development activities for government and private investment, that gives possibilities for employment and income per capita of the society to increase and that in return promote social demand for consumption goods and air transportation services.
- Consciousness of the society for education and skill of various fields of profession.
- Security condition seem favourable for development activities.

#### Investment

Government investment fund for airport in Central Kalimantan Province consisted : Rp. 116,000,000.00 in Pelita I, Rp. 336,540,524.41 in Pelita II and Rp. 534,211,489.00 in Pelita III.

### 3.2. Telecommunication

The existing telecommunication infrastructure and other devices in Central Kalimantan province can be seen in table 3.13. and 3.14.



### Problems

The problems faced in development and improvement telecommunications infrastructure in Central Kalimantan Province are :

- The lack of semi skilled technicians.
- Region areas and un-equality distributed population.
- Shortage of development fund.
- Project leader of telecommunication network in Central Kalimantan Province settles in South Kalimantan Province.

### Supporting potentials.

The supporting potentials needed for telecommunications development and improvement are :

- Security tends is stable
- Population tends to grow in number
- Consciousness of the society for telecommunications services seems to increase.
- The more economic growth of the region the higher is the need for telecommunication services.

### Investment

Government investment fund for telecommunications development in Central Kalimantan province consisted of; Rp, 670,250,000.00 in Pelita I, Rp. 99,170,091.70 in Pelita II and Rp. 548,125,000.00 in Pelita III.

### 3.4. Post and Giro.

The existing post and giro infrasturcture and other devices are shown in table 3.15.

#### Problems

Post and giro service in Central Kalimantan Province is concentrated to urban territories.

In rural areas there only small post houses. Transportations to far away village takes along time using river transprotation service of post and giro transportation inter urban areas is done by plane.

No roads built to connect villages in Central Kalimantan Province brings another problem for post and giro service to society.

Supporting potentials.

There are some factors supporting the post and giro development in Central Kalimantan which among other things are :

- The more economic growth goes up the more Government and Private activities should be realized to promote the society demand for post and giro services in sending informations, letters, post packets and mail goods, etc.
- transportation development result have gradually opened the upland areas isolation.

Investment

Government investment on Post and Giro up to the Pelita III covered : Rp. 12,725,000.00 in Pelita I Rp. 69,310,487.50 in Pelita II and Rp. 85,772,957.69 in Pelita III.

#### 3.4. Potable Water.

1) Potable water for various uses (industry, irrigation, household etc) can be supplied by :

- 1) Individual effort
- 2) State-run Potable Water Company.

Only about five per-cent of the Central Kalimantan population acquired potable water provided by state-run Potable Water Company which located only in Palangka Raya. Survey and feasibility study for the establishment of such potable water company had been planned in Sarpit, Pangkalan Bun, Buntok and Muara Tegeh. (Fig. III.4)

2) Funds that had been invested by the government for financing potable water during PELITA I (The First Five Year Development), II and III were as follows :

Pelita	I	: Rp. 65,570,540.00
Pelita	II	: Rp.291,211,000.00
Pelita	III	: Rp.303,292,721 (See table III.41).

Nearly all of the funds were used for extending the distribution network in Palangka Raya.

Table : III. 41. Potable water investment from Central Government on Regional 1969 - 1984.

No.	Year	Investment (Rp.)
1.	1969-1970	5,063,000
2.	1970-1971	6,994,440
3.	1971-1972	10,011,550
4.	1972-1973	10,911,550
5.	1973-1974	31,690,000
6.	1974-1975	55,000,600
7.	1975-1976	50,000,000
8.	1976-1977	50,000,000
9.	1977-1978	61,211,000
10.	1978-1979	75,000,000
11.	1979-1980	78,380,700
12.	1980-1981	66,440,800
13.	1981-1982	66,440,800
14.	1982-1983	26,230,221
15.	1983-1984	65,800,200

Source : Regional office of Public Work, Central Kalimantan.

- 3). Total number of families living in towns of Palangka Raya, Pangkalan Bun, Kuala Kapuas, Buntok, Muara Teweih and Sampit in 1983 are 36,301. Based on average basic need of 482 litre per family, (according to LIPT and ITB Bandung), the potable water that should be provided will be 17,497,032 litre. There are 538 families already acquired 283,416 litre of potable water, so there will be potable water shortage 17,213,666 litre in potential and economic/profitable locations. (See table III.42).
- 4) In Pelita IV (1984 - 1989) the state run Potable water Companies would development and improve potable water supply only as far as the capital of district is available.
- 5) Projection/estimated of capacity, capital, man power in Palangka Raya, Pangkalan Bun, Kuala Kapuas, Buntok, Muara Teweih and Sampit in 1990, is as follows :

Table : III.42. Total family that have got potable water in Central Kalimantan.

Nu.	Location	: Total Families	: Consumption : need (litre)	: Just got water		: Note	: Potable water (Litre)
				: Family	: Water (Litre)		
1.	Palangka Raya	: 11,613	: 5,597,466	: 588	: 283,416	: 11,025	: 5,314,050
2.	Pangkalan Bun	: 2,137	: 1,030,034	: -	: -	: 2,137	: 1,030,034
3.	Kuala Kapuas	: 9,903	: 4,773,246	: -	: -	: 9,903	: 4,773,246
4.	Buntok	: 4,580	: 2,207,560	: -	: -	: 4,580	: 2,207,560
5.	Muara Weweh	: 6,116	: 2,947,912	: -	: -	: 6,116	: 2,947,912
6.	Sampit	: 1,952	: 940,864	: -	: -	: 1,952	: 940,864
T o t a l		: 36,301	: 17,497,082	: 588	: 238,416	: 35,713	: 17,213,666

Source : Prepare from data and interview with potable water project ( PAM ) in Central Kalimantan.

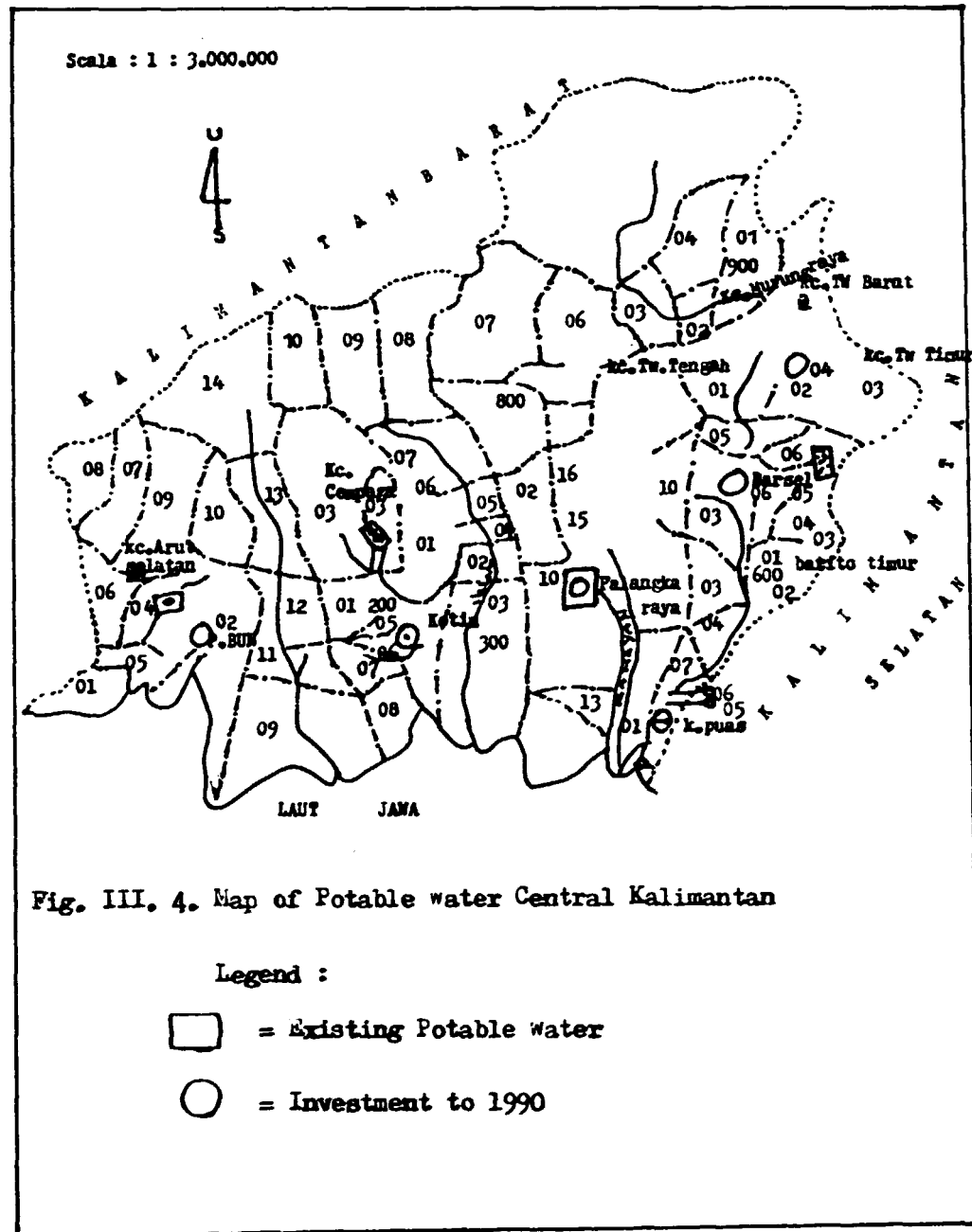


Fig. III. 4. Map of Potable water Central Kalimantan

- Capacity : 330.7 Litre/second
- Investment : Rp. 2,204,530,000
- Man power : 389 persons

See table III.43.

### 3.5. Electrification

1. Power supply in Central Kalimantan is furnished by :

- 1) Individual or group of people who set up diesel generators with the capacity of 1 to 10 KVA.
- 2) Private companies in industry sector who use diesel generators from 50 KVA to 1,000 KVA.
- 3) Regional Government that provide power, to the people less than 24 working hours.
- 4) P L N (State-run Electricity Company).

Of the four mentioned above, PLN plays the most important role in supporting activities in various sectors. In the Pelita IV, PLN would develop and improve electricity in the level of district, Capital of the Region of "Pembantu Bupati" (Head Deputy of District) and rural area (power enter villages). To set up a power unit in certain location economic potential should be taken into consideration. Data about power condition and development in Central Kalimantan are given in table III. 44 and table III. 45.

Table : III. 43. Estimation capacity, investment, employment, input and volume of output of potable water in Central Kalimantan, up to 1990.

Nu.	Location ( Region ) : Capacity	: Estimation Capacity: ( ltp )	: Employment : (Persons)	: Input (ltp)	: Volume of output ( ltp )
1.	Palangka Raya : 120 Litre/Second	: 1,644,500,000	: 120	: 1,522,200,000	: 189,850,000
2.	Pangkalan Bun : 24 Litre/Second	: 684,000,000	: 30	: 65,987,000	: 52,243,000
3.	Kuala Kapuas : 70 Litre/Second	: 1,461,650,000	: 30	: 1,461,650,000	: 1,271,000,000
4.	B u n t o k : 24 Litre/Second	: 336,600,000	: 30	: 67,000,000	: 50,000,000
5.	Muara Teweh : 24.7 Litre/ Second	: 485,300,000	: 30	: 38,217,088	: 38,158,961
6.	S a m p i t : 68 Litre/Second	: 1,382,630,000	: 89	: 79,700,000	: 78,000,000
T o t a l : 330.7 Litre/Second		: 5,994,780,000	: 389	: 3,234,754,088	: 1,679,251,961

Source : Prepare from data and interview with potable water project ( PMA ) in Central Kalimantan.

Table : III. 44 Electricity data PLN VI branch of Palangka Raya up to March 1984.

! Region location !	! Power !	! K V A !			! Note. !
		! Used !	! Reserve !	! Total !	
! Palangka Raya !	! 6 !	! 1,600 !	! 1,500 !	! 3,100 !	! 2 (two) po-
! Kapuas district !	! 6 !	! 416 !	! 75 !	! 491 !	! wers op to
! Anjir Serapat !	! 1 !	! 125 !	! - !	! 125 !	! now, have
! Barimba !	! 3 !	! 225 !	! - !	! 225 !	! been finish-
! Pulang Pisau !	! 2 !	! 100 !	! - !	! 100 !	! ing.
! Manduai !	! 1 !	! 125 !	! - !	! 125 !	!
! Kotawaringin Timur district !	! 4 !	! 3,050 !	! - !	! 3,050 !	!
! Samuda !	! 2 !	! 250 !	! - !	! 250 !	!
! Kuala Pembuang !	! 2 !	! 205 !	! - !	! 205 !	!
! Buntok !	! 2 !	! 250 !	! - !	! 250 !	!
! Muara Teweh !	! 2 !	! 550 !	! - !	! 550 !	!
! Pangkalan Bun !	! 4 !	! 516 !	! - !	! 516 !	!
! T o t a l !	! 35 !	! 7,412 !	! 1,575 !	! 8,987 !	!

Source : PLN VI branch of Palangka Raya.

2. The aim of the power generator improvement in Pelita IV of Central Kalimantan are the extending of power generator capacity, Medium Voltage Network (JTM) and power/distribution sentry-box in Palangka Raya, Kuala Kapuas, Sampit, Pangkalan Bun, Muara Teweh, Buntok, Kuala Kurun, Tamiang Layang, Kasongan and Pulang Pisau. Besides PLN, power development activities also being handled on cooperation between PLN and Regional Government. Local Government also had conducted various effort, among others : collecting data of power utilization, intensification of power resources research (PLTA, PLTM, PLTU), stepping up and improvement of the rural electricity.
3. Total power production from 1969 to 1983 were 64,243,631 KWH, of this 34,698,549 KWH were sold, whereas 13,661,823 KWH were lost (see table III. 45 ).



Table : JTT.45. Production and used electricity in Central Kalimantan 1969 - 1982.

Year	Production (KVH)	Used ( K W H )		
		Sell	Self use	loss
1969	686,498	585,792	2,500	98,206
1970	596,800	585,792	3,365	7,643
1971	732,979	694,008	3,620	35,345
1972	562,750	512,480	3,970	46,300
1973	1,933,401	1,782,000	7,300	144,101
1974	2,677,979	2,438,426	159,477	80,076
1975	-	-	-	-
1976	-	-	-	-
1977	4,351,330	2,646,830	178,582	1,526,498
1978	6,365,366	3,871,752	261,076	2,232,738
1979	8,313,180	5,932,532	311,353	2,078,295
1980	9,912,906	7,050,685	306,258	2,555,963
1981	13,052,603	10,143,536	101,588	2,807,479
1982	15,057,039	12,556,086	351,781	2,149,179
Total	64,243,631	34,698,549	1,690,870	13,661,823

Source : PLN VI Branch of Palangka Raya.

4. There are 10,737 consumers ( 1983 ) in potential and high economic location, while 49,387 families are not provided electricity (See Table III. 46 ).

Table : III.46 : Total Families Consumtion, and less and electricity need in Central Kalimantan, 1983.

Nu	: Location/ Region	:Total Families	: Consumens	: Less
1	! Kodya Palangka Raya	! 11.613	! 5.480	! 6.133
2	! Babupaten Kapuas	! 9.903	! 1.209	! 8.694
3	! Anjir Sarapat	! 2.505	! 97	! 4.403
4	! B a r i m b a	! 2.915	! 251	! 2.664
5	! Pulang Pisau	! 3.252	! 115	! 3.137
6	! M a n d u m a i	! 1.173	! 85	! 1.093
7	! Kab.Kotawaringin Timur! ( Sampit )	! 1.952	! 1.510	! 442
8	! S a m u d a	! 1.952	! 330	! 7.953
9	! Kuala Pambuang	! 3.681	! 229	! 3.452
10	! B u n t o k	! 4.589	! 428	! 4.161
11	! Muara Teveh	! 6.116	! 440	! 5.676
12	! Pangkalan Bun	! 2.137	! 563	! 1.574
T o t a l		! 60.124	! 10.737	!49.387

Source : PLN VI Branch of Palangka Raya.

5. with the estimation of power supply 450 watt per family (average), the shortage of power suply in 1983 for 49,737 families would be 21.515,585 watt or 26,895 KVA.
- 8.6. Based on the price standart in 1980, funds needed for establishing power generator with the capacity of 100 KVA or 80.000 Watt amcunting to Rp 54.550.000,00 (interviewed data). According to the ammal families growth / increase of 3,84 % in potential power location (see Table III. 47) and Cost and sales projection of electricity per 1 KVA in Central Kalimantan 1980 - 1990 ( See Table III.48 ) estimation capacity, consumention, investment, employment, input and volume of output of electricity need in Central Kalimantan up to 1990 could be estimated as follows :

Table : III.47. Population Projection Per-Families needed by Location for Electricity 1984 - 1990

Year	: Palangka Raya	: Kuala Kapuas	: Anjir Sa- rapat	: Barimba	: Pulang Pisau	: Mandumaf	: Sampit	: Samuda	: Kuala Pambuang	: Bontok	: Muara Teweh	: Pangkalan Bun
1980	: 10,574	: 8,937	: 4,067	: 2,631	: 2,936	: 1,063	: 1,762	: 7,476	: 3,322	: 4,142	: 5,519	: 2,065
1981	: 10,942	: 9,248	: 4,203	: 2,722	: 3,038	: 1,100	: 1,823	: 7,736	: 3,438	: 4,236	: 5,711	: 2,137
1982	: 11,223	: 9,570	: 4,354	: 2,817	: 3,143	: 1,138	: 1,386	: 8,005	: 3,556	: 4,435	: 5,910	: 2,211
1983	: 11,613	: 9,903	: 4,505	: 2,915	: 3,252	: 1,178	: 1,952	: 8,283	: 3,681	: 4,539	: 6,116	: 2,283
1984	: 12,017	: 10,247	: 4,662	: 3,016	: 3,482	: 1,183	: 2,019	: 8,571	: 3,809	: 4,749	: 6,329	: 2,368
1985	: 12,435	: 10,603	: 4,824	: 3,120	: 3,603	: 1,224	: 2,089	: 8,869	: 3,941	: 4,914	: 6,549	: 2,450
1986	: 12,368	: 10,972	: 4,992	: 3,228	: 3,728	: 1,226	: 2,167	: 9,178	: 4,073	: 5,035	: 6,776	: 2,335
1987	: 13,316	: 11,354	: 5,166	: 3,340	: 3,358	: 1,269	: 2,242	: 9,497	: 4,212	: 5,262	: 7,012	: 2,633
1988	: 13,779	: 11,749	: 5,346	: 3,456	: 3,992	: 1,313	: 2,320	: 9,828	: 4,358	: 5,445	: 7,256	: 2,714
1989	: 14,258	: 12,158	: 5,532	: 3,576	: 4,131	: 1,359	: 2,400	: 10,168	: 4,510	: 5,634	: 7,508	: 2,808
1990	: 14,754	: 12,581	: 5,724	: 3,700	: 4,275	: 1,406	: 2,483	: 10,521	: 4,667	: 5,230	: 7,769	: 2,905

Table:III.48. Cost and Selling Price Projection Electricity per-1 KVA in Central Kalimantan. 1980 - 1990.

Year	Projection Cost per- 1 KVA (Rp)	Suprice	per - 1 KVA (Rp)
1980	10,000	:	12,000
1981	10,200	:	12,240
1982	10,404	:	12,484
1983	10,612	:	12,734
1984	10,824	:	12,989
1985	11,040	:	13,248
1986	11,260	:	13,512
1987	11,485	:	13,782
1988	11,715	:	14,058
1989	11,949	:	14,339
1990	12,188	:	14,626

Source : Prepare from interview and data PLN VI Branch of Palangka Raya.

Table : VI. 49. Estimation capacity, consumption, investment, employment, input and volume of output of electricity need in Central Kalimantan. 1990.

Region	Location	Capacity		Estimation Investment	Capital (Rp)	Employment (person)	Volume of (kp)	Input (kp)
		Consumption	KVA					
Urban	1. Palangka Raya	:14,754	: 16,639	: 3,621,574,500	:	201	: 80,916,132	: 27,102,014
	2. Pangkalan Bun	: 2,905	: 1,307	: 712,968,500	:	40	: 15,929,716	: 19,116,122
	3. Kuala Kapuas	:12,581	: 5,661	: 3,088,075,500	:	172	: 68,996,268	: 82,737,786
	4. Buntuok	: 5,830	: 2,623	: 1,430,846,500	:	80	: 31,969,124	: 38,362,998
	5. Muara Teweh	: 7,769	: 3,496	: 1,907,068,000	:	106	: 42,609,243	: 51,132,496
	6. Sampit	: 2,483	: 1,117	: 609,323,500	:	34	: 13,613,996	: 16,337,242
Rural	1. Pulang Pisau	: 4,275	: 1,924	: 885,892,000	:	58	: 23,449,712	: 28,140,424
	2. Anjir Sarapat	: 5,724	: 2,756	: 1,503,398,000	:	84	: 33,590,128	: 40,300,256
	3. Mandumai	: 1,406	: 633	: 345,301,500	:	20	: 7,715,004	: 9,258,258
	4. Barimba	: 3,700	: 1,665	: 908,257,500	:	50	: 30,293,020	: 24,352,290
	5. Samuda	:10,521	: 4,734	: 2,582,942,500	:	143	: 57,697,992	: 69,239,484
	6. Kuala Pambuang	: 4,667	: 2,100	: 1,145,550,000	:	64	: 25,594,800	: 30,714,600

Source : To be made from table II.46, III.47, III.48 and interview PLN VI branch Palangka Raya Central Kalimantan.-

- Capacity	: 34,655 KVA
- Number of consumers	: 75,805 families
- Investment	: Rp 18,741,196,000,00.
- Employment	: 1,052 person
- Value of output	: Rp.19,155,480,00.
- Input	: Rp 506,864,229,00.

( See Table III.49 ) (Rp. ....)

### 3.6. Banking

Financial facilities, such as bank, are still limited to those owned by Government Whether National or Regional Bank facilities, as the 'Bank Pembangunan Daerah' BPD is located almost in all district.

But there is not any bank owned by Private sector here.  
( See Table : III.50 ).

TABLE : III.50 : Government Bank in Central Kalimantan 1983.

Nu. :	Region	: Unit :	Bank Specification
1	: Palangka Raya	: 2	: - B P D Kal Teng - Unit BRI
2	: Kuala Kapuas	: 3	: - Unit BRI - Unit BDN - Unit BNI 1946
3	: Sampit	: 6	: - Unit BRI - Unit BDN - Unit BNI 1946 - Unit BPD - Unit BBD - Unit B I
4	: Pangkajenean Bun (Kota - waringin Barat)	: 3	: - Unit BNI 1946 - Unit BRI - Unit BPD
5	: Muara Teweh	: 2	: - Unit BRI - Unit BPD
6	: Buntok ( Barito Selatan )	: 2	: - Unit BPD - UNit BRI
T o t a l		: 18	: -

Source : Data checked Result on six regional.

Scale : 1 : 3.000.000

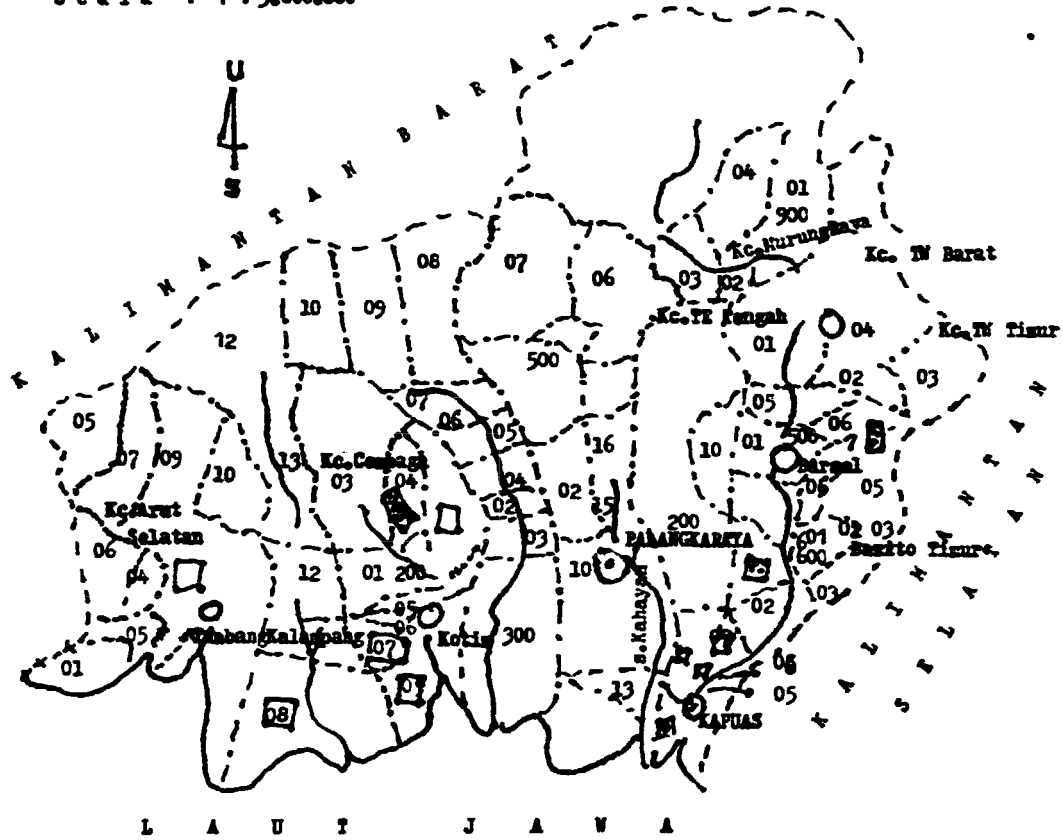


Fig. III. 5. Map of Electricity Central Kalimantan

Fig. III. 5. Map of Electricity Central Kalimantan

Legend :

○ : Existing Electricity.

□ : Investment to 1990.

## IV. PROJECTION ON PRODUCTION, CONSUMPTION AND INVESTMENT.

### 1. Food Crops

#### 1.1. Projection on production.

Farmers' motivation to improve their living standard caused the increase of food crops production through intensification program of farming by using fertilizer and pesticides and extent of areas. The program of intensification was, first of all, applied to paddy crops because farming of non-paddy crops was not considered available.

Seen from the point of the present potential areas based on types of development, the areas were categorized as the following :

- 1.1.1. Irrigated areas, technical irrigation, half technically irrigated, tidal rice-fields, reined rice-fields.
- 1.1.2. Newly opened areas in transmigration location.
- 1.1.3. Newly opened areas as the result of the areal extensification programs.
- 1.1.4. Potential areas in up-land developed as the production pockets.

The average growth of production development during Pelita III. consisted of :

- a. paddy : 2.25 %
- b. vegetables: 23.5 %
- c. maize : 5.94%
- d. nuts : 4.38 %

The average growth of production of those commodities during Pelita III showed continually increase if compared with the average production during Pelita II, with the exception of maize crops which decreased to 1.16 % so that the estimation of food crops production will show continual growth, such as :

- a. rice : 5 %
- b. maize : 7 %
- c. nuts : 28 %
- d. vegetables: 25 %
- e. fruits : 12 %



### 1.2. Consumption projection

According to the census on population in 1980, Central Kalimantan population reached 954,176 persons with population growth 3.84 % per year. As the result of SUBEMIS 1980, consumption need per capita for :

- 1) rice : 120.65 Kg
- 2) maize/corn : 3.65 Kg
- 3) nuts : 5.61 Kg
- 4) vegetables : 75.45 Kg.
- 5) fruits : 84.34 Kg.

The estimation of food production and consumption from 1982 up to 1990 can be seen in table IV.1.

Production growth of rice and maize reaches each 5 % and 7 % per year can supply the consumption need of the people while the increase of nuts, vegetables, and fruits production which reaches only 28 %, 25 % and 12 % per year seems far from the consumption need of the people in Central Kalimantan.

### 1.3. Investment projection.

The realization of intensification program on food crops in Central Kalimantan in the forms of mass guidance and intensification during Pelita, and in Pelita I were improved during Pelita II. Intensification program could be applied only with paddy crops because non-paddy commodities were not available yet for this program.

The increase of production of paddy was mainly caused by the increasing productivity of paddy in intensification was considered still low if compared with national production rate. In the end of Pelita I the average production of rice intensification reached 30.82 % per Ha per year and in Pelita III (1980 - 1981) reached 32.30 % per Ha per year in comparison with rice of non-intensification production rate (19 % per Ha per year).

Table : IV. 1. Estimation of Food Crops and Consumption in Central Kalimantan, 1982 - 1990.

Year	Rice ( Ton )			Maize ( Ton )			Nuts ( Ton )			Vegetables ( Ton )			Fruits ( Ton )		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1982	:177,481	: 124,132	: 53,349	: 3,867	: 3,755	: 112	: 584	: 5,772	: -5,188	: 3,664	: 77,628	: -73,964	: 21,845	: 86,774	: - 64,929
1983	:186,355	: 128,899	: 57,456	: 4,138	: 3,899	: 239	: 748	: 5,994	: -5,246	: 4,580	: 80,609	: -76,029	: 24,466	: 90,106	: - 65,640
1984	:195,673	: 133,849	: 61,824	: 4,428	: 4,049	: 379	: 957	: 6,224	: -5,267	: 5,725	: 83,704	: -77,979	: 27,402	: 93,566	: - 66,164
1985	:205,457	: 138,988	: 66,469	: 4,738	: 4,205	: 533	: 1,225	: 6,463	: -5,238	: 7,156	: 86,918	: -79,762	: 30,690	: 97,159	: - 66,469
1986	:215,730	: 144,325	: 71,405	: 5,070	: 4,366	: 704	: 1,568	: 6,711	: -5,143	: 8,945	: 90,256	: -81,311	: 34,373	: 100,890	: - 66,517
1987	:226,516	: 149,867	: 76,649	: 5,425	: 4,534	: 891	: 2,007	: 6,969	: -4,962	: 11,181	: 93,722	: -82,541	: 38,498	: 104,764	: - 66,269
1988	:237,822	: 155,622	: 82,200	: 5,805	: 4,708	: 1,097	: 7,568	: 7,236	: -4,668	: 13,976	: 97,320	: -83,344	: 43,118	: 108,787	: - 65,669
1989	:249,734	: 161,598	: 88,136	: 6,211	: 4,889	: 1,322	: 3,288	: 7,514	: -4,226	: 17,470	: 101,057	: -83,587	: 48,292	: 112,965	: - 64,673
1990	:262,221	: 167,803	: 94,418	: 6,646	: 5,077	: 1,569	: 4,208	: 7,803	: -3,595	: 21,838	: 104,938	: -83,100	: 54,087	: 117,302	: - 63,215

Explanation : 1. ready stock of production for people's Consumption.

2. Consumption need of people

3. Shortage / surplus.

Notes : -Rice converted - rice, 72 %

-Estimation of production growth for rice 5 %, maize 7 %, Nuts 28 %, Vegetables 25 %, fruits 12 %.

-Population production growth per year 3.84 %

-Population in 1980 : 954,176 person.

The low average of production of rice of intensification showed how low the quality of realizing the program of intensification especially applied with new technology such as mixed farming on the intensification areas had not been realized fully by farmers because of various factors.

Development with new applied technology such as mixed farming on intensification areas consists of :

a. The use of improved variety of seeds.

Intensity of using newly improved variety of seeds was seen in the extent of the intensification areas (including BIMAS and IPAS) which still showed very small.

In four years of Pelita III, the use of the newly improved variety of seeds reached only 11.55 % of the total intensification areas, or average use was 1 % while the greatest part using the weal variety of seeds. This was because of the most parts of the intensification areas are located in tidal rice fields areas which seem very difficult to adopt with newly improved variety of seeds.

Besides the fact that there are no easy transportation to and from the intensification areas and that there have not been any seeds intensification provided by private sectors doing this business of seeds.

b. Fertilization.

The uses of fertilizers have not been so familiar to farmers, and more over the locations are in tidal areas with so poor tidal watering system.

The progress of using fertilizers has not been widely spread reaching the whole of the intensification areas. In four years of REPETA III, average uses of fertilizers (urea and TSP) reached only 30 Kg per Ha or 12 - 20 % of total BIMAS packet.

c. Plant Protection

Plant protection from disease and insects has been the integral part of mixed farming programs which covered both the intensification areas. In four years of PELITA III the average use of insecticide reached even only 29 grams per Ha or 29 % of the total recommendation packet.

d. Irrigation

Irrigation as the mainly supporting factor for the progress of the applied technology in the forms of intensification programs still remained difficult to master, because the most parts of the intensification areas are of the tidal areas, or about 60 % of the areas with traditional irrigation system.

e. Land cultivation and plant care.

Improvement the methods of land cultivation and plant care generally developed according to the application of seed, irrigation and fertilization technology, which could be seen in special intensification areas, transmigration areas and newly opened rice fields.

During PELITA III, realization areas of BIMAS showed tendency of decrease, as the result of the ever increasing number of unreturned credit given by the 'Bank Rakyat Indonesia - BRI - as the creditor of BIMAS. This, unfortunately, had prevented the bank to look for farmers as receiver candidates of credit on BIMAS. Farmer, in return, changed their attention from BIMAS to LBMAS.

As a matter of fact, the intensification areas of BIMAS and LBMAS showed increase even reached average increase of 9.6 % areas in the growing season 1980/1981 and this lasted during the first four years of PELITA III. According to the plan, the intensification areas were expected to go up with average increase 17.36 % and the realization areas reached 57.25 %.

Based on this assumption and its realization areas covered 43,322 Ha during the growing season 1982/1983, it was estimated that the extent of the areas would reach 5 %. Production facilities needed according to Packet B, is shown in Table IV. 2.

Urea : 75/Kg/Ha  
 TSP : 50/Kg/Ha  
 Insecticide: 1,462,968 Kg (granula)  
 Rodenticide: 121,914 Kg.

Table IV. 2 : Intensification Areal Planned (BINAS and IRTAS) and Production Facilities Needed in 1982/1983 up to 1989/1990

Growing Season (Year)	Areal Planned (Ha)	Urea (Kg)	TSP (Kg)	Insecticide (Kg)	Rodenticide (Kg)
1982/83	43,322	3,249,150	2,166,100	1,039,728	86,644
1983/84	45,488	3,411,600	2,274,400	1,091,712	90,976
1984/85	47,762	3,582,150	2,388,100	1,146,288	95,524
1985/86	50,150	3,761,250	2,507,500	1,203,600	100,300
1986/87	52,657	3,949,275	2,632,850	1,263,760	105,314
1987/88	55,290	4,146,750	2,764,500	1,326,960	110,580
1988/89	58,054	4,354,050	2,902,700	1,393,296	116,108
1989/90	60,957	4,571,775	3,047,850	1,462,968	121,914

Notes : Production facilities for Packet B (SIB 1983):

- Urea : 75 Kg/Ha
- TSP : 50 Kg/Ha
- Insecticide (granula) : 24 Kg/Ha
- Rodenticide : 2 Kg/Ha.

## 2. Plantation Crops

### 2.1. Production Projection

Plantation production growth covers intensification including Rubber, Coconut, Coffee, Chocolate and Pepper as well (see Table IV.3)

Intensification and using modern cultivation methods are expected to cause the production growth as shown in Table IV.4 :

Table : IV, 3 Nucleanus Physic/Spreading and Rehabil:tation/Intencification Plantation Crop up to 1989/1990.

Nu. Comodity	1984/1985		1985/1986		1986/1987		1987/1988		1988/1989		/1989/1990	
	Nucleanus Physic Spreading	Rehabilitati on.	Nucleanus Physic Spreading	Rehabilitati on.	Nucleanus Physic spreading	Rehabilitati on.	Nucleanus Physic Spreading	Rehabilitati on.	Nucleanus physic spreading	Rehabilitati on.	Nucleanus physic spreading.	Rehabilitati on.
1. Rubber	1,600	800	2,100	3,200	3,200	5,600	3,800	8,900	4,400	10,400	5,000	12,800
2. Coconut	1,250	1,600	1,500	4,000	1,500	6,400	1,500	8,800	1,500	11,200	1,500	13,600
3. Coffee	-	200	-	400	-	650	-	900	-	1,200	-	1,500
4. Chocolate	200	-	400	-	600	-	800	-	1,000	-	1,200	-
5. Pepper	400	-	400	-	400	-	400	-	400	-	400	-

Source : Plantation Office, Central Kalimantan.

Table : IV. 4 Plan of Areal Spreading and Production Up to 1990 Central Kalimantan.

Nu.	Plant Crop Items :	Y e a r						
		1984	1985	1986	1987	1988	1989	1990
1.	Rubber - Areal (Ha) :	169,416.00	177,210.00	185,362.00	193,388.00	202,807.00	212,136.00	221,894.00
	- Prod. (ton) :	38,674.00	41,230.00	43,953.00	46,852.00	49,945.00	53,241.00	56,755.00
2.	Coconut- Area (Ha) :	33,893.00	35,254.00	36,664.00	17,814.00	19,542.00	40,042.00	41,644.00
	- Prod. (Ton) :	13,454.00	14,803.00	16,239.00	17,814.00	19,542.00	21,437.00	23,516.00
3.	Hybrida-Coconut							
	- Area (Ha) :	975.00	1,121.00	1,289.00	1,482.00	1,704.00	1,960.00	2,254.00
	- Prod (Ton) :	-	-	125.00	150.00	200.00	240.00	288.00
4.	Coffee - Area (Ha) :	3,956.00	4,075.00	4,197.00	4,323.00	4,453.00	1,960.00	2,254.00
	- Prod. (Ton) :	350.00	437.00	546.00	683.00	854.00	1,067.00	1,334.00
5.	Chocolate- Area (Ha) :	441.00	449.00	458.00	468.00	477.00	487.00	497.00
	- Prod. (Ton) :	36.00	48.00	64.00	85.00	113.00	151.00	202.00
6.	Pepper - Area (Ha) :	378.00	379.00	380.00	381.00	382.00	383.00	384.00
	- Prod. (Ton) :	13.38	15.79	18.63	21.93	25.94	30.61	36.12

Source : Plantation Crop Office, Central Kalimantan.

- (1) 6.6 % rubber
- (2) 9.8 % coconuts
- (3) 25 % coffee
- (4) 35.5 % chocolate
- (5) 18 % pepper

## 2.2. Consumption Projection

From the plantation crops products, only rubber product is to be exported, while the other products, such as coffee, coconuts, chocolates and pepper, are used for domestic consumption, as shown in Table IV.5. Coffee product, until now is inadequate regional consumption need and it must be imported from other regions.

## 2.3. Investment Projection

To make more progress in the matter of plantation crops production growth in this region required the urgent needs of :

- (1) Management of Plantation Development Projects to help farmers through "UPP" and "PIR" system as planned up to 1990 (Table IV.6). In this case the UPP and PIR play the roles not to give guidance information needed, but also to supply seeds for the whole areas. It is because of the fact that some seeds must imported from other regions (see Table IV.7).
- (2) Low class of soil fertility needs fertilizing just make it fertile and productive. The ingredients needed are fertilizers which way cause stimulate vegetative and generative growth. The annual needs for fertilizers seem different from year to year as shown in Table IV.8.
- (3) The progress and production of the plantation may decrease because of insects attack and plant diseases. The one way made to prevent and product plantation crops from in seeds other and plant diseases by using insecticide and other chemical substances. The need of insecticide depends on the intensity of the insect attack and the frequency of the attack, as shown in Table IV.9, especially in the newly cultivated areas, as shown in Table IV.10.



Table : IV. 5. Consumption and Export Projection Up to 1990, Central Kalimantan.

Nu.	Plantation Crop Stone:	Y e a r						
		1984	1985	1986	1987	1988	1989	1990
1. Rubber	- Production (Ton)	36,678.00	41,230.00	43,953.00	46,852.00	49,945.00	53,241.00	56,755.00
	- Vol. Export (Ton)	9,500.00	10,070.00	10,674.00	11,315.00	11,994.00	12,714.00	13,497.00
	- Consumption (Ton)	29,178.00	31,160.00	33,379.00	35,537.00	37,951.00	40,527.00	43,278.00
2. Coconut	- Production (Ton)	33,898.00	35,254.00	36,664.00	38,130.00	39,956.00	40,042.00	41,644.00
	- Vol. Export (Ton)	-	-	-	-	-	-	-
	- Consumption (Ton)	3,942.29	4,159.00	4,388.00	4,629.33	5,883.94	5,152.56	5,435.95
3. Coffee	- Production (Ton)	350.00	437.00	546.00	683.00	854.00	1,067.00	1,334.00
	- Vol. Export (Ton)	-	-	-	-	-	-	-
	- Consumption (Ton)	1,230.57	1,255.18	1,280.28	1,305.29	1,332.01	1,358.65	1,385.82
4. Pepper	- Production (Ton)	13.39	15.79	18.63	21.93	25.94	30.61	36.12
	- Vol. Export (Ton)	-	-	-	-	-	-	-
	- Consumption (Ton)	8.70	9.20	9.80	10.40	11.00	11.77	12.40

Source : Plantation Crop Office, Central Kalimantan.

TABLE : IV. 6. Volume plan UPP and PTR up to 1990, Central Kalimantan.

Nu.	Commodity	Y e a r											
		1984/1985		1985/1986		1986/1987		1987/1988		1988/1989		1989/1990	
		UPP	PTR	UPP	PTR	UPP	PTR	UPP	PTR	UPP	PTR	UPP	PTR
1.	Rubber	8	2	12	2	16	4	19	5	22	6	25	7
2.	Coconut	5	-	6	-	6	-	6	-	6	6	-	6
3.	Coffee	7	-	7	-	7	-	7	-	7	7	-	7
4.	Chocolate	1	1	2	3	3	4	3	4	3	3	4	3
5.	Pepper	1	-	1	-	1	-	-	1	-	1	1	-

Source : Plantation Crops Office Central Kalimantan.

Table : IV. 7. Seeds Necessity During Pelita IV Central Kalimantan.

No. Commodity	Years					Source Seed
	1984	1985	1986	1987	1988	
1. Rubber	9,100,000	10,400,000	16,575,000	20,800,000	25,025,000	Other Province
2. Coconut						
- Non Hibrida	412,500	495,000	495,000	495,000	495,000	Self Province
- Hibrida	60,000	90,000	195,000	240,000	300,000	Other Province
3. Pepper	10,666,666	10,666,666	10,666,666	10,666,666	10,666,666	Self Province and other province
4. Chocolate	1,875,000	6,875,000	10,312,500	10,625,000	10,625,000	Other Province.

Source : Plantation Crop Office, Central Kalimantan.

Table : IV. 8. Necessity Manure During Repelita IV Central Kalimantan,-

Nu.	Commodity :	Manure Item :	Necessity Manure ( Ton )					Total :
			1984/1985	1985/1986	1986/1987	1987/1988	1988/1989	
1. Rubber		: Urea	: 1,680	: 1,920	: 3,060	: 3,840	: 4,620	: 15,120
		: TSP	: 1,120	: 1,280	: 2,040	: 2,560	: 3,080	: 10,080
		: KCl	: 1,400	: 1,600	: 2,550	: 3,200	: 3,850	: 12,600
2. Coconut		: Urea	: 200	: 240	: 240	: 240	: 240	: 1,160
		: TSP	: 100	: 120	: 120	: 120	: 120	: 590
		: KCl	: 125	: 150	: 150	: 150	: 150	: 775
3. Coconut Hibrida		: Urea	: 200	: 300	: 650	: 800	: 1,000	: 2,950
		: TSP	: 100	: 150	: 325	: 400	: 500	: 1,475
		: KCl	: 150	: 250	: 400	: 600	: 750	: 2,150
6. Chocolate		: Urea	: 660	: 2,420	: 3,630	: 3,740	: 2,740	: 14,190
		: TSP	: 360	: 1,320	: 1,980	: 2,040	: 2,040	: 7,740
		: KCl	: 480	: 1,760	: 2,640	: 2,720	: 2,720	: 10,320

Source : Plantation Crop Office, Central Kalimantan.

Table : IV. 9. Chemical Need Plan during Repelita IV, Central Kalimantan.

Nu.	Commodity:	Items	Chemical need ( litre/ Kg )					Total
			1984/1985	1985/1986	1986/1987	1987/1988	1988/1989	
1. Rubber		: -Furadan	: 26,465.60	: 26,465.60	: 26,465.60	: 26,465.60	: 132,268.00	: 138,230.40
		: -Tamaren	: 444.80	: 444.80	: 444.80	: 444.80	: 444.80	: 2,323.20
		: -Anthis	: 556.00	: 556.00	: 556.00	: 556.00	: 556.00	: 2,904.00
		: -Colex'in CP	: 21,232.48	: 21,232.48	: 21,232.48	: 21,232.48	: 21,232.48	: 21,232.48
		: -Calex'in MM	: 21,232.48	: 21,232.48	: 21,232.48	: 21,232.48	: 21,232.48	: 21,232.48
		: -Cobox	: 444.80	: 444.80	: 444.80	: 444.80	: 444.80	: 444.80
		: -Dethane M.	: 444.80	: 444.80	: 444.80	: 444.80	: 444.80	: 444.80
		: -Belerang- C'rrus	: 3,892.00	: 3,892.00	: 3,892.00	: 3,892.00	: 3,892.00	: 3,892.00
2. Coconut		: -Azodrin 60: - 10 SC	: 480.00	: 144.00	: 144.00	: 72.00	: 72.00	: 912.00
		: -Orthere 75: SP	: 96.00	: 28.80	: 28.80	: 14.40	: 14.40	: 182.40
		: -Dimecron 50 SCH	: 480.00	: 144.00	: 144.00	: 72.00	: 72.00	: 912.00
		: -B'drin	: 960.00	: 288.00	: 288.00	: 144.00	: 144.00	: 1,824.00
		: -Temik 10 C	: 12,000.00	: 3,600.00	: 3,600.00	: 1,800.00	: 1,800.00	: 22,800.00
		: -Dacomil 75: WP	: 400.00	: 120.00	: 120.00	: 60.00	: 60.00	: 760.00
		: -Zink phosphit	: 1,600.00	: 480.00	: 480.00	: 240.00	: 240.00	: 3,040.00
3. Hibrida		: -Sevin 855	: 180.00	: 270.00	: 585.00	: 720.00	: 900.00	: 2,655.00
		: -Thiodan 35: EC	: 120.00	: 120.00	: 390.00	: 480.00	: 600.00	: 1,770.00
		: -Dacomil 75 WP	: 100.00	: 150.00	: 325.00	: 400.00	: 500.00	: 1,475.00
		: -Brestan 60	: 220.00	: 330.00	: 715.00	: 880.00	: 1,100.00	: 3,245.00

Nu.	Commodity	: Items	Chemical need ( Litre/Kg)					: Total
			: 1984/1985	1985/1986	1986/1987	1987/1988	1988/1989	
4.	Chocolate	:Orthene 75 SP	: 156.00	: 144.00	: 222.00	: 222.00	: 222.00	: 966.00
		:Lebaycid 550 EC	: 1,560.00	: 1,440.00	: 2,220.00	: 2,220.00	: 2,220.00	: 8,256.00
		:Cupravit	: 433,680.00	: 400,320.00	: 617,160.00	: 617,160.00	: 617,160.00	: 2,685,480.00
		:Cobox	: 433,680.00	: 400,320.00	: 617,160.00	: 617,160.00	: 617,160.00	: 2,685,480.00
		:Vitigran Blue	: 433,680.00	: 400,320.00	: 617,160.00	: 617,160.00	: 617,160.00	: 2,685,480.00
5.	Pepper	:Antracol	: 80.00	: 80.00	: 80.00	: 80.00	: 80.00	: 400.00
		:Benlote	: 80.00	: 80.00	: 80.00	: 80.00	: 80.00	: 400.00
		:Basudin 60 EC	: 120.00	: 120.00	: 120.00	: 120.00	: 120.00	: 600.00

Source : Plantation Office, Central Kalimantan.

Table : IV. 10. Chemical Need Plan During Pelita IV Central Kalimantan.

Rehabilitation/Intensification.

No. Commodity :	Items	1984/1985	1985/1986	1986/1987	1987/1988	1988/1989	Total
1. Rubber	: Furadan 3 G	: 75,684.0	: 75,684.0	: 75,684.0	: 75,684.0	: 75,684.0	: 302,736.0
	: Tamaron	: 1,272.0	: 1,272.0	: 1,272.0	: 1,272.0	: 1,272.0	: 5,088.0
	: Antibio	: 1,590.0	: 1,590.0	: 1,590.0	: 1,590.0	: 1,590.0	: 1,590.0
	: Calixin CP	: 68,115.6	: 68,115.6	: 68,115.6	: 68,115.6	: 68,115.6	: 272,462.4
	: Calixin LM	: 68,115.6	: 68,115.6	: 68,115.6	: 68,115.6	: 68,115.6	: 272,462.4
	: Cobox	: 2,703.0	: 2,703.0	: 2,703.0	: 2,703.0	: 2,703.0	: 10,812.0
	: Dithane M 45	: 2,703.0	: 2,703.0	: 2,703.0	: 2,703.0	: 2,703.0	: 10,812.0
	: Belerang Cirrus	: 11,925.0	: 11,925.0	: 11,925.0	: 11,925.0	: 11,925.0	: 47,700.0
2. Coconut	: Azodrin 60 WSC	: -	: 868.0	: 124.0	: 2,108.0	: 124.0	: 3,224.0
	: Orthene	: -	: 173.6	: 24.8	: 421.6	: 24.8	: 644.8
	: Dimocron 50 SP	: -	: 1,736.0	: 248.0	: 4,216.0	: 248.0	: 6,448.0
	: Bdrin	: -	: 868.0	: 124.0	: 2,108.0	: 124.0	: 3,224.0
	: Temic 10 G	: -	: 10,500.0	: 1,500.0	: 25,500.0	: 1,500.0	: 37,000.0
	: Daconil 75 WP	: -	: 770.0	: 110.0	: 1,870.0	: 110.0	: 2,860.0
	: Link Phosphate	: -	: 1,400.0	: 200.0	: 3,400.0	: 200.0	: 5,200.0
	: -	: -	: -	: -	: -	: -	: -
3. Coffee	: Ray Rusil	: 240.0	: 480.0	: 780.0	: 1,080.0	: 1,440.0	: 4,020.0
	: Basamid	: 2,480.0	: 4,960.0	: 8,060.0	: 11,160.0	: 14,880.0	: 41,540.0
	: Bidup	: 248.0	: 496.0	: 806.0	: 1,116.0	: 1,488.0	: 4,140.0
	: Sevin 85 SP	: 22,320.0	: 44,640.0	: 72,540.0	: 100,440.0	: 133,920.0	: 373,860.0
	: Relate	: 80.0	: 160.0	: 260.0	: 360.0	: 480.0	: 1,340.0
	: Dithane M 45	: 340.0	: 680.0	: 1,105.0	: 1,530.0	: 2,040.0	: 5,695.0
	: Supraside	: 22,320.0	: 44,640.0	: 72,540.0	: 100,440.0	: 133,920.0	: 373,860.0
	: -	: -	: -	: -	: -	: -	: -

Source : Plantation Office, Central Kalimantan.

### 3. Livestock and Dairy Product

#### 3.1. Production projection up to 1990.

Production of livestock and dairy products projection in Central Kalimantan province up to 1990 covers : 2,079,342 Kg meat 431,701 Kg of eggs and 2,370 Kg fresh milk.

#### 3.2. Consumption projection up to 1990.

Consumption of livestock and dairy products projection in Central Kalimantan province up to 1990 covers : 16,451,634 Kg of meat 4,468,345 Kg of eggs and 4,468,345 kg of fresh milk.

#### 3.3. Investment projection up to 1990.

Investment is urgently needed to fulfill consumption need per capita in Central Kalimantan according to the national consumption standard.

The investment is used to develop livestock supply such as Rp. 239,538,250,000.00 for livestock beef supply development and Rp. 4,465,800,000.00 for livestock milk product development.

### 4. Forestry and forestry based industries

#### 4.1. Production projection

Logs production during Pelita I reached 7,620,605 Cu.m in Pelita III decreased to 15,940,862 Cu.m.

Sawn timber production, started in the beginning of Pelita II, reached 5,907.51 Cu.m but during the Pelita II, the production reached 628,002.59 Cu.m. In the Pelita III increased to 1,714,578.96 Cu.m.

Plywood production started nearly in the Pelita III periods, until December 1983 reached 305,282.25 Cu.m.

In the running Pelita IV Forestry service of the Province Planned to project logs production in the first year of the Pelita IV (1984/1985) to reach 2,700,000 Cu.m. And until the end the Pelita IV, logs production is projected to reach 20,000,000 the period 1984/1985), while the rest will be used to supply the domestic forestry-based industries to produce processed timber for export and domestic consumption with annual increase 19 %.



The projection of processed timber and plywood products is assumed equal to the marketing projection whether for export or domestic consumption need. In this way the production of sawn timber is projected to reach 1,000,000 Cu.m. logs equivalent (500,000 Cu.m. sawn timber) in the first year of the Pelita IV (1984/1985) and until the end last year of Pelita IV (1988 - 1989) the production will reach 6,507,000 Cu.m logs equivalent (3,253,500 Cu.m) based on the average annual increase 13,127 %. While the plywood production is projected to 1,400,000 Cu.m. logs equivalent (560,000 Cu.m. plywood) in the beginning of the Pelita IV (1984/1985) and until the end the Pelita IV will reach 13,193,000 Cu.m logs equivalent (5,277,250 Cu.m plywood) based on the estimation of the average annual increase 23.72 %.

Production projection and logs marketing in Central Kalimantan done by the Forestry Services for the Pelita IV periods can be seen in Table IV.12.

Seen only from the point of raw materials need of the forestry based industries own by concessionaires setting in Central Kalimantan, if the existing industries go in full capacity in the Pelita IV, it is estimated that 41,991,500 Cu.m logs will be undoubtedly needed, consisting of sawmills 2,129,500 Cu.m per year, based on capacity estimation of maximally 80 % operation.

For industries fully operating will need 2,854,500 Cu.m. per year, consisting of saw mills 2,129,500 Cu.m per year and plywood mills, 725,000 Cu.m per year. These do not include timber industries with are in construction and application stages.

When estimating the supply for sawmills and plywood mills setting outside Central Kalimantan but own the concession areas in Central Kalimantan the amount of intake logs may reach 6,398,000 Cu.m. consisting of 2,846,000 Cu.m per year for sawmills and 3,552,600 Cu.m per year for plywood mills.

The projection of logs planning done by Forestry Service in this Region for the Pelita IV as mentioned above (as shown in table IV,11) remains unable to fulfill the whole need of logs for the existing forest based industries, although just for the operating industries moreover to supply logs for wood processing industries outside Central Kalimantan.

Table : IV.11 Production projection and their marketing based on planning of the Forest Service in Central Kalimantan ( 1984/1985 - 1988/1989).

! Year	! Production projection ! (Cu.m logs)!	! Marketing projection (Cu.m. logs equivalent)				
		! E x p o r t			! D o m e s t i c	
		! Logs	! Sawn timber	! Plywood	! Sawn timber	! Plywood
! 1984/1985	! 2,700,000.00!	! 300,000.00!	! 660,000.00!	! 840,000.00!	! 340,000.00	! 560,000.00!
! 1985/1986	! 3,300,000.00!	-	! 693,000.00!	! 1,170,000.00!	! 357,000.00	! 780,000.00!
! 1986/1987	! 3,900,000.00!	-	! 858,000.00!	! 1,482,000.00!	! 429,000.00	! 1,131,000.00!
! 1987/1988	! 5,000,000.00!	-	! 1,050,000.00!	! 2,050,000.00!	! 500,000.00	! 1,400,000.00!
! 1988/1989	! 5,400,000.00!	-	! 1,080,000.00!	! 2,214,000.00!	! 540,000.00	! 1,566,000.00!
! Total	! 20,000,000.00!	! 300,000.00!	! 4,341,000.00!	! 7,756,000.00!	! 2,166,000.00	! 5,437,000.00!

Note : Conversion factor : sawn timber = 50 % logs

plywood = 40 % logs

Source: Forest Service in Central Kalimantan, 1984.

Seen from the amount of Annual Allowable Cut (AAC) of forest in Central Kalimantan which reach 18,082,962 Cu.m. per year (as shown in table IV.12), in consider to unable the projection of logs production to increase, minimally to fulfill the real need of the existing wood processing industries, including those in Fixed Application Letter and construction stages, even larger in number to fulfill the domestic consumption need of logs and sawn timber and processed timber demand for the International wood markets, if logs export will be stopped after 1985.

#### 4.2. Consumption Projection.

According to the progress of the Indonesia development in the running Pelita IV, the domestic need for consumption of wood is estimated to be totally stopped after 1985, the demand for processed timber product from Indonesia's will shortly increase in number. In the same way the domestic need for wood consumption to supply forest based industries will as also arise together with the increasing number of new industries and their intake capacities.

If all the existing industries in Central Kalimantan will fully operate during the Pelita IV including those of construction and application stages, logs consumption will reach 4,991,500 Cu.m. per year. So that during the Pelita IV period logs consumption is estimated to reach 25,257,500 Cu.m (in five years all together). If all the existing industries whether in or outside Central Kalimantan have fully operate including those of the construction application stages. logs consumption will raise to 31,993,000 Cu.m. during the Pelita IV periods. If added in this amount, the logs exporting planned in 1984/1985, the total logs consumption supply from Central Kalimantan will reach 32,293,000 Cu.m.

Logs marketing projection from the region in the Pelita IV may reach 20,000,000 Cu.m. logs equivalent ( as shown in table IV.13) consisting of logs export, 300,000 Cu.m. sawn timber export 4,341,000 Cu.m. logs equivalent ( 2,170,500 Cu.m. sawn timber), plywood 7,756,000 Cu.m. logs equivalent (3,102,400 Cu.m plywood), domestic marketing sawn timber, 2,166,000 Cu.m logs equivalent (1,083,000 Cu.m. sawn timber) and plywood 5,437,000 Cu.m. logs equivalent (2,174,800 Cu.m. plywood).

Table : IV.12. Annual Allowable Cut (AAC) by species in Central Kalimantan (Cu.m. per year).

No.	Forest District	Limited production forest		Permanent production forest		Conversion forest		Total	
		Cu.m.	%	Cu.m.	%	Cu.m.	%	Cu.m.	%
1.	Sumber Barito	1,143,923	39.79	294,292	2.54	180,299	4.98	1,618,514	8.95
2.	Barito Utara	495,710	17.15	1,863,315	16.09	482,847	13.35	2,841,872	15.73
3.	Barito Selatan	-	-	607,343	5.24	284,842	7.86	892,185	4.93
4.	Kapuas	-	-	754,116	6.51	231,934	6.40	986,050	5.45
5.	Kahayan	244,744	8.51	2,751,116	23.75	761,503	21.02	3,757,363	20.78
6.	Katingan	457,543	15.91	1,731,467	14.95	747,278	20.63	2,936,288	16.23
7.	Kotawaringin Timur	224,007	7.79	1,035,633	8.94	202,264	5.58	1,461,901	8.09
8.	Seruyan	-	-	-	-	-	-	-	-
9.	Kotawaringin Barat	309,034	10.75	2,546,739	21.98	731,013	20.18	3,586,786	19.84
	Total	2,874,961	100.00	11,584,021	100.00	3,621,980	100.00	18,080,962	100.00

Note : Safety factor for : - Limited production forest = 0.3  
 - Permanent production forest = 0.8  
 - Conversion forest = 0.5

This logs marketing projection is based on the assumption that the logs marketing is equal with the annual consumption capacity. If the demand increase and overcomes the target projected the present industry products must be raised up, and this means that logs consumption must be raised up too. Based on the AAC of the regions forest, the logs consumption need can be reached in the PELITA IV.

#### 4.3. Investment in Forest Concession and Timber Industries

The domestic investment in forest concession during the Pelita I reached Rp. 25,128,964.00 and in the forest based industries, Rp. 79,700,000.00 But in the Pelita II, the investment reached Rp. 59,807,867,046.00 (or 138.01 % increase when compared with that in the Pelita I) and no investment for forestry industries.

In the Pelita III up to the third year (1982) the investment reached Rp. 117,867,400.00 (49.60 % increase when compared with that in the Pelita II) and Rp. 15,289,100,000.00 for forestry based industries. Overall, total investment for forestry based industries and forestry industries since the Pelita I up to Pelita III reached Rp. 221,886,962,440.00

The foreign investment for forestry base industries during the Pelita I reached US \$ 44,615,270.00 (162.44 % increase when compared with that of the Pelita I) and in the Pelita III, the investment reach US \$ 16,210,000.00 (63.67 % decrease when compare with that of the Pelita II). There was no investment for forestry during the Pelita II up to the Pelita III.

Further information for domestic and foreign investment in forestry and forestry based industries can be found each in table IV. 13 and table IV. 14.

## 5. Fishery

### 5.1. Production projection up to 1990.

Based on the fishery production in 1982 especially from fresh water fishery out of which 57 % is used and sea fishery 57 % is used and sea fishery out of which 15 % is used, further information can be seen in table IV. 15.

Table : IV.13 Domestic investment on Forestry and Forestry based industries from Pelita I up to Pelita III in Central Kalimantan.

! Pelita/ ! Years	! Forestry sector		! Forestry based industry		! Total	
	! Units	! Investment (R)	! Units	! Investment (R)	! Units	! Investment (R)
! I. 1969/70!	-	-	-	-	-	-
! 1970/71!	4	1,484,767,940	1	79,700,000	5	1,566,467,940
! 1971/72!	8	7,966,099,166	-	-	8	7,966,099,166
! 1972/73!	8	8,192,605,749	-	-	8	8,192,605,749
! 1973/74!	9	7,484,976,109	-	-	9	7,484,976,109
! Total	! 29	! 25,128,448,964	! 1	! 79,700,000	! 30	! 25,208,148,964
! II. 1974/75!	7	3,763,313,422	-	-	7	3,763,313,422
! 1975/76!	2	3,591,868,294	-	-	2	3,591,868,294
! 1976/77!	5	3,102,938,618	-	-	5	3,102,938,618
! 1977/78!	12	15,956,401,413	-	-	12	15,956,401,413
! 1978/79!	7	33,393,345,299	-	-	7	33,393,345,299
! Total	! 33	! 59,807,867,046	! -	! -	! 33	! 59,807,867,046
! III.						
! 1979/80!	11	40,467,108,805	-	-	11	40,467,108,805
! 1980/81!	5	54,381,728,605	1	6,308,000,000	6	60,689,728,608
! 1981/82!	1	2,000,000,000	1	1,850,000,000	2	3,850,000,000
! 1982/83!	3	20,730,009,000	1	7,131,100,000	4	27,861,109,000
! 1983/84!	-	-	-	-	-	-
! Total	! 20	! 117,578,846,410	! 3	! 15,289,100,000	! 23	! 132,867,946,410
! Grand total	! 82	! 206,518,162,440	! 4	! 15,368,800,000	! 86	! 221,886,962,440

Source : Regional Investment Coordinating Board (IRPMD), Central Kalimantan, 1983.

Table : IV.14 Foreign Investment on Forestry and Forestry based Industries from Pelita I up to Pelita III.  
in Central Kalimantan.

Pelita / Years	Forestry sector		Forestry based industry		Total	
	Units	Investment (US \$)	Units	Investment US \$	Units	Investment (US \$)
I.						
1969/70	-	-	1	1,200,000	1	1,200,000
1970/71	-	-	-	-	-	-
1971/72	1	2,000,000	-	-	1	2,000,000
1972/73	2	9,500,000	-	-	2	9,500,000
1973/74	2	5,500,000	-	-	2	5,500,000
Total	5	17,000,000	1	1,200,000	6	18,200,000
II.						
1974/75	1	3,250,642	-	-	1	3,250,642
1975/76	-	-	-	-	-	-
1976/77	1	2,800,000	-	-	1	2,800,000
1977/78	5	22,064,628	-	-	5	22,064,628
1978/79	4	16,500,000	-	-	4	16,500,000
Total	11	44,615,270	-	-	11	44,615,270
III.						
1979/80	-	-	-	-	-	-
1980/81	1	16,210,000	-	-	-	16,210,000
1981/82	-	-	-	-	-	-
1982/83	-	-	-	-	-	-
1983/84	-	-	-	-	-	-
Total	1	16,210,000	-	-	-	16,210,000
Grand total	17	77,825,270	1	1,200,000	-	79,025,270

Source: Regional Investment Coordinating Board (BKPM), Central Kalimantan, 1983.

Table : IV. 15. Fisheries product projection Central Kalimantan province up to 1990 (ton wet).

No.	Dissociation	1990
1.	Fresh Water Fishery	33,188
2.	Seas Fishery	200,130
	Total	241,618



## 5.2. Consumption projection up to 1990.

Consumption projection for fish product up to 1990 is projected to reach 22.5 Kg per capita according to the national consumption standard. The consumption is projected to reach 27,541,254.00 Kg.

## 5.3. Investment projection.

Investment projection up to 1990 is focused on catching and processing fish product for export. For this a fishery based located in potential areas such as Samuda, Bahaur Hilir and Kumai.

## 6. Mineral and Mining.

### 6.1. Production projection.

Production projection of mining and minerals of Central Kalimantan seems very difficult to estimate, because mining has been traditionally done by land or hill owners to reach gold and diamond, generally located dispersely in up lands. No data of production have been reported. Based on this fact it is difficult therefore to determine certain figures of production projected, because all gains from, this effort directly sold to those who pay in cash on the spot.

While the others kinds of mineral mined such as coal, iron ore, limestone, caolin, sand quartz, and crystal quartz have not been the business of the people near or around the locations. General survey and exploitation have been done by businessmen holding what is called mining proxies. The survey and exploitation took 1 - 3 years, but so far no mining proxies have begun mining.

### 6.2. Consumption projection.

#### a. Gold and diamond

Quite the same situation as to mining and mineral data, no data which can support the consumption projection of gold and diamond, because both are used for ornament only by people especially women here.

b. Coal

Consumption projection of coal used by industries here in Central Kalimantan can not be found. This is because not only no data from the industries using coal, and if there is any, the use of coal is certainly very limited. Almost all wood-based industries here use no coal at all as their source of energy.

At national level, coal consumption in 1983 reached 5,086,000 tons, and based on this consumption projection of coal up to 1990 may reach 15,796,000 tons, while the production in 1985 reaches 2,520,000 tons and in 1990, 11,000,000 tons. Shortage of coal in 1985 reaches 2,566,000 tons and in 1990, 4,796,000 tons. Based on this projection, coal mining in Barito Utara District seems urgent, besides it is rich in resource.

c. Iron ore.

The same as to previously mentioned no data which support consumption projection of this mineral. The iron ore resource found in Kotawaringin Barat is estimated to reach potentially 1,452,000 tons. Besides Kotawaringin Barat, iron ore is also found in Barito Selatan district, but so far there is no iron ore melting industries established here.

Formerly, in 1956 - 1965 an iron-ore melting factory would have been established in South Kalimantan reaching capacity of 250,000 tons per year in 30 years' course. Nevertheless, when the mining was done it was found that the resource of the iron ore was not available to supply raw materials for the factory. From that time until now days, there is no sign of effort to start with such job.

d. Limestone

The highly increasing progress in agriculture sector, including tidal areas cultivation, the need for limestone has been felt more urgent, especially in neutralizing acidity of peat soil. Limestone is also needed for Portland cement industries and as raw material of building construction. According to a research report, neutralizing soil acidity requires a great deal of limestone, estimated to reach 14 tons per one hectare.

It is clearly seen that limestone becomes one of non oil-commodities which can support the Government's plan to prepare 500,000 Ha for tidal rice fields in Central Kalimantan during this running Pelita II, which therefore needs 700,000 tons of limestone.

In this case, the potential areas of limestone is located in Barito Selatan district with resource of 1,390,766,000 tons. This is estimated more than enough to supply the need of limestone for agriculture sector.

e. Caolin.

Until now, the projection of consumption of caolin has not been estimated because of the so limited usage for chemical industries, such as ceramic, paint, cosmetics, and coating material for paper industries.

This region, according to a research, has potentially resource of caolin as shown in table II.48.

f. Sand quartz.

The region has abundant resource of sand quartz but it is difficult to determine the consumption projection of sand quartz because there is no sand quartz processing industry here. This industry can only be

built of there have already been built industry using processed and quartz, such as sement industry or glass industry etc. The potential of sand quartz can be seen in table II. 48.

g. Crystal quartz

This mineral is also found in this region, even in great quantity of resource. Mining effort of this mineral has not been done because of many factors as mentioned above. There is no supporting industry established here. The potential of crystal quartz is shown in table. II. 48.

6.3. Investment Projection.

According about the situation above projection investment of mining and mineral surely can not be made. The first step is to do especially general research and exploration of mining and mineral with intensive too benefitability.

Potential mining and mineral material have to explore as soas as posible especially coals and limestone in the region at Barito Utara district and others that spreading in region of Central Kalimantan Province.

Numbers of investment which is agreed for stone exploration industry in Kotawaringin Timur's district reaches Rp.403, 000,000.00 but no realization in it.

7. M e t a l

1). Production projection.

Production development of metal based industries traditi- onally managed by produce better production with better quality.

Especially home-industry to produce : knives, chopping knives etc. and other agriculture tools. On their growing up to this industry has some obstacles, especially shortage of capital (funds), skill and material in put, on the other hand quality production is low and can not competitive with other product from out side. Body ship products in Kotawari- ngin Barat as owned by PT. KORINDO, average products only

12 pieces in year, it is for HPH consumption in Central Kalimantan. To effort growing product is also difficulty of material input, skill and limited equipment. They will be hoped on Pelita IV, can be developed their industry for to fulfill river transportation in Central Kalimantan.

2). Consumption projections.

Necessity of furniture and agriculture tools will be developing in Central Kalimantan to past so as same as way at transmigration planning and developed new areal for agriculture.

For to fulfill the consumption above imports from other island or Java or abroad (foreign).

That's because metal home industry can not to complete needed, and his industry is still on traditional and simple as well as quality, competitive power and too low quantity.

River transportation requirements, especially "perahu/klotok" ( a little ship) is still to import for out side. That is also "perahu/klotok" is industry not many growing, and the ship body industry in only limited on "Kapal Tongkang" especially use for wood load transportation.

3). Investment projection.

Investment is used by PT. KORINDO in District of Kotawaringin Barat for ship-industry reaches about Rp. 1,850 billions and will be hoped the investment can be growth to use wide industry for to fulfill transportation in Central Kalimantan.

To effort growing industry body ship supports by wood material mostly that spreading on Central Kalimantan forest.

### 8. Basic Needs

#### 8.1. Production projection.

According to the National Socio Survey (February 1960) the food consumption by the people in Central Kalimantan was as follows :

- a. rice - 2.34 Kg weekly expenditure per capita or 10.5 monthly or 126 Kg annually per capita.
- b. meat - 0.052 Kg weekly expenditure per capita or 0.12 Kg monthly or 2.64 Kg per annual per capita.
- c. fish - 0.264 Kg weekly expenditure per capita or 1.31 Kg per monthly or 13.56 Kg per year per capita.
- d. egg - 0.307 weekly expenditure per capita or 1.31 per monthly or 15.72 / 1.78 Kg annually per capita.
- e. milk - 0.022 litre weekly expenditure per capita or 0.094 litre monthly or 1.12 litre = 1.12 Kg per per capita.
- f. nuts - 0.016 Kg weekly expenditure per capita or 0.068 Kg monthly 0.72 Kg per annual per capita.
- g. vegetables - 0.430 Kg weekly expenditure per capita or 1.84 Kg per capita.
- h. fruits - 0.434 Kg weekly expenditure per capita or 1.86 Kg per monthly or 22.32 Kg per year per capita.

The monthly consumption is based on the formula  $30/7 \times$  weekly consumption. This is shown in table IV. 16 Food consumption in Central Kalimantan.

Tabel : IV.16. Food Consumption in Central Kalimantan Province (in Kg ).

: Kinds	: Year		: Population		: Total
	: 1980	: 1985	: Population	: Transmigrant	
: Rice	:120,226,176	:145,375,272	:176,056,146	:79,858,170	:255,914,316
: Meat	: 2,519,024	: 3,045,958	: 3,088,795	: 1,673,218	: 5,362,013
: Fish	: 12,938,626	: 15,645,148	: 18,946,994	: 2,594,260	: 27,541,254
: Eggs	: 744,257	: 899,257	: 1,089,871	: 494,360	: 1,584,231
: Milk	: 1,068,677	: 1,292,224	: 1,564,943	: 709,850	: 2,274,793
: Nuts	: 568,688	: 630,715	: 1,006,035	: 456,332	: 1,462,367
: Vegetables	: 21,087,289	: 25,475,285	: 30,851,743	: 13,594,193	: 44,845,936
: Fruits	: 21,087,289	: 25,475,285	: 31,187,088	: 14,146,304	: 45,333,392

Source : National Economic Survey - Food Consumption of Population out side Java (February 1960).

b. Projection of the need and shortage of housing.

1. The need for housing up to 1990.

Seen from the population growth rate 3.84 % per year as recorded by the Statistic Bureau of Central Kalimantan Province and assumption that one family with five members (according to The Family Planning Programs), the housing needed up to 1990 can be therefore, estimated 279,454 units, as shown in table IV.17.

Table : IV. 17. Housing needed until 1990 (without transmigration during Pelita IV in Central Kalimantan Province.

Total population 1980	: until 1990	: Family 1990	: Housing needed : until 1990	: Note
954,176	: 1,397,271	: 279,454	: 279,454	: The needed housing
:	:	:	:	: project the formula
:	:	:	:	: 3.84 % per year.
:	:	:	:	: One family = five
:	:	:	:	: persons

2. The shortage of housing up to 1990.

To know about the existing housing and the need of housing in the next decade may help to estimate shortage of housing up to 1990 : about 101,162 units, as shown in table IV.18.

Table IV.18. Shortage of housing .

Existing houses	: The needed until 1990	: Total shortage until 1990
178,292	: 279,454	: 161,162

To care of its problem, until 1990 requires a great number of investment to solve the housing problem in Central Kalimantan. In the other words, the investment in housing sector up to 1990 had a good prospect. For time being the possibilities upon to realization limited to subdistricts of the capital of the districts in Central Kalimantan.

The shortage housing up to 1990 ini subdistricts in all capitals of the districts in Central Kalimantan as much as 31.930 units (see table IV.19)

Table : IV.19. . The needed and shortage housing until 1990 in the Sub-districts of the capitals of districts in Central Kalimantan Propinice.

No.	District	Sub districts	Population year 1980	Existing house	1990				Note
					Popula- tion	Family	Housing needed	Shortage housing	
1.	Kotawaringin Barat	Arut Selatan	28,863.00	5,357	42,140	8,428	8,428	3,071	Increase
2.	Kotawaringin Timur	1. Baamang	22,760	4,583	33,230	6,646	6,646	2,063	projection
3.		2. Pangang	36,368	6,564	53,097	10,619	10,619	4,055	3.84/year/
3.	Katingan	Katingan Hilir	6,065	880	8,855	1,771	1,771	891	
4.	Kapuas	Selat	48,499	8,428	70,808	14,162	14,162	5,734	1 KK=person
5.	Gunung Mas	Kuala Kurun	7,779	1,087	11,357	2,271	2,271	1,184	
6.	Barito Selatan	Dusun Selatan	23,191	4,252	33,859	6,772	6,772	2,520	
7.	Barito Utara	Teweh Tengah	25,300	4,077	36,938	7,388	7,388	3,311	
8.	Barito Timur	Dusun Timur	12,983	2,443	18,955	3,791	3,791	1,348	
9.	Murung Raya	Murung	12,950	2,032	1,807	3,781	3,781	1,749	
10.	Palangka Raya	Pahandut	55,572	10,223	81,135	16,227	6,004	6,004	
	Total		230,348	49,926	392,181	81,856	81,856	31,930	



### 3. Need projection of housing construction materials.

According Regional Office of General Work Province has stated that the house type T. 45/C/250 is in considered convenient to live in by family which five members . This type has fulfilled the minimum standard for a family to live in. To built a houses of this type with material needed :

#### a. Beton construction :

- 13 Cu.m rocks
- 5,700 Cu.m bricks
- 4,6 Cu.m of gravel stone
- 14 Cu.m of sand
- 2,8 Cu.m of wood (any speciaes).

#### b. Wood construction :

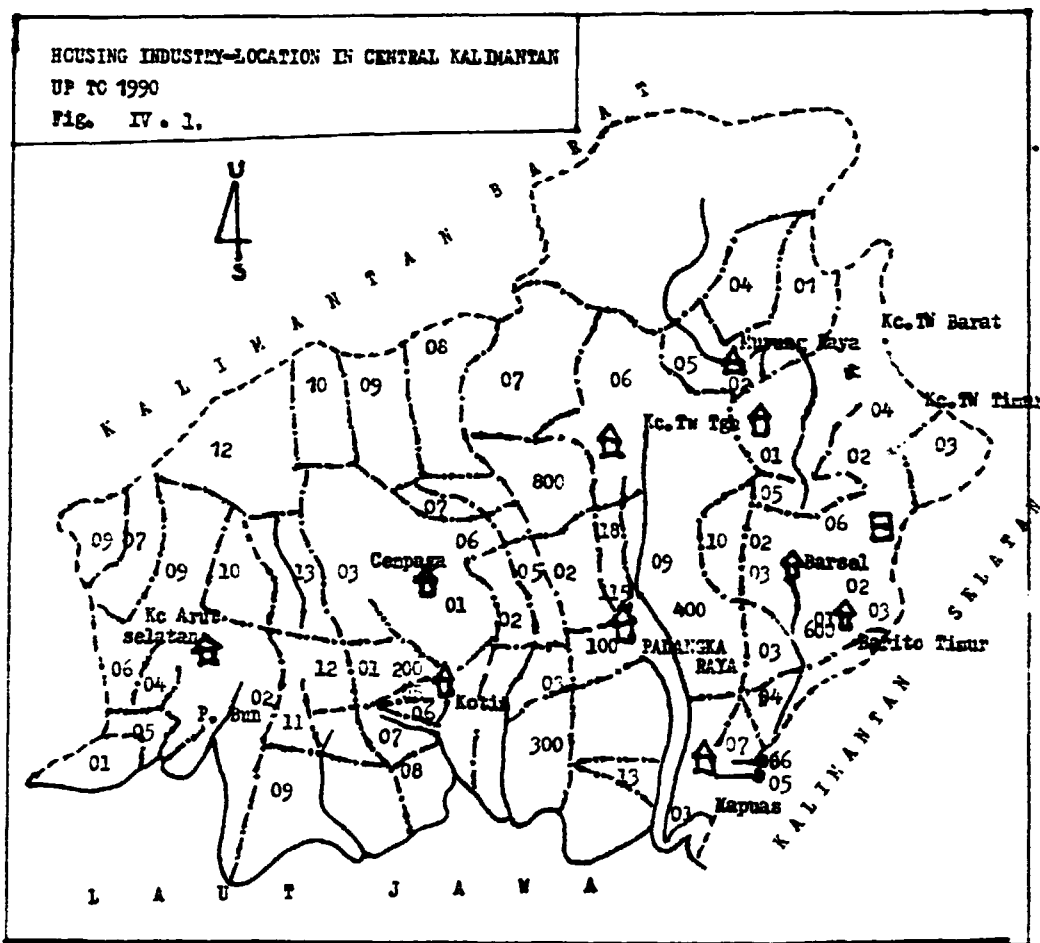
- 2,2 Cu.m fondament from ulin (ulin wood)
- 1,2 Cu.m frame, lanan wood
- 3 Cu.m lanan wood
- 9,274 shingle cuts
- 0,8 Cu.m ulin board.

The materials needed to fulfill the shortage housing in subdis - trict of the capital of the district in Central Kalimantan with beton construction type T.45/C/250 is follow : rocks as much as 415,090 Cu.m bricks 182,001,000 Cu.m., gravel 135,296.01 Cu.m., sand 447,020 Cu.m., wood 89,412 Cu.m., shingle (sirap) 296,118,820 (piece) (see table IV.20).

The materials needed to fulfill the shortage housing in subdistrict of the capital of the districts in Central Kalimantan with wood cons - truction type T.45/C/250 is follow : wood as much as 139,300 Cu.m., and shingle as much as 296,116,820 pieces (see table IV.21). **Fig. IV. 1.**

### 3. Clothing need projection.

Average national clothing need index percapita per year are : for textile 1,92 and batik 1,32 piece. According to this index, clothing need pro - jection from 1984 to 1990 in used, which consist of clothing stuff (tex - tile, batik, sarong) as shows in the table IV.22 and IV.23.



No. : District	: Sub-District	: The Capital of Sub-District	: Shortage 1990.
1. Kotawaringin Barat	: Arut Selatan	: Raja	: 3,071
2. Kotawaringin Timur	: Baamang	: Baamang	: 2,063
3. Katingan	: Ketapang	: Ketapang	: 4,055
4. Katingan	: Katingan Hilir	: Kasongan	: 891
5. Kapuas	: Selat	: Kuala Kapuas	: 5,734
6. Gunung Mas	: Kurun	: Kuala Kurun	: 1,184
7. Barito Selatan	: Dusun Selatan	: Buntok	: 2,520
8. Barito Utara	: Teweh Tengah	: Muara Teweh	: 3,311
9. Barito Timur	: Dusun Timur	: Iamiang Layang	: 1,348
10. Murung Raya	: Murung	: Furuk Cahu	: 1,749
11. Palangka Raya	: Pahandut	: Pahandut	: 6,004

Table : IV. 20 The materials needed for shortage housing until 1990 in the Subdistrict of the capitals of the districts in Central Kalimantan with wood construction ( materials stocks in Central Kalimantan) with Type T 45 / C / 25.

Nu.	District	: Sub District	: Shortage housing	: Materials needed	
				: Wood ( M3 )	: Shingle ( piece )
1.	Kotawaringin Barat	: Arut Selatan	: 3,071	: 30,710	: 28,420,454
2.	Kotawaringin Timur	: 1. Baamang	: 2,063	: 20,630	: 19,132,262
		2. Ketapang	: 4,055	: 40,550	: 37,606,070
3.	Katingan	: Katingan Hilir	: 891	: 8,910	: 8,263,134
4.	Kapuas	: Selat	: 5,754	: 57,340	: 53,177,116
5.	Gunung Mas	: Kurun	: 1,184	: 11,840	: 10,980,416
6.	Barito Selatan	: Dusun Selatan	: 2,520	: 25,200	: 23,370,480
7.	Barito Utara	: Teweh Tengah	: 3,311	: 33,110	: 30,706,214
8.	Barito Timur	: Dusun Timur	: 1,348	: 13,430	: 12,501,352
9.	Murung Raya	: Murung	: 1,749	: 17,490	: 16,220,226
10.	Palangka Raya	: Pahandit	: 6,004	: 60,040	: 55,681,096
T o t a l			: 31,930	: 319,300	: 296,118,820

Table : IV.21. Estimate on clothing needs of the people in Central Kalimantan not include the transmigrans will be invaded to the Province during 1984 up to 1990.

Year	Population Projection	Clothing needs <sup>x)</sup>	
		Clothing material ( m )	Batik (piece)
1984	1,111,106	2,133,323.5	1,466,659.92
1985	1,153,772	2,145,242.2	1,522,979.04
1986	1,199,923	2,333,852.1	1,583,898.36
1987	1,247,920	2,386,006.4	1,647,254.40
1988	1,295,840	2,488,012.8	1,710,508.80
1989	1,345,600	2,583,552	1,776,192
1990	1,397,271	2,682,760.3	1,844,397.72

Note x) : Processing data from the index of clothing needs per capita yearly (from the Official Department Industry of Central Kalimantan Province).

Table : IV.22. Estimate on clothing needs of the Transmigrans will be invaded to Central Kalimantan during 1984 up to 1990.

Total of Transmigrans	Clothing Needs	
	Clothes material (m)	Batik (piece)
633,795	1,216,886.40	836,609.40

Source : Book IV the Fourth Five Year Development Plan.

### 8.3. Investment Projection

#### a. Food crops.

Table IV.23 shows comparison between production, people's consumption needs based on the nutritional standard. Rice production shows much less in the year 1990, or about 6 tons per Ha., while fish production is always surplus, although it is far beyond the consumption need :

Table : IV.23. Food Production Need ( in Kgs ) and Production Projection 1990

Kinds	Year 1980				Year 1985			
	Production	Consumption	Needed	Less/Overs	Production	Consumption	Needed	Less/Over
Rice	144,201,600	120,226,176	115,121,424	205,457,000	205,457,000	143,375,272	139,202,590	+60,081,728
Meat	1,446,658	2,519,024	7,728,826	-6,282,167	2,079,342	3,045,958	9,345,553	-7,266,211
Fish	83,533,000	12,938,626	21,468,960	62,064,040	75,616,000	15,645,148	25,959,870	+49,656,130
Eggs	231,668	744,257	2,099,187	-1,867,519	431,701	899,942	2,538,298	-2,106,957
Milk	1,300	1,068,677	2,099,187	-2,097,887	2,378	1,292,224	2,538,298	-2,535,920
Nuts	625,000	568,668	5,352,927	-4,727,927	1,225,000	830,715	6,472,661	-5,247,661
Vegetables	2,629,000	21,087,289	71,992,579	-69,363,579	6,020,000	25,475,285	87,052,097	-82,032,097
Fruits	18,902,000	21,087,289	80,475,203	-61,573,203	26,018,000	25,752,191	97,309,130	-71,291,130

Note : rice 144,201,600 is 60 % from 240,336 tons gabah (Table II.1.1. harves areas and food crops productivity).

## Year 1990 (population + transmigration)

production	: Consumption	:	Needed	:	Less/over
262,221,000	: 255,914,316	:	245,048,106	:	+ 6,306,604
2,079,342	: 5,362,013	:	16,451,635	:	- 14,372,292
75,616,000	: 27,541,254	:	45,698,984	:	+ 29,917,016
431,700	: 1,584,231	:	4,468,345	:	- 4,036,044
2,370	: 2,274,793	:	4,468,345	:	- 4,465,975
3,283,000	: 1,462,367	:	11,394,288	:	- 8,106,288
13,772,000	: 44,845,936	:	153,243,922	:	- 39,471,922
34,818,000	: 45,333,392	:	171,300,000	:	- 36,482,100

Source : Taken from the table - Food Needed ( Table IV.16 ) Food Consumption

- 1980 surplus of fish product 62 tons
- 1985 surplus of fish product 49 tons
- 1990 surplus of fish product 29 tons

Other food production as meat, egg, milk and nuts, vegetables, fruits is always less in comparison with people's consumption need. The lack of food, as shown in table IV.23, becomes the basis for food investment. The investment cost for rice, maize or nuts consist of :

- a. Land rent
- b. production input cost (seeds, pharmaceuticals, fertilizers, boxes)
- c. labor cost (land preparation, nursery, soil village, weeding, fertilizing, pest and disease control and harvesting).

Land rent, production input and labor differ according to the location, kinds of plants and the condition of soil.

Labor cost was the highest in Kotawaringin Barat District (Rp.95,000.00 per Ha.), the input cost is the most expensive in Barito Utara District (Rp.40,000.00 per ha.) and the least one in Kapuas District (Rp.9,250.00 per ha.). Wet rice field, tidal rice field, rice field and peanut areas were spreading in five districts and maize areas in five districts.

The average investment cost per Ha is as follows :

- wet rice field	: Rp. 244,710.00
- tidal rice field	: Rp. 211,350.00
- maize	: Rp. 194,805.00
- peanuts	: Rp. 196,960.00

(Source : Annual report of the Agriculture Office Central Kalimantan, 1982)

This is shown in table IV.24 and table IV.25:

#### b. Investment Needed

Regional office of General Work Province has stated that the unit cost for housing of type T 36 until T 37, estimate to reach Rp. 135,000.00 per sqm for beton construction but 60 % of this unit

Table : IV. 24. Production Projection up to 1990.

Kinds	Y e a r 1985			Y e a r 1990		
	Production Needed in ( Kgs )	Investment in ( Rp )	Cost in ( Rp )	Production Needed in (Kgs)	Investment (Ha/Head)	Cost in ( Rp )
Rice	-	-	-	-	-	-
Meat	7,266,211	72,662 Cows meat	18,165,500.000	14,372,292	958,153 Cows meat	293,538,250,000
Eggs	2,106,597	21,065 fowls	36,863,750	4,036,644	40,366 fowls	70,640,000
Milk	2,535,920	25,359 Cows	6,339,750,000	4,465,975	14,886 Cows	4,465,800,000
Nuts	5,247,661	6,559 Ha	1,289,237,040	8,106,288	10,132 Ha	1,991,545,920
Vegetables	82,032,097	343,030 Ha	-	39,471,922	165,154 Ha	-
Fruits	71,291,130	146,388 Ha	-	36,482,100	74,911 Ha	-

Source : Agriculture Office of Central Kalimantan.

- The average product of crops from the year 1970 up to 1983 is :
  - 1.1 ton of rice per Ha or 1,65 ton grain.
  2. 0,8 ton of nuts (peanut, soyabean, green bean) per Ha.
  3. 2,39 tons of vegetables per Ha.
  4. 4,87 ton of fruits per Ha
- Investment cost for vegetables and fruits has not been found yet  
Investment cost for peanut is Rp 196,560,- per Ha ( as shown in-  
Table IV. 27 )

\*. Life stook Office of Central Kalimantan :

- Investment cost for cows meat and cow-  
milk Rp 250,000,-  
Investment cost for fowls Rp 1,750,-
- Projection up to 1990 specially for cows  
meat (beef) egg and milk, as shown in  
Table II. 26 and Table II.27.



cost for wood construction (based on constant price 1983).

Whatever the type and construction may be built that must appeal to the desire of consumer or demand, and the investment needed appeal with the type and construction of the house.

There are some alternative type of housing can be chosen, as follows :

- (1) The investment needed to built the housing in <sup>the</sup> subdistrict of the capitals of the districts in Central Kalimantan until 1990 with type T 36 on based constant price 1983 with beton construction are Rp. 155,274,800,000.00 and with wood construction are Rp. 96,007,885,000.00 (see in table IV.26)
- (2) The investment needed to built the housing in the subdistrict of the capitals of the districts in Central Kalimantan until 1990 with type T 45 on based constant price 1983 with beton construction are 193,964,750,000.00 and with wood construction Rp.116,048,850,000.00 (see table IV.27,.
- (3) The investment needed to built the housing in the subdistrict of the capitals of the districts in Central Kalimantan until 1990 with type T 36 , T 45, T 54 with in comparisson degrees 3 : 4 : 3 with beton and wood construction is presented in table IV.28.

Table IV.25. Investment expenses per ha, cereals, maize and nuts

Location	Types of agriculture				
	wet rice field	tidal rice field	Rice field	maize	peanut
Kotawaringin Timur	: value of land rent - 65,625	: value of land rent - 10,500	: -	: dto 10,500	: -
	: Input Production - 11,000	: input production - 4,300	: -	: input Rp.- 11,500	: -
	: labor cost - <u>222,000</u>	: labor cost - <u>108,500</u>	: -	: labor cost - <u>98,750</u>	: -
	Rp 264,625	Rp 252,250		Rp 120,750	
Kotawaringin Barat	: value of land rent : dto -	: -	: -	: dto -	: dto -
	: input production : dto -	: -	: -	: dto -	: dto -
	- 14,125	- 24,750			- 42,500
	: labor cost : dto -	: -	: -	: dto -	: dto -
	- <u>250,500</u>	- <u>227,500</u>			- <u>237,000</u>
	Rp 264,625	Rp 252,250			Rp 279,500
K a p u a s	: value of land rent : dto -	30,000	: -	: dto -	35,000 : dto
	- 40,000				
	: input production : dto -	10,500	: -	: dto -	33,800 : dto
	- 9,250				
	: labor cost : dto -		: -	: dto	: dto
	- <u>228,250</u>	- <u>218,000</u>		- <u>226,000</u>	
	Rp 277,250	Rp 258,250		Rp 364,800	

location	Types of agriculture				
	wet rice field	tidal rice field	rice field	maize	peanut
Barito Utara	: V.L.R - 10,000	: V.L.R. -	: V.L.R - 5,000	: V.L.R - 3,000	: V.L.R. - 5,000
	: input production : - 40,000	: dto -	: dto - 29,250	: dto - 30,200	: dto - 28,000
	: labor cost : - 95,000	: dto -	: dto - 58,000	: dto - 28,575	: dto - 39,000
	Rp 145,000		Rp 92,250	Rp 61,775	Rp 72,000
Barito Selatan	: value of land rent :	-	-	: V.L.R -	: V.L.R -
	: input production : - 14,200	-	-	-	-
	: labor cost : - 223,350	-	-	-	-
	Rp 238,050			Rp 180,700	Rp 238,200
Palangka Raya	: -	-	-	: value of land rent	-
	: -	-	-	: input production :	-
	: -	-	-	52,000	-
	: -	-	-	: labor forces :	-
				194,000	-
				Rp 246,000	-
Average cost Investment	Rp 244,710:	Rp 211,350:	-	: Rp 194,805 :	Rp 196,560

Source : Production Cost report and Agriculture Income in Central Kalimantan.

Agriculture office of Central Kalimantan ( year 1981/1982 ) .

Table : IV.26.. Investment needed to fulfill the shortage housing with Type 45 at Sub Districts of the Capital of Districts in Central Kalimantan Province until 1990.

District	Sub Districts	Increase	Investment	
			Beton Constr. (Rp.)	Wood Constr. (Rp.)
Kotawaringin Barat	Arut Selatan	3,071	18,656,325,000	11,937,795,000
Kotawaringin Timur	1. Baamang	2,063	12,532,725,000	7,519,635,000
	2. Katapang	4,055	24,634,125,000	14,780,475,000
Katingan	Katingan Hilir	891	5,412,825,000	3,247,695,000
Kapuas	Selat	5,734	34,834,050,000	20,900,430,000
Gunung Mas	Kurun	1,134	7,192,800,000	4,315,680,000
Barito Selatan	Dusun Selatan	4,520	15,309,000,000	9,185,400,000
Barito Utara	Teweh Tengah	3,311	20,114,325,000	12,068,595,000
Barito Timur	Dusun Timur	1,348	8,189,100,000	4,913,460,000
Murung Raya	Murung	1,749	10,625,175,000	6,375,105,000
Palangka Raya	Pahandut	6,004	36,474,300,000	21,884,580,000
<b>T o t a l</b>		<b>31,930</b>	<b>193,964,750,000</b>	<b>116,048,850,000</b>

Table : IV. 27. Investment needed to fulfill the shortage of housing with type 36 by Sub Districts of capital of Districts in Central Kalimantan Province until 1990.

District	Sub Districts	The shortage housing	Investment	
			Beton Constr. (Rp.)	Wood Constr. (Rp.)
Kotawaringin Barat	Arut Selatan	3,071	14,925,060,000	8,955,036,000
Kotawaringin Timur	1. Baamang	2,063	10,026,180,000	6,015,708,000
	2. Katapang	4,055	19,707,300,000	11,824,380,000
Katingan	Katingan Hilir	891	4,330,260,000	2,598,156,000
Kapuas	Selat	5,734	27,867,240,000	16,720,344,000
Gunung Mas	Kurun	1,184	5,754,240,000	3,452,544,000
Barito Selatan	Dusun Selatan	2,520	12,247,200,000	7,248,320,000
Barito Utara	Teweh Tengah	3,311	16,091,460,000	9,654,876,000
Barito Timur	Dusun Timur	1,348	6,551,280,000	3,930,768,000
Murung Raya	Murung	1,749	8,500,140,000	5,100,084,000
Palangka Raya	Pahandut	6,004	29,179,440,000	17,507,664,000
T o t a l		31,930	155,274,800,000	96,007,885,000

Table : IV.28 . Needed to fulfill the shortage of housing with Type 36, 45, 54 at Sub Districts of the Capital of Districts in Central Kalimantan until 1990 3: 4: 3

District	Sub-District	T 36			T 45			T 54			Total Invest	
		House will be Built	Beton Construction (000)	Wood Construction (000)	House will be Built	Beton Construction (000)	Wood Construction (000)	House will be Built	Beton Construction (000)	Wood Construction (000)	Beton Construction (000)	Wood Construction (000)
Kotawaringin Barat	: Arut Selatan	: 921	: 4,476,060	: 2,675,636	: 1,229	: 7,466,175	: 4,479,705	: 921	: 6,714,090	: 4,028,454	: 13,656,325	: 11,193,79
Kotawaringin Timur	: 1. Baamang	: 610	: 3,013,200	: 1,807,920	: 823	: 4,999,725	: 2,999,835	: 620	: 4,519,800	: 2,711,000	: 12,532,725	: 7,519,63
	: 2. Katapang	: 1,216	: 5,909,760	: 3,545,856	: 1,623	: 4,359,725	: 5,915,835	: 1,216	: 8,364,640	: 5,318,784	: 24,634,125	: 14,780,47
Katingan	: Katingan Hilir	: 267	: 1,297,620	: 770,572	: 357	: 1,168,775	: 1,301,265	: 267	: 1,364,430	: 1,167,858	: 5,412,829	: 3,247,69
Kapuas	: Selat	: 1,720	: 8,399,200	: 3,013,520	: 2,294	: 13,936,090	: 8,361,630	: 1,720	: 12,530,800	: 7,523,200	: 34,834,050	: 20,900,43
Gunung Mas	: Kurun	: 355	: 1,725,300	: 1,036,180	: 474	: 2,879,550	: 1,727,730	: 355	: 1,587,950	: 1,552,770	: 7,192,800	: 4,315,68
Barito Selatan	: Dusun Selatan	: 756	: 3,674,160	: 2,204,400	: 1,000	: 6,123,600	: 3,674,160	: 756	: 5,511,240	: 3,306,744	: 15,309,000	: 9,105,43
Barito Utara	: Teweh Tengah	: 993	: 4,825,900	: 2,895,580	: 1,325	: 8,043,375	: 4,329,625	: 993	: 7,230,970	: 4,343,382	: 20,114,325	: 12,068,99
Barito Timur	: Dusun Timur	: 404	: 1,696,440	: 1,178,060	: 540	: 3,200,500	: 1,968,300	: 404	: 2,945,160	: 1,767,096	: 9,189,100	: 4,913,46
Murung Raya	: Murung	: 524	: 2,548,640	: 1,527,904	: 701	: 4,250,575	: 2,555,145	: 524	: 5,819,290	: 12,291,976	: 10,625,175	: 6,375,10
Pulangka Raya	: Pahandut	: 1,801	: 8,752,060	: 5,251,716	: 1,402	: 14,593,190	: 8,755,290	: 1,801	: 13,129,290	: 7,377,574	: 36,474,300	: 21,804,90
T o t a l		: 9,577	: 46,544,220	: 27,927,532	: 12,776	: 77,614,200	: 46,568,520	: 9,577	: 69,816,330	: 21,089,790	: 193,974,750	: 116,384,81

## V. SPATIAL INDUSTRIAL REQUIREMENT

### 1. The Devision of Development area.

For spreading out the development effort in Central Kalimantan her development area was divided into 4 development zone, as follows

- 1) East Development Zone, with Buntok as the Centre, covering the district of Barito Selatan and Barito Utara.
- 2) Central Development Zone, with Palangka Raya as the centre.
- 3) South Development Zone, with Palangka Raya as the centre, covers the district of Kotawaringin Timur, axcept Katingan sub-district.
- 4) West Development zone, with Pangkalan Bun as the Centre.

The next policy has been taken for making the development area aproval more steady is to make and integrated regional development as the strategy in regional development; as the direction for drawing up the location for investment either by government or private in all sector into spatial effect for reaching the target of development.

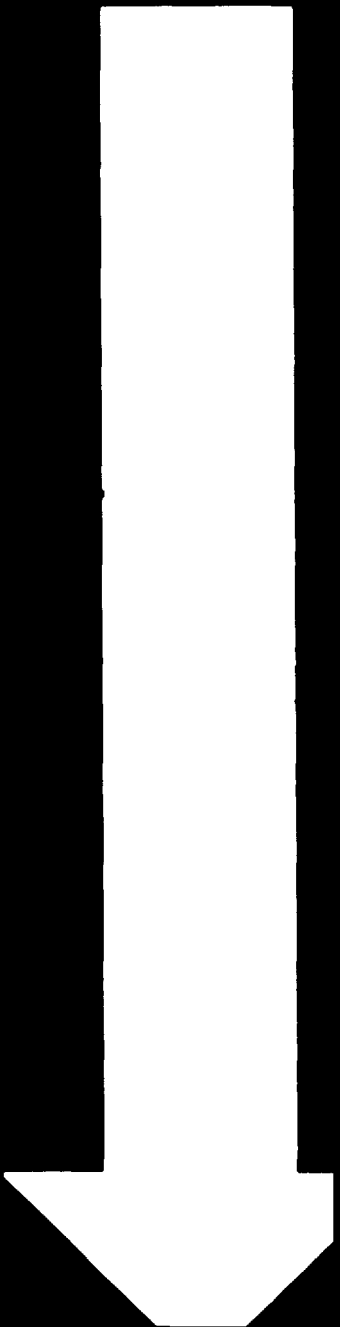
Each development area/zone divided into smaller area for maximizing the sector interlinkages, for making the multiplier effect for development of the regional for reach of spread of development objective.

In this system, the region of Central Kalimantan divided into four unit of development zone as follows :

#### 1) East development zone.

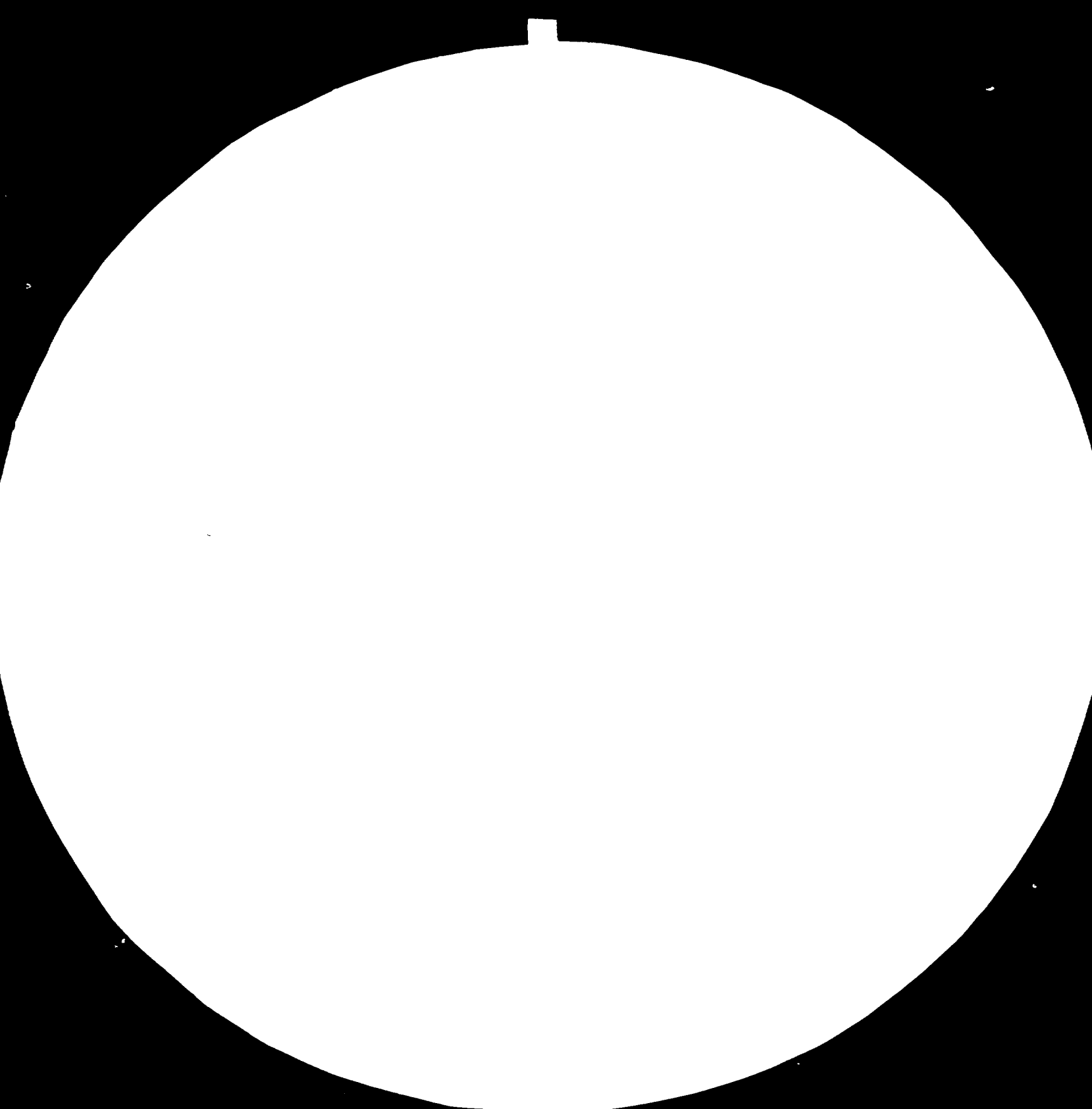
- |               |                   |
|---------------|-------------------|
| a. Centre     | : Buntok          |
| b. Sub-centre | : 1. Muara Teweh  |
|               | 2. Puruk Cahu     |
|               | 3. Tamiang Layang |
|               | 4. Ampah          |
|               | 5. Jenamas        |

Making unit this development zone from marketing point as view are more oriented to Banjarmasin harbour.



**84.12.19**







MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS  
STANDARD REFERENCE MATERIAL 1010a  
(ANSI and ISO TEST CHART No. 2)

## 2) Central Development Zones :

Covered the district of Kapuas, Palangka Raya and Katingan, with Palangka Raya as the centre. And the sub-centre are :

- Kuala Kapuas
- Katingan
- Tumbang Lahang
- Kuala Kurun
- Tewah
- Pegatan
- Sei Hanyo

The sea port of this zone is Pulang Pisau, Kuala Kapuas and Pagatan.

## 3) South Development Zone.

Covered the district Kotawaringin Timur (excluding Katingan) with Sampit as the centre. And the sub-centre are :

- Kuala Pembuang
- Parenggean
- Kuala Kuayan
- Kotabesi
- Samuda

The sea port of this zone is Sampit and Kuala Pembuang.

## 4) West Development Zone.

Covered the district of Kotawaringin Barat (the River flows of Kumai Lamandau, Arut and Jelai) with his centre in Pangkalan Bun and sub-centres are :

- K u m a i
- Sukamara
- Naga Bulik
- Kotawaringin Lama
- Balai Riam

This zone, Kumai and Sukamara as the sea port. Looking from distribution and service facilities point of view all sub centre oriented into Pangkalan Bun/Kumai.

The determination of all sub-centre has been considered\*the possibilities improvement the service function location and its linkages with other sub-centre.

#### 1.1. Summary of Development Progress and Problems

In general the agricultural sector is the main sector which absorb a large part of worker.

The main industrial activity in Central Kalimantan is processing agricultural product, that is the product of forestry sub-sector in form of log.

Up to the end of Felita III, the plywood industry was 12 industries with production capacity 83,000.00 Cu.m and sawmill was 252 plant with production capacity 1,753,159.00 Cu.m per year.

The activity of other industry which are having potentiality and developed are small industry and handicraft. In 1979/1980 the amount of unit was 930 units and increase into 4,157 units in 1982/1983. And in the same year the man power have been absorbed was 11,270 labor into 19,743 labor ( Table V.1).

Table V.1 : The Sums of Manufactures and Man Power from Small Industry and Handicrafts.

No. :	Years	: Total Unit	: Total Man Powers (man)
1. :	1979/1980	: 930	: 11,270
2. :	1980/1981	: 967	: 7,382
3. :	1981/1982	: 982	: 6,291
4. :	1982/1983	: 4,157	: 19,743

Source : Industrial Office Central Kalimantan.

The small industry and handicraft product is rattan plait, brick industries, rubber carving and others. The amount of unit small industry, labors and production were shown in Table V.2.

Table V.2 : Small Industries in Central Kalimantan 1982.

No.	Criteria handicraft Industry	Unit	Labor force (man)	Production
1.	Varied Rattan plaiting	1,125	1,895	221,823 sheets
2.	Varied Purun Plaiting	807	2,891	2,891 sheets
3.	Brick body boat/ship	69	436	22,073,000 pieces
4.	Gedah Nyatu's Grave	1	105	484 pieces
5.	Copra's Smoked	169	725	1,905.41 tons

Source : Industrial Department Office Central Kalimantan.

The labor force in 1970 was 209,254.00 and in 1980 was 364,980.00. In nine years provide has been growth 155,725 labor or 74.42 percent. In 1970 the agricultural sector have been absorbed 79,66 percent from total labor force in 1980 is 73.53 percent.

There was improvement in the services activity with increase from 7.5 percent in 1971 become 9.6 percent in 1980. Other activity that have a little bit increasing was in processing activity from 2.35 percent in 1971 become 5.32 percent in 1980 (see Table V.3).

Table : V.3.

The sum of total Labor-Force Central Kalimantan by Field Activities in 1971 to 1980.

: No.:	: Y e a r s :			
	: 1971 :		: 1980 :	
No.: Filed Activities	: Total :	% :	: Total :	% :
: 1.: Agriculture	: 166,687 :	79.66 :	: 268,347 :	73.52 :
: 2.: Mineral and Mining	: 209 :	0.10 :	: 3,069 :	0.84 :
: 3.: Manufacturing Indus- try	: 4,924 :	2.35 :	: 14,410 :	5.32 :
: 4.: Electricity and Pola- ble Water	: 93 :	0.04 :	: 125 :	0.03 :
: 5.: Building and Cons- truction	: 1,279 :	0.61 :	: 5,811 :	1.59 :
: 6.: Trade, Restaurant and Hotels	: 6,557 :	3.14 :	: 24,484 :	6.71 :
: 7.: Transportation and Communication	: 1,661 :	0.80 :	: 6,392 :	1.75 :
: 8.: Bank and Institution: other financial Instituti tution and hire house	: 336 :	0.16 :	: 786 :	0.22 :
: 9.: Government and Secu- rity	: - :	- :	: 118 :	0.03 :
: 10.: Services	: 15,707 :	7.50 :	: 35,035 :	9.60 :
: 11.: Unclear	: 11,801 :	5.64 :	: 1,403 :	0.39 :
: : T o t a l	: 209,254 :	100.00 :	: 364,980 :	100.00 :

Source : Central Kalimantan Population, Population Census, 1971.

Central Kalimantan Population, Population Census 1980.

In 1970 there are only six PiDI (Domestic Investment) with investment Rp. 2,402,730,924.00 and in the first year of Delita III, the portion of PiDI and PDI ( Foreign Investment) is as follows :

- 1) 968 PIDE, with planned investment Rp. 250,500,716,541.00 and realization Rp. 115,702,668,244.00 (46.18 %).
- 2) 16 PMA with planned investment US \$ 88,756,957.00 and realization US \$ 66,101,280.00 (74.47 %).

There are about 93.7 % of total investment (both PIDE and PMA) in Forest exploitation and Wood Industry (table V.4.)

Table : V.4.

Investment per-sector since 1968 to 1982.

PIDE Projects									
:Years:	:Sectors :		:Total : :Project:	: Per- sector Investment (Rp.) :				: Investment total ( Rp.)	
	:Fo- :res :try :	:In- :dus- :try :		:	: Forestry	: Industry	:		
1968	-	-	-	-	-	-	-	-	
1969	-	-	-	-	-	-	-	-	
1970	4	1	5	1,484,767,940:	79,700,000:		1,566,467,940		
1971	8	-	8	7,966,099,166:	-		7,966,099,166		
1972	8	-	8	8,192,605,749:	-		8,192,605,749		
1973	9	-	9	7,484,976,109:	-		7,484,976,109		
1974	7	-	7	3,763,313,422:	-		3,763,313,422		
1975	2	-	2	3,591,868,294:	-		3,591,868,294		
1976	5	-	5	3,102,938,618:	-		3,102,938,618		
1977	12	-	12	15,956,401,413:	-		15,956,401,413		
1978	7	-	7	33,393,345,299:	-		33,393,345,299		
1979	11	-	11	40,467,108,805:	-		40,467,108,805		
1980	5	1	6	54,381,728,605:	6,308,000,000:		60,689,728,605		
1981	1	1	2	2,000,000,000:	1,850,000,000:		3,850,000,000		
1982	3	1	4	20,730,009,000:	7,131,100,000:		27,861,109,000		
<b>Total</b>	<b>:82</b>	<b>: 4</b>	<b>: 86</b>	<b>:206,518,162,440:</b>	<b>15,368,800,000:</b>		<b>221,886,962,440</b>		

Source : BKPID (Regional Coordinating Investment Board).

There is rapid growth in industrial sector, especially in wood processing industry like saw mill, plywood, moulding and others.

Up to November 1983 there was 111 projects PMDN and PMA (including 85 big sawmill, 2 plywood industries and 1 Glue Industry with has been operated). See table V.5.

Table : V.5.

Total and Varied Business Investment (PMA and PMDN) in Central Kalimantan November 30, 1983.

! No.	! Varied Business	! Total	!
! 1.	! Logging	! 36	!
! 2.	! Logging, sawmill	! 22	!
! 3.	! Logging, sawmill, dryk:ln, wood working	! 14	!
! 4.	! Logging, veneer, plywood	! 2	!
! 5.	! Plywood	! 5	!
! 6.	! Logging plywood	! 3	!
! 7.	! Sawmill, dryk:ln, wood working	! 1	!
! 8.	! Logging, sawmill, wood working	! 3	!
! 9.	! Logging, sawmill, plywood	! 2	!
! 10.	! Sawmill	! 8	!
! 11.	! Sawmill, plywood	! 1	!
! 12.	! Plywood, blockboard	! 1	!
! 13.	! Plywood, sawmill, dryk:ln, wood working	! 1	!
! 14.	! Wood working	! 1	!
! 15.	! Logging, sawmill, blockboard, wood working	! 1	!
! 16.	! Sawmill, dryk:ln, blockboard	! 1	!
! 17.	! Logging, sawmill, dryk:ln	! 1	!
! 18.	! Boat/ship and Reparation Iron Boats	! 1	!
! 19.	! Hotels	! 1	!
! 20.	! Electricity	! 1	!
! 21.	! Crumb rubber	! 2	!
! 22.	! Plantation	! 2	!
! 23.	! Rattan Industry	! 1	!
! Total		! 111	!

Source : Regional Investment Board (BKSPMD) Central Kalimantan.



### 1.2. Investment Record, PMA, PMDN and others.

The Investment position (public investment, private investment, including PMA and PMDN) from Pelita I up to Pelita III as follows :

	Periode	PMA/PMDN	Public
Pelita	I	Rp. 25,266,586,285.00	Rp. 8,948,417,451.00
Pelita	II	Rp. 97,902,905,240.00	Rp. 54,726,407,906.00
Pelita	III	<u>Rp. 210,956,352,929.00</u>	<u>Rp. 311,361,619,478.00</u>
Total		Rp. 334,125,844,454,00	Rp. 375,036,444,845.00

This figure shows that even investment of PMA/PMDN or Government from Pelita I up to Pelita III are still increased.

In Pelita III the investment volume of PMDN/PMA nearly 835 % from investment in Pelita I. Public investment in Pelita III was 4191 % from investment value in Pelita I.

But the investment proportion of PMA/PMDN from the total investment (Private and Public) from Pelita I to Pelita III are decreased. That is 78.8 %; 64.1 % and 40.3 %.

In Pelita I and II PMA/PMDN are larger than public investment but in Pelita III public investment are larger than PMA/PMDN.

### 2. Sectoral Priority.

1) The sectoral priorities in Pelita III is agricultural and follows by industrial sector. It shown from the investment that has been realized by public and private.

Public Investment Funds in Central Kalimantan in Pelita III was Rp. 311,361,619,478.00 (Table V.6). The Funds Available in Pelita III comes from Central Government Budget was 63 % from the total Public Investment in Central Kalimantan.

The development funds from the Provincial Budget was 18 % and Impres (Presiden Instruction) was 19 %. The capability of provincial government mobilizing funds are become smaller. This is because of many factors, among others thing is because the limitation of economic activity in the region, which were concentrated mainly in Agricultural and wood processing industrial sector.

2) Since 1979/1980 up to 1981/1982 the Development Funds from Regional Budget always increased from Rp. 5 million become Rp. 15.7 billions. But in 1982/1983 decreased into Rp. 10.7 billions.

Table V.6. Budget Realization for Pelita III in Central Kalimantan ( Budget years 1979/1980 to 1983/1984 ) Con -  
dition until 30 September 1983 ( on thousand Rupiahs ).-

Fund Source	1979/1980		1980/1981		1981/1982	
	Fund on DIP	Realization	Fund on DIP	Realization	Fund on DIP	Realization
I. A P B N	9,490,824.30	9,415,823.97	29,694,918.95	28,380,524.35	39,977,058.50	38,005,851.50
II. A P B D	5,020,131.18	4,496,219.82	13,180,117.62	11,855,692.10	15,741,927.80	10,992,721.34
III. Impres	4,947,452.00	4,405,239.00	7,557,258.00	7,503,383.00	13,486,251.00	12,083,810.00
<b>T o t a l</b>	<b>19,458,425.48</b>	<b>18,317,282.79</b>	<b>50,432,294.57</b>	<b>47,729,599.45</b>	<b>69,205,237.30</b>	<b>61,082,382.84</b>

Fund on DIP	1982/1983		1983/1984		T o t a l	
	Fund on DIP	Realization	Fund on DIP	Realization	Fund on DIP	Realization
I. A P B N	66,074,707.15	50,254,536.08	50,700,867.10	6,641,982.06	195,938,394.00	132,698,717.97
II. A P B D	10,714,894.90	6,625,824.99	11,304,510.95	-	55,961,582.46	33,970,458.17
III. Impres	17,691,493.00	12,558,429.00	15,779,189.00	-	59,461,643.00	36,550,861.00
<b>T o t a l</b>	<b>94,481,095.05</b>	<b>69,438,789.97</b>	<b>77,789,567.05</b>	<b>6,641,982.06</b>	<b>311,361,619.47</b>	<b>203,220,037.14</b>

Source : Regional Planning and Development Board.

Development funds from Central Government increasing continuously, except in 1983/1984, with average rate of growth 72.3 % per years. Because the impact of world Economic Recession, the development fund from Central Government on year 1983/1984 was less than Rp. 15,820,171,070,00 or 24 % from 1982/1983.

There was because the weakness of the Economic structure of the province, where mostly of the product was from agriculture and especially log with foreign market orientation, and so the Regional Fund decreased very quickly because the impact of the decreasing of Foreign Demand for Forest Product.

- 3) Sectoral priority in Pelita III focused base on Fund Resources that is Public and Private Funds. Sectoral priorities according to government budget stressed mainly in Central Budget for the Central Kalimantan in many sectors.

The main sectors that absorbed the Central Government Budget was Public utility and Irrigation sectors that was Rp. 56.5 billions or 29.3 % of total fund from Central Government Budget; Man Powers and Transmigration sector has the second ranked with total funds Rp. 42,6 billion or 21.7 % from total fund of Central Government Budget. The third is agricultural sector with total funds Rp. 27 billions or 13.8 % (See table 5.1).

Private Investment especially PMA/PMDN has the largest activity in the agricultural sector, that is forestry sub sector and industry sector in processing forest product like logs (table V.7).

- 4) The value of PMA and PMDN in Pelita III as follows :

PMA	: Planned	: US \$ 35,672,914.00
	Realization	: US \$ 22,232,727.00 (62.5 %).
PMDN	:Planned	: Rp.174,943,877,856.00
	Realization	: Rp. 59,626,222,661.00 (34.28 %)

Investment realization per year for PMA and PMDN in Pelita III are shown in table V.8. and V.9.

Table V.7. Recapitulation : Budget fund allocations and Developed Realization for source from A.P.B.N in Central Kalimantan Region from 1979/1980 to 1983/1984 ( Repelita III ) situation on II Triwulan ( September, 30 1983 )

Number :	Name of Department : and non Department	1979/1980		1980/1981		1981/1982	
		Budget	Realization	Budget	Realization	Budget	Realization
1.	HOME AFFAIRS	504,810.00	503,310.00	826,746.00	749,005.30	1,931,474.25	1,860,591.55
2.	ATTORNEY GENERAL	130,000.00	130,000.00	300,000.00	298,681.00	300,000.00	283,550.80
3.	JUSTICE	717,101.00	717,101.00	1,485,172.00	1,185,172.00	794,000.00	748,248.80
4.	INFORMATION	204,100.00	204,100.00	544,957.00	537,839.00	360,915.00	329,926.10
5.	FINANCIAL	223,901.00	223,180.00	384,638.00	379,504.40	419,625.00	374,571.50
6.	TRADE AND COOPERATION	80,566.88	75,908.00	245,641.00	245,441.00	610,947.00	601,811.90
7.	AGRICULTURE	1,003,432.00	938,636.55	4,381,412.25	4,262,576.95	1,435,730.00	2,222,739.20
8.	INDUSTRIAL	90,800.00	90,800.00	53,490.00	52,990.00	168,850.00	168,749.00
9.	PUBLIC WORK	2,457,959.88	2,457,959.88	5,815,617.80	5,274,409.40	14,739,748.00	14,184,990.80
10.	TRANSPORTATION	471,938.00	471,938.00	1,020,466.00	1,006,605.30	2,716,431.00	2,571,210.10
11.	EDUCATION AND CULTURE	1,040,440.80	1,037,148.30	2,144,255.20	2,064,022.50	3,028,913.00	2,987,330.90
12.	HEALTH	474,109.63	477,109.63	788,605.80	778,145.60	1,384,793.60	1,218,270.60
13.	RELIGION	297,141.30	297,141.30	244,190.00	243,318.50	429,393.00	424,163.30
14.	LABOR FORCE AND TRANSMIGRATION	1,461,780.80	1,461,780.80	5,368,247.90	5,283,004.30	9,276,832.25	8,968,076.75
15.	SOCIAL	202,270.00	202,270.00	571,650.00	568,837.40	1,018,000.00	917,642.20
16.	NON DEPARTMANT	130,491.00	130,441.00	5,549,496.00	5,448,011.30	361,506.00	233,978.40
T O T A L		9,490,842.30	9,415,423.97	29,694,918.95	28,360,524.35	39,977,058.50	38,005,851.50
TOTAL PROJECT/AVERAGE PER-		115	89.34	131	95.66	151	95.07
CENTPAGE OF REALIZATION							

Source : Regional Planning and Development Board.

1982/1983		1983/1984		T O T A L	
Budget	Realization	Budget	Realization	Budget	Realization
2,232,612.85	1,280,804.88	2,589,136.00	335,938.20	8,084,779.10	4,729,649.90
256,250.00	252,045.70	233,150.30	31,000.00	1,219,400.30	995,277.90
1,148,100.00	760,040.00	409,155.00	-	4,533,856.00	3,410,561.80
405,100.00	286,082.20	1,027,912.00	78,158.50	2,542,984.00	1,436,105.80
111,156.00	205,102.00	167,325.00	865,500.00	1,606,645.00	2,048,557.90
527,418.00	444,394.40	365,865.20	164,898.20	1,930,438.88	1,532,453.50
16,905,394.50	16,273,175.70	2,968,972.00	642,534.25	27,694,946.75	24,342,662.15
143,350.00	137,026.80	159,916.00	42,380.00	616,406.00	491,495.80
16,811,653.00	12,843,142.70	16,763,830.50	1,823,605.47	56,763,830.50	36,584,103.26
2,303,084.00	1,718,965.60	1,808,864.00	77,236.79	8,320,783.00	5,845,955.79
3,493,379.90	4,432,809.30	5,661,942.10	530,543.36	20,338,931.40	10,961,854.36
1,573,075.40	1,305,875.20	2,353,835.00	333,345.32	6,574,319.43	4,109,746.35
370,708.00	1,358,505.80	459,394.00	39,144.30	1,800,826.30	1,362,273.20
12,634,919.50	8,751,214.20	13,868,846.00	946,288.50	42,610,626.45	25,410,364.15
1,297,530.00	796,140.30	1,172,007.00	312,966.30	4,261,475.00	2,797,856.20
560,976.00	408,511.30	690,717.00	418,442.85	7,293,186.00	6,639,384.85
66,074,707.15	50,254,536.08	50,700,867.10	6,641,982.68	195,938,394.00	132,698,717.00
162	75,61	186	37,70	745	65,46

Table V. 8 . Per - sector Investment for 1967 to 1982

PMA Project

Years	s e c t o r		Total Project	Per - sector Investment ( US \$ )		Total Investation ( US \$ )
	Forestry	Industry		Forestry	Industry	
1967	-	-	-	-	-	-
1968	-	1	1	-	1,200,000.00	1,200,000.00
1969	-	-	-	-	-	-
1970	-	-	-	-	-	-
1971	1	-	1	2,000,000.00	-	2,000,000.00
1972	2	-	2	9,500,000.00	-	9,500,000.00
1973	2	-	2	5,500,000.00	-	5,500,000.00
1974	1	-	1	3,250,642.81	-	3,250,642.81
1975	-	-	-	-	-	-
1976	1	-	1	2,800,000.00	-	2,800,000.00
1977	5	-	5	22,064,628.00	-	22,064,628.00
1978	4	-	4	16,500,000.00	-	16,500,000.00
1979	-	-	-	-	-	-
1980	1	-	1	16,210,000.00	-	16,210,000.00
1981	-	-	-	-	-	-
1982	-	-	-	-	-	-
	17	1	18	77,825,270.81	1,200,000.00	79,025,270.81

Source : Regional Coordinating Investment Board.

Table V.9 Development PMA Investment Since 1979/1980 to 1983/1984 in Central Kalimantan

(on US. \$)

Number	Budget Years	Investment		Cumulative Investment	
		Plan	Realization	Plan	Realization
1.	1979/1980	-	-	-	-
2.	1980/1981	32,422,914.00	20,714,536.88	32,422,914.00	20,714,536.88
3.	1981/1982	3,250,000.00	1,618,191.08	35,672,914.00	22,332,727.96
4.	1982/1983	-	-	35,672,914.00	22,332,727.96
5.	1983/1984	-	-	35,672,914.00	22,332,727.96
.	T o t a l	35,672,914.00	22,332,727.96	35,672,914.00	22,332,726.96

Source : Regional Planning and Development Board, Central Kalimantan.

Table V.10 Development PMDN Investment Since 1979/1980 to 1983/1984 in Central Kalimantan

(on thousand Rupiahs)

Numbers:	Y e a r s	I n v e s t m e n t		C u m u l a t i v e I n v e s t m e n t	
		Plan	Realization	Plan	Realization
1.	1979/1980	36,620,487,033.00	12,470,326,318.00	36,620,487,033.00	12,470,326,318.00
2.	1980/1981	63,937,762,730.00	25,989,516,491.00	100,558,249,763.00	38,459,842,809.00
3.	1981/1982	36,519,931,166.00	20,112,912,058.00	137,078,180,928.00	58,572,754,867.00
4.	1982/1983	18,523,258,000.00	1,053,467,794.00	155,601,438,928.00	59,626,222,661.00
5.	1983/1984	19,342,438,928.00	-	174,943,877,856.00	59,626,222,661.00
T o t a l		174,943,877,856.00	59,626,222,661.00	174,943,877,856.00	59,626,222,661.00

Source : Regional Planning and Development Board.



The plan and realization of the PMA/PMDN base on SPI/SPS (that is the Government approval in forestry sub sector and forestry base industry in Pelita III per district as follows :

District/municipality	Planned	Realization
1. Palangka Raya		
P M A	-	-
P M D N	Rp.12,949,259,280.00	-
2. Barito Selatan		
P M A	-	-
P M D N	Rp.22,392,668,392.00	Rp.12,908,300,940.00
3. Barito Utara		
P M A	Rp. -	-
P M D N	Rp.42,302,548,273.00	Rp.28,120,013,333.00
4. Kotawaringin Barat		
P M A	US \$ 69,392,542.00	US \$ 9,578,185.00
P M D N	Rp.11,466,790,252.00	Rp. 3,752,086,939.00
5. Kotawaringin Timur		
P M A	US \$ 11,441,000.00	US \$ 9,578,185.00
P M D N	Rp. 98,072,941,679.00	Rp.43,640,276,077.00
6. Kapuas		
P M A	US \$ 7,923,415.00	US \$ 8,108,958.00
P M D N	Rp. 63,370,508,005.00	Rp.27,282,195,523.00

In the Palangka Raya municipality, District Barito Selatan and Barito Utara there was no PMA investment during Pelita III. In Palangka Raya there was no realization of PMDN investment.

The spread of PMA/PMDN investment and labor force by district are shown in table 5.2.

5) For the period of Pelita IV the sectoral policies as follows :

- (1) Developing the transportation activities via construction and rehabilitation of road, river, sea and air infrastructure. Development of infrastructure for achieved the target for making that all development zone/area could be connected with the provincial capital and the production centre with the relation to consumers/ports/processing area.

Table V. 11. Data manufacture on statute of foreign Investment/Domestic Investment by District in Central Kalimantan

Nu.	Distric/name of manufacture	HPH : Owner :	SPT/SPS numbers	Business field	Lab. force : Po- re- ign :	Wide (Ha )	Investment ( US \$ / Rp		Explanation
							Plan	Realization	
I.	Palangka Raya Municipality	-	-	:	:	:	:	:	:
A.	Foreign Investment	-	-	:	-	-	-	-	-
B.	Domestic Investment	-	-	:	:	:	:	:	:
1.	Bania Raya Indahwood PT	-	143/I/PMDN/81	:Saw, dryk, woodw	-	:	2,900,000,000	-	:rep. A Juni 1983
2.	P. L. N. PT	-	56/I/PMDN/82	:Listrik	-	-	1,499,259,280	-	:
3.	Palangka MembangunPT	-	123/I/PMDN/83	:Hotels	4	180	8,550,000,000	-	:SPT. 16 -8 -1983
					4	180	12,949,259,280	+	:
<b>II. BARITO SELATAN</b>									
A.	Foreign Investment	:	:	:	:	:	:	:	:
B.	Domestic Investment	-	-	:	-	-	-	-	:
1.	First Djajanti Ltd PT	X	44/II/PMDN/80	:Log, Saw, Dry, Wo odw	7	1282	4,491,864,000	791,262,464	:rep..A. 29-5-1981
2.	Perkebunan XVIII PT	X	20/II/PMDN/82	:plantation	-	-	2,741,644,000	-	:
3.	Rimbayu Barito PT	X	190/II/PMDN/78	:Logging	16	392:125,000	1,218,897,500	1,337,628,625	:rep.A. 13-4- 1981
4.	Sindo Lumber PT	X	123/Sekr/ SP PMDN/72	:Logging	37	264: 98,000	711,344,400	575,499,077	:rep.A. 15-6- 1980
5.	Tiga Badang Sanak PT	X	89/I /PMDN/79	:Logging	10	237:107,000	1,357,900,000	-	:
6.	Antang Utara Estate PT	X	67/II/PMDN/82	:Suger plant	-	-	5,771,000,000	-	:
7.	Djajanti Djaja	X	34/A/SP.01b/ BKr15/VII/77	: Logging	19	216	5,717,518,492	9,821,410,774	:rep.A. 19-6-1980

8. Guntur Gempita	PT : X : 316/SK/A/BKPM/	: Logging, saw	: -	:
	: : VIII/PMDN/71	: mill	:	:
<hr/>				
	: :	:	:	89:

111. BARITO UTARA

A. Foreign Investment	: -	:	-	:	-	:
B. Domestic Investment	:	:	:	:	:	:
1. Antang Permata Tim ber	- : X : 26/A/SP.01b/ PT : : BKPM/VII/76	: Logging, saw- : mill	: 4	:	:	:
2. Austral Byna	PT : X : 260/VI/PMDN/80	: Log, saw, dry, : wood	: 9	:	:	:
3. Alamindo Jaya	PT : X : 101/A/SP.01/ : : BKPM	: Logging :	: -	:	:	:
4. Aji Obaya/Antang Kalang	: X : 17/VI/PMDN/81 PT : :	: Log, saw, dry, : wood	: 2	:	:	:
5. Barito Pacific Lum- ber	: X : 21/II/PMDN/78 PT : :	: Log, sawmill :	: 18	:	:	:
6. Dacridium I,II	PT : X : 1408/Sekr/BKPM : : SP.PMDN/71	: log, sawmill :	: 12	:	:	:
7. Hutrindo	PT : X : 17/A/SP.01/ : : BKPM/II/77	: logging :	: 12	:	:	:
8. Hutan Emas	PT : X : 1490/Sekr/SP. : : PMDN/71	: logging :	: 19	:	:	:
9. Maruwai Timber	PT : X : 81/I/PMDN/82 : :	: log, saw, ply- : wood	: -	:	:	:
10. Manibun Jaya	PT : X : 39/Kpts/Um/I/81 : :	: log, saw, wood- : work	: 11	:	:	:

155 : 70,000 : 382,500,000 : 382,500,000 : rep.A.30-6-1978  
: : : :

---

2546 : 100,000 : 22,392,668,392 : 12,908,300,910 :  
:

- : - : - : - : -  
:  
156 : 65,000 : 709,384,300 : 1,203,348,280 : rep.A.31-5-83  
:  
467 : 300,000 : 15,717,000,000 : 7,034,767,186 : rep.A.23-8-83  
:  
254 : 109,000 : 1,500,000,000 : 934,694,481 : rep.A.30-3-81  
:  
204 : 65,000 : 2,837,884,215 : 2,648,689,410 : rep.A.30-3-81  
:  
222 : 90,000 : 1,830,551,500 : 9,309,759,000 : -  
:  
117 : 150,000 : 1,077,250,400 : 1,028,155,857 : rep.A.28-2-81  
:  
52 : 73,000 : 841,432,500 : 976,306,905 : rep.A.15-7-81  
:  
334 : 200,000 : 2,396,649,464 : - : -  
:  
- : - : 5,012,614,000 : - : rep.A.18-4-83  
:  
64 : - : 800,000,000 : - : -  
:  
:

11. Nara Kalimantan	PT : X : 10/V/PMDN/79	: logging	: 14 : 155	: -	: 1.452.500.000:	1.582.568.165	: rep.A.31-5-83
12. Sarang Sapta Putra	PT : X : 207/VI/PMDN/82	: log,saw,woodwork	8 : 57	: 125.000:	5.660.000.000:	1.053.467.794	: rep.Jan. 81.
13. Tanjung Raya Timber	PT : X : 774/Sekr/PMDN	: logging	: - : 60	: 85.000:	309.058.571:	189.532.932	: rep.A.22-5-71
14. Antang Kalimantan	PT : X : 09/V/PMDN/79	: logging	: 6 : 132	: -	: 2.158.223.323:	2.158.223.323	: rep.A.31-5-83
			: ;	: 115:2.274	: 1.262.000:	42.302.548.273:	28.120.013.333:

#### IV. KOTAWARINGIN BARAT

##### A. P.M.A.

1. Arut Bulik Timber	PT : X : B.07/Pres/3/78	: log,plywood	: 15: 248	: 180.000:	US\$ 10.000.000:	US\$ 7.680.000	: rep.A.26-7-83
2. Bintang Arut	PT : X : B.76/Pres/7/73	: log,sawmill	: 13: 642	: 62.500:	2.000.000:	1.680.000	: rep.A.31-1-83
3. Central Karda	PT : X : B.36/Pres/7/73	: Log,veneer,ply:	39: 783	: 99.000:	10.564.628:	9.755.905	: rep.A.27-1-83
4. Korindo Lamandau	PT : X : B.26/Pres/8/76	: log,saw,ply	: 25: 388	: 155.000:	5.655.000:	4.884.635	: rep.A.27-1-83
5. Kcrindo Aria Bima	PT : X : 16/II/PMA/80	: log,veneer,ply:	46: 955	: 100.000:	16.212.914:	13.710.905	: rep.A.27-1-83
6. Korindo Sari	PT : - : 21/I/PMA/80	: plywood	: 12: 94	: -	: 16.210.000:	7.003.630	: rep.A.27-1-83
7. Pangkalan Bun Timber	PT : X : B.18/Pres/4/77	: log,saw,dry,wood	15: 230	: -	: 3.000.000:	1.449.067	: rep.A.15-3-82
8. Rimba Delta	PT : X : B.42/Pres/42/77	: Log,saw,dry,wood	22: 600	: 97.000:	2.250.000:	2.250.000	: rep.A.24-10-83
9. Hanni Utama	PT : X : B.34/Pres/4/78	: log,saw	: 23: 212	: 100.000:	3.500.000:	3.006.008	: rep.A.1-2-81
			: ;	: 210:4.152	: 793.500:	69.392.542:	51.420.150

##### B. Domestic Investment

1. Angkasa Wana	PT : X : 1499/Sekr/SP.	: logging	: - : -	: 130.000:	895.815.914	: Rp. -	: rep.A.31-3-81
	: : PMDN/71	:	: : :	:	:	:	:
2. Bina Dwimajaya	PT : X : 108/A.SP.01/	: log,saw,dry	: - : 132	: 85.000:	2.475.300.393:	1.778.762.194	: rep.A.31-3-81
	: : BKPM/X/77	:	: : :	:	:	:	:
3. First Lamandau Timber	PT - : 150/I/PMDN/80	: plywood	: 4 : 112	: 100.000:	5.109.000.000:	-	: rep.A.20-8-80
4. Hezubasah	PT : X : 03/A/SP.01/BKPM	: logging	: 3 : 107	: 90.000:	472.248.183:	639.800.000	: rep.A.25-4-80
5. Inocin Kalimantan	PT : - : 39/I/PMDN/81	: Stellsips nons	: - : -	:	590.000.000:	965.800.000	: Rep.A.Juli 83
	: :	: truction and re:	: : :	:	:	:	:
	:	: pair	:	:	:	:	:

6. Lamandau Utama Jaya Estate	: X : 317/SK/A/BKPM/ PT : : VII/74	: Logging	: 6	: 268	: 57,500	: 951,000,000	: -	: Rep. A. Pebr. 1983
7. Sarimbang Sawmill	PT : : 55/1/PMDN/77	: Sawmill	: 8	: 292	: -	: 893,762,518	: 367,721,715	: rep. A. 25-1-1980
8. Marundau	PT : : 441/SP.PMDN/69	: crumb rubber	: -	: -	: -	: 79,663,244	: -	: rep. A. 20-3-1983
			: 26	: 992	: 467,500	: 11,466,790,252	: Rp3,752,086,939	:

#### V. KABUPATEN KAPUAS

##### A. Foreign Investment

1. Kaboli Lumber	PT : X : 40/VI/PMA/81	: Log, saw, dry,	: 20	: 325	: -	: US\$ 3,250,000	: US\$ 1,618,191	: rep. A. 10-10-1983
2. Kahayan Lumber	PT : X : B.113/Pres/9/71	: Log. saw	: 12	: 708	: 150,000	: 2,423,415	: 1,686,575	: rep. A. 14-3-1983
3. Salawaty Hayu	PT : X : B.10/Pres/4/78	: Log, saw	: 17	: 125	: 95,000	: 2,250,000	: 4,804,192	: rep. A. 15-11-1983
			: 49	: 1,158	: 245,000	: US\$ 7,923,415	: US\$ 8,108,958	:

##### B. Domestic Investment

1. Antang Cahaya Baru	PT : : 70/T/Industri/79	: Sawmill	: 5	: 254	: -	: 1,134,427,425	: Rp2,565,958,766	: rep. A. 31-5-1983
2. Antang Permai Ply Indus	PT : : 161/1/PMDN/80	: Plywood.	: 10	: 213	: -	: 8,824,000,000	: 7,736,704,680	: rep. A. 31-5-1983
3. Arjuna Wihaha	PT : X : 107/SP.01/BKPM/ X/77	: Log, saw, dry, wood	: 2	: 204	: 90,000	: 1,381,194,100	: 773,972,231	: rep. A. 31-1-1983
4. Damar Kayu Perksa	PT : - : 05/I/PMDN/82	: Ply, saw, dry wood	: 12	: 524	: -	: 9,992,071,000	: -	: rep. A. 6-10-1983
5. Dahiyan Timber	PT : - : 166/1/PMDN/81	: log, saw, dry, wood	: -	: -	: 66,000	: 745,000,000	: -	: -
6. Daya Sakti Timber	PT : X : 13/A/SP.016/ BKPM/II/76	: log, saw	: -	: -	: 168,000	: 1,138,662,169	: 1,139,485,425	: rep. A. 6-1-1981
7. Glat Ika Aneka Timber	PT : X : 771/Sekr/SP.	: Logging	: 2	: 225	: 81,000	: 3,112,480,000	: 2,951,000,000	: rep. A. 17-3-1983
8. Gunung Meranti	PT : X : 39/II/PMDN/78	: Logging	: 6	: 20	: 16,000	: 1,925,000,000	: 1,395,456,400	: rep. A. 4-3-1983

9. Gempita Kal-Teng	PT : X	: 747/Sekr/SP/ PMDN	: Logging	: -
10. Hutan Mirih Raya	PT : X	: 82//A/SP.01/ PMDN/77	: Logging	: 15:
11. Hutan Damas Raya	PT : X	: 11/VI/PMDN/80	: Log, saw, black wood	: 20:
12. Indo Sakti Timber Proservation	PT: -	: 74/VI/PMDN/82	: wood	: - :
13. Inka Raya Plywood	PT: -	: 38/II/PMDN/79	: Log. Ply	: 18:
14. Jaya Gada Mas	PT : X	: 133/I/PMDN/ 79	: log, saw.	: 2:
15. Kayu Sanebar	PT : -	: 22/I/PMDN/ 81	: Plywood	: - :
16. Kayon Timber	PT : X	: 787/Sekr/SP.PM- DN/70	: Logging	: - :
17. Mangkatip	PT : X	: 103/A/SP.01/PMDN /X/77	: Logging	: 1:
18. Palangka Agung In- dustry	PT : X	: III/SP.01/BKPM XII/76	: saw.	: - :
19. Sumber Asia	PT : -	: 313/SK/A/BKPL/ VII/PMDN/74	: sawmill	: - :
20. Sehati Kungan	PT : X	: 244/IS/PMDN/79	: Logging	: - :
21. Sikatanwana Raya	PT : X	: 141/I/PMDN/81	: log. sawmill	: 30:
22. Talawang	PT : X	: 1523/Sekr/SP. PMDN/71	: -	: - :
23. Cakra Alam	PT : X	: 324/SK/PMDN/VII: /81	: Log. Sawmill	: - :
24. Bumi Indah Raya	PT : X	: 17/A/SP.01/ BKPM/77	: Log, saw, wood- work	: 4:

199:100,000:	382,884,638:	206,341,767 :	-
67: - :	785,919,000:	589,935,553 :	rep.A. 6 -1-1981
82:247,000:	5,415,523,375:	995,161,835 :	rep.A. 7 -7-1983
- : - :	- :	- :	-
605: 52,000:	1,861,517,321:	- :	-
376: - :	743,840,430:	- :	-
220: - :	4,323,635,956:	- :	-
- : 40,000:	450,357,100:	- :	-
212: 55,000:	207,500,000:	109,500,375 :	rep..A.15- 3-1983
104: - :	319,446,210:	265,110,565 :	rep.A. 1 -10-1979
64: - :	211,475,400:	211,475,400 :	rep.A.11- 7-1981
- : 77,000:	- :	- :	-
300: - :	4,179,288,730:	- :	-
28: 87,000:	448,267,659:	500,900,000 :	rep.A. 20- 5-1978
- : 80,000:	860,000,000:	- :	rep.A. 31- 5-1983
95: 55,000:	1,745,052,832:	801,377,258 :	rep.A. 17-11-1960



25. Pajar Kahayan	PT	X	: 80/1/PMDN/80	: Logging, sawmill	: 10	: 199	: 42,000	: 2,472,639,375	: -	: -
26. Kayu Lapis Indonesia	PT	X	: 307/II/78	: Logging	: 50	: 2,365	: 130,000	: -	: -	: -
27. Polymen International	PT	-	: B.142/pres/12/68	: crumb rubber	: 3	: 387	: -	: 1,164,000,000	: 2,258,750,190	: SK. Perusahaan
28. Sipo Jaya Timber	PT	X	: 89/A/SP 18/BK-	: log, sawmill	: -	: -	: 103,000	: 840,475,725	: -	: -
			PM/X/76							
29. Dayak Besar	PT	X	: 115/I/PMDN/80	: Log, saw, plywood	: -	: -	: 140,000	: 1,425,879,800	: -	: -
30. Ramin sawmill	CV	-	: 56/1/PMDN/82	: sawmill	: -	: -	: -	: 194,203,295	: -	: -
31. Gempita Marual	PT	X	: 80/1/PMDN/78	: Logging	: -	: -	: -	: 866,234,000	: -	: rep.A. 4-3-1980
32. Tunggal Pasanang	PT	X	: 12/III/PMDN/82	: Logging	: -	: 290	: -	: 6,219,453,125	: 4,781,704,075	: rep.A. 1-1-1980
									: 190:7,133:1,699,000 63,370,508,665 : 27,282,195,523 :	

## VI. KOTAWARINGIN TIMUR

### A. Foreign Investment.

1. Inde Balambit	PT	X	: B.12/Pres/4/78	: log, saw, dry, wood	: 11	: 29	: 90,000:US\$	: 2,250,000:US\$	: 2,073,152	: rep.A. 7-4-1980
2. Katingan Timber	PT	X	: B.172/ABKPM/III	: log, sawmill	: 10	: 270	: 110,000	: 3,000,000	: 3,000,000	: rep.A.18-4-1983
3. Samangan Hayu	PT	X	: B.60/Pres/5/68	: Log, sawmill	: 21	: 682	: 133,000	: 2,500,000	: 1,500,000	: rep.A.30-4-1983
			.B.577/A/BKPM							
4. Yasmin Trading	PT	X	: B.48/pres/4/74	: log. sawmill	: 9	: 54	: 95,000	: 3,591,000	: 3,005,034	: rep.A.25-3-1983
									: 51:1,035:423,000:US\$ 11,441,000: US\$ 9,578,186 :	

### B. Domestic Investment

1. Berkas Cahaya Timber	PT	X	: 622/CK//A/BKPM	: logging	: -	: -	: -	: 2,134,160,642	: 1,475,548,282	: rep.A.25-2-1982
			X/PMDN/73							
2. Carus Indonesia	PT	X	: 23/I/PMDN/80	: log, saw, wood	: -	: -	: -	: 4,000,000,000	: 2,369,989,689	: rep.A.15-15-1983
3. Dwimajaya Utama	PT	X	: 107A/SP.01/BK-	: log, saw wood	: 9	: 205	: 159,000	: 4,556,894,684	: 5,663,296,196	: rep.A.31-1-1981
			PM/X/77							
4. Duta Schati Tunggal	PT	X	: 301/PMDN/76	: logging	: -	: 44	: -	: 1,103,425,000	: 51,000,000	: rep.A.20-3-1981

5. Golden Plywood Indo	PT	:		:40/IS/PMDN/80	: Ply, blackboard:	-	:
6. Handayani & Co	PT	:	X	:17/I/PMDN/77	: Logging	-	:
7. Inhutani III	PT	:	-	:310/SK/A/BKPM/ VII/PMDN/74	: sawmill	-	:
8. Kalimantan Hayu	PT	:	X	:50/sekr/PMDN/73	: Log. sawmill	17:	:
9. Katunen	PT	:	X	:89/I/PMDN/79	: log, saw, dry	2:	:
10. Kayu Klaban Timber	PT	:	X	:137/SK/A/BKPM/ 73/PMDN	: Logging	10:	:
11. Kayu Tribuanan Rama	PT	:	-	:4/II/PMDN/77	: sawmill	-	:
12. Kayu mas Timber	PT	:	X	:779/C/BKPMV/74	: logging	-	:
13. Meranti Mustika	PT	:	-	:99/I/BKPM/80	: saw, ply	-	:
14. Mountrada Jaya	PT	:	X	:71/II/PMDN/80	: log, sawmill	-	:
15. Kayu Karya Utama	PT	:	X	:14/A/SP.01/BK- FM/II/76	: sawmill	-	:
16. Surya Sejati Timber	PT	:	X	:313/SK/A/BKPM	: sawmill	-	:
17. Mentaya Kalteng	PT	:	X	:241/SK/A/BKPM/ V/74/PMDN	: log. sawmill	-	:
18. Kota Indah	PT	:	X	:0400/SK/A/BKPM/ IX/73/PMDN	: logging	-	:
19. Nusantara Plywood	PT	:	X	:1465/sekr/SP/ PMDN/72	: log. plywood	-	:
20. Numan Trade	PT	:	X	:1725/Sekr/Sp.PM DN/70	: Logging	-	:
21. Perkasa Janu	PT	:	X	:63/PMDN/81	: log, saw, dry, wood	-	:
22. Parakanca Jaya Raya	PT	:	X	:816/sekr/SP. PMDN/73	: logging	-	:
23. Subaga sawmill	PT	:	-	:78/A/SP.01/BKPM/ VIII/82	: sawmill	3:	:
24. Sari Bumi Fusaka	PT	:	X	:88/I/PMDN/80	: sawmill	10:	:
25. . . . .		:					:

-	:	-	:	15,228,824,000:	-	:	
117:	100,000:	1,660,000,000:	2,108,464,831	:rep.A.15-	7-1981		
140:	455,000:	238,300,000:	198,343,900	:rep.A. 5-	7-1980		
80:	67,500:	1,119,875,000:	1,095,875,000	:rep.A.26-10-	1983		
76:	46,000:	1,555,000,000:	962,797,000	:rep.A.15-	7-1981		
152:	-	930,000,000:	756,460,000	:rep.A. 5 -	5-1983		
-	:	87,000:	7,266,604,241:	3,850,723,620	:rep.A.3 -5 -	1983	
-	:	-	1,661,289,820:	1,168,866,554	:rep.A.3 -5-	1983	
12:	60,000:	17,757,318,750:	2,571,317,422	:rep. April	1982		
95:	75,000:	3,763,358,125:	975,197,689	:rep.A. 18-	8-1982		
-	:	-	518,000,000:	568,221,283	:rep.		
-	:	-	306,730,620:	152,157,384	:rep.A.17-	7-1975	
-	:	40,000:	143,883,581:	439,129,121	:rep.A. 5-7-	1980	
-	:	200,000:	-	-	:rep. belum ada		
-	:	142,000:	512,483,765:	748,335,041	:April 1983.		
50:	-	1,640,000,000:	-	:	-		
-	:	85,000:	2,000,000,000:	922,000,000	:	-	
-	:	80,000:	641,702,500:	-	:	-	
483:	-	617,325,000:	4,022,412,502	:rep.A. 4-1-	1982		
231:	270,000:	6,990,946,875:	6,079,601,818	:rep.A.25-	8- 1983		

25. Sri Rattanenia Parama	PT	-	:88/I/PMDN/80	:Industri Hutan:	3:	690:	-	:	918,726,250:	667,338,885:	rep.A. 4-12-1982
26. Mira Saraya Tama/Wiraita	PT	X	:28/II/PMDN/79	:log. sawmill	:	6:	205:	50,000 :	683,000,000:	632,279,260:	rep.A.30- 3-1981
27. Kalang Bumi	PT	X	:614/Sekr/SP.PM-	:logging	:	-:	-:	30,000 :	247,789,726:	-	-
			DN/73								
28. Mastikel	PT	-	:181/I/PMDN/78	:log, saw, dyk,	:	-:	39	-	: 1,959,500,000:	790,030,600:	rep.A.15- 4-1981
				wood							
29. Rati Tara/Aga Lan	PT	-	:176/IS/PMDN/81	:saw, ply, black	:	-:	-:	182,000:	7,598,000,000:	-	:rep. Lapangan.
30. Sarpatim	PT	X	:1226/A/BKPM/XI/	:Log. sawmill	:	13:	492:	70,000:	10,320,106,000:	5,370,890,000:	rep.A.27 -7 -1983
			74								
<hr/>											
o t a l : - : - : - : 73:3,111:2,198,500:98,072,941,679: 43,640,276,077: -											
=====											

**Notes :**

1. Sign X = The manufacture that have got HPH.
2. Sign - = The manufacture that not got HPH or ather logs manufactures
3. SPT/SPS = Letter of Export Permanent Agreement/ Letter of Temporary Agreement
4. Total sum manufacture on Central Kalimantan.

- (2) Agricultural development such should be developed with the objective to increased the agricultural production for meeting the demand and increasing export, increasing the farmer income, in expanding the employment of opportunity and new economic activity and also for developing transmigration.
- (3) Industrial development, aspecially industrial processing of agricultural and mining product for creation new employment which are mainly focused on industrial with labor intensive besides Capital Intensive.

The development progress of transportation, agricultural and industrial sector in four unit of development zone should be adjusted with the condition and characteristic of each region by taking in to consideration of the land availability, mineral, the planning of transmigration, resettlement, the planning of opening up new area and so fourth.

### 3. Investment Requirement.

The existing industries description up to the end third Plans and the investment needed in Fourth Plans by zones or districts are as the following :

#### 1) West Development Region (Kotawaringin Barat).

##### 1.1. Existing Industries.

Kotawaringin Barat District :

Sub district :

Lamandau : Bug Livestock Rance

Arut Selatan : - Plywood mill  
- Sawmill

K u m a i : - Drying and salting fish, Balachan  
Made, Kerupuk, Wadi and Pindang.  
- Plywood mill  
- Sawmill

Kotawarin\_in Lama : - Plywood mill  
- Sawmill (Fig. 5.1.)

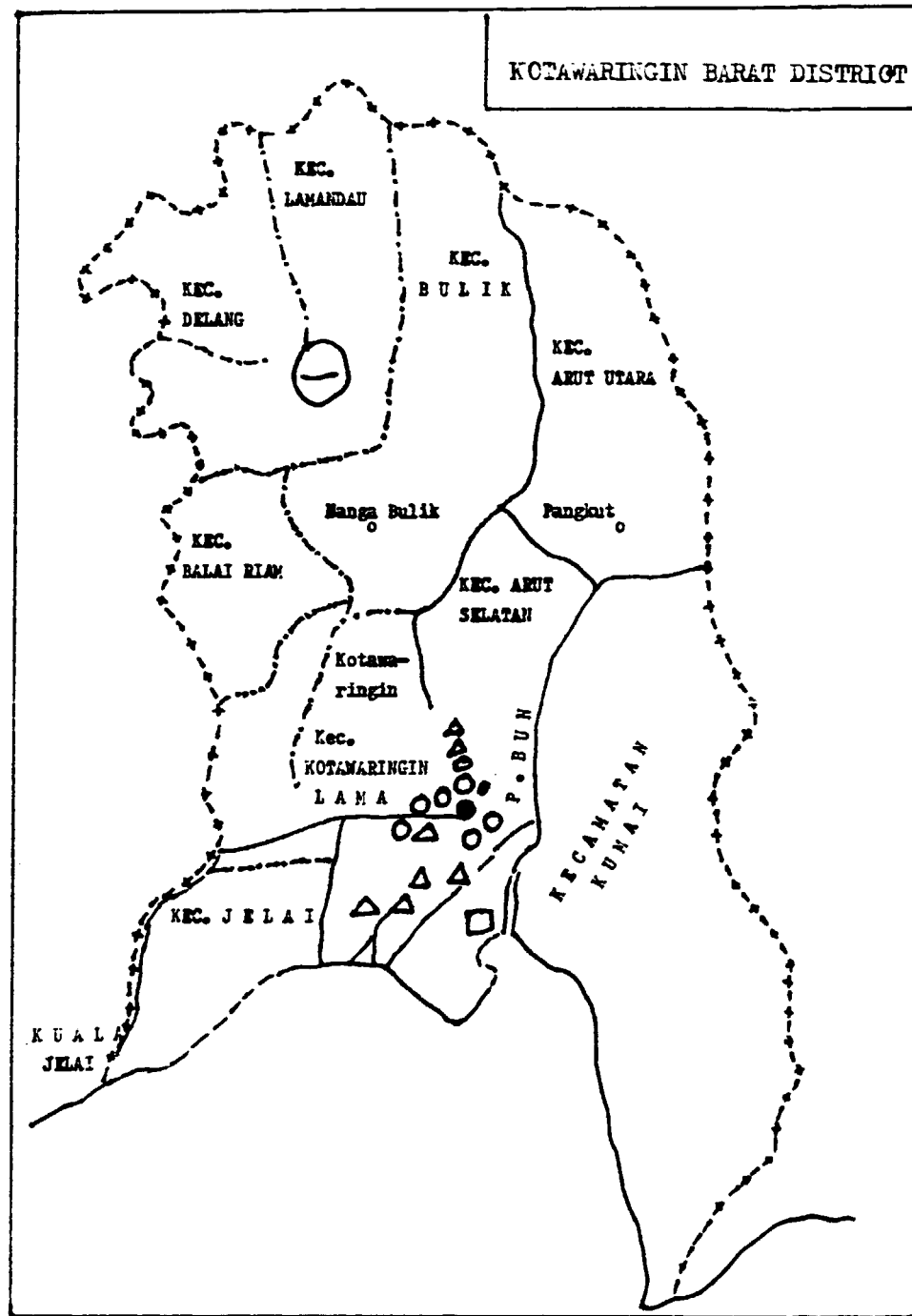


Fig. 5. 1. Existing Industry, Livestock and Others.

Legend :

- = Plywood Mill.
- △ = Sawmill.
- = Drying and Salting Fish, Balachan Made, Kerupuk Wadi and Pindang.
- ⊖ = Ranch.

1.2. Development Potential, Industries, Mining, Potable Water, Transmigration and Plantation.

Kotawaringin Barat District :

Sub district

- |              |   |  |
|--------------|---|--|
| Kuala Jelai  | : | - Caolin Mining/Ceramic Industry<br>- U.P.P (Plantation Project Unit).   |
| B u l i k    | : | - U P P ( N E S )<br>- Iron Mining<br>- Gold<br>- Development area for Technical<br>Irrigation Rice-Field Transmi-<br>gration. |
| Balai Riam   | : | Development Area for Technical Ir<br>Irrigation Rice-Field Transmigration.   |
| Arut Selatan | : | Glasses Industry   |
| K u m a i    | : | - P I R ( N E S )<br>- U P P (Plantation Project Unit).<br>- Development Area for Tidal Rice-<br>Field Transmigration.         |
| Arut Selatan | : | - Hotel<br>- Potable water<br>- Handicraft, Getah Nyatu, Tudung<br>Saji, Rattan Plaiting.<br>- Housing                         |
| Kuala Jelai  | : | - Caolin Mining/Ceramic Industry<br>- Development for Tidal Rice -<br>Field Transmigration.                                    |

2) South Development Region (Kotawaringin Timur) (Fig. 5.2).

2.1. Existing Industries.

Kotawaringin Timur District :

Sub district :

- |             |   |   |
|-------------|---|---|
| Marikit     | : | - Gold  |
| Pulau Malan | : | - Ranch cow                                   |
| Kota Besi   | : | - Plywood mill (Production step)<br>- Sawmill |

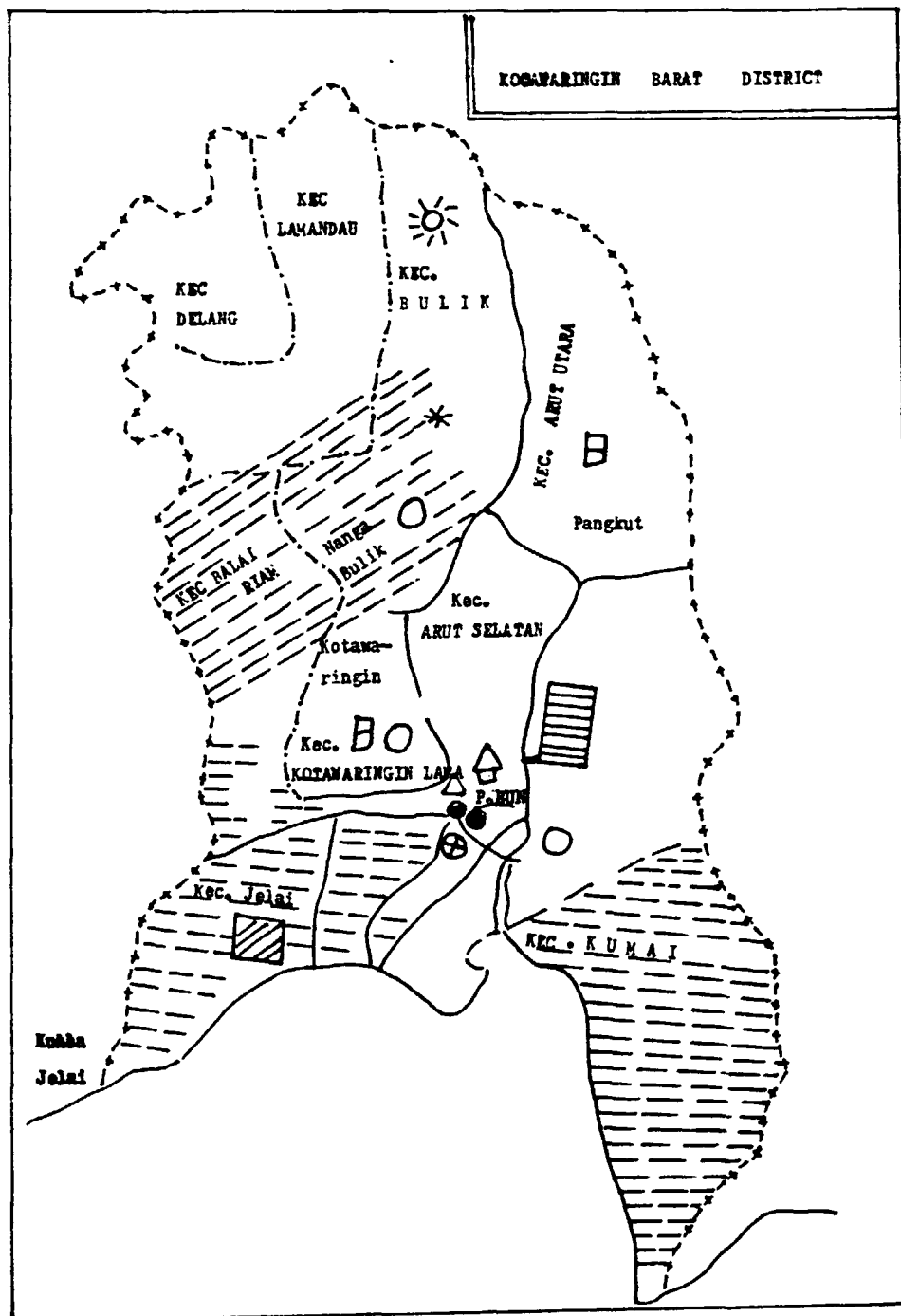














Fig. 5. 2. Potential development : Industrial, Mining, Potable Water, Hotel and Others.

Legend :

- |   |  |   |                                   |   |          |
|---|--|---|-----------------------------------|---|----------|
|  | : Glasses Industry.  |  | : Hotel.                          |  | : P I R. |
|  | : Iron Mining.   |  | : Gold.                           |  | : U P P. |
|  | : Potable Water.   |  | : Caolin Mining/Ceramic Industry. |   |          |
|  | ; Handicraft; Getah Nyatu; Tndung Baji; Rottan Plaitting.                |   |                                   |   |          |
|  | : Development Area for Technical Irrigation Rice - Field Transmigration. |   |                                   |   |          |
|  | : Development Area for Tidal Rice Field Transmigration.                  |   |                                   |   |          |
|  | : H o u s i n g.   |   |                                   |   |          |



Baamang (Sampit)	: - Plywood mill (Production step). - Plywood mill (Construction step)
Seruyan Hilir	: - Saw mill - Drying/Salting fish, Kerupuk, wa di, balachan made, pindang.
Katingan Kuala	: - sawmill (Fig.5.3).

## 2.2. Development Potential, Industries, Mining, Plantation, Potable Water and Transmigration Kotawaringin Timur District.

Sub distric	:
Mentaya Hulu	: - Gold - Coal
Kota Besi	: - Caolin Mining/Ceramic Industry - Transmigration Growth Area
C e m p a g a	: - Glasses Industry - Transmigration Growth Area
Parenggean	: - P I R ( N E S)
Seruyan Tengah	: - Dock Ship
Baamang (Sampit)	2 - Coals - Potable Water - Housing : - integrated industry
Seruyan Hilir	: - Transmigration Growth - Tidal Swamp - Fishery (Fig. 5.4).

## 3) Central Region Development.

(Palangka Raya Municipality and Kapuas District).

3.1. Existing Industry	:
Palangka Raya Municipality	:
Sub district	:
Pakaraut	: - Hotels (Fig. 5.5.)
Kapuas District	:
Kahayan Hilir (Pulang Pisau)	:- Sawmill - Flywood mills.
Basarang	: - Saw mill

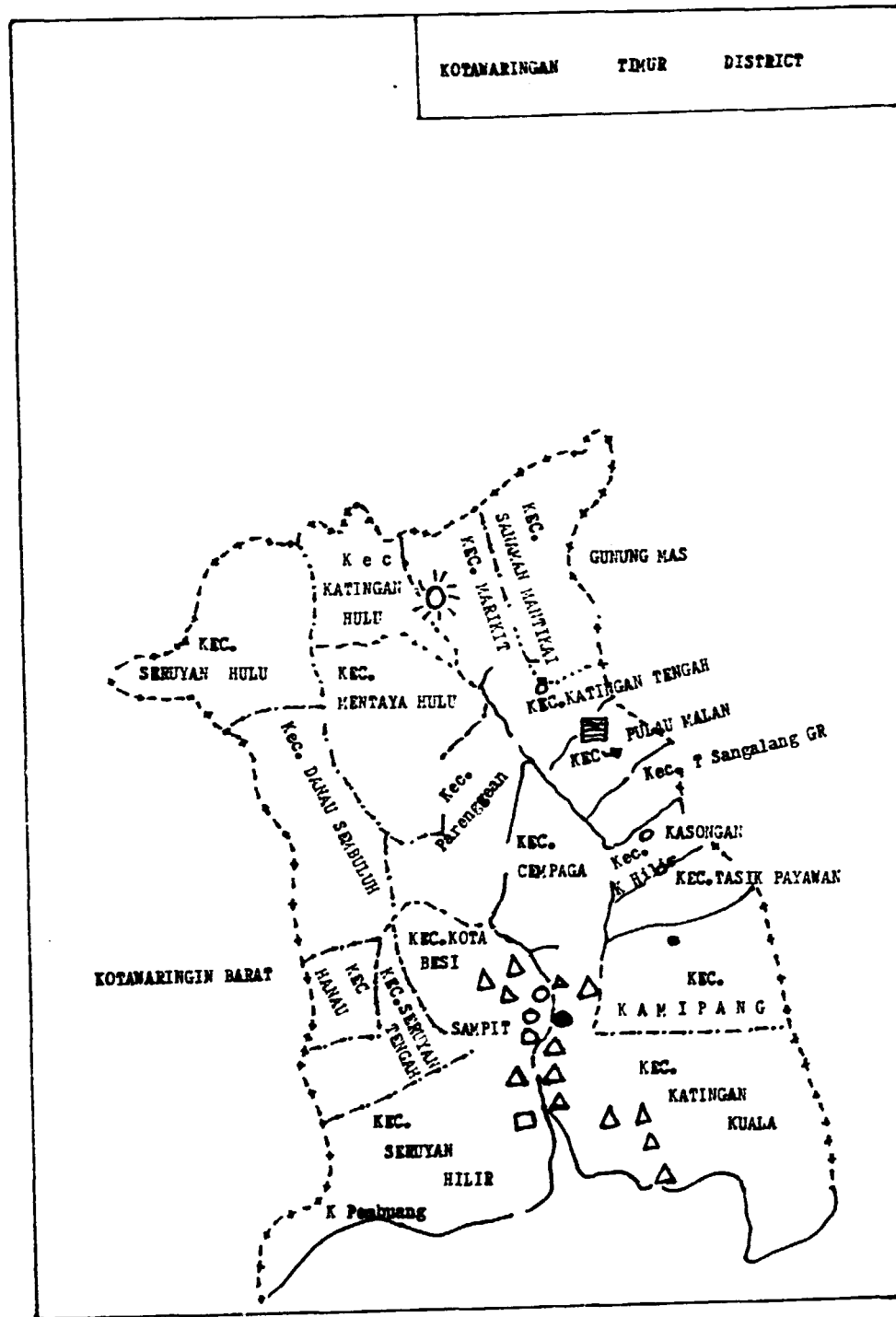


Fig. 5. 3. Existing Industry

Legend :

- : Plywood Mill ( Production Stop ).      △ : Saw mill.
- ☉ : Plywood Mill ( Construction Stop ).      ☀ : Gold .
- 🐮 : Ranch Cow.
- : Drying / Salting Fish, Krupuk, wadi, Balachan Made, Pindang

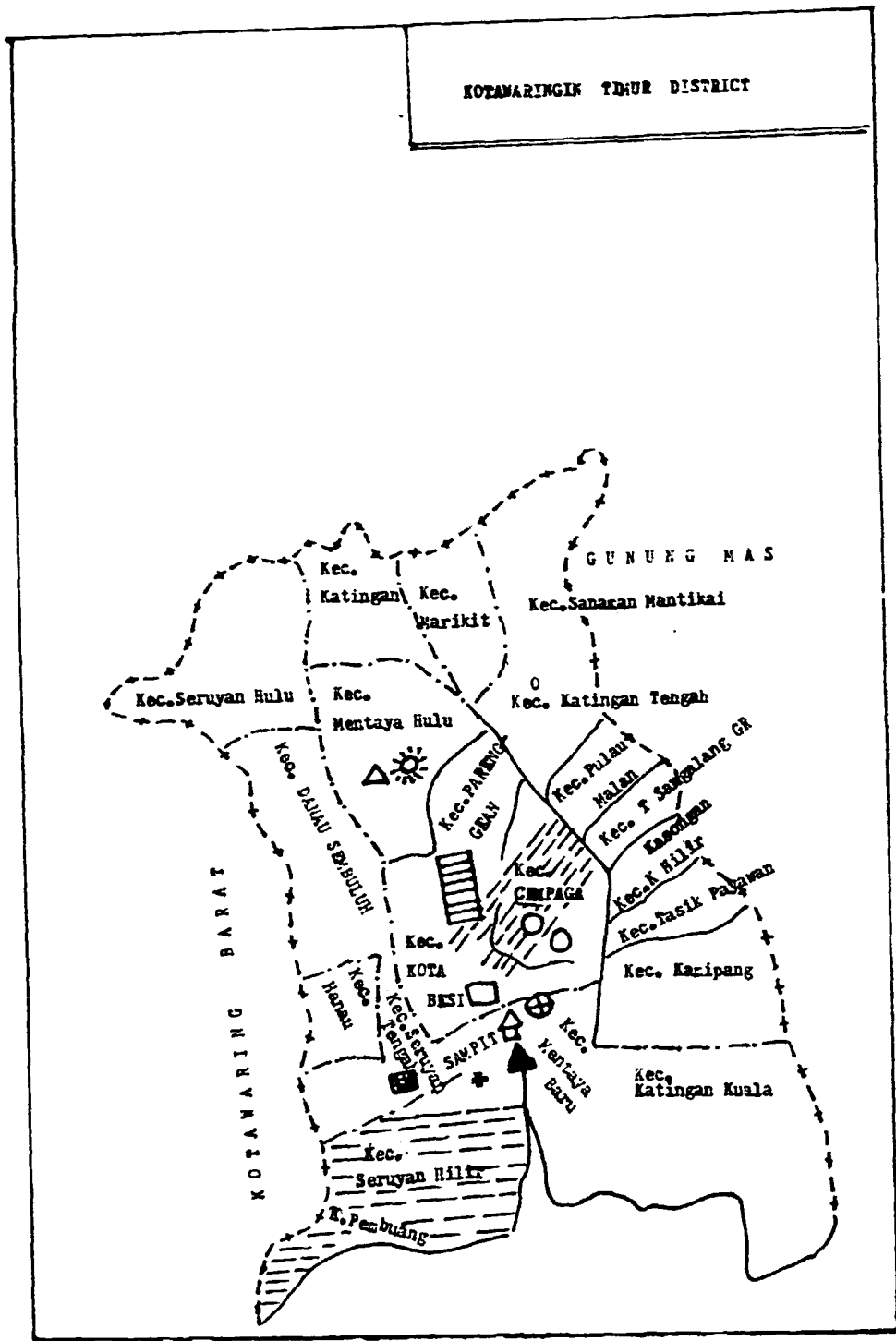


Fig. 5. 4. Potential Development : Industry, Hotels, Mining, Potable Water and Others.

Legend :

- : Glasses Industry.
- △ : Hotels.
- : Caolin Mining/ Ceramic Industry
- ⊕ : Potable Water
- 🏠 : Housing.
- : Book Skip.
- ▲ : Coals.
- ☀ : Gold.
- ▨ : Transmigration Growth Area.
- ≡ : Transmigration Growth Tidal Swamp.
- \* : Integrated Industry.
- 🐟 : Fishery.

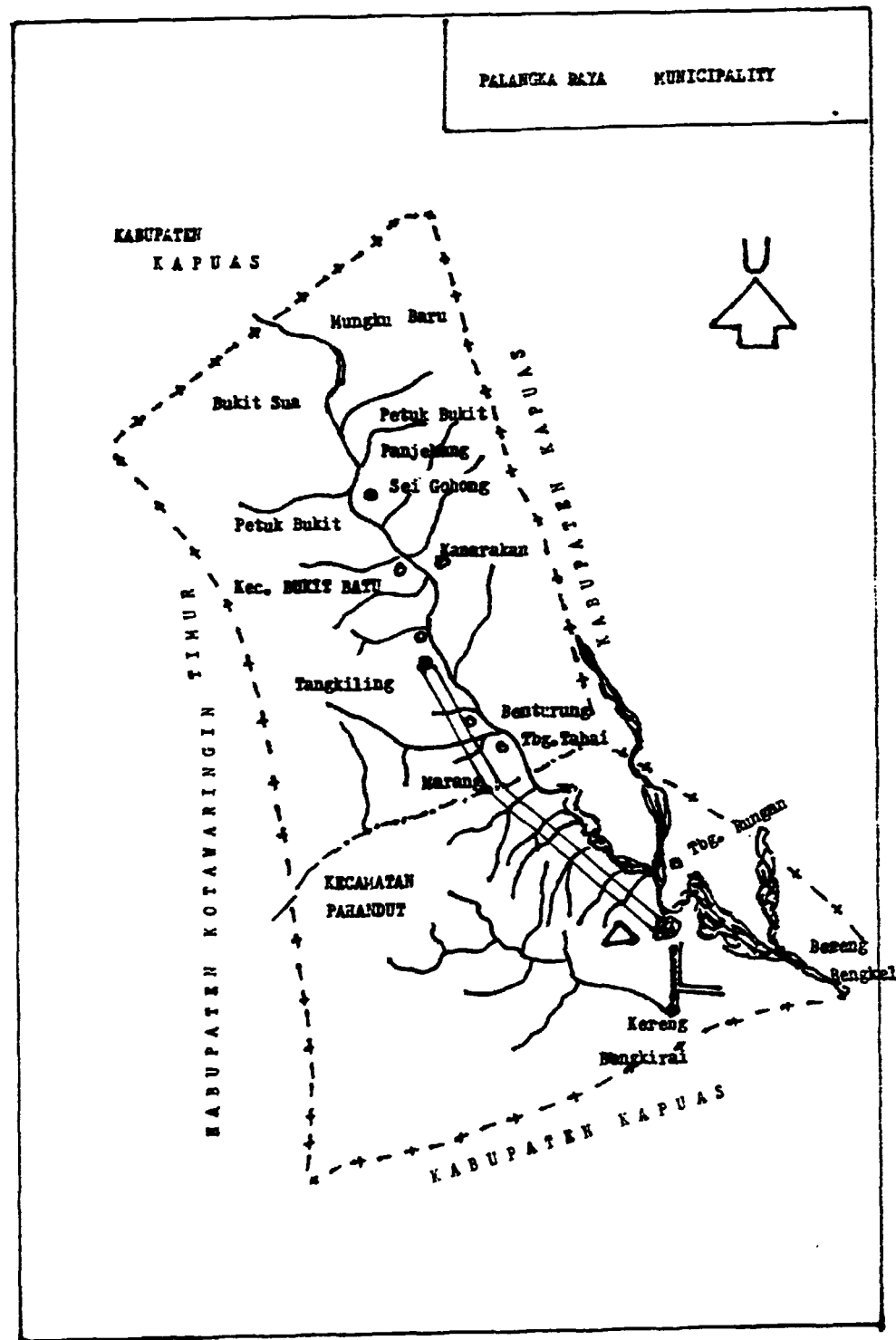


Fig. 5. 5. EXISTING INDUSTRY

Legend :

△ : Hotels.

Pandih Batu : Saw mill  
 Plywood mill  
 Kapuas Barat : Saw mill  
 Pulau Petak : Saw mill  
 Kapuas Tengah : Plywood mills

Notes : Plywood mills ( 1982, still in SPU/SPS stages application)  
 (fig. 5.6).

### 3.2. Development Potentials, Industries, Mining, Livestock, Plantation and others.

Palangka Raya Municipality :  
 Sub district :

Pahandut : - Caoline and ceramic industry  
 - Pulp and paper industry  
 - Quartz and glass industry

Bukit Batu : - Caoline and ceramic industry  
 - Quartz and glass industry (fig.5.7)

Kapuas District :  
 Sub district :  
 Kahayan Hilir : - Integrated Industry  
 S e l a t : - Potable water  
 - Housing  
 - Fishery industry  
 - Small cattle  
 - Coal  
 - Development Area for Tidal Rice  
 Field Transmigration.

Matangai : - Sands quartz/glass industry  
 Kahayan Tengah : - Caoline  
 K u r u n : - Big cattle  
 Kapuas Hulu : - Caoline  
 Tengah : - Gold  
 - Coal  
 - Lime  
 - Development Area for Plantation.

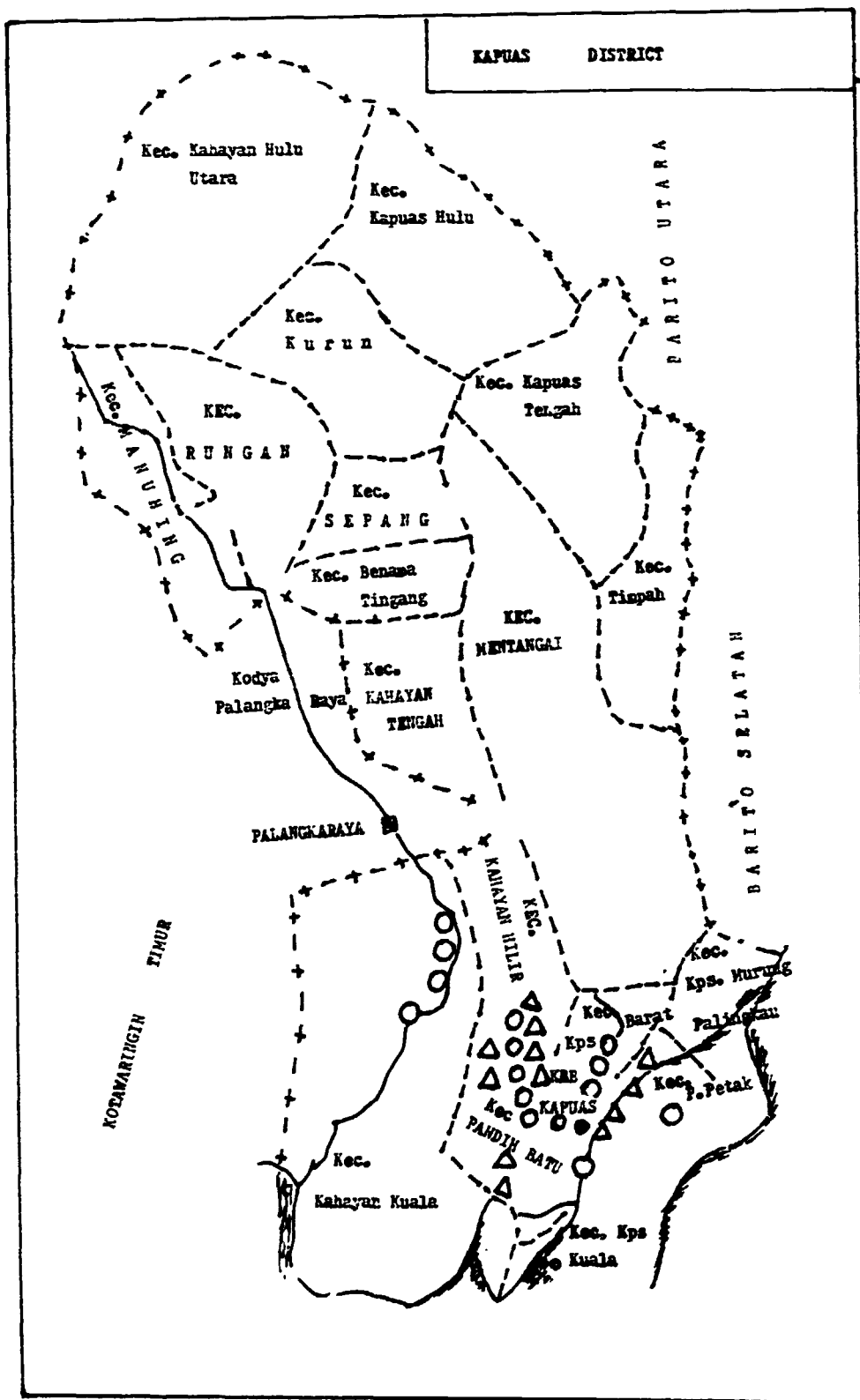


Fig. 5. 6. Existing Industries.

○ = Saw mills.

△ = Plywood Mills (1982, Still in Fixed Application Letter and agreement on principles stoges).

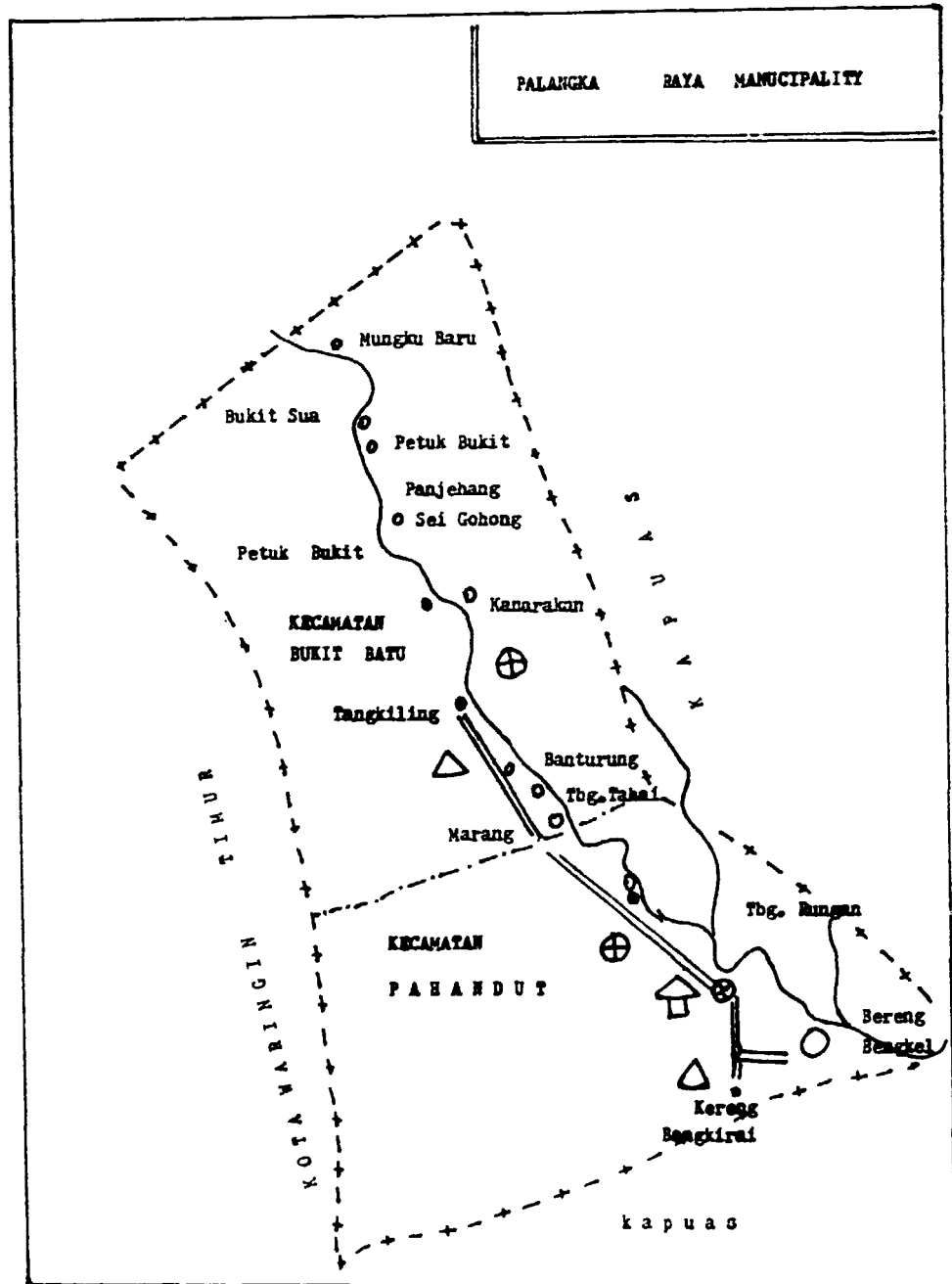


Fig. 5.7. Development Potential : Industry, Housing and Others

Kahayan Hulu Utara	: - K i c a
R u n g a n	: - L i m e - C o a l - Oil Palm Plantation - Development Area for Plan- tation
Kahayan Kuala	: - Development Area for Tidal Rice Field Transmigration
Pulau Petak	: - Development Area for Tidal Rice Field Transmigration
Kapuas Kuala	: - Development Area for Tidal Rice Field Transmigration (Fig. 5.8).

4) East Development Region.  
(Barito Utara and Barito Selatan District).

4.1. Existing Industries

Barito Utara District	:
Sub district	:
Teweh Tengah	: - Cum based handicraft - Small cattle - Goat mining - Development Area for Techni- cal Irrigation Rice Field Transmigration - Housing - Potable water
Teweh Timur	: - Lime : - Coal
Lahei	: - C o a l - Big cattle - Development Area for Plan- tation.



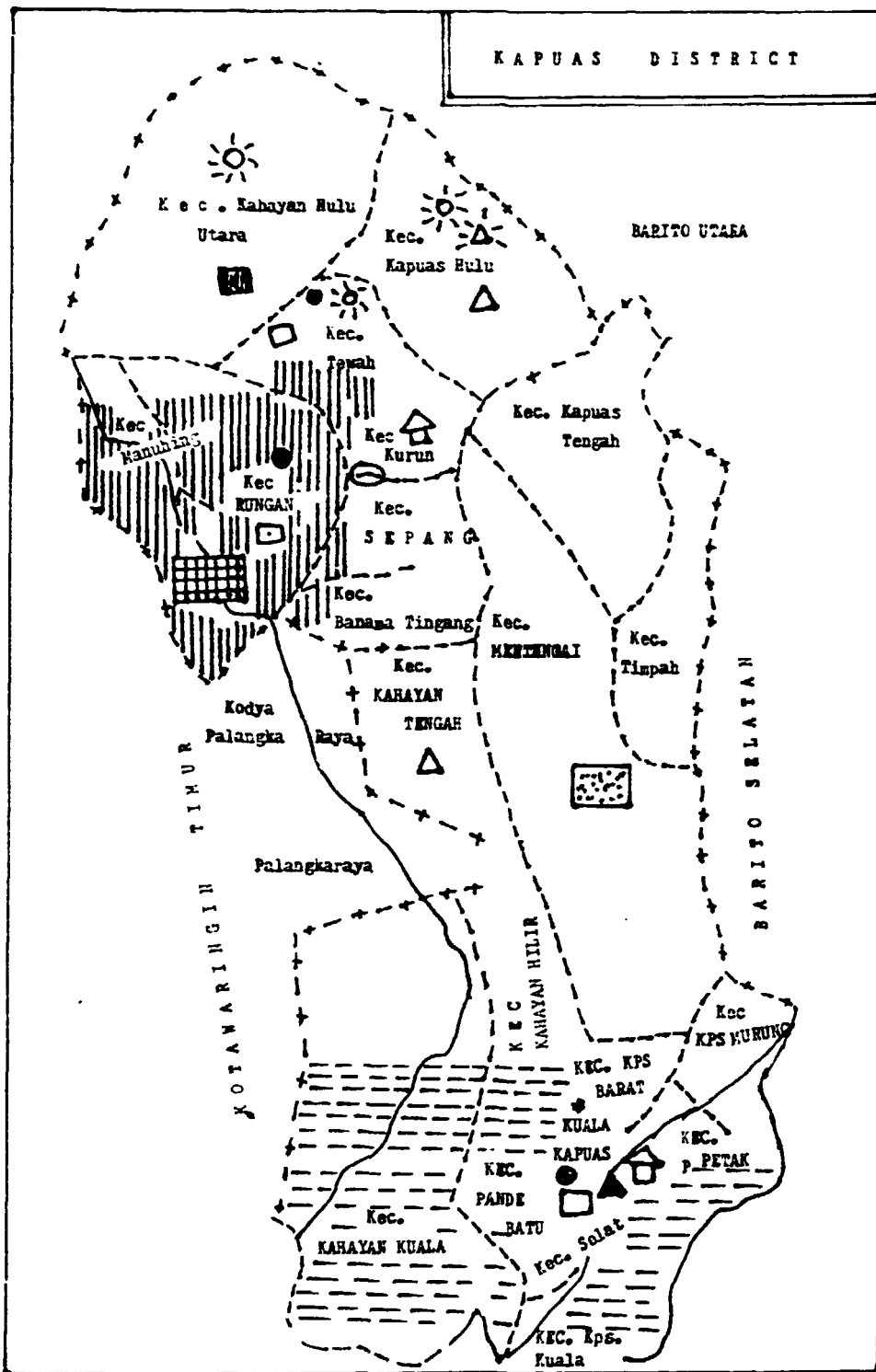


Fig.5.8. Development Potentials : Housing, Mining, Agriculture and Others

- |                      |   |
|----------------------|---|
| ⊕ = Potable water    | ▲ = Small sized cattle                                    |
| ⌣ = Housing          | □ = Fishery industry                                      |
| ☀ = Gold             | ▨ = Sand quartz/Glass industry                            |
| ☀ = Diamond          | = Development areas for plantation                        |
| ● = Coal             | ▨ = Development areas for tidal rice field Transmigration |
| ■ = Mica             | ▨ = Oil palm plantation                                   |
| △ = Caoline          | ★ = Integrated Industry                                   |
| ⊖ = Big Sezed Cattle |   |

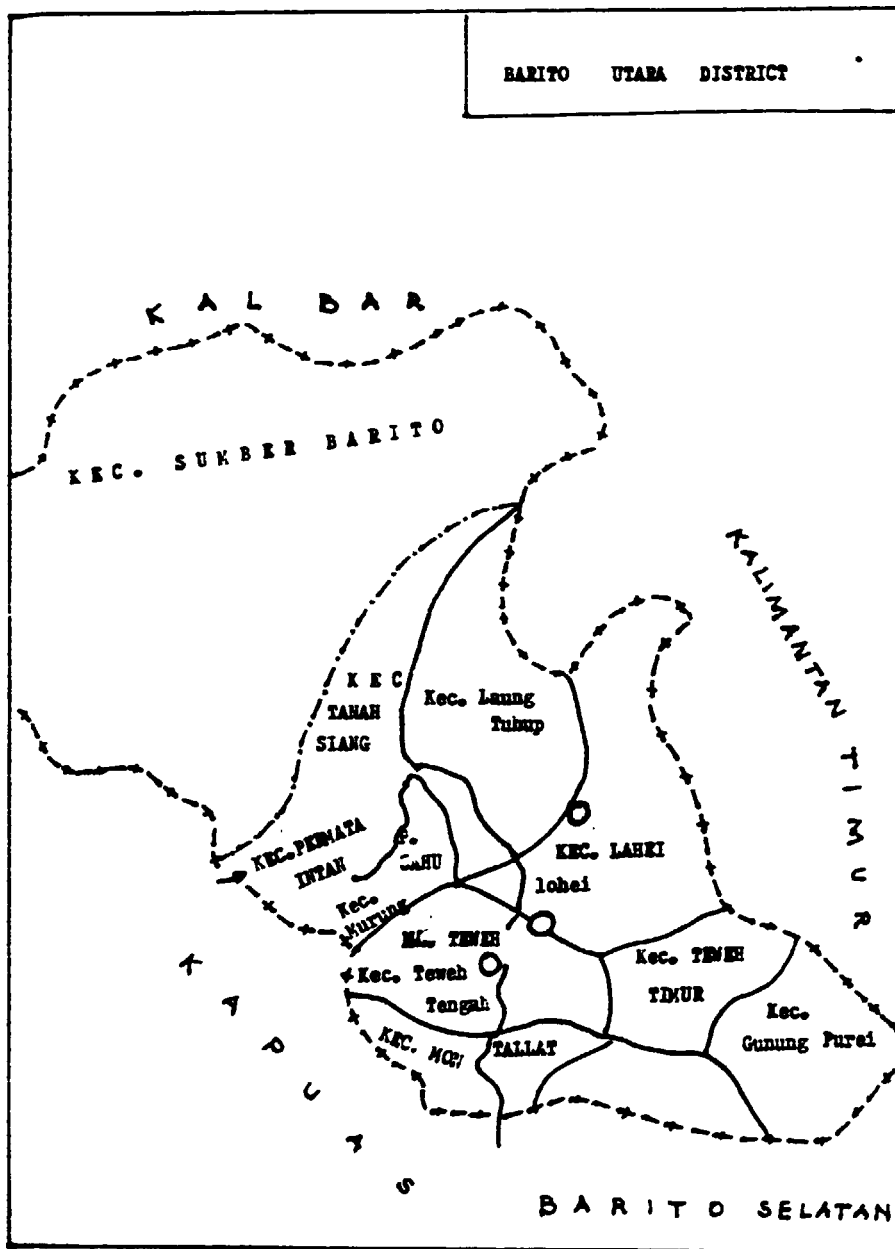


Fig. 5. 9. Existing Industries.

○ = Sawmill

Muntalat	: - Coal - Development Area for Technical Irrigation Rice Field Transmigration.
Murung	: - Lime - Diamond - Development Area for Technical Irrigation Rice Field Transmigration.
Sumber Barito	: - Gold (Fig. 5.10).
Barito Selatan District	:
Sub District	:
Dusun Timur	: - Big V Cattle - Caoline - Development Area for Plantation
Dusun Tengah	: - Gold - Development Area for Plantation
Gunung Bintang Awai	: - Development Area for Plantation
Karau	: - As mentioned above
Awang	: - As mentioned above
Dusun Hilir	: - Development Area for technical irrigation rice-field Transmigration (Fig. 5.11).

Figures 5.1. to 5.10 show both the existing industries and potential of industries development in the future. Efforts to upgrade the existing industries and infrastructure for the investment up to 1990 depend very much on the existence of land transportation which plays the most important role for both people and goods, service and information to and from production centres. Land transportation with good roads may help farmers to increase their income, especially. Those who are (1) how to up-grade the present road condition and (2) how to build new roads connecting the up-land production centres. These of course, need to be immediately solved in the Pelita IV periods.

It's clearly that the decision makers of the region must take proper policies to build new roads connecting production centres with local, regional (where possible) national and international markets.

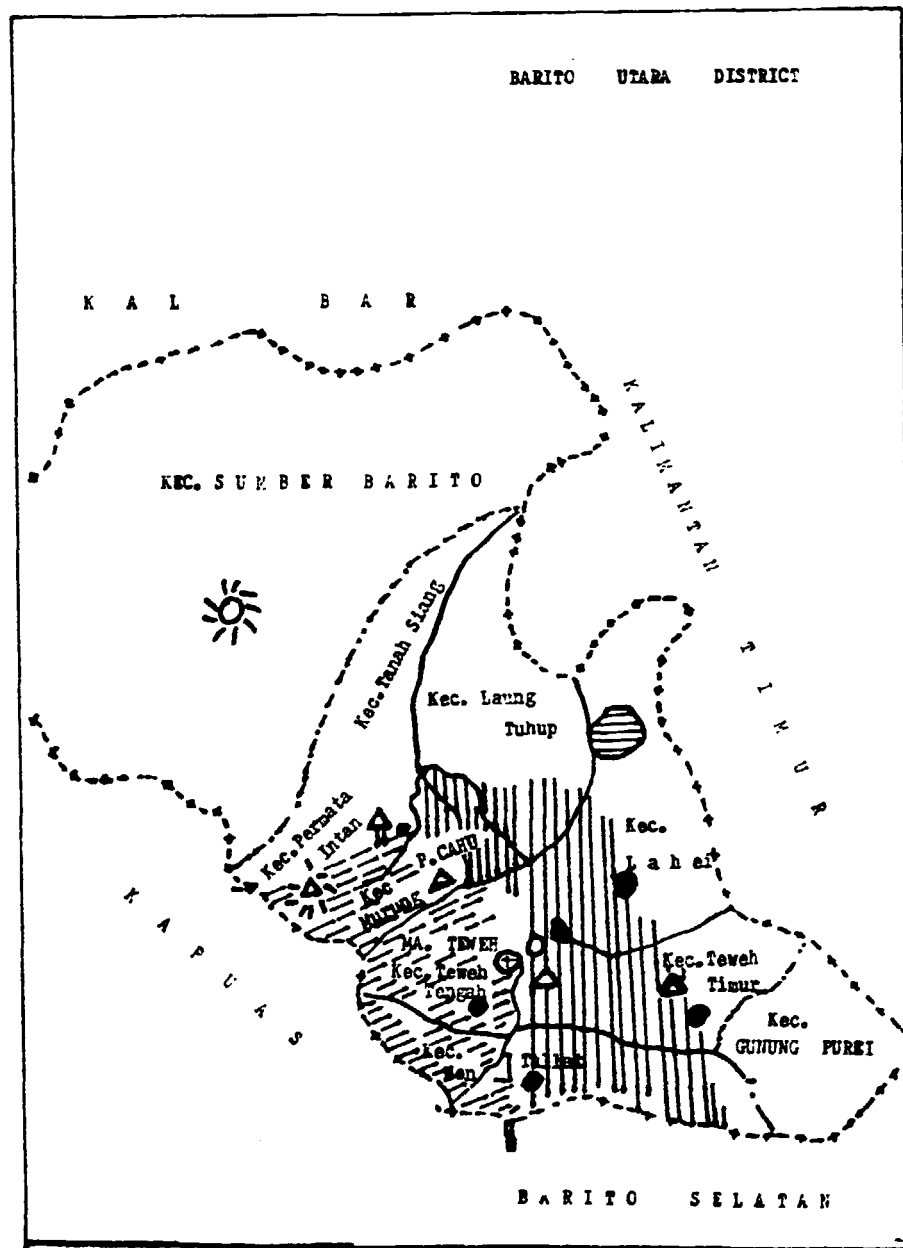


Fig. 5. 10. Development Potentials : Housing, Industries, Mining, Livestock and Others.

- |                                      |  |
|--------------------------------------|--|
| ↑ : Housing.                         | ⊗ : Lime.  |
| ⊕ : Potable Water.                   | ● : Coal Mining.   |
| ○ : Gum Based Handicraft.            | ⊖ : Big Cattle (Cows, buffaloes)   |
| ⊙ : Diamond.                         | ▲ : Small Cattle (pigs, Goat, Sheep, Chicken).                           |
| ☀ : Gold.                            | ▨ : Development Area for Technical Irrigation Rice Field Transmigration. |
| ▨ : Development Area for Plantation. |  |

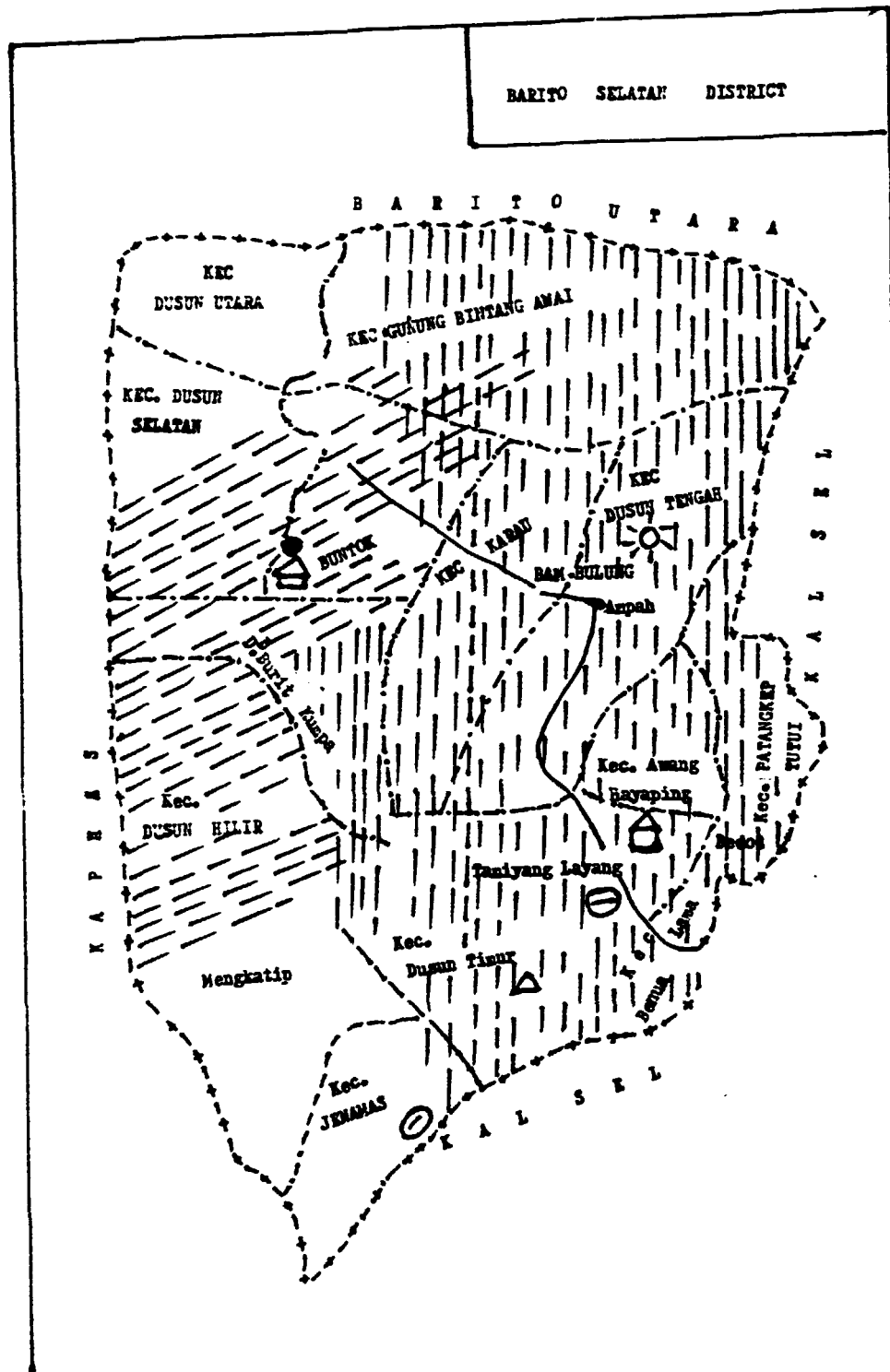








Fig. 5. 11. Development Potentials : Housing, Mining and Others.

-  : H o u s i n g .
-  : Bigsize Cattle breeding ( Cows, buffaloes).
-  : G o l d .
-  : C a o l i n e .
-  : Development Areas dor Plantation.
-  : Development Areas for Technical Irrigation for Rice fields Transmigration.

The roads are projected to connect shorts and harbours. Those places are expected on the one hand, to have the concentration of consumers and man power, and on the other hand, to have high frequency in export and import activities.

The roads to built are as the following :

- 1) West development areas (known as Kotawaringin Barat) : The length roads will cover :
  - (a) Pangkalan Bun - Pagatan : 90 Km.
  - (b) Pangkalan Bun - Kotawaringin : 34 Km.
  - (c) Kotawaringin - Balai Riam : 46 Km.
  - (d) Kotawaringin - Manga Bulik : 25 Km.

The length roads ( a,b,c) will function as the main transportation connection for with development areas for plantation, tidal, transmigration, and technical irrigation, as shown in fig. 5.2.

- 2) South development areas (known as Kotawaringin Timur District). The length roads will cover :
  - (a) Sampit - Kasongan : 58 Km
  - (b) Bapinang - Pagatan : 45 Km
  - (c) Tumbang Jutuh - Kasongan : 35 Km.
  - (d) Tumbang Jutuh - Kuala Kurun : 54 Km. (in Kapuas District).

The length road (1), when finished, will reach development areas for technical irrigation, tidal transmigration, and potentials areas for glass industry, etc. The length road (2), when finished, is expected to reach potential areas for fishery development. And the length road (3) and (4) will reach potential areas for plantation development. For further information, see fig. 5.3. and 5.4.

- 3) Central Development Areas :

The length roads will cover :

- 1) Palangka Raya - Pulang Pisau : 60 Km.
- 2) Pulang Pisau - Kuala Kapuas via Basarang : 37 Km.
- 3) Sei Hanyu - Tumbang Lahung (Barito Utara) : 30 Km.

The length road (1) is considered absolutely needed city of Palangka Raya with Pulang Pisau port which functions as the inter-insular harbour.

The length road, when finished, will reach Tidal Transmigration of Basarang, Mentaren, which will be, sooner or later, the rice centre production for the region. And the length road (3), when finished will connect gold, diamond and caoline mining areas in Kapuas Hulu District. See Fig. 5.8.

4) East Development Areas.

The length roads will cover :

- 1) Tumbang Lahung - Purak Cahu : 34 Km.
- 2) Ampah - Muara Teweh : 53.5 Km.
- 3) Muara Teweh - Tumpang Laung : 23 Km.

The length road (1), when finished, will reach diamond mining area, plantation area, and the length road (2), when finished, will connect the development area for plantation; and the length road (3) when finished, will reach planned location for technical irrigation, as shown in Fig. 5.10.

## VI. CONCLUSIONS AND RECOMMENDATIONS

1. Central Kalimantan is agriculture region, production of foodcrops every years increase, therefore any extensification and intensifications. Intensifications for paddy commodity, especially by BHMIS and IKUSUS's participant. Extensification of maize, nuts, vegetable, and fruits commodity conducted.

Consumption need for paddy and maize up to 1990 should fulfill regional need, beside nuts, vegetables, and fruits should not.

2. Central Kalimantan has highest potential for development plantations crop.

Plantation commodity exports is rubber, beside coconuts, coffee remain insufficient to fulfill region need so have to import from others.

Chocolate commodity just has grow on Repelita III, has not produced. Supply activity of Saprodi (agriculture inputs) through PIR and UPP intended for improve and support project activity. Project activity is to do up to now especially on consulted form and supply seeds for farmers participant is UPP.

Use of fertilizers and chemicals (insectisida and rodentisida) mostly limited only to farmer participant of UPP and not to do according right technical procedure, beside supply of fertilizer very shortage.

3. Potentials areas of natural resources for livestock and feeding grass are plentyfully available for livestock development programs in Central Kalimantan which cover three principal policies : intensification, extensification and diversification.

Base on the present development, animal population growth tends to increase gradually from year to year. Eventhough, the need for meat remains in shortage, and therefore, the regional must import livestock from other regions.

Meat, milk and eggs for reached 90 % from imported livestock. Consumption per capita is below the national standard.

To fulfill national consumption standard per capita up to 1990 Central Kalimantan needs 14,372,292 kg of meat; 4,036,644 kg of eggs, and 4,465,975 kg of milk.

Therefore fulfill the consumption need requires :



Livestock development in Central Kalimantan is small, medium and large scales by private firms, especially for small scale livestock development public. Livestock service should support through guidance, facilities and chemical supplies in the right time and place. For medium and large scale livestock development government should support by licence facility.

4. Investment in forestry based industries in Central Kalimantan seems to be supported by potentials of forest production with AAC 18,082,952 Cu.m per year, and the government policy to stop logs export in the end of 1985.

Besides, diversification of industries is in need because of the fluctuation of the market price of sawntimber and plywood in international market even low tendencies.

It is therefore, recommended that the investment in this sector should be given high priority especially to the pulp/paper industries, rayon industries located in Fulang Fisau or Sampit.

Joint enterprise among concessionaires is very much recommended. Investment should also be directed towards Non-wood forest products industries. The stress is given to integrated industries, such as Rattan Industries with meuble industries. The same to nutmeg (tengkawang), etc.

5. Fishery Development areas in Central Kalimantan cover mainly : 323,500 Ha river areas ; 1,811,500 Ha swamp areas ; 132,800 Ha lake areas ; 750 Km sea water areas (located along the south coast of Central Kalimantan).

Based on data, as recorded in 1982, potential of sea water fish 31,219.5 tons, out of which only 15 % exploited, and 44,391.1 tons, out of which 57 % exploited.

6. Regional consumption standard of Central Kalimantan is still under the National Consumption Standard per capita with the exception of fish. Regional consumption of fish per capita is 41 Kg per year, while the national consumption of fish reaches only 22.5 Kg per year.

Based on population growth including that of transmigration sector up to 1990, Central Kalimantan will be in need of food supply.

The lack of food is shown below :

- 1) Rice, 127,006,742 Kg.
- 2) Beef, 14,372,194 Kg.
- 3) Milk, 4,465,975 Kg.
- 4) Eggs, 4,036,649 Kg.
- 5) Nuts, 667,367 Kg.
- 6) Vegetables, 106,013 Kg.
- 7) Fruits, 87,832,564 Kg.

7. Based on data of total housing as recorded in 1980, reached 161,216 units. It is been projected that Central Kalimantan up to 1990, will lack 101,162 units (out of those built for transmigration in Felita IV) and 31,930 units for subdistricts of the region.

8. Clothing focused on "people's actual habits and pattern of consumption has been almost entirely fulfilled by clothing good supplies imported from other regions and the rest comes from local sewing industries. Base on the assumption that "the actual habits and consumption patters" of people in Central Kalimantan the clothing consumption need up to 1990 is projected to be the same as that of today, so that the clothing need should be fulfilled by :

- development ready-made clothing and local sewing industries
- importing clothing stuff (as textiles, batik sarong) from other regions.

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Table : 3.1. Budget and Realization of Development Expenses by Sector in Central Kalimantan 1974/1975 - 1977 / 1978

Sector	Y e a r									
	1974/75		1975/76		1976/77		1977/78		Volume	
	B	%	B	%	B	%	B	%	Volume	%
1. Agriculture and Irrigation	320,218,000.00		2,165,532,000.00		2,197,482,000.00		2,317,530,000.00		2,000,762,000.00	
	R: 274,029,751.00	85.57	838,523,432.88	33.72	1,452,552,111.42	6.10	866,985,774.75	37.00	3,432,091,239.05	49.02
2. Industry and Mining	5,300,000.00		19,535,000.00		12,630,000.00		17,754,000.00		55,239,000.00	
	R: -		19,540,750.00	99.77	5,925,400.00	46.84	11,404,000.00	64.23	36,870,150.00	86.68
3. Electricity	10,000,000.00		22,720,000.00		-		138,354,000.00		171,074,000.00	
	R: 6,176,250.00	61.76	22,551,213.50	99.25	-		93,561,452.50	47.62	122,291,916.00	71.43
4. Transportation/Communication	238,110,000.00		397,726,750.00		512,031,500.00		776,880,000.00		1,931,798,250.00	
	R: 221,961,466.25	93.25	336,303,714.20	84.56	394,751,605.00	76.04	402,001,472.50	51.74	1,355,018,257.95	70.14
5. Cooperative and trade	6,444,000.00		12,242,000.00		13,770,000.00		13,900,000.00		51,356,000.00	
	R: 6,444,000.00	100	8,392,000.00	50.95	13,770,000.00	100	13,230,000.00	95.13	46,836,000.00	90.32
6. Man power and Transmigration	99,203,850.00		139,624,000.00		425,966,000.00		475,336,000.00		1,190,134,850.00	
	R: 66,099,550.00	66.70	95,832,630.00	50.54	296,032,378.79	69.51	176,255,850.84	37.08	634,270,409.63	53.29
7. Local and Regional Development	24,932,000.00		43,246,000.00		59,576,000.00		57,384,000.00		190,238,000.00	
	R: 23,265,009.00	93.39	24,539,400.00	50.76	20,527,000.00	34.46	27,121,500.00	47.26	95,472,909.00	50.13
8. Religion believe Got Almighty	8,400,000.00		3,950,000.00		34,475,000.00		35,500,000.00		32,325,000.00	
	R: 7,338,000.00	87.36	3,950,000.00	100	34,475,000.00	100	28,300,000.00	79.71	74,063,800.00	89.96
9. Educational and National Culture, youth generation building	337,179,100.00		433,036,050.00		816,640,700.00		690,213,200.00		2,332,039,150.00	
	R: 158,319,571.06	46.36	398,726,929.65	61.70	589,582,228.00	72.00	225,847,885.07	32.72	1,370,475,793.80	53.76
10. Health, Family Planning and Social Welfare	43,700,000.00		62,403,000.00		105,500,000.00		197,903,000.00		400,591,000.00	
	R: 33,691,397.00	77.09	51,076,700.00	81.84	78,254,496.92	74.17	176,756,999.40	89.14	339,779,536.72	82.99

Nu. Sector	Y e a r										
	:B:	1975/76	%	1976/77	%	1977/78	%	1978/79	%	Volume	%
11. Housing and potable water	:B:	30,000,000.00	:	55,000,000.00	:	54,998,000.00	:	61,211,000.00	:	201,209,000.00	:
	:R:	9,600,000.00:32.00	:	52,081,700.00:94.69	:	13,113,100.00:23.84	:	11,651,590.00:19.03	:	36,446,690.00:42.96	:
12. Defence Secu- rity and law building	:B:	58,322,000.00	:	250,000,000.00	:	276,324,000.00	:	324,532,000.00	:	993,178,000.00	:
	:R:	48,984,165.50:83.98	:	234,408,635.00:93.76	:	221,974,518.50:80.33	:	228,541,629.00:88.00	:	733,908,998.00:80.72	:
13. Information and communica- tion	:B:	568,000.00	:	137,775,250.00	:	71,389,500.00	:	102,985,000.00	:	312,717,750.00	:
	:R:	568,000.00:100	:	43,573,236.70:31.62	:	71,387,500.00:99.99	:	44,203,327.00:42.92	:	159,732,063.70:51.07	:
14. Research, scien- ce teaknology development	:B:	17,176,700.00	:	41,559,000.00	:	51,336,000.00	:	35,462,000.00	:	142,583,700.00	:
	:R:	16,833,400.00:93.00	:	31,914,000.00:76.79	:	18,203,660.00:35.42	:	33,752,000.00:95.17	:	100,703,060.00:69.17	:
15. Government Officials Buil- ding	:B:	115,855,000.00	:	262,331,500.00	:	486,647,000.00	:	589,820,000.00	:	1,434,703,500.00	:
	:R:	94,355,306.20:81.44	:	207,936,104.00:79.24	:	242,231,355.48:49.77	:	258,736,910.84:43.85	:	803,259,697.27:55.21	:
T o t a l	:B:	1,315,413,750.0	:	4,156,885,550.00	:	5,130,855,700.00	:	5,834,844,300.00	:	16,437,999,100.00	:
	:R:	965,686,866.03:73.41	:	2,969,350,496.13:56.99	:	3,437,830,873.51:67.39	:	2,598,353,335.40:44.53	:	9,491,221,621.12:57.13	:

Notes : B = Budget

R = Realization

Source: Report on Development activity during FELITA II, 1974/1975 - 1977/1978,-

**Table. 3.2. Value Added of Livestock and Dairy Product on basic Current Price and basic Constant Price, 1975**  
(Rp. 1000).

No.	Specification	1975	1976	1977	1978	1979	1980	1981	r
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
<b>I. : Basic Current Price :</b>									
1.1.	Gross Value Product	1,649,141	2,337,232	2,882,456	4,625,736	4,749,405	4,661,189	4,074,792	18.95
1.2.	Intermediate Cost	440,830	752,047	897,427	1,447,622	1,297,181	1,476,533	1,219,137	-
1.3.	Gross value added	1,208,311	1,585,185	1,985,029	3,178,114	3,452,224	3,184,656	2,855,655	17.84
1.4.	Depreciation	3,615	7,384	8,014	16,628	15,918	7,802	10,108	-
1.5.	Net value added	1,204,696	1,577,801	1,997,015	3,161,486	3,436,306	3,176,854	2,845,547	17.77
<b>II. : BASIC CONSTANT PRICE :</b>									
2.1.	Gross value product	1,649,141	1,892,407	1,954,014	2,538,483	2,304,811	1,740,945	1,366,133	-1.21
2.2.	Intermediate Cost	440,830	612,156	598,312	771,743	598,071	490,369	384,654	-
2.3.	Gross value added	1,208,311	1,280,251	1,355,702	1,766,740	1,706,740	1,250,576	981,479	-1.58
2.4.	Depreciation	3,615	6,008	5,588	8,442	7,269	3,199	3,515	-
2.5.	Net value added	1,204,696	1,274,243	1,350,114	1,758,298	1,699,471	1,247,377	977,904	-1.60

Source : Regional Income Central Kalimantan 1975 - 1981, Statistic office Central Kalimantan, 1983.-

Table : 3.3.

Volume and Export Value by Harbour in Kapuas District 1973 - 1983.

No.	Years/ month	Teluk Sebangau		Kuala Kapuas		Pulang Pisau	
		Volume (Kg)	Value ( US \$)	Volume (Kg)	Value (\$)	Volume (Kg)	Value (\$)
1.	1973	-	-	32,245,823	4,955,261	861,948,202	34,081,690
2.	1974	-	-	30,256,508	6,286,272	426,276,753	21,938,905
3.	1975	-	-	26,947,650	5,360,395	458,814,813	20,389,400
4.	1976	-	-	34,509,668	7,778,056	677,403,333	37,514,734
5.	1977	-	-	39,338,471	7,898,422	607,340,730	36,235,755
6.	1978	-	-	13,521,717	6,009,465	512,310,154	35,428,399
7.	1979	54,992,798	9,658,534	24,189,788	10,512,162	375,817,085	57,752,998
8.	1980	22,519,827	6,215,534	21,960,779	12,085,771	310,241,169	56,463,190
9.	1981*)	11,243,566	3,401,380	11,678,672	6,510,321	183,415,668	29,548,930

\*) Up to July 1981.

Source : Statistic Office, Central Kalimantan.



Table : 3.4.

Volume and Value of Import by Harbour in Central Kalimantan 1973 - 1983.

! No. !	! Years	! H a r b o u r							
		! Pangkalan Bin		! K u m a i		! Kuala Kapuas		! Pulang Pisau	
		! Volume (Kg)	! Value (\$)	! Volume (Kg)	! Value (\$)	! Volume (Kg)	! Value (\$)	! Volume (Kg)	! Value (\$)
! 1. !	! 1973 !	! 38,000!	! 323,000!	! - !	! - !	! 76,000,000 !	!	! 1,237,000 !	! 1,238,000 !
! 2. !	! 1974 !	! 7,000!	! 11,000!	! 271,000!	! 878,000!	! 69,000 !	! 65,000 !	! 14,014,000 !	! 16,023,000 !
! 3. !	! 1975 !	! 269,000!	! 1,121,000!	! 256,000!	! 257,000!	! 63,000 !	! 119,000 !	! 794,000 !	! 11,503,000 !
! 4. !	! 1976 !	! 1,101,727!	! 3,344,000!	! - !	! - !	! 21,975 !	! 31,000 !	! 46,411 !	! 113,000 !
! 5. !	! 1977 !	! 1,168,706!	! 2,612,373!	! 325,650!	! 531,723!	! 39,780 !	! 19,402 !	! 471,750 !	! 789,596 !
! 6. !	! 1978 !	! 467,694!	! 1,887,992!	! 14,000!	! 22,918!	! 619,555 !	! 162,381 !	! 1,048,162 !	! 4,109,086 !
! 7. !	! 1979 !	! 2,715,930!	! 5,319,623!	! 86,325!	! 92,994!	! 169,468 !	! 160,842 !	! 160,842 !	! 598,055 !
! 8. !	! 1980 !	! 7,343,420!	! 12,500,627!	! - !	! - !	! - !	! - !	! - !	! - !
! 9. !	! 1981*)!	! 9,538,095!	! 10,188,826!	! - !	! - !	! - !	! - !	! 75,534 !	! 92,403 !

\*) Up to Agust 1981.

Source : Central Bureau of Statistics.

Table : 3.5.

Volume and Export Value by Harbour in Kapuas District 1973 - 1983.

No.	Years/ month	Kuala Pembuang		S a m p i t		Peratan Mendawai	
		Volume (Kg)	Value ( \$ )	Volume (Kg)	Value ( \$ )	Volume (Kg.)	Value ( \$ )
1.	1973	-	-	377,238,148	15,858,788	-	-
2.	1974	-	-	401,243,481	23,180,011	4,346,352	175,135
3.	1975	-	-	378,221,480	17,062,587	-	-
4.	1976	3,425,649	50,517	550,131,247	29,496,675	23,826,583	1,622,581
5.	1977	-	-	640,324,644	36,084,407	28,514,718	1,678,407
6.	1978	16,486,770	1,001,999	774,852,406	43,880,167	44,774,285	4,126,119
7.	1979	-	-	554,850,149	72,518,679	-	-
8.	1980	6,375,660	807,130	435,271,753	80,487,339	3,045,705	487,312
9.	1981*)	140,517	18,738	148,371,966	32,235,515	-	-

\*) Up to July 1981.

Source : Statistic Office, Central Kalimantan.

Table : 3.6. The sums of goods by harbour and ship Specification in Central Kalimantan 1982 ( ton/ m<sup>3</sup> ).

Sea Harbour	Sail - ship Specification				Total	
	Ocean	Regional	Local	People		
1. Kuala Kapuas	-	302	-	712	1,014	
2. Pulang Pisau	197	549	-	1,577	2,323	
3. Pagatan, Mandawai	-	-	609	2,107	2,716	
4. Sampit	-	973	19,833	52,000	72,806	
5. Kuala Pembunag	-	-	927	588	1,515	
6. Samuda	-	-	-	15,742	15,742	
7. Kumai	-	-	-	28,872	28,872	
8. Pangkalan Bun	5,098	-	-	9,900	14,998	
9. Sukamara	-	-	-	5,633	5,633	
Total	1982	5,295	1,824	21,369	117,136	145,324
	1981	11,466	13,964	108,396	159,439	293,315
	1980	16,721	8,464	32,230	45,676	103,191
	1979	4,957	883	60,640	27,219	93,700

Source : Harbour Office Regional V Banjarmasin.

Table : 3.7. The sums of goods by harbour and sail ship specification in Central Kalimantan.

Sea harbour	Sea ship Specification				Total	
1. Kuala Kapuas	: 9,395:	3,560 :	- :	11,536 :	24,291	
2. Pulang Pisau	: 256,543:	3,599 :	- :	5,560 :	265,702	
3. Pagatan Mandawai	: - :	- :	4,654 :	49,401 :	54,055	
4. Sampit	: 316,256:	35,826 :	24,415 :	17,845 :	394,342	
5. Kuala Pembuang	: - :	- :	8,663 :	11,878 :	20,541	
6. Samudra	: - :	- :	- :	10,916 :	10,916	
7. Kumai	: 15,959:	- :	- :	13,358 :	29,318	
8. Pangkalan Bun	: 150,404:	- :	- :	14,558 :	164,962	
9. Sukamara	: - :	- :	- :	10,001 :	10,001	
Total	1982 : 748,558:	42,785 :	37,732 :	145,054 :	974,126	
	1981 : 337,462:	57,499 :	57,763 :	159,489 :	1,162,218	
	1980 : 1,492,235:	31,376 :	49,275 :	57,204 :	1,630,090	
	1979 : 1,581,831:	99,462 :	85,429 :	31,687 :	1,699,942	

Source : Harbour Office Regional V Banjarmasin.

Table : 3.3. Traffic of Passenger by harbour and sail specification in Central Kalimantan 1982.

Sea - harbour	: sail -ship Local		: sail-ship people:		T o t a l		
	:Arrival	:Departure	: Arrival	:Departure	:Arrival	:Departure	
1. Kuala Kapuas	: -	: -	: 60:	-	: 60:	-	
2. Pulang Pisau	: -	: -	: 90:	-	: 90:	-	
3. Pegatan Mandawai	: -	: -	: -:	-	: -:	-	
4. Sampit	: 3,494	: 3,073	: 4,377:	3,655	: 7,071:	6,760	
5. Kuala Pembuang	: 419	: 300	: 43:	52	: 462:	432	
6. Samudra	: -	: -	: 15,742:	10,916	: 15,742:	10,916	
7. Kumai	: -	: -	: -:	-	: -:	-	
8. Panchalalan Bun	: -	: -	: 632:	632	: 632:	632	
9. Sukarara	: -	: -	: -:	-	: -:	-	
T o t a l	1982 :	3,913	: 3,453	: 20,944:	15,295	: 24,875:	13,742
	1981 :	4,790	: 2,870	: 6,274:	4,404	: 11,064:	7,274
	1980 :	3,518	: 1,953	: 4,232:	2,754	: 7,750:	4,737
	1979 :	4,295	: 8,403	: 3,041:	6,315	: 7,336:	14,723
	1978 :	-	: -	: -:	-	: 17,795:	12,235
	1977 :	-	: -	: -:	-	: 6,106:	6,310

Source : Harbour Office Regional V Banjarmasin.

Table : 3.9. Traffic Domestic Air-flight in Central Kalimantan 1982.

Month/Year	Air Craft :		Pasanggers :		Things (Kg) :		Baggage :		Pack <sub>o</sub> ge/Post			
	Depar- ture	Arri- vals	Departu- re	Arrivals	Trans- it.	Cargo	Load	Cargo	Load	Cargo	Load	
1. Januari	: 579	: 579	: 5,228	: 5,314	: 794	: 8,153	: 10,831	: 31,507	: 36,805	: 3,529	: 6,913	
2. Februari	: 563	: 563	: 4,660	: 4,758	: 456	: 4,853	: 18,983	: 22,034	: 30,588	: 3,220	: 5,513	
3. Maret	: 671	: 671	: 5,440	: 5,454	: 577	: 6,016	: 18,059	: 31,663	: 41,165	: 3,440	: 6,801	
4. April	: 633	: 633	: 4,716	: 4,696	: 569	: 5,447	: 13,813	: 27,826	: 32,505	: 3,368	: 6,954	
5. Mei	: 640	: 645	: 4,947	: 4,842	: 640	: 4,210	: 12,032	: 28,954	: 35,692	: 3,295	: 7,550	
6. Juni	: 768	: 766	: 6,769	: 6,448	: 937	: 7,463	: 12,078	: 41,930	: 45,599	: 4,070	: 6,202	
7. Juli	: 768	: 770	: 7,158	: 6,598	: 1,386	: 5,966	: 11,048	: 42,501	: 42,164	: 3,937	: 5,247	
8. Agustus	: 764	: 763	: 7,122	: 7,317	: 1,065	: 6,646	: 12,661	: 42,865	: 46,348	: 2,883	: 6,102	
9. September	: 506	: 505	: 4,546	: 4,419	: 452	: 5,322	: 11,289	: 28,865	: 29,555	: 2,672	: 5,055	
10. Oktober	: 693	: 695	: 4,811	: 4,721	: 6,686	: 3,302	: 11,403	: 26,290	: 33,444	: 2,044	: 3,412	
11. Nopember	: 856	: 869	: 6,374	: 6,603	: 1,060	: 4,539	: 13,714	: 37,441	: 54,899	: 4,383	: 4,156	
12. Desember	: 1,022	: 1,019	: 7,452	: 7,027	: 1,214	: 11,533	: 23,900	: 40,616	: 44,624	: 3,748	: 5,499	
Total	1982	: 8,463	: 8,178	: 69,223	: 68,197	: 9,836	: 73,448	: 169,813	: 402,494	: 473,370	: 40,589	: 69,404
	1981	: 6,271	: 6,272	: 61,561	: 59,124	: 4,797	: 82,753	: 176,171	: 343,374	: 413,914	: 40,203	: 78,739
	1). 1980	: 3,973	: 3,959	: 37,413	: 37,232	: 23	: 57,671	: 127,062	: 211,261	: 281,403	: 21,568	: 44,500
	1979	: 4,231	: 4,237	: 32,704	: 32,729	: 1,494	: 60,655	: 105,899	: 203,620	: 232,347	: 14,837	: 29,299
	1978	: 5,225	: 5,218	: 38,450	: 38,012	: 3,368	: 58,535	: 117,442	: 268,968	: 308,013	: 16,915	: 40,853
	1977	: 3,185	: 3,178	: 27,776	: 25,354	: 4,230	: 31,295	: 88,839	: 154,692	: 200,938	: 9,823	: 39,659
	2). 1976	: 1,412	: 1,411	: 9,517	: 9,340	: 2,365	: 23,204	: 44,005	: 69,629	: 68,356	: 5,581	: 12,644
2). 1975	: 674	: 679	: 4,748	: 5,073	: 2,205	: 5,797	: 13,425	: 39,752	: 50,472	: 3,448	: 3,392	
2). 1974	: 396	: 395	: 3,014	: 3,597	: -	: 1,297	: 3,495	: 86,875	: 77,199	: 694	: -	

Note : 1). Non include Iskandar Airport, Pangkalan Bun . 2). Only Panarung's Airport

Table : 3.10. Traffic Domestic Air-flight from Panarung Air-port Palangka Raya 1982

Mont/Year	: Air-Craft :		Pasanger			: Things (Kg) :		Baggage		: Package/Post		
	Departure.	Arrival.	Departure.	Arrivals	Transit.	Cargo	Load	Cargo	Load	Cargo	Load	
1. Januari	: 225	: 225	: 2,568	: 2,496	: 630	: 3,358	: 4,969	: 15,044	: 19,360	: 1,591	: 4,292	
2. Februari	: 220	: 220	: 2,118	: 2,204	: 342	: 2,035	: 8,549	: 12,608	: 17,717	: 2,002	: 3,263	
3. Maret	: 259	: 259	: 2,762	: 2,605	: 452	: 3,356	: 12,208	: 17,333	: 20,602	: 2,263	: 3,530	
4. April	: 259	: 259	: 2,294	: 2,211	: 482	: 2,526	: 8,960	: 13,628	: 17,033	: 2,101	: 3,866	
5. Mei	: 262	: 267	: 2,290	: 2,395	: 565	: 1,976	: 7,031	: 12,872	: 18,914	: 1,909	: 4,148	
6. Juni	: 299	: 297	: 3,292	: 3,083	: 732	: 3,967	: 8,027	: 21,955	: 21,598	: 2,151	: 3,773	
7. Juli	: 294	: 296	: 3,274	: 2,903	: 1,029	: 2,352	: 6,117	: 13,611	: 19,761	: 2,117	: 2,840	
8. Agustus	: 290	: 289	: 3,364	: 3,212	: 317	: 2,916	: 6,971	: 21,717	: 20,479	: 1,962	: 3,693	
9. September	: 164	: 163	: 1,824	: 1,615	: 297	: 2,628	: 6,797	: 12,716	: 10,970	: 1,902	: 3,092	
10. Oktober	: 212	: 214	: 1,977	: 1,761	: 423	: 2,222	: 5,152	: 12,060	: 12,456	: 1,226	: 1,456	
11. Nopember	: 313	: 327	: 3,130	: 3,085	: 833	: 2,235	: 8,482	: 19,142	: 21,343	: 3,070	: 3,051	
12. Desember	: 395	: 392	: 3,559	: 3,260	: 882	: 3,702	: 10,810	: 20,670	: 22,174	: 1,604	: 2,950	
T o t a l	1982	: 3,192	: 3,208	: 32,552	: 30,835	: 7,484	: 33,273	: 94,073	: 198,356	: 222,907	: 23,898	: 39,954
	1981	: 2,243	: 2,244	: 27,022	: 25,672	: 3,000	: 23,638	: 68,936	: 142,841	: 183,803	: 21,934	: 48,682
	1980	: 1,702	: 1,694	: 18,394	: 18,668	: 23	: 24,009	: 64,672	: 102,172	: 121,146	: 14,567	: 29,718
	1979	: 2,132	: 2,138	: 16,060	: 16,496	: 1,474	: 11,411	: 44,652	: 95,549	: 128,936	: 7,541	: 21,925
	1978	: 2,540	: 2,542	: 15,962	: 15,800	: 3,223	: 99,278	: 128,150	: 15,905	: 44,910	: 9,542	: 22,458
	1977	: 1,439	: 1,432	: 10,392	: 10,362	: 4,208	: 69,989	: 79,268	: 12,109	: 30,649	: 6,626	: 26,553
	1976	: 1,212	: 1,411	: 9,517	: 9,340	: 2,365	: 23,804	: 44,008	: 69,629	: 68,356	: 5,581	: 12,644
	1975	: 677	: 679	: 4,748	: 5,079	: 2,205	: 5,797	: 13,425	: 39,752	: 50,474	: 3,448	: 3,392
	1974	: 394	: 395	: 3,014	: 3,397	: -	: 1,296	: 3,595	: 86,875	: 77,199	: 694	: 876

Source : Air-Port Authority Regional Central Kalimantan.

Table : 3.II. Traffic Domestic Air - Flight "Haji Asan Air- Port" Sampit 1982.

Month/Year	: Air - Craft :		Pasanger			: Things (Kg)		: Baggage		: Package/ Post	
	Departu- re	Arrivals	Depart- ure	Arrivals	Tran- sit	Cargo	Load	Cargo	Load	Cargo	Load
1. Januari	: 210	: 210	: 1,507	: 1,606	-	: 1,001	: 4,133	: 9,212	: 11,686	: 315	: 1,476
2. Februari	: 185	: 185	: 1,292	: 1,298	-	: 495	: 3,089	: 7,540	: 10,218	: 427	: 1,378
3. M a r e t	: 217	: 217	: 1,434	: 1,506	-	: 679	: 2,399	: 8,641	: 11,144	: 359	: 1,730
4. April	: 194	: 194	: 1,274	: 1,353	-	: 881	: 1,995	: 7,161	: 8,201	: 357	: 1,503
5. Mei	: 179	: 179	: 1,435	: 1,287	-	: 887	: 2,594	: 8,669	: 8,161	: 493	: 1,564
6. Juni	: 231	: 231	: 1,807	: 1,700	-	: 824	: 1,733	: 9,625	: 11,786	: 308	: 1,316
7. Juli	: 271	: 271	: 2,041	: 2,019	14	: 1,128	: 1,931	: 12,416	: 11,055	: 353	: 1,521
8. Agustus	: 271	: 271	: 2,001	: 2,084	24	: 516	: 2,446	: 10,766	: 12,868	: 379	: 1,729
9. September	: 206	: 206	: 1,522	: 1,495	12	: 1,250	: 2,098	: 9,837	: 8,613	: 319	: 1,326
10. Oktober	: 260	: 260	: 1,439	: 1,524	-	: 592	: 3,416	: 7,313	: 10,226	: 410	: 729
11. November	: 279	: 278	: 1,689	: 1,621	22	: 465	: 3,556	: 9,879	: 13,608	: 13	: 325
12. Desember	: 309	: 309	: 1,814	: 1,716	94	: 1,739	: 5,247	: 10,638	: 15,340	: 471	: 1,399
Total 1982	: 2,812	: 2,811	: 19,255	: 19,209	166	: 10,457	: 34,637	: 111,697	: 133,406	: 4,204	: 15,996
1981	: 2,372	: 2,372	: 18,318	: 17,894	-	: 14,134	: 54,510	: 115,607	: 137,994	: 4,641	: 15,782
1980	: 1,814	: 1,814	: 15,220	: 15,061	-	: 15,363	: 49,820	: 19,961	: 134,748	: 3,254	: 11,198
1979	: 1,674	: 1,674	: 13,375	: 13,438	-	: 23,060	: 49,047	: 67,679	: 90,260	: 3,404	: 5,795
1978	: 1,508	: 1,508	: 11,616	: 11,247	75	: 11,567	: 36,482	: 76,678	: 84,783	: 2,502	: 6,989
1977	: 1,061	: 1,001	: 9,399	: 8,662	22	: 9,636	: 39,998	: 60,792	: 77,927	: 1,281	: 6,604

Source : Air Port authority in Central Kalimantan Region.



Table : 3.12. Traffic Domestic Air-flight from Beringin Air-Port Muara Teweh. 1982

Month / Year	Air- Craft		Pasanger			Things (Kg)		Baggage		Package / Post	
	Departure	Arrival	Departure	Arrival	Transit	Cargo	Load	Cargo	Load	Cargo	Load
1. Januari	30	30	200	216	-	1,100	1,200	998	1,093	900	1,030
2. Februari	26	26	210	164	-	1,193	1,698	550	946	360	579
3. Maret	33	33	202	211	-	1,503	2,265	735	1,334	392	763
4. April	32	32	241	243	-	1,471	1,717	923	1,099	464	584
5. Mei	27	27	187	195	-	571	855	1,153	1,514	375	1,045
6. Juni	33	33	216	202	-	1,696	1,154	862	580	975	402
7. Juli	38	38	285	304	-	1,772	1,997	935	678	828	366
8. Agustus	38	38	265	286	-	2,623	1,751	1,326	387	273	214
9. September	4	4	29	33	-	170	264	35	35	30	89
10. Oktober	33	33	284	227	-	122	1,161	825	2,093	202	927
11. Nopember	55	55	240	360	-	781	317	3,850	1,965	825	228
12. Desember	90	90	474	550	-	208	4,134	2,974	576	767	271
Total 1982	439	439	2,824	3,000	-	13,210	18,513	15,166	12,455	6,332	6,498
1981	390	390	3,090	2,948	4	17,428	10,782	11,327	11,576	7,925	7,493
1980	457	457	3,299	3,523	-	18,239	13,463	17,189	25,489	3,747	3,534
1979	425	425	3,273	2,765	-	25,372	12,200	38,392	13,968	3,890	579
1978	430	430	4,118	4,131	70	61,770	61,965	15,442	15,491	2,135	721
1977	367	367	4,339	3,320	-	15,079	31,117	5,135	11,011	1,445	69

Source : Air-Port Authority Regional Central Kalimantan.

Table : 3.13. Central Capacity and Telephone Licence in Central Kalimantan 1982

C o u n t y	Central Capacity	Transmission			T o t a l
		Central	Branch		
1. Palangka Raya	: 1,000	: 884	: 23	:	907
2. Kuala Kapuas	: 200	: 188	: -	:	100
3. Sampit	: 400	: 337	: 12	:	399
4. Muara Teweh	: 300	: 121	: -	:	121
<b>T o t a l</b>	<b>1982</b>	<b>: 1,900</b>	<b>: 1,580</b>	<b>: 35</b>	<b>: 1,615</b>
	1981	: 1,900	: 1,467	: 27	: 1,494
	1980	: 1,650	: 1,295	: 22	: 1,317
	1979	: 1,050	: 901	: 15	: 926
	1978	: 1,020	: 725	: 26	: 751
	1977	: 1,029	: 611	: 25	: 637
	1976	: 1,020	: 774	: 22	: 796
	1975	: 1,020	: 732	: 25	: 756
	1974	: 920	: 679	: 26	: 705
	1973	: 820	: 606	: 25	: 631
	1972	: 580	: 421	: 19	: 440
	1971	: 480	: 307	: 38	: 345

Source : Telecommunication Regional XI Banjarbaru.

Table : 3.14. Telecommunication Condition in Central Kalimantan up to 1983 - 1984.

Nu.	Telecommunication- Items	Condition	:	Locations	:	Explanation
1. Telephone	: SLB	= 1,000	Unit	: Palangka Raya	:	
	: SLB	= 400	Unit	: Sampit	:	
	: SLB	= 400	Unit	: Kuala Kapuas	:	
	: SLB	= 100	Unit	: Muara Teweh	:	
2. SKSD Palapa/Station relay	:	1	Unit	: Palangka Raya	x)	: x) have been finishing
		1	Unit	: Pangkalan Bun	:	
		1	Unit	: Muara Teweh	:	
3. R R I	:	1	Unit	: Palangka Raya	:	
4. Telecommunication	: HF, SBLT	=	1	Unit	: Palangka Raya	:
	: SBK		1	Unit	: Sampit	:
	: SBK		1	Unit	: Kuala Kurun	:
	: SBK		1	Unit	: Kuala Pembuang	:
	: SBK		1	Unit	: Buntok	:
	: SBK		1	Unit	: Kuala Kuayan	:
5. Local Telecommunication	: SSB	107	Unit	: Distribut	:	: at every District subdistrict in Central Kalimantan
5. Meteorology and Geophysical	:	80	Unit	: Distribute	:	: d.t.o
		1	Unit	: Pangkalan Bun	:	: d.t.o
		1	Unit	: Palangka Raya	:	: d.t.o
		1	Unit	: Muara Teweh	:	: d.t.o

Source : MAPPEDA Central Kalimantan.

Table : 3.15 . The sums of Post-Office in Regional Central Kalimantan 1982

Regional	Post	Added Post-Office	Assistant Post Office	Post House	Total
1. Kotya Palangka Raya:	1	-	1	9	11
2. Kabupaten Napuas :	1	-	2	14	17
3. Kab. Panto Selatan:	-	-	3	9	12
4. Kab. Panto Utara :	-	-	2	8	10
5. Kab. Ktv. Timur :	1	-	7	17	25
6. Kab. Ktv. Barat :	-	-	2	7	9
<b>Total</b>					
1982 :	3	-	17	64	84
1981 :	3	-	13	39	55
1980 :	3	-	11	19	33
1979 :	3	-	13	18	34
1978 :	3	-	13	18	34
1977 :	3	-	13	17	33
1976 :	3	-	12	17	32
1975 :	3	-	12	17	32
1974 :	3	-	12	17	32
1973 :	3	-	12	17	32

Source : Post and Giro Regional IX Banjarbaru.

Table : 3. 16 The sums of Arrival and loading cargo by harbour in Central Kalimantan, 1982.

Sea Harbour	Sum of		Sum of		
	Ship	Det	Loading	Carro	
1. Kuala Kapuas	252	46,964	1,014	24,291	
2. Pulang Pisau	171	417,942	2,323	265,702	
3. Pasatan Mandawai	589	59,698	2,716	54,055	
4. Sampit	1,468	648,386	72,806	394,342	
5. Kuala Pembuang	316	301,082	1,515	20,541	
6. Samudra	395	61,582	15,742	10,916	
7. Kumai	1,419	217,867	28,872	29,318	
8. Pangkalanbun	309	360,482	14,998	164,962	
9. Sukamara	337	35,205	5,038	10,001	
Total	1982	5,256	1,942,648	145,624	974,128
	1981	4,791	1,667,811	293,315	1,162,216
	1980	3,461	1,811,146	103,291	1,630,090
	1979	5,076	3,075,507	93,700	1,699,941
	1978	5,351	3,879,938	98,968	1,712,507
	1977	4,276	2,786,345	68,490	2,019,104
	1976	3,269	253,930	41,522	1,479,681
	1975	2,709	245,378	17,252	1,067,317
	1974	2,095	114,323	23,416	994,385
	1973	2,495	-	2,288	1,717,605
1972	4,646	-	9,074	512,047	
1971	1,153	-	7,301	460,245	

Source : Harbour office Regional V Banjarmasin.

### 1. The Background

Since the introduction of the First Five Year Development Plan in 1969, the planning system has been gradually improved through the Second and the third Plans. However, private investment has played only a minor role in the process of development over the two periods. In the third Plan, estimate contribution of private investment to participate around 60 percent of the total investment, while the Philippines and Thailand Plans estimated about 81 percent and 72.3 percent respectively (Hendra Esmara, 1979).

The problems of private investment in Indonesia become more acute, due to unequal regional distribution of the investment. Over the period of 1968 - 1983, about 59 percent of private domestic investment were located in Java. In the meantime, the private foreign investors preferred also to invest in Java rather than in the other islands.

Central Kalimantan is one of the province which has been largely behind in attracting either the private domestic or private foreign investment. The growth of the private investment seems to be too low. In the last seventeen years, the total private domestic investment in Central Kalimantan was about 3.25 percent, while the total private foreign investment achieved only 2.17 percent of the total respective investment in Indonesia.

The public investment grew to some extent in the infrastructure projects such as roads, bridges, irrigation and power plants. The private sectors while the natural resources are still abundant in Central Kalimantan.

#### The Need for an Investment Opportunities Study.

In Central Kalimantan there successive five-year development plans gave some guidance into the direction of regional development. However, the plans should put more emphasis into the problems of public investment through the national plans and also give little consideration into the private investment. In other words, the regional plan should be supplemented with a more detailed plan for the private and for the private and public sectors as a forerunner.

The needs for such a plan have already been felt particularly at the eve of the provincial fourth five-year plan.

## 2. The Objectives of the Study

The main objective of the study is to find appropriate ways and means of developing the private and public sectors in the province. This broad objective is supplemented by several sub-objectives :

- (1) to review recent development of the public and private sectors in Central Kalimantan.
- (2) to study the major obstacles and ways and means to overcome it, in developing the public and private sectors.
- (3) to assess the investment opportunities for the public and private sectors in the province.
- (4) to prepare a provincial public and private sectoral development programs up to 1990.
- (5) to draw up a policy recommendation for promoting the public and private investment in Central Kalimantan.
- (6) to make an overview of the Pattern of Economic Development of Central Kalimantan since 1967 (breaking up into several economic sectors).
- (7) to make a critical review on past studies and reports on Natural and Economic Resources in the province to bring out factors for future investment, keeping transmigrants in view.
- (8) to identify market potential : domestic market (demand) based on basic needs, commodities and services (food, clothings, housing, health, education etc), market for consumer goods by import substitutions, market of essential products import substitution, export and inter-island markets.

The objectives are inter-related, and, as a whole, will form a general picture of the problems and prospects of the public and private sectors in the province.

## 3. Approaches to the Study

The study on developing the public and private sector in

Central Kalimantan will be implemented in terms of four components :

(1) Macro Component : Planning, Growth and Population.

The macro component will give an overall development trends of province and will be used as the basic starting point for assessing the role of public and private sector in the economy. The macro-component covers various aspects of planning, growth, population and manpower.

Although the provincial government prepares a regional plan, nevertheless, some problems have been encountered in implementing the plan particularly due to the limited financial resources of the province. The provincial government saving hardly exists and private saving seems to be negligible. It was not surprising that the main source of financing came from the central government has a very limited power in executing the plan.

The effort to attract the public and private investment has been hampered by a lack of a systematic information of the potential of the province.

Major activities in the macro-component consists of the four interrelated studies.

(a) To review the Central Kalimantan Five-Year Development Plans

A description of Central Kalimantan Five-Year Development Plans achievements, problems and a critical evaluation. This study will give a macro overview of the direction of regional development in the last fifteen years from the First Plan (1969/1970 - 1973/1974) to the Third Plan (1979/1980 - 1983/1984). In the meantime some ideas on the for coming Fourth Plan (1984/1985 - 1988/1989) will be presented.

(b) To assess the Trends of Economic Growth of Central Kalimantan.

The study will be focused on the long-range trends of economic growth of the province. An assessment will be made of the performance during the seventies with a detailed analysis on the principal economic sectors and sources of growth. The role of regional trade export, import, inter-island and inter-provincial trade will be analyzed in its relationship with the growth patterns of the province. A projection of Gross Regional Domestic Product will be made up to 1990.

(c) Population Trends.



A study will be made on the population trends, by age, sex, education, and transmigration patterns. The unequal distributions of population within the province will be studied in connection with the natural resources and transmigration program of the region. Other aspects of population trends, especially transmigration and culture, will become an important part of this study. A population projection will be made up to 1990.

(d) Analysis of Manpower Resources and Supply

The potential of manpower will become an important factor in regional development. The study will be made on the trends of labour force and employment in the period of 1971 - 1980. Particular attention will be given to several urban areas, such as Palangka Raya, Sampit, Kuala Kapuas, Pangkalan Bun, and Muara Teweh.

Projection of labour force up to 1990 will be made in connection with the population projection.

(2) Sectoral Component : Agro-Industry and Manufacturing

In trying to identify the public and private investment opportunities, particular attention will be given to agro-industry and manufacturing sectors. Agriculture plays an important role in regional development of Central Kalimantan both in terms of income and employment.

However, the agro-industrial development seems to be neglected. In this sense there is a gap between the agricultural development on the one hand, and the agro-industrial development on the other hand. The study will look into the potential of the agricultural sector for developing the agro-industrial projects.

The study on manufacturing sector will assess the performance of the sector in the seventies in terms of production, employment, productivity, and prices. However, the main objective of assessing the manufacturing performance is to find out some possibilities in the next decade. In this context, the study will focus mainly on agro industries, forest-based industries and demand based industries.

The sectoral component will become an important part in the study on developing the private sector in Central Kalimantan. Some tentative calculation will be made in the sectoral investment requirement

on the basis of the projects to be develop in this sector.

The major activities in the sectoral cover 11 special studies.

(a) A study on Resources Base of the Agriculture Sector.

The study on resources base will cover the physical feature of the province such as land use, climate soil, water supply, etc. The resource base will determine the potential of the agricultural sector.

(b) Assesment and Identification of Agro-Industrial Projects : Food Crops-Based Industries.

An assesment of the agro-industrial projects starts with a study on the trends of production and consumption of food crops in Central Kalimantan including trade. The main focus of study will be concentrated in five essential. Commodities : rice, cassava, maize, peanuts, vegetables, soy beans and fruits. On the basis of the provincial plan, a projection will be made up to 1990.

With the present situation of food crops production, an overall review will be made of the existing food crops agro-industrial projects. The overall review will be based on production, capacity, sales raw materials, technology, employment, productivity, marketing system, prices, ownership, etc.

The gap between the production and consumption of food crops, on the one hand, and the existing capacity of the food crops agro-industrial projects, on the other hand, will be used as in indicator for the identification of the investment opportunities in the food crops agro-industries, the calculation on investment requirement will be used on scale of the plants.

(c) Assesment and Identification of Agro-Industrial Projects : Plantation Crop-Based Industries.

A study on the production trends of commercial crops during the seventies will be made, particularly in terms or yield, available land, type of technology (estate or small holder) and international demand. A projection of the production of commercial crops will be prepared up to 1990 particularly for five main commodities, out of rubber, roscla, coffee, copra, cashewnuts, and sugarcane.

An assesment will be made on the existing commercial crops agro-industries in terms of production, capacity, sales, raw materials, technology, employment, productivity, marketing system, prices ownership, and etc. By existing commercial crops agro-industries, identification will be made on the possibilities of developing these industries in the future at least up to 1990. Some tentative calculation of the investment requirement will be made, especially in terms of the scale of the plants.

(d) Assesment and Identification of Agro-Industrial Projects : Forest Based Industries.

The basis of developing the investment possibilities in the forest-based projects will be made on study of the trends and projection of the forest production particularly in the seventies and up to 1990. The main forest production to be studied will be concentrated on timber. The production requirement will be based on the (i) Criteria of Annual Allowable Cut; (ii) declared capacities; (iii) conservation, and available reserves; (iv) export and domestic market potential; (v) afforestation and (vi) ecology and catchment area.

Some tentative calculation on the investment requirements for developing forest and forest-based industries will be made up to 1990.

(e) Assesment and Identifications of Agro-Industrial Projects : live-stock and Dairy-Based Industries.

The study will be made on there related subjects. First, an assesment of the livestock population in Central Kalimantan. It will cover the population of cattle, buffalo, pigs, goats, and poultry and will be looked in terms of distribution, and technology. Second, a study on the trends of livestock production such as meat, milk, and eggs. Third, an assesment of the existing livestock-based agro-industries.

A long-term trends and projection of livestock population up to 1990 will be matched with the consumption and capacity of the live-stock based agro-industries. The gap will be used for estimating the possibilities of developing new livestock based industries in Central Kalimantan. Calculation will be made on the expected investment requirement for these industries.

(f) A study on the Agricultural Related Industries.

The agricultural related industries to be studied in this context are farming equipments industries, animal feeds industries; fertilizer packaging units can industries and fish-catching related industries such as fishing-tackles, boat industries, jilnet industries, etc. The study will be found on the production, ownership, problems and potentials including the investment requirements for expanding and establishing new industries.

(g) Assesment of the Agro-Industrial Support Facilities.

An assesment will be made on the facilities and production of the agricultural schools, agricultural research institutions, marketing and credit, and other facilities.

(h) A Study on Mineral Resources

An assesment will be made on the existing mineral resources, particularly in terms of location, availability production capacity, employment, market and prices. A tentative calculation will be made in connection with the investment requirement of establishing mineral based industries in Central Kalimantan. Specially mining of gold, coal, peat, quartz, kaolin, limestone, iron ore.

(i) Transportation.

Transportation plays an important role in almost all sectors in Central Kalimantan province specially lack of it. River transportation plays the dominant role. Land transportation plays a very little part in overall transport system. Roads building still waits for further development and investment.

The road length is about 372.41 Km and waits for massive improvement and planning.

Air transportation has some coverage and it reaches almost all important district towns through the pioneer services of Merpati Nusantara Airlines.

In effects, the common transportation of goods and services is done by river taxis and river express busses.

River transportation has its limitation. As such, a proper analysis is necessary for further development and investment in canals mainly used for transportation of goods and services. The co-relation between road and river transportation needs study.

(2) A Study on Manufacturing Sector : Industrial Development.

Trends of the industrial development over the period of 1970 - 1982, with the emphasis on sources of growth, employment, wages, prices and productivity. A detailed analysis will be made on selected industrial production in Central Kalimantan by classifying the industries into large, medium and small scale industries. A projection of the manufacturing sector will be made up to 1990.

(3) Basic Needs Component : Needs and Requirements.

The sectoral component assesses the economic production and consumption in connection with the possibilities of establishing new projects by the private sector. In order to proceed with the sectoral component programs, an assessment would be made on the condition of the basic needs of the people in the province.

The basic needs component tries to evaluate the situation of the social services which affected the living condition of the population. Without a fully supported basic needs programs, it will be difficult for the private sector to invest in the province.

The basic needs component consists of the situation on food, housing, clothings, potable water and health, and education and training facilities. The basic needs investment, however, is usually financed by the government funds. The basic needs program become an integrated part of the provincial five-year development plan.

Major activities to be implemented in the basic needs component consist of five inter-related studies.

(a) An assesment of Food Supply and Demand in the Province.

The assesment of food suply and demand in the basic needs component will be made on the basis of food balance sheet of Central Kalimantan over the period of 1970 - 1982. By using this approach, it can be traced out the trend of the nutritional condition of the people. The level of the nutritional condition can be matched with the requirements and the gap can be used as the basis for measuring the nutritional needs.

Calculation will be made on the investment requirements for fulfilling the nutritional needs.

(b) An Assessment of Housing Facilities and Needs.

A study will be made on the number of houses or shelters available and the number of houses needed to fill the needs of the population. In this connection, the minimum housing standards will be used as the basis for calculating the housing needs.

Calculation will be made on the investment requirements for fulfilling the nutritional needs.

As a part of the study on housing, an assessment will be made on the availability of construction materials to be used for housing construction.

The gap in housing needs will be used in calculating the investment requirements for housing construction. The projection of housing needs and investment will be needs up to 1990.

(c) A Study on Clothing Needs

The study will be focused on the actual clothing habits and patterns of consumption. Estimates will be made on the local production and import of textiles. It will be misleading, however, to estimate the investment requirements for textile industries locally, since trade played an important role in providing the local needs.

(d) Assessment on the Availability of Potable Water and the Provision of Health Care.

The main objective of the assessment of the availability of potable water and the provision of health care is to measurement the health condition of the provide.

Study will be made on the number and location of plants and distribution lines of pipe water supply including potable water resources in the rural areas. The gap in potable water supply and consumption will be used in estimating the investment requirements for providing potable water.

Health condition of the people will be assessed by mortality rate, and other health measurements. In the meantime survey will be made on the condition of health facilities in Central Kalimantan.

(e) A Study on Educational and Training Facilities.

Educational and Training Facilities, particularly for the specific needs of the private investment projects, will affected the investment climate of the province. A special survey will be conducted in assessing the condition and availability of educational and training facilities in Central Kalimantan. The gap between private sectoral development needs and the availability of specific manpower skill will be used in estimating the investment requirements in the educational and training facilities.

(4) Investment Component : The Need of the Public and Private Sector with Reference to the Main Objectives of the Study.

An analysis of the patterns of investment in Central Kalimantan will give an overall picture of the investment opportunities in the future. However, particular attention will be given to the private investment requirements, projected to 1990.

Major activities of the investment component consist of two parts :

(a) Survey of the trends of public (government) Investment.

The government investment plays a dominant role in the regional development of Central Kalimantan. The government investment consist of the central government, the provincial government and the "kabupaten" (district) and municipalities investments. Assesment of government investment will be concentrated on the government efforts in providing the basic needs of the people.

(b) Survey of the Trends and Estimates of Private Investment Requirements.

The trends of private investment reflected the private sector development in the province. The private investment can be classified again into the local private investment and non-local private investment.

Calculation on the private investment requirements up to 1990 will be based on the studies in the second component, by giving particular attention to the investment requirement by development regional (zones) within the province.

#### 4. Study Activities.

The activities taken in this study are as the following :

##### 4.1. Inventory

(1) Inventarisation of the agriculture and agro industry food crops.

An agree upon selection will be made of five-food crops from the following : rice, potatoes, peanuts, maize, sorghum, fruit, vegetables, and other nuts.

- Resources base, such as climate, soils, water supply, physical features, existing land use, and evaluation.
- Agriculture base, such as land use, production, yields, use of fertilizers and chemical agents, irrigation, technology applied, land tenure, physical infra-structure and average income to small farmer.

(2) Inventarisation on agriculture and agro industry of the plantation crops.

- An agree - upon selection will be made of the more important plantation crops in the province.
- Resource base, such as climate, soils, water supply, physical features, existing land use, and evaluation.
- Agriculture base of the basic trends per crop, such as land use, production, yields, use of fertilizer and chemical agents, irrigation, technology applied, land tenure, physical infrastructure, average income to small farmers.

(3) Inventarisation of the livestock and dairy products such as beef-cattle, bufaloes, pigs, sheep, goats, poultry and milk.

(4) Inventarisation of Agriculture-related industries.

Existing industries which produce agricultural inputs are as the following : seeds, fertilizers, boxes, animal feed , pharmaceuticals.

(5) Inventarisation of the existing forestry and forestry based industries.

(6) Inventarisation of the existing minerals, mining and chemical derivations.



- (7) Inventarisation of the existing metal working industries.
- (8) Inventarisation of the existing fisheries, resource base, and fisheries based industry.
- (9) Inventarisation of the existing infra-structural support facilities, such as cover roads, electrification, potable water, industry, industrial zones and estates, port and harbours, and telecommunication.
- (10) Inventarisation of the existing manpower supply, skill and training centres.
- (11) Inventarisation of the existing spatial industrial requirements, such as definition and analysis of development areas or zones, summary of zonal priorities based on Five Year Development Plan ( PELITA) III and IV.
- (12) Inventarisation of the basic needs requirements of food by species, housing, clothing, potable water, and health care, and electrification.
- (13) Inventarisation of the existing province, development plans which cover achievements, problems and evaluation of Pelita I, II and III, trends of the economic growth and social achievement such as gross regional domestic products and principle economic sectors.

4.2. Direct Interview or Discussing with officials whose duties are closely related to the research work.

4.3. Estimating the trends of needs and production of commodities up to the next decade to be used as the basic development programs of the region integrated for other regencies in Central Kalimantan.

4.4. Based on the estimation mentioned above, investment needed can be therefore, estimated, and recommended to increase the investment volumes.

