

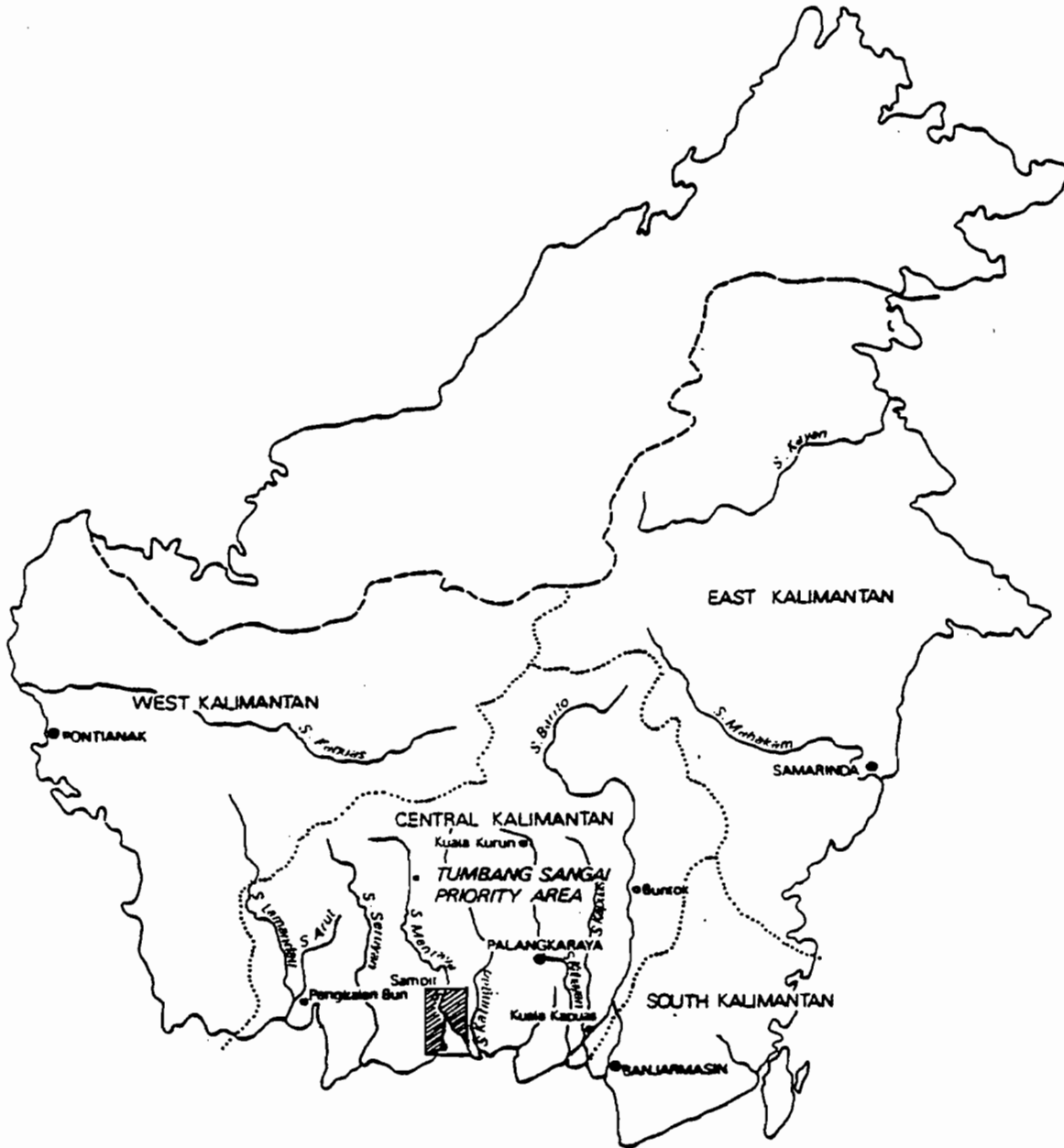


DEPARTEMEN TRANSMIGRASI
 DAN KEMASYARAKATAN
 (REPUBLIK INDONESIA)



INSTITUT FRANCAIS DE RECHERCHE SCIENTIFIQUE
 POUR LE DEVELOPPEMENT EN COOPERATION
 (REPUBLIQUE FRANCAISE)

**REGIONAL GEOGRAPHY
 TO DEVELOP TRANSMIGRATION SETTLEMENTS
 - CENTRAL KALIMANTAN -**



THE LOWER MENTAYA VALLEY

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THE LOWER MENTAYA VALLEY

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CONTENTS

Forward

PART I

- CHAPTER 1. The Mentaya estuary
- CHAPTER 2. A commercial artery
 - 2.1. Navigation
 - 2.1.1. Few rapids
 - 2.1.2. Navigability
 - 2.1.3. Means of transportation and shops
 - 2.2. Merchandise flow

PART II

SAMPIT : port located at the back of an estuary; advanced post in trade with the upper valley.

- CHAPTER 3. Sampit port
 - 3.1. Location
 - 3.2. Business life and trade
 - 3.2.1. Boat traffic
 - 3.2.2. Freight
 - 3.3. Port traffic
 - 3.3.1. The ports of origin
 - 3.3.2. Destinations
 - 3.3.3. Merchandise
 - 3.3.3.1. Imports
 - 3.3.3.2. Exports
 - 3.4. Samuda, a satellite port
- CHAPTER 4. Commerce at Sampit
 - 4.1. The port market
 - 4.2. The night market

- CHAPTER 5. A town with little controlling power in regional affairs
 - 5.1. Trading houses and the collection of cash crops
 - 5.1.1. Remiling and primary treatment of the production
 - 5.1.2. Supply sources
 - 5.2. Commercial attraction of the Sampit market
 - 5.3. The attraction held by Sampit's school system

PART III

The teachings of an ancient, little - known, spontaneous transmigration which has already made radical changes in the landscape of the lower valley.

- CHAPTER 6. Spontaneous transmigrants previously installed in the lower valley.
 - 6.1. Populations and densities in the lower valley
 - 6.2. Migrants and transmigrants
 - 6.2.1. The autochtons
 - 6.2.2. The migrants
 - 6.2.3. The "spontaneous transmigrants"

- CHAPTER 7. Development of the lower valley and the lessons it provides for directed Transmigration
 - 7.1. Setting up a coconut grove
 - 7.2. Distribution of the plantations
 - 7.2.1. Jaya Karet : early coconut groves
 - 7.2.2. Parebok : a recent settlement
 - 7.2.3. Sebamban : the intermediate case
 - 7.3. Two clever adaptations : the use of the tidal force and the valorization of human potential.
 - 7.3.1. An original adaptation to the environment : the use of the tide.
 - 7.3.2. A valorization of human potential that is no less clever : seasonal migrations and work in the coconut groves.
 - 7.3.3. The "handi" system
 - 7.4. Coconut groves and the economy of the lower valley : a financial "gold mine".

- 7.4.1. Operating accounts of a coconut grove
- 7.4.2. The coprah ovens
- 7.4.3. The oil factories

CONCLUSIONS AND RECOMMANDATIONS

1. Create a large number of small centers rather than a few large projects.
2. Improve the infrastructures
 - 2.1. Navigation
 - 2.2. The port
3. The crops to develop at the Transmigration Centers
 - 3.1. Rattan
 - 3.2. Rubber
 - 3.3. Coconut
 - 3.4. The other commercial crops
4. The concurrence of food crops and cash crops on the Transmigrant farms of the upper valley.
5. The limits of the "systim garpu".

LIST OF TABLES

1. Intensity of Precipitations - Percentage of Monthly rainfall.
2. Index of species found most in the peat - swamp forest
3. Klotoks and shops on the Mentaya.
4. Distances on the Mentaya.
5. Boat traffic bound for Sampit - 1982.
6. Average size of loads bound for Sampit - 1982.
7. a. Foreign Ports of call (Pelayaran Samudra, Pelayaran Nusantara) - 1982.
b. Returns hold empty - 1982.
8. No. of boats per shipowner (Pelayaran Rakyat, Pelayaran Lokal).
9. Distribution of boats registered at Sampit in function of freight capacity - 1982.
10. Distribution of freight capacities and boats registered at Sampit by shipowners' ethnic origin (Domestic trade - 1982).
11. a. Distribution of boats according to nationality of colors flown (Pelayaran Samudra).
b. Distribution of boats according to tonnage (Pelayaran Samudra) Sampit - 1982.
12. Sampit port traffic - 1982. Recapitulation by type of trade.
13. Sampit port traffic - 1982. Recapitulation by port of origin and port of destination.
14. Foreign export - Sampit 1982.
15. Composition of port traffic - 1982 - (by port of origin and port of destination).
16. Composition of port traffic by commodity Sampit - 1982.
17. Boat traffic in and out of Samuda - 1982.
18. Composition of port traffic at Samuda - 1982.
19. Distribution of stalls in the Sampit Market - 1982.
20. Ethnic distribution of Merchants in the Sampit Market - 1982.
21. Butcher's trade - Sampit - 1982.
22. Fish Market at Sampit.
23. Composition of the fish Market - Sampit - May 1983.
24. The Night Market.
25. Purchases made by the Sampit Trading Houses in 1982.

26. Exports carried out by the Sampit Trading Houses in 1982.
27. Rubber processing in the two remilling factories - 1982.
28. Supply sources of the Sampit Trading Houses - 1982.
29. Sales at the "Toko Aneka".
30. Origins of the clients of a Sampit shop.
31. Breakdown of sales made at a Sampit shop.
32. School Map - 1980.
33. Spread of Elementary Instruction.
34. Social Origins of the Secondary School Students.
35. The Attraction of Sampit School System - 1983.
36. Population and Religions in the Lower Mentaya Valley.
37. Population of the villages along the lower Mentaya Valley.
38. Spontaneous Transmigrants in the lower Mentaya Valley.
39. Land Development.
40. Geographic distribution of the coconut groves belonging to the planters at Jaya Karet (% areas).
41. Size of parcels, land - holdings and age of coconut trees.
42. Amounts of labour needed in the coconut groves.
43. Operating accounts for a one - hectare - coconut - grove - 1983.

LIST OF MAPS, CHARTS, FIGURES AND SKETCHES

1. Geomorphological Sketch.
2. Kalimantan Rainfall Map.
3. Variation of the Monthly Rainfall (Kuala Kuayan, Kuala Kurun).
4. Monthly Rainfall Variation Diagrams (Kuala Kuayan, Sampit, Kasongan, Kuala Kurun).
5. Monthly Rainfall and rainy days (Samuda, Sampit, Kuala Kuayan) - 1982.
6. Conditions of Fluvial Traffic.
7. Distribution of the Klotoks along the Mentaya River.
8. Distribution of the Shops along the Mentaya River.
9. Fluvial Traffic along the Mentaya River.
10. Fish Supply Networks.
11. Monthly Purchases made by the Trading Houses - 1982.
12. Distribution of Schools.
13. Origin of the Lower Mentaya Banjarese.
14. Origin of the Madurese who settled in Parebok and Samuda Kecil (Lower - Mentaya).
15. Coconut Plantations on the Lower Mentaya River.
16. The steps leading to a coconut small - holding on the lower Mentaya River.

FORWORD

In 1982, the study of the Tumbang Sangai priority transmigration site was carried out as basis for an integrated study of the Mentaya valley. The development of these regions by the Dayak inhabitants provided useful information for the transmigrants.

In order to favor the insertion of future Transmigration centers into a highly sectional regional economy, it became evident that the continuation of the geographic studies further downstream was necessary. The result is a crosssection from the mountains in the north to the Java Sea.

Therefore, the objects of this report are to analyse the potentials and constraints of the interconnected commercialization networks around the port of Sampit and to present the first evaluation of an ancient, spontaneous, and little-known transmigration.

Specifically, the Mentaya valley is part of the Kabupaten¹ Kotawaringin Timur, and is divided into 9 Kecamatan². This study of the lower valley covers the following Kecamatan : Kota Besi, Baamang, Mentawa Baru Ketapang, Mentaya Hulu Utara, Mentaya Hulu Selatan, and Pulau Hanaut.

¹ Kabupaten : Administrative unit (Regency) corresponding to a departement.

² Kecamatan : Administrative unit corresponding to a district.

CHAPTER 1 : the Mentaya estuary

The Mentaya river flows roughly in a north-south direction in the longitude of 113° east. The river rises at the foot of 630-meter Gunung Belawan (1° 30' S latitude) and after a 400-km course runs into the Java Sea - (3° S latitude).

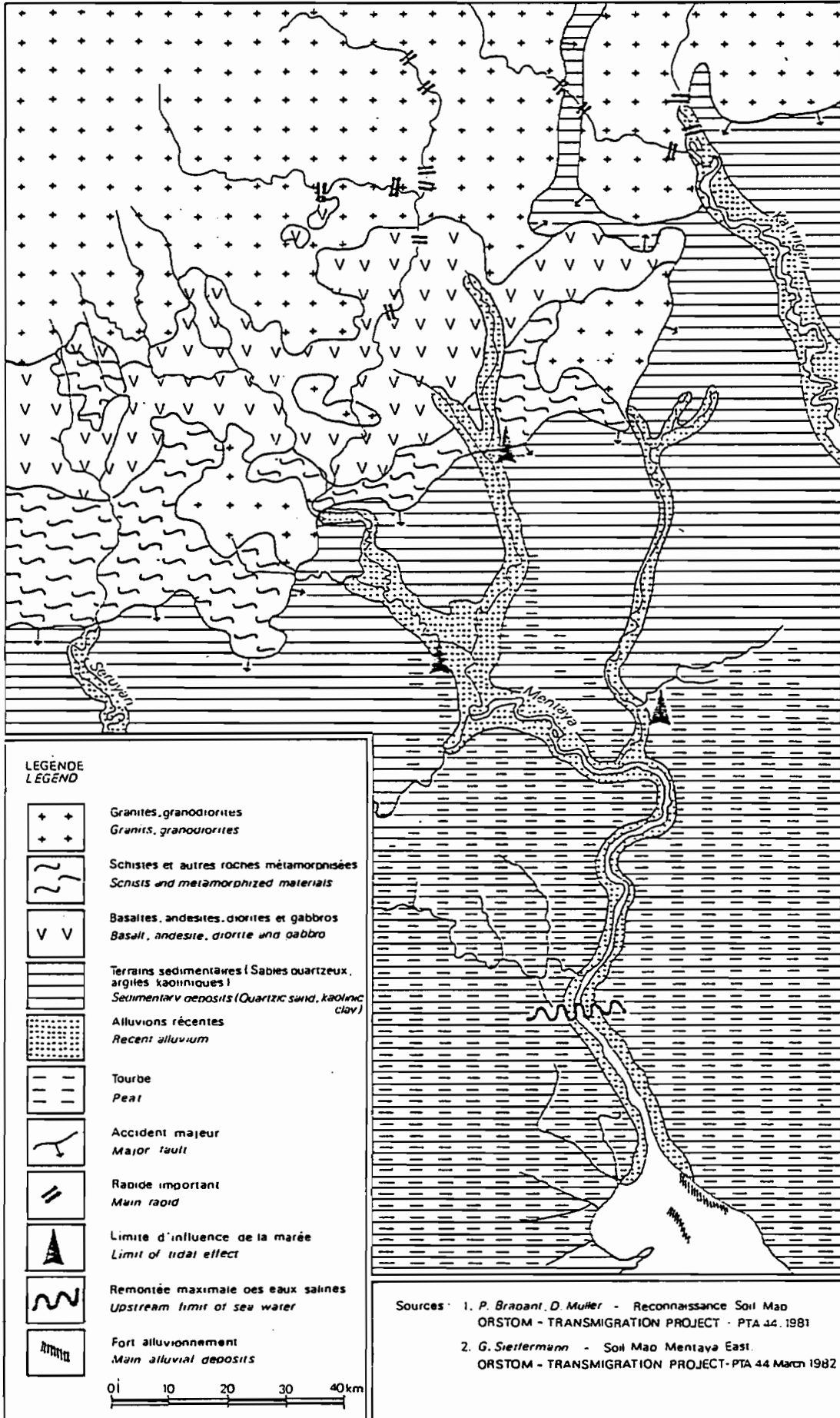
Three major tributaries feed the river from the left bank : the Kalang, the Tualan, and the Cempaga, while on the right bank the only notable tributary is the Kuayan. On the whole, the Mentaya drains a basin covering 15,300 km².

From its source in the Schwaner borderland (80 km in a direct line from Bukit Raya), the Mentaya successively crosses a zone of hills and hummocks, then a sedimentary plain, and finally a low alluvial amphibious plain. A 100-km long estuary forms the river's mouth, while the mixture of fresh water and sea water takes place in a bay - a vast protected stretch of calm water spreading over 385 km².

The headwaters of the river are surrounded by hills and hummocks. These rolling, tree covered hills separated by a maze of small valleys which open out on to marshy depressions present a typical landscape of " half oranges " formed on granites and grano-diorites. A line of huge granite batholiths dating from the end of the secondary era ¹ stretches from the Seruyan in the west to the Kahayan in the east. The andesites and basalts appear in softer forms, hummocks separated by small valleys whose width ranges from 50 to 100 meters. The relative regularity of the altitudes which follow a north-south incline (70 m at Tumbang Sangai, 35 m in the south) suggests the existence of a surface of erosion which, at the present level of information, is difficult to date. The volcanic effusions are restricted to a very limited area north of a major fault line which

¹P. Brabant & D. Muller. Reconnaissance Survey for the Selection of Transmigration Sites in Central Kalimantan. Phase 1. Soil and Land Suitability. Indonesia - ORSTOM Transmigration Project (PTA 44). Jakarta 1981. p. 10.

ESQUISSE GEOMORPHOLOGIQUE
1- GEOMORPHOLOGICAL SKETCH



divides the province of Central Kalimantan along a south-west - north-east line from Durian Kait (Seruyan) to Tewah (Kahayan). Here and there, strips of sedimentary covering are reincorporated into the socle and metamorphized. These are the schists and micaschists reinforced by quartzite and aplite intrusions which spread out to the north-east of Luwuk Kuwan. They form more vigorous reliefs - occasionally reaching an altitude of several hundred meters - which are separated by V - shaped valleys whose width rarely exceeds 20 to 30 meters.

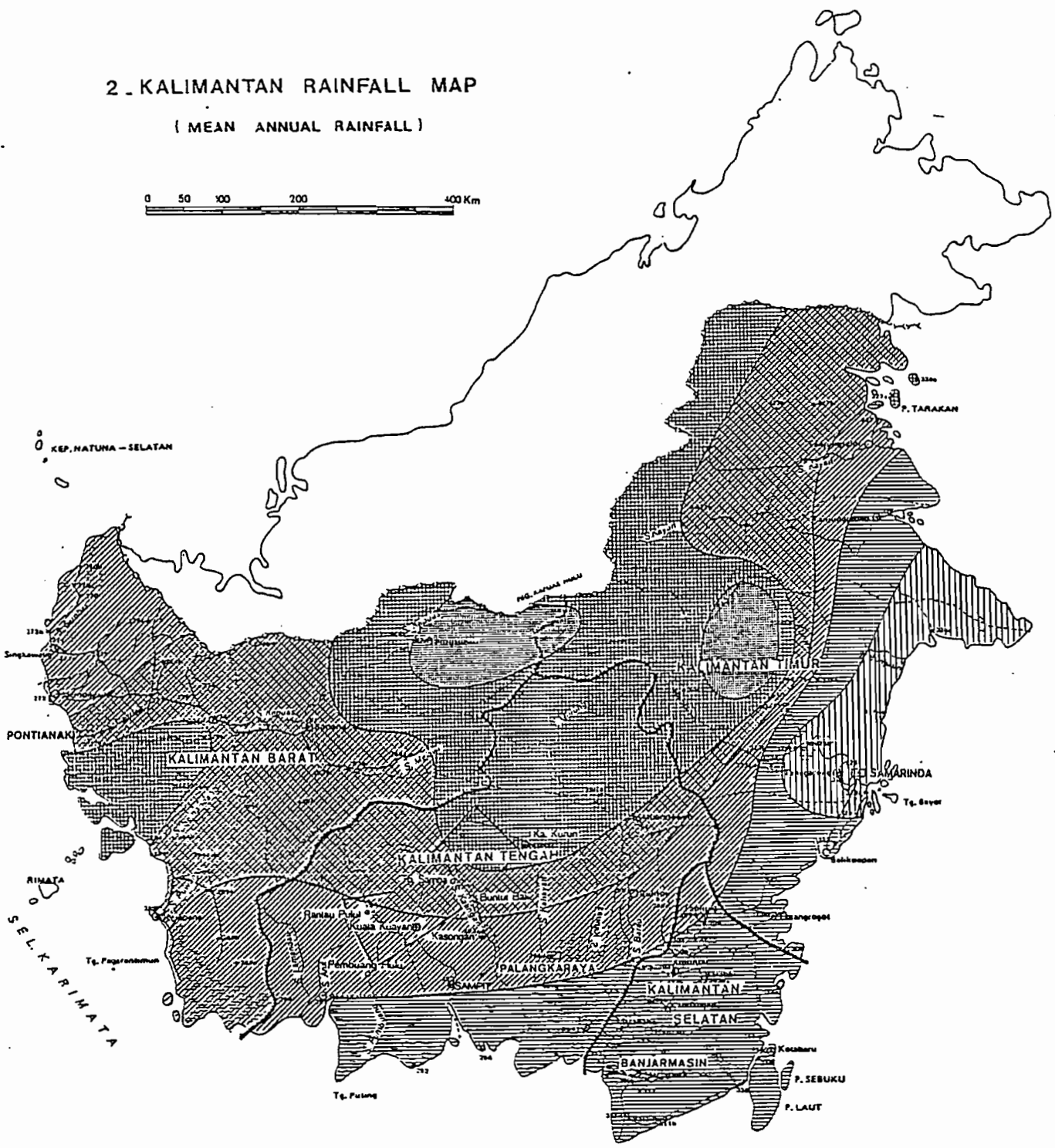
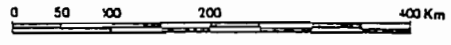
South of the major fault line which crosses the Mentaya near the village of Pemantang, the sedimentary soils indicate a period of continental, lagoonal sedimentation during which considerable masses of quartzite, sandy deposits and kaolinitic clays accumulated. The Dahor formation 1 is made up of quartzite sandstones - probably mio-pliocene - that are more or less altered. The thickness of the deposits is estimated at 300 m; it increases further south and fossilises anterior forms which pierce the sedimentary covering. This is especially true of the andesitic reliefs at Kuwan Batu and Pundu.

More recent in formation, the alluvial plain corresponds to a former marine gulf bordered by ancient sand bars. A 30-km-wide band of white sand leads from the mouth of the Pembuang in the south-west to Palangkaraya in the north-east. A vast amphibious zone covered by a thick layer of peat (2 to 3 meters , even 10 meters in places) has built up from sediments brought down by the Barito, Kapuas, Kahayan, Katingan, Pembuang, and Mentaya rivers. This swampy plain has an estimated surface of 5,000,000 hectares, most of which covers the Katingan, Kahayan, Kapuas, and Barito lowlands, while to either side of the Mentaya the plain's extension remains moderate.

The Mentaya estuary that part of the river where tidal movement appears - is 100 km long. The river is 300 m wide at Kandan, 500 m off Sampit and reaches a

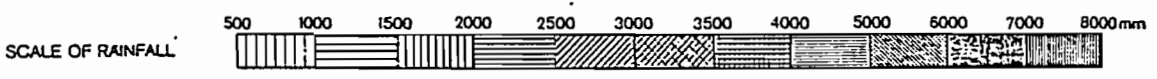
1 A. Sudrajat Sumartadipura. Geologic Map of the Tewah Quadrangle, Central Kalimantan. 1/250,000 th. Geological Survey of Indonesia. Directorate General of Mines. Ministry of Mines. 1976.

2. KALIMANTAN RAINFALL MAP (MEAN ANNUAL RAINFALL)



LEGEND :

- o Existing rainfall stations in the area
- ⊕ Working stations



Source : Lembaga Meteorologi dan Geofisika, Jakarta Meteorological Note 9. Vol. II

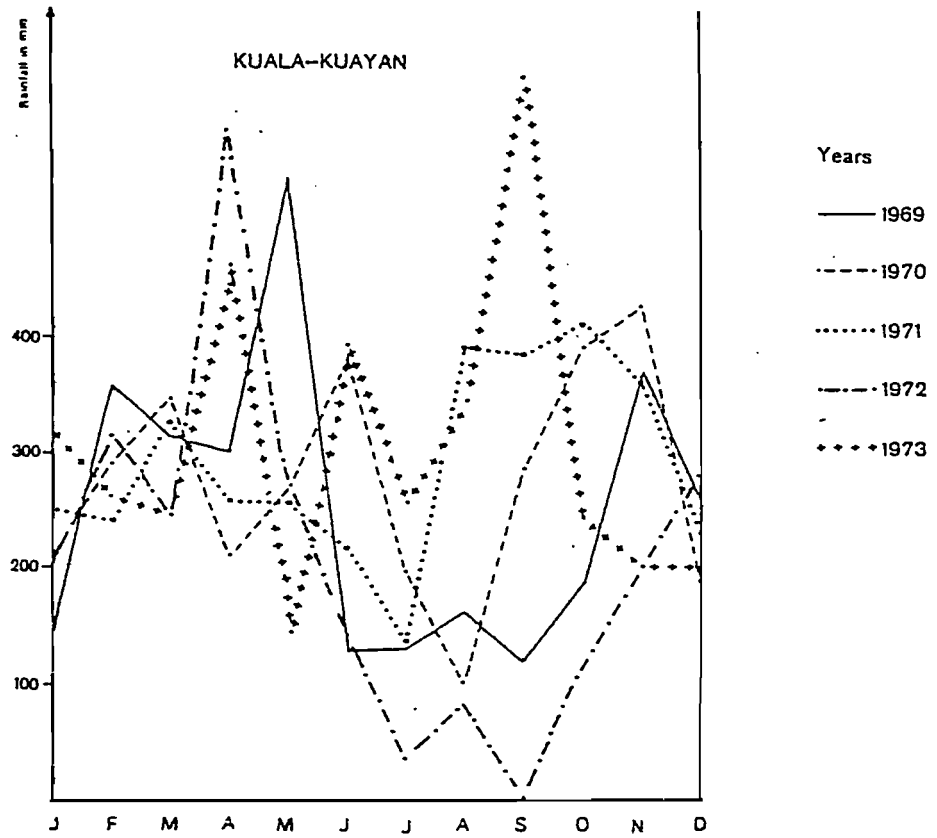
width of one to 1.5 km at Samuda. The estuary can be broken down into three distinct sections : the mouth per se, a great bay totalling 385 km²; a middle section from the village of Berawan to the junction with the Sampit river; and finally an upstream section which runs from the Sampit river to the Cempaga junction.

Sampit Bay (Teluk Sampit) is a vast gulf 30 km wide and 15 km long. A sand bank (Ujung Pandaran) tends to transform the bay into a lagoon in a progression which follows the direction of the littoral drift.

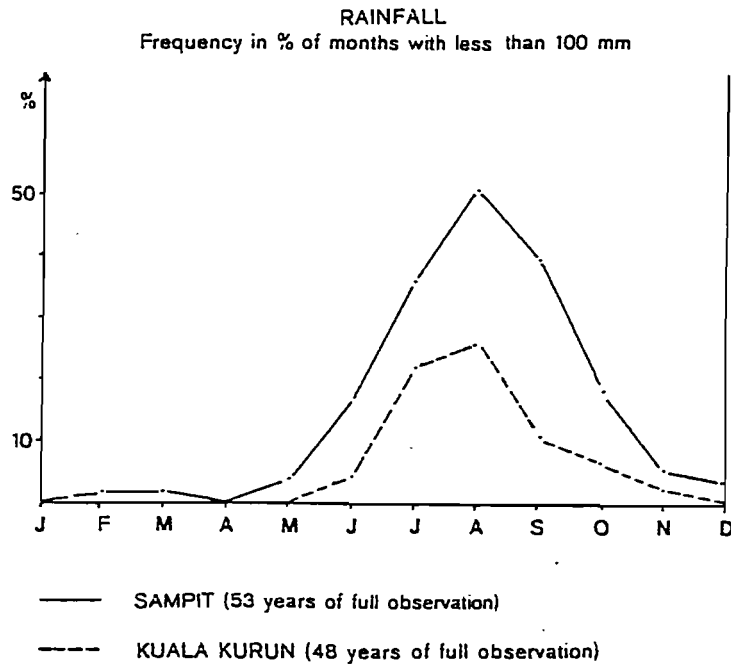
The spit connecting the island of Ujung Pandaran with the coast is a simple tombolo of 5 km in length. Access to the bay is provided by an 18 - to - 20 - meter - deep channel (however, the channel which links the river itself to the marine bay is only about 4 meters deep). Of the 385 km² which make up this surface of water, 125 km² (32.5 %) have a depth inferior to 2 m; 108 km² (28 %) are between 2 and 5 meters deep; 109 km² (28 %) between 5 and 10 meters; and only 43 km², or 11.5 % of the surface area, correspond to depths of more than 10 meters. The middle of the bay is occupied by a shoal (0.20 - 0.80 m) in the continuation of the neck formed by the river. The contours of the bay are quite variable, as the unequal aggradation modifies the shoreline, especially on the eastern side. In this way, 4,5 km² were regained from the sea from 1949 to 1982. Tidal flats and salt meadows are particularly developed in the western part of the bay and are furrowed with tidal creeks.

The middle section of the estuary, located between the Sampit River (right bank tributary) and the neck which leads to the bay, makes up a large rectilinear arm with a south-east - north-west orientation. However, the channel is very sinuous, and its depth diminishes from upstream to downstream : at the level of the Sampit River junction the depths range from 8 to 12 meters while the channel is no more than 5 to 6 meters deep at Samuda and 2.5 to 3 meters deep at Besawang. This is one of the results of heavy aggradation. The river is dotted with shallows, especially near Samuda Kecil and upstream from Pulau Lepeh. The two islands of Pulau Lepeh and Pulau Hanaut are composed of recent alluvial deposits and continue to evolve.

FIGURE No.3



VARIATION of the MONTHLY RAINFALL



In the upper part of the estuary, from the Sampit River to the Cempaga junction, the river is winding. These are valley meanders, yet they are quite different from the alluvial plain wandering meanders of the lower Katingan or the middle Kahayan. Here there no oxbow, and the river flows between two levees. At this level the river's apparent width is around 300 m and average depths are comprised between 6 and 12 m.

Contrary to the Kahayan, there is no hydrological data concerning the Mentaya. One has to rely on spot checks made among the people who live along the river. The tide's influence is perceptible on the river as far as Tangar, up - stream from Hanjalipan, and up to Sebungsu on the Tualan. At Sebungsu, the water table is very moderately elevated, about 10 cm or so, while at Sampit the amplitude ranges between 1.80 m and 2.20 m and can reach 2.50 m to 2.80 m in Sampit Bay. At any rate, the economic influence does not extend beyond Hanjalipan on the Mentaya and Cempaka Mulia on the Cempaga.

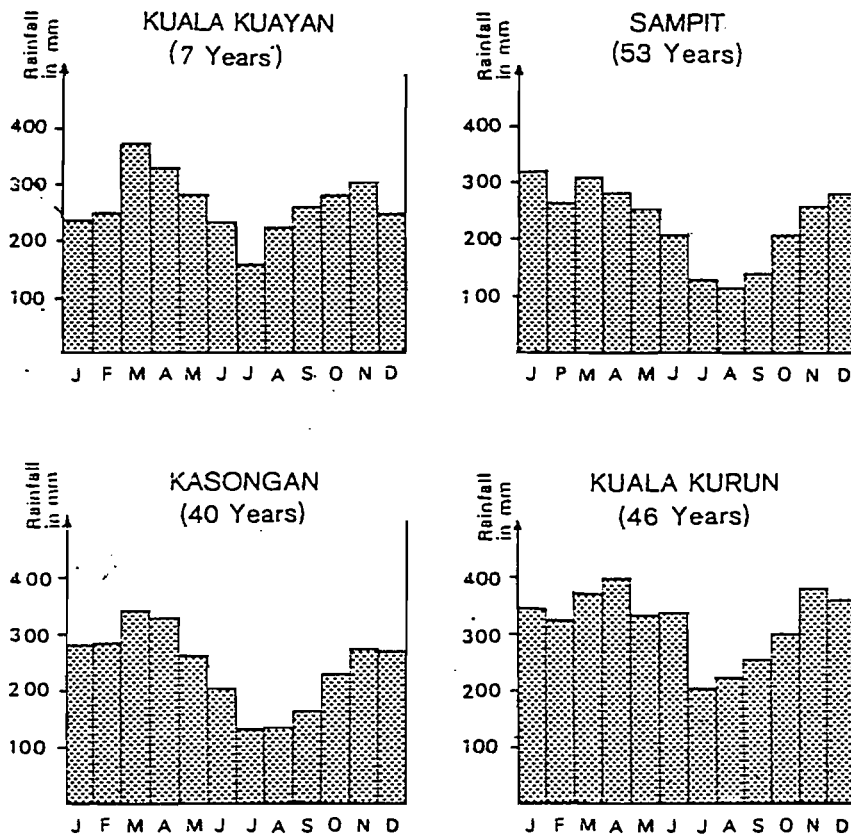
Sea waters are found as far upstream as the Sampit River (Bagendang Tengah village). When there is a particularly pronounced drought (for example Nov. Dec. Jan. 1982 - 1983), the flow of the river is abnormally low, and salt water proceeds upstream as far as Pelangian, a few kilometers below Sampit. The situation is so serious that the inhabitants of the downstream village pay rp. 2000 ¹ per 100 - liter - keg for fresh water from Sampit.

The Mentaya is bathed in an equatorial climate characterized by an abundance of rainfall throughout the year. In this very humid world, it is through orography that the discrepancy between the precipitations is explained (Map no. 1). The position of the Schwaner and Muller ranges explains the gradient which brings the total amount of precipitation from 2000/2500 mm downstream from Sampit to 2500/3000 mm in the middle valley and to more than 3500 mm in the upper valley and on the Kalang.

Sufficiently long series of data are available only for Sampit (53 years) and the village of Kuala Kuayan (7 years) ; these were used to prepare charts no.

¹ 1 Franc = 130 rupiah (1983).

FIGURE No.4



MONTHLY RAINFALL VARIATION DIAGRAMS

3 and 4. One does not really find a pattern of two maxima and two minima, especially in Sampit's case. However, March and November are on the average the rainiest months whereas a less rainy season (but not dry with respect to the Gausson index $P < 2 t$) appears in July / August. Depending on the stations and the years January and February can make up a secondary minimum (Kuala Kuayan).

The instability of the pluviometric pattern is due to the extreme inter-annual variability. An excellent example of this is shown in figure no. 2. which sums up 5 years of precipitation for the Kuala Kuayan station. It is enough that for one year January or February be totally dry to make the decennial average show a secondary minimum without permitting one to speak of a constant in the pluviometric pattern.

Figure no.5 recapitulates for 1982 (one of the rare years that were completed) the monthly rainfall for three stations, listed in down-to-up-river order : Samuda, Sampit, and Kuala Kuayan. The increase in rainfall from downstream to up speaks for itself : 1678 mm, 1944 mm, 2103 mm; which is to say a gradient of :2 mm/km or 425 mm over about 200 kms. Two maxima (March / April and November/December) appeared just as clearly as two minima (July / August /September and January) that particular year. If for the same chart we compare the monthly rainfall and the number of rainy days, we find that to the first maximum (300 - 330 mm) corresponded a greater number of rainy days (on the the order of 18 to 24) than to the second. In other words, from October to December most of the rainfall was concentrated in several heavy downpours (427 mm in 17 days of rain in December 1982 at Kuala Kuayan !). As a rule, the heavy rains (720 mm) make up the greater part of the precipitation (78% at Sampit; see Table No. 1).

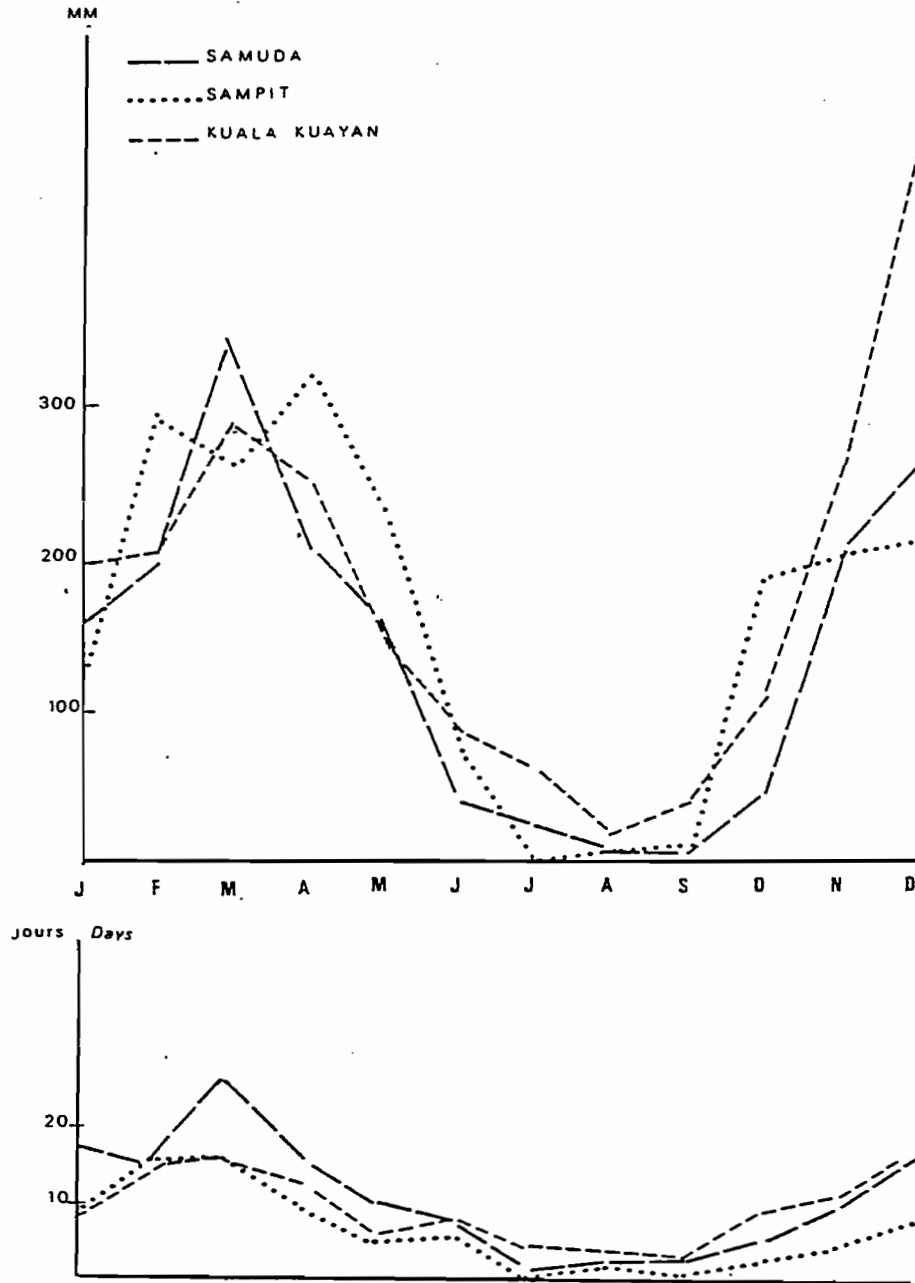
The river rises in a rolling landscape at the heart of a dense tropical forest of Dipterocarpaceae. Supported by ferallitic soils issued from the alteration of granites or of volcanic rocks, the forest breaks down into three strata. The upper

PLUVIOMETRIE MENSUELLE / MONTHLY RAINFALL

5 -

1982

NOMBRE DE JOURS DE PLUIE / RAINY DAYS



SOURCE : DINAS PERTANIAN SAMPIT

1 - Intensity of Precipitation - Percentage of Monthly Rainfall.

| Station | Type of rain | J | F | M | A | M | J | J | A | S | O | N | D | % of annual total | annual pluviometry |
|--------------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|--------------------|
| Samuda | light rain $P < 5$ mm | 10.12 | 5.1 | 4.4 | 3.86 | 5.03 | 42.5 | 0 | 14.29 | 23.08 | 4.17 | 2.8 | 1.58 | 5.48 | (mm) 1678 |
| | moderate rain $5 \leq P < 20$ mm | 4.4 | 39.29 | 34.60 | 57.49 | 37.11 | 0 | 0 | 85.71 | 76.92 | 95.83 | 21.5 | 28.06 | 37.66 | |
| | heavy rain $P \geq 20$ mm | 45.84 | 55.61 | 61 | 38.65 | 57.86 | 57.5 | 100 | 0 | 0 | 0 | 75.7 | 70.36 | 56.86 | |
| | Total % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |
| Sampit | light rain $P < 5$ mm | 7.26 | 4.78 | 0.74 | 0.92 | 0 | 2.82 | 0 | 100 | 0 | 0 | 0 | 0 | 1.95 | 1944 |
| | moderate rain $5 \leq P < 20$ mm | 23.39 | 28.87 | 60.97 | 10.74 | 2.6 | 35.21 | 0 | 0 | 100 | 0 | 6.86 | 12.79 | 19.57 | |
| | heavy rain $P \geq 20$ mm | 69.35 | 72.35 | 38.29 | 88.34 | 97.4 | 66.2 | 0 | 0 | 0 | 100 | 93.14 | 87.21 | 78.48 | |
| | Total % | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | |
| Kuala Kuayan | light rain $P < 5$ mm | 3.16 | 5.09 | 3.08 | 0 | 2.7 | 3.49 | 6.45 | 0 | 0 | 6.31 | 0 | 2.61 | 2.62 | 2103 |
| | moderate rain $5 \leq P < 20$ mm | 21.05 | 27.31 | 19.18 | 33.59 | 19.59 | 66.28 | 13.64 | 0 | 100 | 52.25 | 14.57 | 12.11 | 24.96 | |
| | heavy rain $P \geq 20$ mm | 75.79 | 67.59 | 77.74 | 66.41 | 77.7 | 30.23 | 74.24 | 100 | 0 | 41.44 | 85.43 | 85.27 | 72.42 | |
| | Total % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |

Source : Dinas Pertanian - Sampit

Samuda : 1980 - 1982 — Sampit : 1980 - 1981 - 1982 — Kuala Kuayan : 1981 - 1982.

level is dominated by Shoreas of more than 35 meters in height; the middle level from 10 to 20 meters, is made up mostly of Lauraceae, Myrtaceae, and Clusiaceae, while the lower level abounds with shrubs such as *Golchidion borneense* and *Eurycoma longifolia* which are not more than 10 m tall. Countless varieties of rattan render the undergrowth impenetrable.

This forest is rich in valuable woods. For the most part, the foresters exploit the Dipterocarpaceae, especially a large number of merantis (*Shorea* spp) or keruings (*Dipterocarpus* spp), and to a lesser extent certain conifers (*Agathis borneensis* Warb.). As for the Dayaks, they stick to the exploitation of the stands of ironwood, or ulin (*Eusideroxylon zwageri*).

The forestry surveys¹ give a notion of the amount of exploitable stock. All species included, this amount represents 111.12 m³ / hectare for trunk diameter greater than or equal to 35 cms, or 93.16 m³ / hectare if only trees whose diameter is greater than 50 cms are taken into consideration. Within this group, the Dipterocarpaceae represent 81.40 m³ / hectare (diameter greater than or equal to 35 cms) of which 61.91 m³ / hectare is meranti and 7.85 m³ / hectare is keruing. Ironwood represents 2.88 m³ / hectare, while the *Agathis* only account for 0.08 m³ / hectare.

Swamp forest is well - developed below Hanjalipan on the river, below Cempaga Mulia on the Cempaga, and all along the Seranau. Three types of forest² are found in the Sampit area : the peat-swamp, or "ajap", forest ; the *agathis*, or "bengalan", forest ; and the *tristania* - which is also called "pelawan" forest.

The peat-swamp forest is a dense forest made up of trees whose trunks are slender and whose height rarely exceeds 10 to 12 meters. Here and there one tree stands out, more vigorous than the others, and pierces the canopy.

¹ Survey kelompok hutan S. Mentaya. S. Kalang. Propinsi Kalimantan Tengah. Departemen Pertanian, Direktorat Jenderal Kehutanan. Direktorat Perencanaan. Laporan No. 391. 1973.

² Anwari Dilmy - Ecological data from the Sampit area (Central Kalimantan) - Herbarium Bogoriense p 9.

The layer of peat is from 0.5 to 4 meters thick, with sands underneath. The most frequently found species of trees are shoreas (*Shorea uglinosa* Foxw.) and Annonaceae (*Mezzettia leptopoda* Oliv.). The undergrowth is composed of Rubiaceae, such as *Pavetta*, *Timenius*, and *Ixora*, or of Euphorbiaceae, such as *Golchidion* and *Antidesma*. There are numerous epiphytes : *Myrmecodia*, *Hydnophytum*, and *Medinilla*. On the whole, considering those trees whose trunks are greater than or equal to 35 cms in diameter, this forest represents a volume of 136 m³ / hectare in wood (Table No. 2). The heath forest grows on sand and peat and corresponds more or less to this peat - swamp forest.

The agathis forest (*Agathis borneensis* Warb.) is found on podzols. A humus - bearing horizon 20 to 25 centimeters thick lies atop a 0.70 to one meter layer of sand. Agathis amounts to a volume of 172.9 m³/hectare, while only three other species appear at least once per hectare : lanan buaya (*Shorea uglinosa* Foxw), mahabay (*Mezzettia leptopoda* Oliv.) and kayu tanah (*Tetramerista glabra*). The Undergrowth is less dense than that found in the peat - swamp forest, and aerial roots are abundant as are rhizomes (*Dactyloclades* and *Calophyllum*)

The tristania forest is a dense, though not tall, forest in which the tristania make up the greater part of the canopy. However, while the limit between the the peat - swamp forest and the agathis forest is clearly defined, the same is not true of the agathis forest and the tristania forest, because in certain tristania forests, while there are more tristania than agathis, the number of agathis is nevertheless greater than in the agathis forest ! The ground is covered with lichens, especially around the tree trunks. The bushes consist of *Rhodommia cinera* and of various species of Myrcinaceae, with here and there some *Absolmsia sparticides*. The epiphytes are represented by *Myrmecodia*, *Hynoplytum*, and a few species of *Dischidia*. On the whole, 96.9 % of the trees are tristanias. The trees with a diameter of greater than or aqual to 35 cms represent a volume of 140.8 m³/ha in wood ¹.

¹ Anwari Dilmy. Ecological data from the Sampit area (Central Kalimantan)
Herbarium Bogoriense p. 6.

2. Index of species found most in the peat - swamp forests.

| Vernacular name | timber class | Scientific name | number of trees per ha | timber - mass m ³ per ha |
|--------------------------|--------------|--|------------------------|-------------------------------------|
| lanan buaja | III / IV | <i>Shorea uliginosa</i> Foxw. | 7.1 | 24.8 |
| mahabay | V | <i>Mezettia leptopoda</i> Oliv. | 6.6 | 12.8 |
| njatuh | IV | <i>Palaquium</i> | 8.0 | 14.4 |
| tumih | — | <i>Combretocarpus motleyi</i> Hook. ff | 6.6 | 16.8 |
| garu buaja (ramin) | V | <i>Gonystylus</i> | 2.0 | 4.4 |
| medang pipit | IV | <i>Dactyloctenium aegyptium</i> Oliv. | 2.4 | 4.4 |
| punaga djangkar | IV | <i>Calophyllum rhizophorum</i> Benth | 2.4 | 4.4 |
| kayu tanah | III | <i>Tetramerista glabra</i> Miq. | 2.0 | 5.4 |
| bengalan | III | <i>Agathis borneensis</i> Warb. | 1.1 | 2.9 |
| bintan | III / III | <i>Parastemon urophyllum</i> A.D.C. | 1.6 | 2.9 |
| gandis (?) | IV | <i>Garcinia spec.</i> | 1.1 | 1.4 |
| geronggang | IV | <i>Cratoxylum glaucum</i> Korth. | 1.1 | 3.9 |
| kemantau | — | <i>Paratocarpus</i> | 1.3 | 2.0 |
| kempas | III | <i>Koompassia malaccensis</i> Maing | 1.6 | 3.1 |
| ketiau | IV | <i>Ganua motleyana</i> Pierre | 1.1 | 1.7 |
| ubar | III | <i>Eugenia spec.</i> | 1.1 | 1.2 |
| pantung | — | <i>Dyera lowii</i> Hook. f. | 1.6 | 3.0 |
| punaga laut | IV | <i>Calophyllum spec.</i> | 1.1 | 6.2 |
| belangiran | II | <i>Shorea belangiran</i> Burck. | 0.4 | 1.5 |
| tempudau | III | <i>Myristicia spec.</i> | 0.7 | 1.7 |
| tutup keballi | V | <i>Dipterocarpus spec.</i> | 0.9 | 1.5 |
| " other timber species " | — | — | 4.9 | 8.5 |
| Total per ha | | | 57.1 | 135.9 |

Sance : Anwari Dilmy — Ecological data from the Sampit area (Central Kalimantan).
Herbarium Bogoriense.

The tristania forest does not seem to be an edaphic formation, but rather an anthropic one. After a forest fire, the regrowth is pioneered by tristania. The Dayaks also point out that by burning the forest regularly for several years in sequence, the layer of humus disappears and a forest of tristanias grows back on the the white sand. Should the humus remain present the agathis reappears.

CHAPTER 2 : A commercial artery

The Mentaya is an excellent penetration route towards the up-country. The N - S orientation of the river basin, the number of tributaries and their navigability, and the absence of rapids are all qualities which were valorized very early on.

2.1. Navigation

2.1.1. Few rapids

The limited number of rapids and their localization favors navigation. It is possible to go upriver for 280 kms without encountering any obstacles. The first rapids on the river are found at the level of Tumbang Mangkup, or, on the Tualan, at Tanjung Jurung. However, one must distinguish between two types of rapids : those which only slow down the traffic or present a temporary obstacle during the low - water periods, and those which, no matter what the season, necessitate the breaking up of the load. The latter are only frequent above Tumbang Kalang on the Mentaya, as well as on the Kalang and on the upper Tualan above Tanjung Jurung.

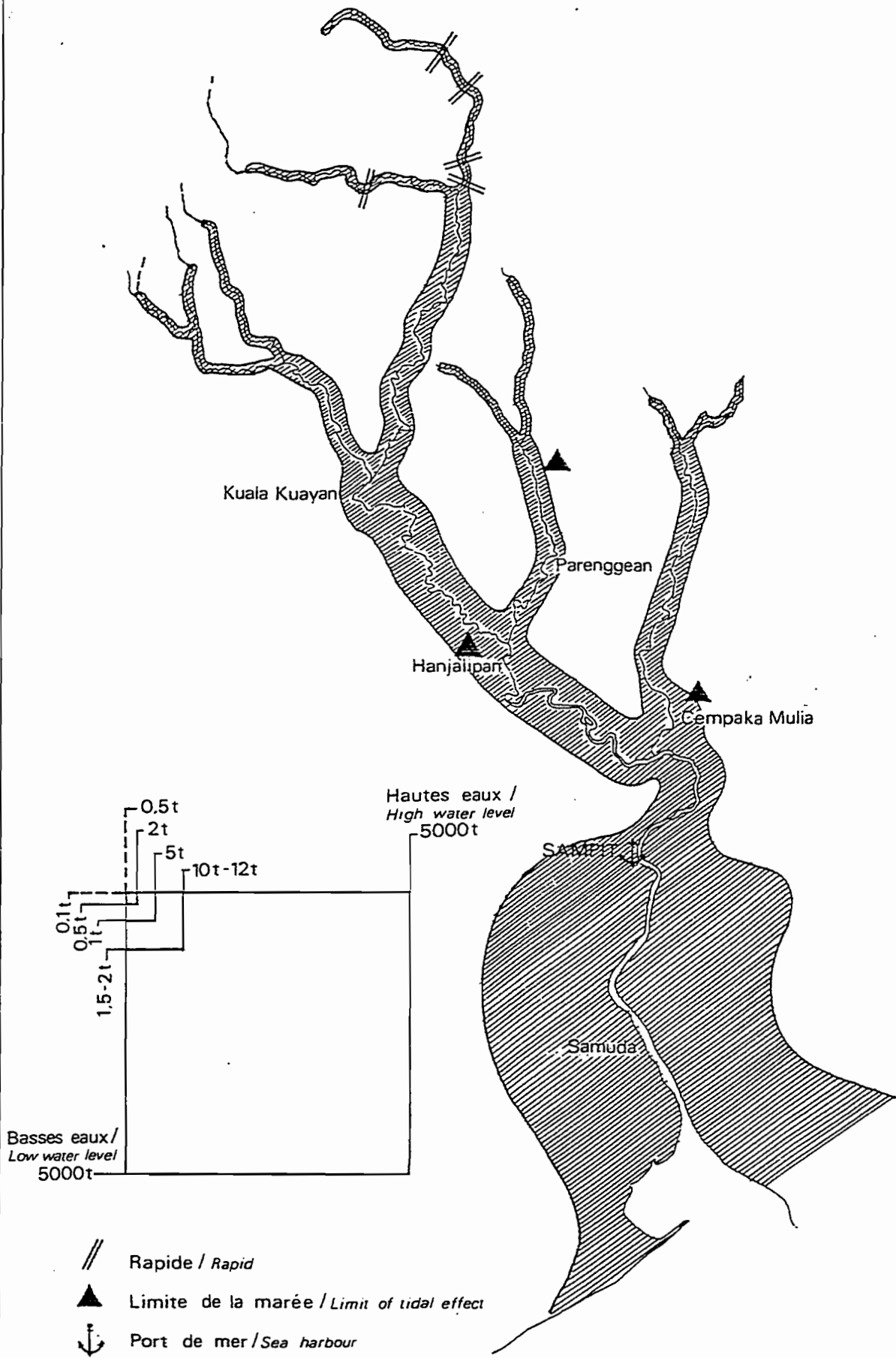
2.1.2. Navigability.

We have seen that there are no hydrological data concerning the Mentaya or its tributaries. Therefore, an understanding of the navigation conditions can only be reached by polling the merchants who are used to making the trip up and down the river. Sketch No.6 summarizes the observations.

Five sections can be distinguished on the river. The first corresponds to the estuary downstream from the Sampit port which is accessible to boats of 5000 tons the year round. Sampit Bay is frequented by ships of from 10 to 12,000 tons. Tidal amplitude is approximately two meters. Cargo ships are able to circulate at low tide but it is necessary to wait for high tide in order to enter the bay and cross the bottleneck which blocks the estuary.

LES CONDITIONS DE LA CIRCULATION FLUVIALE

6 - CONDITIONS OF FLUVIAL TRAFFIC



- // Rapide / Rapid
- ▲ Limite de la marée / Limit of tidal effect
- ⚓ Port de mer / Sea harbour

Echelle / Scale 1/1,000,000

The second section corresponds to that part of the river which is accessible to 10 - to - 12 - ton boats during high - water periods, or to 1.5 - to - 2 - ton boats at low flood. This reach extends from Sampit to Kuala Kuayan on the Mentaya, and from Sampit to Cempaka Mulia on the Cempaga. The major obstacle during the low-flood period is the abundance of sand banks, especially around Kawan Batu, Santilik,.....

The third section covers the Cempaga from Cempaka Mulia to Pundu, the Tualan from Hanjalipan to Sebungsu, the Kuayan from Kuala Kuayan to Tumbang Penyawan, and the Mentaya from Kuala Kuayan to Tumbang Kalang. Only klotoks of 5 tons burden at high water and 1 ton burden at low water can circulate. Traffic is sometimes slowed considerably for a few days, but the absence of a marked hydrological rhythm and the great interannual variability do not allow for further precision.

Navigation becomes more difficult along the fourth section, where the first rapids appear. During the periods when the water is at its lowest level, only motorized canoes carrying a few bundles (500 kgs) can navigate. When the waters are high, the larger boats are handicapped by the shape of the riverbed (shallows), the numerous meanders, and the very strong current.

The last section corresponds to the headwaters of the river basins where access is difficult the year round. Here, the river is but a stream which is hardly navigable in anything but a canoe. Yet no village is really inaccessible or cut off from the outside world; commerce and the monetary economy are present everywhere. Only time and higher costs of transport are to be taken into account.

2.1.3. Means of transportation and shops.

On the river, passengers and merchandise alike are transported by klotok. This is a wooden boat made of a dugout canoe of ironwood on which planks and

occasionally a deck have been mounted. The craft is propelled by a diesel motor whose constant popping noise justifies the name "klotok".

The total number of klotoks on the Mentaya is somewhere around 2,000, for a population of about 145,000 inhabitants, which represents one boat for 70 - 75 people. Considering that one family consists of 7 - 8 persons, on the average, this brings it to one klotok for every ten families. If the existence of the town of Sampit (60,000 inhabitants) is taken into account, one obtains a ratio of one boat boat for 4 to 5 families of villagers, which implies a very high rate of penetration.

The distribution per kecamatan (Table No. 3) shows that, with the exception of the kecamatan of Mentawa Baru / Ketapang which makes up the heart of the town of Sampit, two kecamatans are less favored : Kota Besi and Cempaga. The relatively low rate of penetration in the first of these districts can be explained by the economic decline in this section of the river. The prosperity of the Seranau and the areas around the villages of Simpur, Camba, was based on the exploitation of resins (damar) and latex (jelutung) during the period between WWI and WWII. Today, these areas are in decline as they are not favorable to the cultivation of rattan which is the wealth of the valley. The Cempaga fares scarcely better as far as the number of klotoks is concerned. This is due to the large number of recently - immigrated people who have come from the lower valley to work on the rattan plantations. These recent immigrants cannot afford to buy themselves a klotok.

It will be noted that the kecamatan of Mentaya Hulu, regrouping the villages of the upper valley, is - paradoxically - the most favored, with one klotok per less than 40 inhabitants. The Ngaju Dayaks who live in this kecamatan have built up their prosperity from the exploitation of hevea and rattan plantations which are cultivated very extensively.

The lower Mentaya valley is also privileged, but this is hardly surprising considering the very intensity of the commercial life which characterizes the estuary. Here, rattan and coconut palms are the basis of the prosperity.

3 – Klotoks and shops on the Mentaya

| Kecamatan | No of klotoks | Ratio (Persons per klotok) | Toko Kios Warung (shops) | Ratio (Persons per shop) |
|-------------------------|---------------|----------------------------|--------------------------|--------------------------|
| Mentaya Hilir Selatan | 436 | 43.42 | 337 | 56.17 |
| Mentaya Hilir Utara | 103 | 44.28 | 27 | 168.93 |
| Pulau Hanaut | 274 | 40.44 | | |
| Mentawa Baru / Ketapang | 191 | 190.54 | 617 | 58.99 |
| Baamang | | | 771 | 29.60 |
| Kotabesi | 145 | 77.24 | 60 | 186.67 |
| Cempaga | 261 | 63.76 | 116 | 143.47 |
| Parenggean | 43 | 102.23 | 17 | 258.59 |
| Mentaya Hulu | 478 | 39.41 | 137 | 137.50 |

Source : Kantor Statistik – Sampit – 1980.

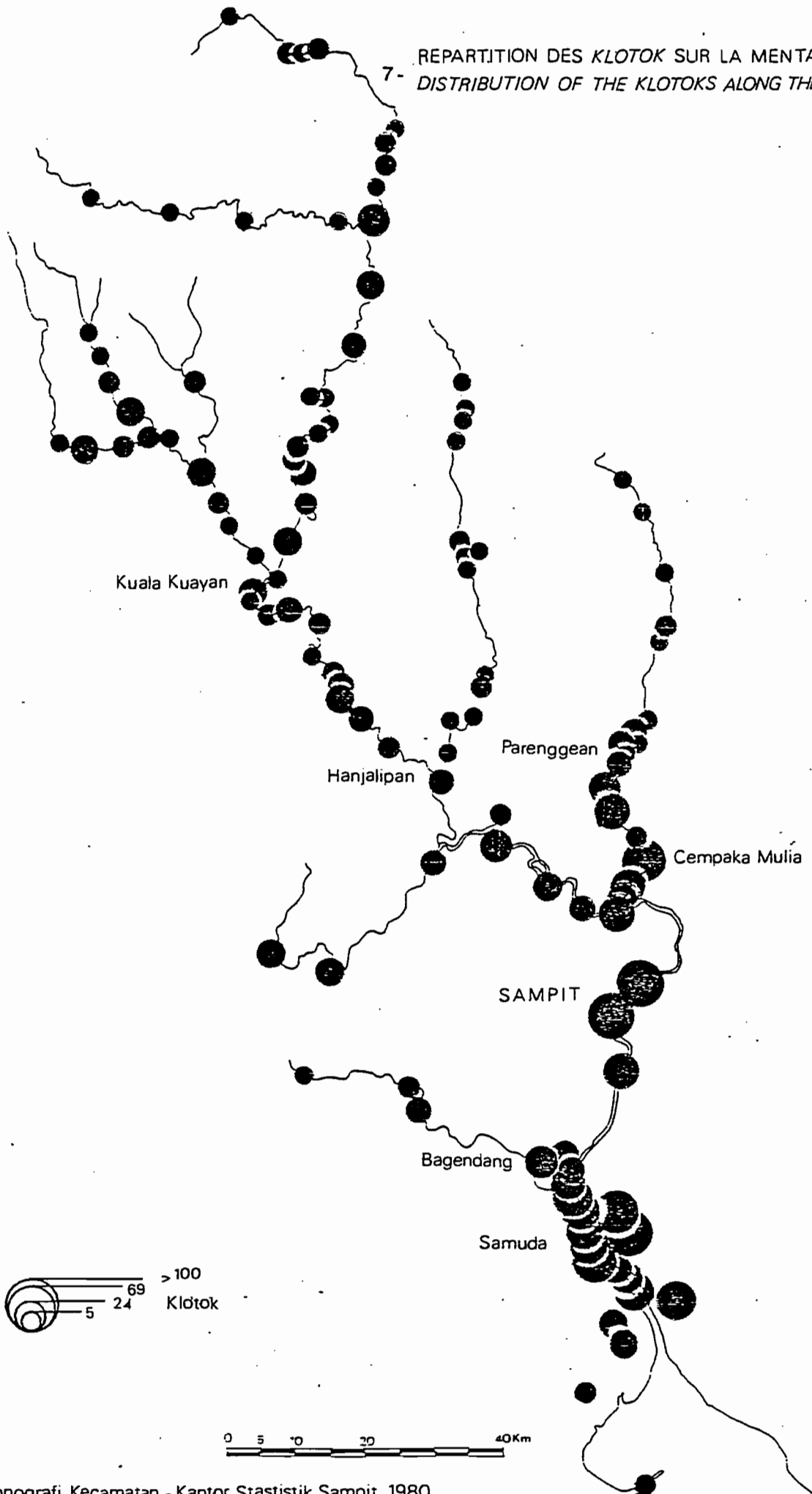
4 – Distances on the Mentaya.

| From \ To | U. Pandaran | Samuda | Sampit | Kota Besi | Cempaka Mulia | Hanjalipan | Parenggean | Kuala Kuayan | Tumbang Kalang |
|----------------|-------------|--------|--------|-----------|---------------|------------|------------|--------------|----------------|
| U. Pandaran | 0 | 30 | 75 | 105 | 117 | 170 | 200 | 240 | 320 |
| Samuda | 30 | 0 | 45 | 75 | 87 | 140 | 170 | 210 | 290 |
| Sampit | 75 | 45 | 0 | 30 | 42 | 95 | 125 | 165 | 245 |
| Kota Besi | 105 | 75 | 30 | 0 | 12 | 65 | 95 | 135 | 205 |
| Cempaka Mulia | 117 | 87 | 42 | 12 | 0 | 77 | 107 | 147 | 227 |
| Hanjalipan | 170 | 140 | 95 | 65 | 77 | 0 | 30 | 70 | 150 |
| Parenggean | 200 | 170 | 125 | 95 | 107 | 30 | 0 | 100 | 180 |
| Kuala Kuayan | 240 | 210 | 165 | 135 | 147 | 70 | 100 | 0 | 80 |
| Tumbang Kalang | 320 | 290 | 245 | 205 | 227 | 150 | 180 | 80 | 0 |

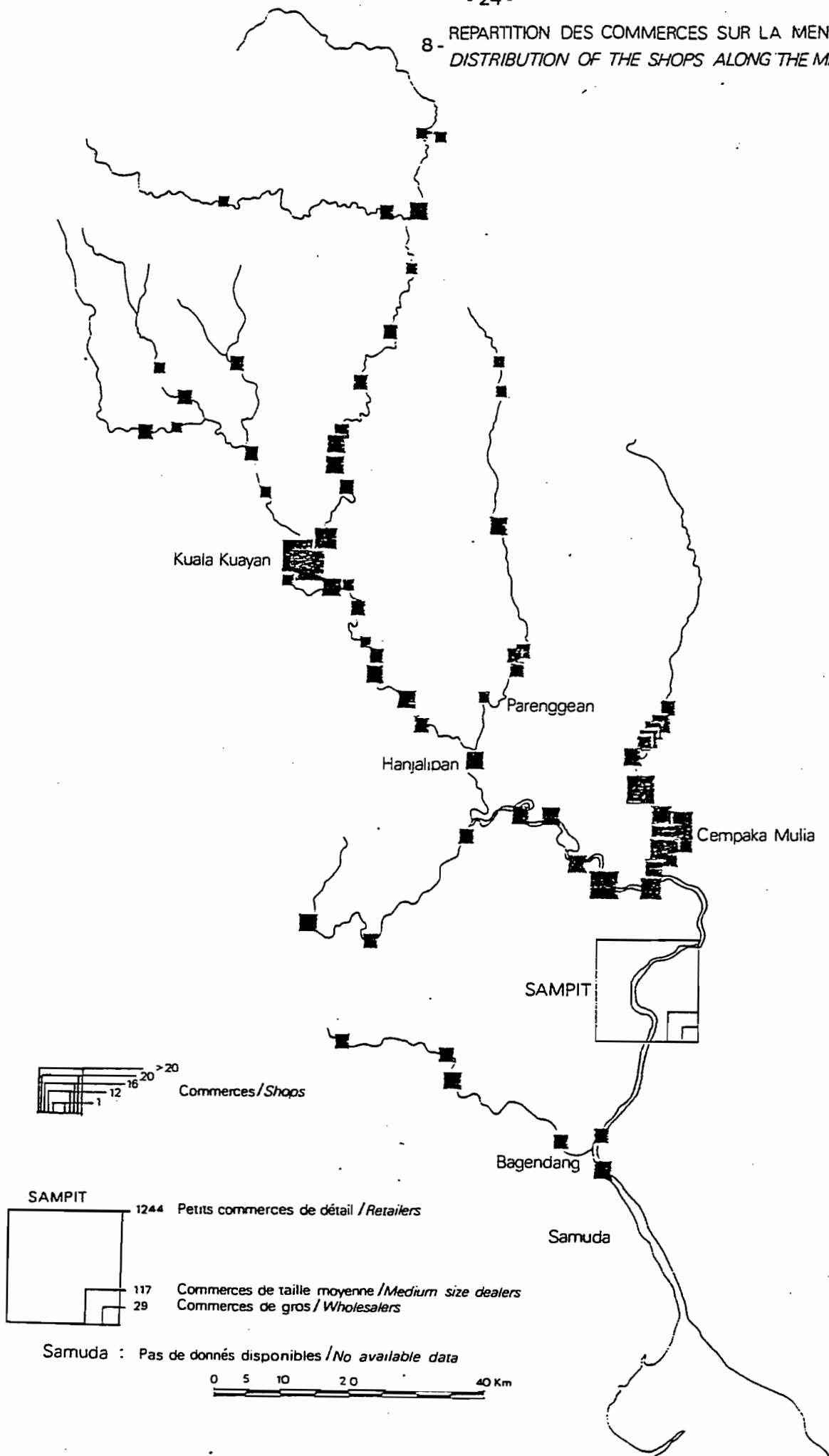
Source : Tactical Pilotage Chart (TPC M – 11 A G) – Curvometer.

(Distances may differ from one table to another according to the map which is used).

REPARTITION DES KLOTOK SUR LA MENTAYA
DISTRIBUTION OF THE KLOTOKS ALONG THE MENTAYA RIVER



8- REPARTITION DES COMMERCES SUR LA MENTAYA
DISTRIBUTION OF THE SHOPS ALONG THE MENTAYA RIVER



On the whole, the total diffusion of means of river transportation over all of the river basin must be stressed (Graph No.7). No stretch is really isolated, be this by rapids, difficulties in navigation, or lack of klotoks. Such is the great fortune of the Mentaya.

Indonesian statistics differentiate between kios, toko, and warung. "Toko" is the true name for the shop whose proprietor's main activity is commerce and whose capital is superior to 2 million rupiah, whereas the "kios" is often simply a few shelves at the village headman's house or else at some important person's. Furthermore, the proprietor of the "toko" is responsible for the commercialization of the cash crops (rattan, rubber) and wood is its different forms. "Warung" applies to a small restaurant to which is often added a small trade in staple goods (salt, sugar,).

The distribution of the shops is quite different from that of the klotoks. There are stretches along the river that are completely devoid of shops, and sections of valley where the diffusion is at its maximum, while a few poles stand out (Graph No.8).

The areas in which there are no shops are : the upper Tualan, the upper Kalang, the upper Kuayan (above Tumbang Penyawan), and the upper Mentaya. The Ot'Danum villages are the least favored. Commercial relations do exist but are carried out by itinerant merchants.

On the other hand, along the river from Tumbang Kalang to Samuda, the shops are well - distributed. Almost every village has a small shop. Apart from Sampit, to which a special chapter will be devoted, the privileged centers are : Kota Besi, Cempaka Mulia, and Kuala Kuayan.

2.2. Merchandise flow (Graph No.9).

The tonnage as well as the nature of the goods which go up and come down the river can only be appreciated through statistics compiled by the L.L.A.S.D.P.¹ bureau in Sampit. This is somewhat unreliable data, as the proprietors of the klotoks must declare the merchandise they carry and pay tax on it. Not surprisingly, the analysis of the data gathered stresses Sampit's role as the collection and redistribution center. Sampit ships out mainly general cargo (consumer goods, foodstuffs, rice, sugar, oil,) to the villages and receives raw materials. From upstream come slabs of rubber² and bundles of rattan³, while the middle valley provides the town with fresh fish (live, freshwater fishes) and the building stones which are so cruelly lacking in a world where everything is alterits or alluvial sand.

Coming downstream, the tonnage is notably greater than it is going up (3000 tons as compared to 2100 tons, at Kota Besi). Moreover, going downstream, in the middle valley (Hanjalipan and above all Kota Besi) there is a definite break in the balance, as the tonnage in rattan and rubber grows sharply. The lower Cempaga is a major zone of rattan production. Cultivation has already been intensified and the plantations are cut every year as opposed to every 3 years above Kuala Kuayan.

The lower valley, with a port (Samuda) at its disposal and direct connections with the exterior, sends to and receives from Sampit only a modest tonnage of around 300 to 400 t. To Sampit are shipped the bananas and other fruits (notably rambutans) which grow in the shade of the coconut palms and which are destined for urban markets, as well as fish - fresh or dried - caught off Sampit Bay. Sampit sends down the same consumer goods as it ships upriver (manufactured products, cloth, foodstuffs,).

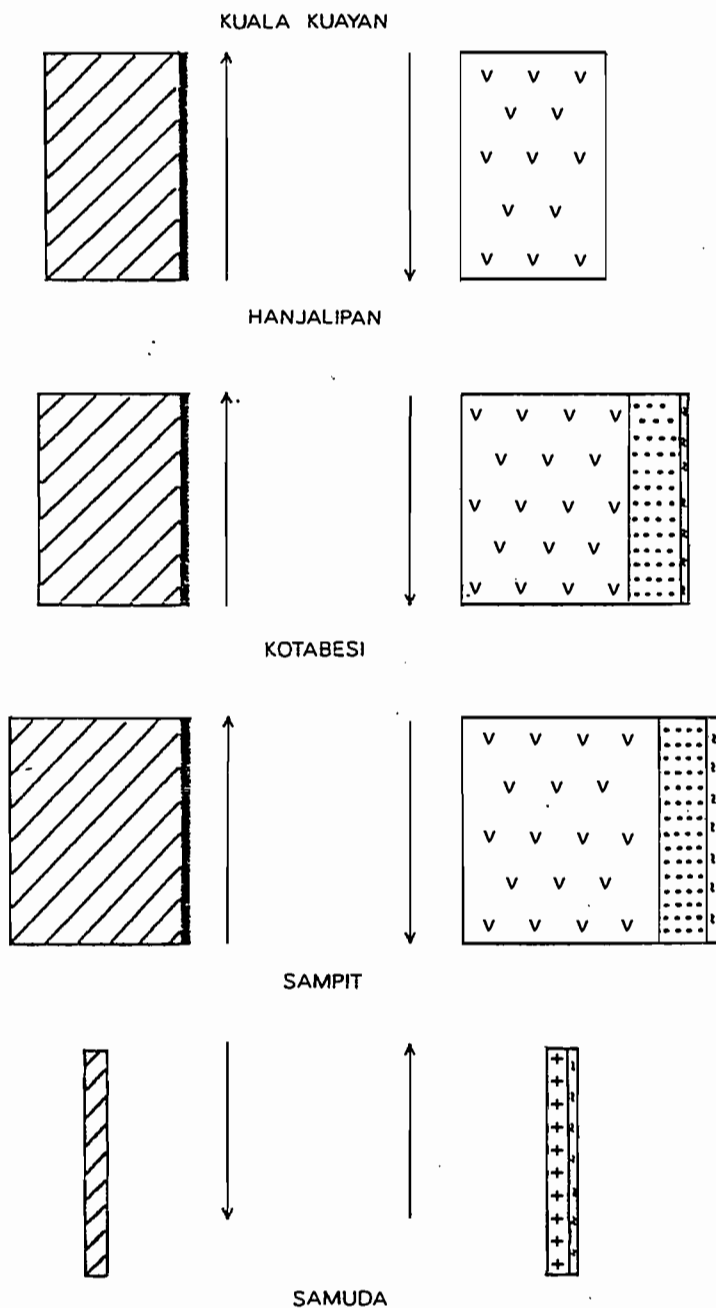
¹ L.L.A.S.D.P. : Lalu Lintas Air Sungai Danau dan Penyeberangan.

² For more details, see East Mentaya Priority Area, vol. 2, "Human Environment".

³ Ibid

CIRCULATION FLUVIALE LE LONG DE LA MENTAYA

9 - FLUVIAL TRAFFIC ALONG THE MENTAYA RIVER



1000 t



Marchandises générales / *General cargo*



Matériaux de construction / *Building materials*



Rotin, caoutchouc et diverses résines / *Rattan, latex and various resins*



Fruits / *Fruits*



Poisson / *Fish*



Pierres / *Stones*

Sources : LLASDP. Sampit. Chiffres annuels moyens obtenus à partir des relevés mensuels 1979.1980.1981.
Mean annual figure calculated from monthly statement 1979.1980.1981.

PART II

SAMPIT : Port located at the back of an estuary; advance post in trade with the upper valley.

CHAPTER 3 : Sampit Port

The port of Sampit is without a doubt very ancient. Its existence in the 15 th century is attested to by the "Shun Feng Hsiang Sung", a Chinese navigation treaty which places the port in the context of the sea routes of the period, particularly the one between Banten and Banjarmasin. ¹

3.1. Location of the port.

We have seen in the previous chapter that the Sampit port is 80 kms from the mouth of the Mentaya, at the back of the estuary and on the outside bank of a meander oriented roughly in a north- south direction. At this point the river is about 500 m wide and the channel 8 to 9 meters deep. The "quays" are 1.5 to 2 kms long, though this is only an estimation. In fact, the boats are moored along the entire right bank of the river from Baamang to Mentawa Baru Hulu, a distance of 5 to 6 kms. Where there is no actual quay, the boats are unloaded through the use of floating pontoons made of logs which have been lashed together.

Port activities - and indeed those of the entire town - have developed along the right bank only. The left bank has retained the traditional appearance of the Dayak village : a single street lined with houses.

3.2. Business life and trade.

3.2.1. Boat traffic.

The sea - going boats fall into two large categories : motor - powered boats (Kapal Laut) and sailboats with an auxiliary motor (Kapal Layar Motor). The two categories can be further broken down with respect to the operating range of the Companies (agen) responsible for finding freight on behalf of the

¹ J.V. Mill, "Chinese Navigation in Insulinde about A.D. 1500".
Archipel, 1979, No. 18, p. 83.

5 - Boat Traffic Bound For Sampl - 1982.

| Provenance | Pelayaran Rakyat | | Pelayaran Lokal | | Recapitulation on domestic level Pelayaran Rakyat + Pelayaran Lokal | | Pelayaran Nusantara | | Pelayaran Samudra | | General recapitulation | |
|-----------------------|------------------|------------|-----------------|------------|---|------------|---------------------|------------|-------------------|------------|------------------------|------------|
| | no. of boats | % of total | no. of boats | % of total | no. of boats | % of total | no. of boats | % of total | no. of boats | % of total | no. of boats | % of total |
| Samuda | | | 5 | 2.56 | 5 | 0.72 | | | | | 5 | 0.63 |
| Pegatan / Mendawal | 53 | 10.56 | 18 | 9.23 | 71 | 10.19 | | | | | 71 | 8.92 |
| Kuala Pembuang | 104 | 20.71 | | | 104 | 14.92 | | | | | 104 | 13.06 |
| Kereng Bengklral | 1 | 0.20 | | | 1 | 0.14 | | | | | 1 | 0.12 |
| Kuala Kapuas | 7 | 1.39 | | | 7 | 1 | | | | | 7 | 0.88 |
| Pulang Pisau | | | 1 | 0.51 | 1 | 0.14 | | | | | 1 | 0.12 |
| Banjarmasin | 132 | 26.29 | 35 | 17.95 | 167 | 23.96 | 28 | 36.84 | | | 195 | 24.50 |
| Pangkalanbun | 5 | 1 | | | 5 | 0.72 | | | 1 | 4.35 | 6 | 0.76 |
| K u m a l | 3 | 0.6 | 2 | 1.03 | 5 | 0.72 | 23 | 30.26 | | | 28 | 3.52 |
| Kuala Jelai | 3 | 0.6 | | | 3 | 0.43 | | | | | 3 | 0.38 |
| Balikpapan | 2 | 0.4 | 3 | 1.54 | 5 | 0.72 | | | | | 5 | 0.63 |
| Samarinda | 2 | 0.4 | | | 2 | 0.29 | | | | | 2 | 0.26 |
| Juara | 4 | 0.8 | | | 4 | 0.57 | | | | | 4 | 0.50 |
| Kamal (Madura) | 25 | 4.98 | 4 | 2.05 | 29 | 4.16 | | | | | 29 | 3.65 |
| Balinese ports | 1 | 0.20 | | | 1 | 0.14 | | | | | 1 | 0.12 |
| Surabaya | 154 | 30.67 | 127 | 65.13 | 281 | 40.32 | 5 | 6.58 | 6 | 26.08 | 292 | 36.69 |
| Cirebon | 1 | 0.20 | | | 1 | 0.14 | 1 | 1.32 | | | 2 | 0.26 |
| Semarang | 6 | 1 | | | 5 | 0.72 | 6 | 7.89 | | | 11 | 1.38 |
| Ketapang | | | | | | | | | 1 | 4.35 | 1 | 0.12 |
| Cilacap | | | | | | | | | 2 | 8.70 | 2 | 0.26 |
| Jakarta | | | | | | | | | 1 | 4.35 | 1 | 0.12 |
| Sarawak (E. Malaysia) | | | | | | | 10 | 13.16 | 12 | 52.17 | 22 | 2.76 |
| Penang | | | | | | | 1 | 1.32 | | | 1 | 0.12 |
| Singapore | | | | | | | 2 | 2.63 | | | 2 | 0.26 |
| Total | 502 | 100 | 195 | 100 | 697 | 100 | 76 | 100 | 23 | 100 | 796 | 100 |

Source : Surveys carried out in the shipping companies.

boat's owner. At the Indonesian national level there are four categories of companies :

— The "Pelayaran Rakyat" ("Popular" Companies) manage wooden boats resembling large, big - bellied klotoks that are used in trade along the Kalimantan coast. There are three such firms in Sampit.

— The "Pelayaran Lokal" (Local Companies), with two agencies in Sampit, handle boats of larger tonnage that run between the islands of the archipelago. These are very often sailboats equipped with an auxiliary motor (Bugis or Madurese).

— The "Pelayaran Nusantara" (Inter - island Companies) also handle inter - island commerce, but according to fixed routes and timetables. The only firm of this kind represented in Sampit is the national company PELNI, which transports merchandise and carries passengers as well.

— The "Pelayaran Samudra" (Ocean Lines) have overseas connections though this is not exclusive. The boats used are cargo ships. Two such companies have agencies in Sampit.

For the purpose of this report, we shall group together "popular" and "local" companies on the one hand and "Inter - island" and "Ocean" lines on the other. The opposing groups cover two quite different types of trade and of boats.

A systematic record of the provenance and the destination of the boats which docked at Sampit in 1982 was carried out at the different shipping companies and is recapitulated in Table No. 5.

More than 87% of the boats are small vessels used in trade along the Kalimantan coast or to make runs to the nearby islands. These boats are managed by the first two types of shipping agents. Cargo ships and other iron vessels only make up 13% of port traffic.

6 - Average size of loads bound for Sampit – 1982.

| Load size | Pelayaran Rakyat | | Pelayaran Lokal | | Recapitulation domestic level P. Rakyat + P. Lokal | |
|-----------|------------------|-------|-----------------|-------|---|-------|
| | No | % | No | % | No | % |
| < 10 t | 88 | 21.10 | 12 | 7.59 | 100 | 17.39 |
| 10 – 49 t | 137 | 32.85 | 52 | 32.91 | 189 | 32.87 |
| 50 – 99 t | 80 | 19.19 | 57 | 36.08 | 137 | 23.83 |
| ≥ 100 t | 112 | 26.86 | 37 | 23.42 | 149 | 25.91 |
| Total | 417 | 100 | 158 | 100 | 575 | 100 |

Size of rice loads bound for Sampit – 1982

| Load size | Pelayaran Rakyat | | Pelayaran Lokal | | Recapitulation P. Rakyat + P. Lokal | |
|-----------|------------------|-------|-----------------|-------|--|-------|
| | No | % | No | % | No | % |
| < 10 t | 5 | 5.10 | 3 | 4.41 | 8 | 4.82 |
| 10 – 29 t | 51 | 52.04 | 33 | 48.53 | 84 | 50.60 |
| 30 – 49 t | 21 | 21.43 | 15 | 22.06 | 36 | 21.69 |
| ≥ 50 t | 21 | 21.43 | 17 | 25 | 38 | 22.89 |
| Total | 98 | 100 | 68 | 100 | 166 | 100 |

Source : surveys carried out in the shipping companies.

The boats arrive from 24 different ports, of which three are foreign; almost all ships arriving from foreign countries stop over in an Indonesian port before they reach Sampit. Of the 21 Indonesian ports listed in the survey, 12 are on Kalimantan and 6 on Java.

Surabaya is the primary port which sends its boats on to Sampit (36,68%). Next is Banjarmasin (24.50%) and third (13.06%) is Kuala Pembuang, at the mouth of the Seruyan. Surabaya, along with the Javanese ports and the one in Banjarmasin, supply Sampit whereas Kuala Pembuang and the other small ports on Kalimantan (25 to 30% of the total number of boats) participate in the redistribution. The Seruyan, the Kumai, and the Katingan have no real ports, and the export goods collected along these valleys are gathered in Sampit and then exported.

The sizes of the loads bound for Sampit are given in Table No. 6. Almost 50% weigh less than 50 tons. Included in this category are the loads of rice, which make up 29% of the total number of expeditions (international trade excluded) and which correspond in the large majority of cases to shipments of less than 30 tons.

With respect to domestic trade, it is important to note that more than half of the boats return empty. We shall see that this imbalance is not due to a negative trade balance, but to a dichotomy between a supply system, on the domestic level, using small boats of a few hundred tons and foreign exports handled by firms which collect the cash crops for several weeks, even months, in order to freight a cargo ship (Table 7).

3.2.2. Freight.

Tables Nos. 9 and 10 recapitulate the freight capacities and the number of boats registered at Sampit which handle Nusantaraien trade. Where wooden boats managed by the popular / local companies are concerned, freight capacity is given in cubic meters instead of in barrels. More than 70% of the vessels have a

7. a. Foreign Ports of Call – 1982
(Pelayaran Samudra + Pelayaran Nusantara).

| Destination | No. of boats |
|--------------|--------------|
| Sarawak | 16 |
| Singapore | 19 |
| Hong Kong | 5 |
| J a p a n | 5 |
| Thailand | 1 |
| Europe | 2 |
| Total | 48 |

Source : surveys carried out in the shipping companies.

b. Returns hold empty : 1982.

| Destination | P. Rakyat No. of empty returns | P. Lokal No. of empty returns | Total returns hold empty |
|--|--------------------------------|-------------------------------|--------------------------|
| Samuda | 12 | 17 | 29 |
| Pegatan | 7 | 16 | 23 |
| K. Kapuas | 7 | | 7 |
| K. Pembuang | 83 | 1 | 84 |
| Banjarmasin | 112 | 30 | 142 |
| Balikpapan | 2 | | 2 |
| Surabaya | 1 | 2 | 3 |
| Various Madurese ports | 32 | | 32 |
| Total | 256 | 66 | 322 |
| % out of 418 returns : 61.24% | | % out of 198 returns 33% | |
| general percentage out of 616 returns : 52.27% | | | |

Source : surveys carried out in the shipping companies.

gross freight capacity of less than 400 m³, which is roughly equivalent to boats of of 250 to 300 tons.

The ratio of boats to shipowners is quite small; 36 persons own but one boat each. A few wealthy Chinese merchants who have their shops on the port own two or three boats, and only the logging companies have more than five ships (Table No. 8).

8- No. of Boats per Shipowner
(Pelayaran Rakyat / Pelayaran Lokal)

| No. of boats owned | 1 | 2 | 3 | 4 | 5 + |
|--------------------|----|---|---|---|-----|
| No. of shipowners | 36 | 5 | 4 | 1 | 2 |

The distribution of the number of boats and the freight capacities is the most significant if analysed in terms of the proprietors' ethnic origins (Table No. 10). More than 50% of the gross freight capacity is in the hands of the Chinese merchants. Next, though far behind the Chinese, come the Orang Sampit, or para-Malays : Dayaks who have been culturally assimilated to the Malays since the last century. This group is followed closely by the Dayaks themselves. (We omit the boats belonging to the logging companies as they are not very significant).

The other ethnic groups are represented only in small numbers, which does not mean they are unimportant; the Buginese are most probably registered at Ujung Pandang, the Madurese in Madura, and the Banjarese in Banjarmasin.

In addition, it must be stressed that the Orang Sampit own mostly small coasting vessels (Pelayaran Rakyat), while the naturalized Chinese own larger boats which carry out inter - island trade. However, it will be noted that, surprisingly enough, the Dayaks are more highly represented in inter - island trade than in coasting trade (9.94% of freight capacity as opposed to 1.69%). This is pro-

9 - Distribution of boats registered at Sampit in function of freight capacity 1982.

| M ³ | No. of boats | |
|----------------|------------------|-----------------|
| | Pelayaran Rakyat | Pelayaran Lokal |
| < 100 | 12 | 5 |
| 100 - 199 | 4 | 4 |
| 200 - 299 | 7 | 7 |
| 300 - 399 | 7 | 7 |
| 400 - 499 | 8 | 8 |
| 500 - 599 | 0 | 0 |
| 600 - 699 | 0 | 3 |
| ≥ 700 | 0 | 3 |
| Total | 38 | 37 |

Source : surveys carried out in the shipping companies.

10 - Distribution of freight capacities and boats registered at Sampit by shipowners' ethnic origin
(Domestic trade – 1982).

| Ethnic origin | Pelayaran Rakyat | | | Pelayaran Lokal | | | Recapitulation domestic trade P. Rakyat + P. Lokal | | |
|---|------------------|---------------|-------|-----------------|---------------|-------|---|---------------|-------|
| | No. of boats | Gross tonnage | | No. of boats | Gross tonnage | | No. of boats | Gross tonnage | |
| | | m3 | % | | m3 | % | | m3 | % |
| Orang Sampit | 11 | 2707.38 | 29.05 | 1 | 147.52 | 1.07 | 12 | 2854.9 | 12.36 |
| Dayak | 2 | 157.39 | 1.69 | 4 | 2139.92 | 15.53 | 6 | 2297.31 | 9.94 |
| Banjarese | 1 | 60.25 | 0.65 | 3 | 671.8 | 4.87 | 4 | 732.05 | 3.17 |
| Madurese | 3 | 422.95 | 4.54 | | | | 3 | 422.95 | 1.83 |
| Buginese | | | | 1 | 405.97 | 2.95 | 1 | 405.97 | 1.76 |
| Naturalized Chinese | 13 | 4614.83 | 49.52 | 22 | 7529.31 | 54.63 | 35 | 12,144.14 | 52.57 |
| Forestry companies (all nationalities) | 8 | 1355.7 | 14.55 | 5 | 977.47 | 7.09 | 13 | 2333.17 | 10.1 |
| Other | | | | 1 | 1910.31 | 13.86 | 1 | 1910.31 | 8.27 |
| T o t a l | 38 | 9318.5 | 100 | 37 | 13782.3 | 100 | 75 | 23,100.8 | 100 |

Source : surveys conducted in the shipping companies.

11. a. Distribution of boats according to nationality of
colors flown (Pelayaran Samudra) Sampit 1982.

| Flag | No. of boats |
|------------|--------------|
| Indonesian | 27 |
| Greek | 2 |
| Panamanian | 2 |
| Japanese | 1 |
| Malaysian | 12 |
| Taiwanese | 2 |
| T h a i | 2 |
| Total | 48 |

Source : surveys conducted in the shipping companies.

b. Distribution of boats according to tonnage
(Pelayaran Samudra) Sampit 1982

| t | No. of boats |
|-----------------|--------------|
| < 100 | 13 |
| 1000 - 4999 | 2 |
| 5000 - 9999 | 6 |
| 10,000 - 14,999 | 0 |
| ≧ 15,000 | 2 |
| Total | 23 (1) |

Source : surveys conducted in the shipping companies.

(1) 23 boats only in the sample (PELNI not included).

12 - Sampit Port Traffic – 1982
Recapitulation by type of trade.

| Shipping Companies | Imports | | Exports | |
|------------------------------------|---------|------------|---------|------------|
| | t | % of total | t | % of total |
| Pelayaran Rakyat | 40,850 | 57.74 | 14,944 | 17.38 |
| Pelayaran Lokal | 14,910 | 21.08 | 13,800 | 16.05 |
| Pelayaran Nusan- tara (PELNI) | 14,682 | 20.75 | 22,361 | 26.01 |
| Pelayaran Samudra | 301 | 0.43 | 34,879 | 40.56 |
| Total | 70,743 | 100 | 85,984 | 100 |

Source : surveys conducted in the shipping companies.

bably due to the fact that they are concerned with the commercialization of their agricultural products for which there is no market on Kalimantan.

Needless to say, the shipping companies which handle foreign trade only have an agency, or perhaps simply a representative, in Sampit. The nationality of the shipowner and that of the flag he flies do not carry the same weight as in domestic trade. In 1982, 48 boats docked at Sampit; their distribution with respect to the colors they sailed under is given in the following table (tabel No. 11).

3.3. Port traffic.

Sampit's total port traffic for 1982 comes to slightly more than 156,000 tons. Of this, 70,000 t were imports and nearly 86,000 t were exports. There is therefore a relative balance (Table No. 12).¹

The distribution between small and large - scale trade is inverted for imports and exports. The supplying of Sampit is the domain of small - scale commerce; it is carried out on a national level and is handled by small shipowners. Supply alone represents more than 50% of the entries. On the other hand, large - scale international commerce - practically non - existent in imports - represents more than 40% of the exports.

1 The figures used in this report come from personal enquiries made either in the shipping companies or of various agents who participate in trade. These figures do not always correspond to (and even sometimes diverge totally from) the official figures listed in the statistics. Experience has proved that the latter were based on data which is none too reliable; errors in carry - over are numerous and additions not always exact. Furthermore, it is impossible to accept that tons added to cubic meters yield T/m³. We therefore prefer to consider that on the whole, 1 m³ of wood = 0.75 t.

13 - Sampit Port Traffic - 1982. Recapitulation by ports of origin and ports of destination.

| Origin | Import | | Destination | Exports | |
|------------------|---------------|------------|----------------|---------------|------------|
| | t | % of total | | t | % of total |
| Kuala Pembuang | 14,856 | 21 | Pegatan | 168 | 0.20 |
| Surabaya | 25,329 | 35.80 | Banjarmasin | 465 | 0.54 |
| Banjarmasin | 25,369 | 35.86 | Kuala Pembuang | 19 | 0.02 |
| Pegatan | 2,725 | 3.85 | Batu licin | 15 | 0.02 |
| Kuala jelai | 12 | 0.02 | Pangkalanbun | 909 | 1.06 |
| K u m a i | 86 | 0.12 | P. Pisau | 372 | 0.43 |
| Pangkalanbun | 36 | 0.05 | J u a r a | 58 | 0.07 |
| Kereng Bengkirai | 11 | 0.02 | T u b a n | 10 | 0.01 |
| Pulang Pisau | 166 | 0.23 | Cirebon | 221 | 0.26 |
| Mandomai | 15 | 0.02 | Semarang | 993 | 1.15 |
| Kuala Kapuas | 104 | 0.15 | Surabaya | 27,461 | 31.94 |
| Balikpapan | 160 | 0.23 | Ujung Pandang | 303 | 0.35 |
| Semarang | 1,039 | 1.47 | Balikpapan | 149 | 0.17 |
| Cilacap | 310 | 0.44 | Sarawak | 13,025 | 15.15 |
| Madura | 275 | 0.39 | Singapore | 9,690 | 11.27 |
| B a l i | 250 | 0.35 | Hong Kong | 7,182 | 8.35 |
| | | | J a p a n | 21,538 | 25.05 |
| | | | Europe | 3,406 | 3.96 |
| Total | 70,743 | 100 | | 85,984 | 100 |

Source : surveys conducted in the shipping companies.

3.3.1. The ports of origin (Table No. 13)

The main ports which supply Sampit are Banjarmasin (35,86 %), Surabaya (35,80%) and Kuala Pembuang (21 %). Kuala Pembuang, located at the mouth of the Seruyan, is the collection center for the export products of the valley which are sent to Sampit for export. This is a coasting trade which is handled by merchants from Sampit. Surabaya and Banjarmasin have functions which are altogether different from that of Kuala Pembuang. These two ports supply Sampit and the Mentaya, and as Surabaya is far ahead of Banjarmasin in this respect, Sampit therefore gets its supplies directly from Java !. The other ports play only a small, occasional part in Sampit's supply chain. It will be noted that the farthest direct contacts are with Semarang on Java and Balikpapan on Kalimantan.

3.3.2. Destinations.

On the Indonesian level, Surabaya is practically the destination, receiving 31,94% of the tonnage. Following is a multitude of small ports, which, aside from Semarang (1,15 %) do not even receive one percent of the traffic.

Foreign ports receive 63,78% of the total export tonnage.¹ The greater part goes to Japanese ports (25,05%), followed by the ports at Sibu and Kuching in East Malaysia (15,15%) then by Singapore and Hong Kong (11,27 % and 8,35%). All European ports combined make up only 3,96% (Table NO. 14)

3.3.3. The merchandise (Tables Nos. 15 and 16).

3.3.3.1. Imports.

General merchandise heads the list of entries with 31.87% of the total. This is various consumer goods : cloth, radios, small appliances, foodstuffs, and

¹ Considering that 1 m3 of wood = approximately 0.7 to 0.75 t.

14 - Foreign Exports - Sampit 1982.

| Destination | t | % of exports |
|-------------|--------|--------------|
| Sarawak | 13,539 | 25.30 |
| Singapore | 9,856 | 18.41 |
| Hong Kong | 4,203 | 7.85 |
| Japan | 22,384 | 41.82 |
| Europe | 3,541 | 6.62 |
| Total | 53,523 | 100 |

Source : surveys conducted in the shipping companies

NOTE : Only foreign export tonnage – 63,78% of port exportation has been taken into account.

1 m3 of wood = 0.75 t on the average.

15 - Composition of port traffic (by port of origin and port of destination) - 1982

Imports

| Origin | Rice | | Sugar | | Flour | | Cattle | | General largo | | Cement | | Stone | | Fuel Oil | | Rattan | | Rubber | | Jelutong | | Bark (gemur) | | Logs | | Sawn Timber | | | |
|--------------|-------|-------|-------|-------|-------|-----|--------|-----|---------------|-------|--------|-------|-------|-------|----------|-------|--------|------|--------|-------|----------|-------|--------------|-----|--------|-------|-------------|------|-------|-------|
| | t | % | t | % | t | % | t | % | t | % | t | % | t | % | t | % | t | % | t | % | t | % | t | % | m3 | % | m3 | 5 | | |
| Pegatan | | | 6 | 0.19 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Banjarmasin | 167 | 2.59 | | | | | | | 14,778 | 65.55 | 22 | 1.55 | 607 | 54.78 | 9,785 | 98.50 | | | 79 | 33.33 | | | | | | | 1,565 | 6.61 | 1,714 | 87.31 |
| K. Perbuang | | | | | | | | | 7 | 0.03 | 2 | 0.14 | | | | | 15 | 3.90 | 108 | 45.57 | 1 | 3.04 | 2 | 100 | 22,087 | 93.35 | | | | |
| K. Jelal | | | | | | | | | | | | | | | | | | | | | 12 | 36.36 | | | | | | | | |
| Kumai | | | | | | | | | 42 | 0.19 | | | | | 40 | 0.40 | | | 4 | 1.70 | | | | | | | | | | |
| Pangkalanbun | | | | | | | | | | | | | | | | | | | 16 | 6.75 | 20 | 60.60 | | | | | | | | |
| K. Bengkulu | | | | | | | | | | | | | | | | | 6 | 1.55 | 5 | 2.10 | | | | | | | | | | |
| P. Pisau | | | | | | | | | | | | | | | | | | | | | | | | | | | | 249 | 12.69 | |
| Mandomal | | | | | | | | | | | | | | | | | 15 | 3.90 | | | | | | | | | | | | |
| K. Kapuas | 67 | 1.04 | | | | | | | | | 12 | 0.84 | | | | | | | 25 | 10.55 | | | | | | | | | | |
| Balikpapan | | | | | | | | | 160 | 0.71 | | | | | | | | | | | | | | | | | | | | |
| Surabaya | 5,355 | 83.16 | 3,213 | 99.81 | 598 | 100 | | | 6,729 | 29.85 | 9,394 | 97.48 | 36 | 27.62 | 4 | 0.04 | | | | | | | | | | | | | | |
| Semarang | 600 | 9.32 | | | | | | | 439 | 1.95 | | | | | | | | | | | | | | | | | | | | |
| Cilecep | | | | | | | | | 310 | 1.37 | | | | | | | | | | | | | | | | | | | | |
| Madura | | | | | | | 1,720 | 100 | 78 | 0.35 | | | 195 | 17.60 | | | | | | | | | | | | | | | | |
| Bali | 250 | 3.88 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 6,439 | 100 | 3,219 | 100 | 598 | 100 | 1,720 | 100 | 22,543 | 100 | 9,430 | 100 | 1,108 | 100 | 9,935 | 100 | 385 | 100 | 237 | 100 | 33 | 100 | 2 | 100 | 23,662 | 100 | 1,963 | 100 | | |

Source : Surveys conducted in the shipping companies.

E x p o r t s

| Destination | Sawn Timber | | L o g s | | Bark (gemur) | | Tengkawang | | Jelutung | | Rubber | | Rattan | | General largo | | R i c e | |
|--------------|------------------|------------|---------------|------------|---------------|------------|------------|------------|------------|------------|--------------|------------|--------------|------------|---------------|------------|------------|------------|
| | m3 | % | m3 | % | t | % | t | % | t | % | t | % | t | % | t | % | t | % |
| Pegatan | | | | | | | | | | | | | | | 108 | 54,08 | 62 | 12,60 |
| Banjarmasin | | | | | 241 | 14,86 | 16 | 3,48 | | | | | 170 | 2,55 | 38 | 19,40 | | |
| K. Pembuang | | | | | | | | | | | | | | | 19 | 9,69 | | |
| Batu Licin | | | | | | | | | | | | | | | 15 | 7,65 | | |
| Pangkalanbun | 1,239,63 | 1,70 | | | | | | | | | | | | | 18 | 9,18 | | |
| P. Pisau | 515 | 0,71 | | | | | | | | | | | | | | | | |
| Juara | 80 | 0,11 | | | | | | | | | | | | | | | | |
| Tuban | 14 | 0,02 | | | | | | | | | | | | | | | | |
| Cirebon | 306 | 0,42 | | | | | | | | | | | | | | | | |
| Semarang | 781 | 1,07 | | | | | | | | | | | | | | | 430 | 87,40 |
| Surabaya | 36,794 | 50,41 | | | 914 | 56,35 | | | | | | | | | | | | |
| U. Pandang | 420 | 0,57 | | | | | | | | | | | | | | | | |
| Balkpapan | 207 | 0,28 | | | | | | | | | | | | | | | | |
| Sarawak | 18,052,23 | 24,73 | | | | | | | | | | | | | | | | |
| Singapore | 5,820,01 | 7,97 | | | 467 | 28,79 | 444 | 96,52 | 539 | 100 | 3,071 | 100 | 970 | 14,54 | | | | |
| Hong Kong | 2,290,42 | 3,14 | | | | | | | | | | | 6,530 | 82,91 | | | | |
| Japan | 1,747,98 | 2,40 | 28,097 | 100 | | | | | | | | | | | | | | |
| Europe | 4,721,31 | 6,47 | | | | | | | | | | | | | | | | |
| Total | 72,988,58 | 100 | 28,097 | 100 | 1,622 | 100 | 460 | 100 | 539 | 100 | 3,071 | 100 | 6,670 | 100 | 196 | 100 | 492 | 100 |

Source : Surveys conducted in the shipping companies.

so on. These products come from Java, though via Banjarmasin (65.55%), for a great many owners of the small coasting vessels hesitate to send their boats across the Java Sea.

Wood comes second in volume with 23.77%. 92% of this is raw timber which for the most part comes from Kuala Pembuang. The wood is treated at Sampit and then exported; sawmills and plywood factories are numerous along the Mentaya estuary.

Banjarmasin also provides almost all (98%) of the fuel oils which make up the third largest volume of imports (14.04%). In fact, the Indonesian national company, Pertamina, has no depot in Sampit. The retailers obtain supplies in Banjarmasin and send barrels. The one and only gasoline pump in Central Kalimantan is in Palangkaraya, the provincial capital.

Cement ranks fourth, with 13.33%; construction is a growing activity in Sampit. Most of the cement arrives from Surabaya, as the cement factories are concentrated on Java. Stones are extremely rare in this world of alterits : more than 50% are imported from Banjarmasin, with Java as the second largest provider.

Rice only comes in 5 th position (9.10% of the total import volume). It provides supplies not only for the town, but also for the Dayak and Banjar populations who earn their living from cash crops (rattan, rubber trees coconut palms). Practically all of this rice comes from Java (Surabaya, 83.16%; Semarang, 9.32%). Bali provides - though far behind the other two - the third largest amount (3.88%). It will be noted that Banjarmasin only provides a very small volume of rice (2.59%) despite the large empoldered areas where rice is cultivated intensively.

The other imported goods only make up a very small part of the total volume. Sugar is the one exception, with 3219 t and 4.55% of the entries. This symbolizes a rise in the standard of living of these populations, the wealthier families consuming large quantities of sugar. Rattan, rubber, and jelutung supply the

16 - Composition of port traffic by commodity, Sampit 1982.

| Type of Goods | Imports | | Exports | |
|--------------------|---------------|------------|---------------|------------|
| | t | % | t | % |
| Rice | 6439 | 9.10 | 492 | 0.57 |
| Sugar | 3219 | 4.55 | | |
| Flour | 598 | 0.85 | | |
| Gen. Merchandise | 22,543 | 31.87 | 196 | 0.23 |
| Cement | 9430 | 13.33 | | |
| Stone | 1108 | 1.57 | | |
| Petroleum products | 9935 | 14.04 | | |
| Rattan | 385 | 0.54 | 6670 | 7.76 |
| Rubber | 237 | 0.33 | 3071 | 3.57 |
| Jelutung | 33 | 0.05 | 539 | 0.63 |
| Bark (gemur) | 2 | 0 | 1622 | 1.89 |
| Tengkawang | | | 460 | 0.53 |
| Wood | 16.814 | 23.77 | 72,934 | 84.82 |
| Total | 70,743 | 100 | 85,984 | 100 |

Source : surveys conducted in the shipping companies.

treatment companies that line the estuary; the products come from Pegatan and Kuala Pembuang, for the Seruyan and the Katingan are closed - in valleys whose products are collected by Sampit.

3.3.3.2. Exports.

The greatest part of the port traffic is the exportation of wood, which represents 84,82% of the total. Of this, sawn wood is predominant with 72.20%. There are a lot of sawmills along the river. Since 1981, societies that do not own a plywood factory in Indonesia have been forbidden to export raw wood in order to favorize the tendancy towards a first processing before exportation. The majority of sawn products are shipped to Surabaya and feed the Javanese market, while 44.71% is exported to foreign countries, notably East Malaysia. Japan receives 29.52% of the total volume in wood exported, though mainly in its raw form.

The cash crops (rattan, rubber) or the products gathered in the forest (jelutung, bark) make up 7.78% and 2.53% of the export tonnage. Rubber is exported in smoked sheet and "blanket" forms; there are two remilling factories in Sampit. Rattan is exported either raw in "galungs" ¹ or in treated strands. There has been a treatment plant in Sampit since 1982. Jelutung is exported in "bantal" ² after first undergoing a treatment which purifies it. The gemur ³ bark is used to make insect - repelling coils. The primary destination is Singapore or Hong Kong, for the rattan and Surabaya for the different barks.

Finally, a few tons of rice and general merchandise shipped in from Java are re - exported up the enclaved valleys of the Seruyan and the Katingan.

¹ For more information, see "East Mentaya Priority Area", Vol. 2, "Human Environment". Indonesia - ORSTOM Transmigration Project PTA 44. Jakarta Jakarta 1982.

² Literal translation : "pillow"

³ gemur :

3.4. Samuda, a satellite port.

Samuda lies 35 km down the estuary from Sampit. It is a satellite of Sampit with respect to the collection of cash crops (rattan, rubber) but is also a port which has direct contacts with the other islands of the archipelago, and even with Singapore.

Boat traffic here (Table No. 17) is scarcely different from that registered in Sampit (Table No. 13) and the large trade flows are the same. In 1982, a total of 354 boats entered the Samuda port and 349 departed, which represents about half the activity of the Sampit harbour.

Port traffic is around 18,000 of which almost 8,000 t are imports (Table No. 18) or 11% of the total Sampit traffic.

Most of the import tonnage is comprised of foodstuffs (rice and sugar). A large part of the population works in the fishing industries, small manufacture, trade, or the plantations, and cultivates little or no rice.

Sawn wood makes up most of the export tonnage though it is closely followed by coconut oil and coprah. Coconut palms are very numerous along this section of the estuary : the coconut oil is processed locally but canned in Surabaya.

17 - Boat traffic in and out of Samuda – 1982.

| Provenance | No. of boats | % | Destination | No. of boats | % |
|------------------|--------------|------------|------------------|--------------|------------|
| Sampit | 49 | 13.84 | Sampit | 39 | 10.60 |
| K. Kapuas | 3 | 0.85 | K. Kapuas | 3 | 0.86 |
| K. Bengkirai | 7 | 1.98 | K. Bengkirai | 3 | 0.86 |
| Banjarmasin | 101 | 28.53 | Banjarmasin | 116 | 33.24 |
| Pegatan | 21 | 5.93 | Pegatan | 26 | 7.45 |
| K. Pembuang | 3 | 0.85 | K. Pembuang | 18 | 5.16 |
| Kumai | 11 | 3.12 | Kumai | 3 | 0.85 |
| K. Jelai | 1 | 0.28 | | | |
| Surabaya | 83 | 23.45 | Samarinda | 2 | 0.57 |
| Tuban | 54 | 15.25 | Surabaya | 69 | 19.77 |
| Juara | 7 | 1.98 | Tuban | 38 | 10.89 |
| Madura | 9 | 2.54 | Juara | 6 | 1.72 |
| Panarukan | 1 | 0.28 | Madura | 16 | 4.58 |
| Kalibaru (Jka) | 2 | 0.56 | Panarukan | 1 | 0.29 |
| Singapore | 2 | 0.56 | Kalibaru (Jka) | 10 | 2.87 |
| | | | Lombar | | |
| | | | (Sunda isles) | 1 | 0.29 |
| Total | 354 | 100 | Total | 349 | 100 |

Source : Kantor Perhubungan Laut. Samuda. 1982.

18 - Composition of port traffic at Samuda – 1982

| Goods | Imports | | Exports | | |
|---------------|---------|-------|---------|------|-------|
| | t | % | t | m3 | % |
| Rice | 2566.5 | 32.97 | | | |
| Sugar | 2238 | 28.76 | | | |
| Cloth | 25 | 0.32 | | | |
| Fuel Oils | 2567.5 | 33 | | | |
| Miscellaneous | 384.5 | 4.95 | 355 | | 3.39 |
| Sawn wood | | | | 7344 | 52.68 |
| Coconut oil | | | 3195 | | 30.55 |
| Coprah | | | 1400 | | 13.38 |
| Total | 7781.5 | 100 | 4950 | 7344 | 100 |

1 m3 of wood = 0.75 t

Source : Direktorat Perhubungan Laut. Kantor Wilayah V
Pelabuhan Samuda. 1982.

CHAPTER 4 : Commerce at Sampit

There are three markets operating in Sampit : one at the port, one in Baamang (also called "pasar kramat"), and one which takes place at night. The main marketplace is that of the port, which is open from 7:00 to 17:00, though most of the business takes place before 11:00. After 17:00, the night market takes over until 22:00. The Baamang market is dependant upon the port market, as it is made up of retailers who obtain supplies at the wholesalers' in the main marketplace.

4.1. The port market.

All of the various types of commerce are represented in the main market (Table No. 19), including such rare services as repair shops for boat motors, radios, or cassette decks.

The sale of cigarettes, fruit, and vegetables is the domain of small - scale retailers whose incomes and capital remain very low. These vendors have only a portable stall, and their business is a precarious one. The number of such peddlers fluctuates from month to month, or even from week to week, and the figures given should not be considered as definitive data, but only as appoximate averages. For example, when a boat arrives from Java with a load of mangoes, for the next few days the number of small - scale fruit vendors swells to ten times its normal size.

The listing "small resta.urants and refreshment stands" in fact covers two very distinct realities. A small restaurant (warung) is made up of a shack in the center of which are placed a table and a bench. As to the "refreshment stands", this is the official name for houses of ill repute.

"Pharmacies" includes a pharmacy and a few vendors selling medicines, potions, and miracle creams in the marketplace.

19 - Distribution of Stalls in the Sampit Market — 1982.

| Type of business | No. | % |
|---|------------|------------|
| Cigarettes | 34 | 6.84 |
| Small restaurants and refreshment stands | 94 | 18.92 |
| Retailers (foodstuffs) | 105 | 21.14 |
| Cloth shops | 42 | 8.45 |
| Pharmaceutical shops | 13 | 2.62 |
| Small stalls selling consumer goods | 25 | 5.04 |
| Fruit / vegetable stalls | 31 | 6.24 |
| Dressmakers / tailors | 17 | 3.42 |
| Engine dealerships | 2 | 0.40 |
| Bookstalls | 3 | 0.60 |
| Fresh fish stalls | 39 | 7.85 |
| Dried fish stalls | 11 | 2,21 |
| Butcher shops | 5 | 1 |
| Repair shops (shoes, radios) | 12 | 2.41 |
| Large - scale sales of food and general merchandise | 32 | 6.44 |
| Jewelers | 6 | 1.20 |
| General hardware stores | 6 | 1.20 |
| Photographers | 2 | 0.40 |
| Glasscutters | 1 | 0.20 |
| Clothing stores | 17 | 3.42 |
| T o t a l | 497 | 100 |

Sources : Kantor Pasar Sampit 1982; field surveys.

"Engine dealerships" represents the Japanese companies Kubota and Yanmar that specialize in deisel motors for klotoks, as well as electric generator, etc.

"Jewelers" obviously sell jewelry, but are above all concerned with gold sales. They keep up with the gold prices via the B.B.C.

A great many of the archipelago's ethnic groups are represented at Sampit. Certain trades are handled by a few particular ethnic groups, while others are less exclusive (see Table No.:20).

The Madurese sell cigarettes or fruits and vegetables, and have only a very little capital at their disposal. This is actually a temporary activity for recent immigrants who are almost beggars. In most cases the husbands are dockers, porters, or handymen, while the spouses are retail vegetable merchants. These vegetables are planted in plots at the edge of town, while the fruits come in part from the lower valley (bannanas, rambutans) and in part from Java or Madura (mangoes, mangosteens).

The butcher's trade is also in the hands of the Madurese. All the cattle come from Madura on Madurese ships. One lone "importer" rents a boat from his son - in - law (at Rp. 15,000 per animal), buys the steers at Pamekasan or in Kecamatan Sampan, and re - sells them to 6 or 7 large - scale meat dealers in Sampit - all of whom are Madurese. Some of these animals are immediately slaughtered while others are set aside to be fattened. One animal is worth about Rp. 250,000, and five or six are slaughtered every day (Table No. 21).

The Banjars are well - represented in the cloth trade and in dress - making except for the luxury ready - to - wear shops. This is in fact a recent specialization, having appeared only 10 to 15 years ago, and requires an average capital of some few hundred thousand rupiah. Such merchants are always highly dependant on the Chinese importers who advance part of the merchandise after having overcharged it and then get their money back progressively.

20 - Ethnic Distribution of Merchants in the Sampit Market - 1982.

| Ethnic Groups | Cigarette sales | | small restaurants and refreshment stands. | | Retailers (foodstuffs) | | Cloth shops | | Pharmaceutical shops | | Shops selling diverse consumer goods | | Fruit/vegetable stalls | | Fresh Fish stalls | | Dressmakers tailors | | Dried fish stalls | | Butcher shops | |
|---------------|-----------------|------------|---|------------|------------------------|------------|-------------|------------|----------------------|------------|--------------------------------------|------------|------------------------|------------|-------------------|------------|---------------------|------------|-------------------|------------|---------------|------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| O. Sampit | 6 | 17.65 | 28 | 29.80 | 38 | 36.20 | 15 | 35.71 | 3 | 23.87 | 7 | 28 | 6 | 19.35 | 32 | 82.05 | 1 | 5.88 | 4 | 36.36 | 1 | 20 |
| Dayaks | 1 | 2.94 | 1 | 1.06 | | | 1 | 2.38 | | | | | | | | | | | | | | |
| Banjarese | 5 | 14.70 | 27 | 28.72 | 11 | 10.48 | 24 | 57.15 | 5 | 38.46 | 8 | 32 | 1 | 3.22 | 2 | 5.13 | 15 | 88.24 | | | | |
| Javanese | 1 | 2.95 | 17 | 18.08 | 14 | 13.33 | 1 | 2.38 | 1 | 7.70 | 3 | 12 | 2 | 6.45 | | | | | 4 | 36.36 | | |
| Madurese | 17 | 50 | 20 | 21.28 | 31 | 29.52 | | | | | 3 | 12 | 22 | 70.98 | 3 | 7.69 | 1 | 5.88 | 3 | 27.28 | 4 | 80 |
| Arabs | | | | | | | | | 1 | 7.70 | 1 | 4 | | | | | | | | | | |
| Chinese | 4 | 11.78 | 1 | 1.06 | 10 | 9.52 | 1 | 2.38 | 3 | 23.07 | 3 | 12 | | | 2 | 5.13 | | | | | | |
| Buginese | | | | | | | | | | | | | | | | | | | | | | |
| Sumbawane | | | | | 1 | 0.95 | | | | | | | | | | | | | | | | |
| Total | 34 | 100 | 94 | 120 | 105 | 100 | 42 | 100 | 13 | 100 | 25 | 100 | 31 | 100 | 39 | 100 | 17 | 100 | 11 | 100 | 5 | 100 |

| Ethnic Groups | Repair shops (shoes/radios) | | Large - scale retailers (foodstuffs gen merch) | | Jewelers | | General hard-ware stores | | Engine dealerships | | Large clothing shops | | Book stalls | | Photogra - phers | | Glass - makers | | Respective num - bers of the diffe - rent ethnic groups | |
|---------------|-----------------------------|------------|--|------------|----------|------------|--------------------------|------------|--------------------|------------|----------------------|------------|-------------|------------|------------------|------------|----------------|------------|---|------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | Total | % of total |
| O. Sampit | 5 | 41.66 | | | | | | | | | | | | | | | | | 146 | 29.38 |
| Dayaks | | | | | | | | | | | | | | | | | | | 3 | 0.60 |
| Banjarese | 5 | 41.66 | | | | | | | | | | | | | | | | | 103 | 20.73 |
| Javanese | 1 | 8.34 | | | | | | | | | | | | | | | | | 44 | 8.85 |
| Madurese | | | | | | | | | | | | | | | | | | | 104 | 20.93 |
| Arabs | | | | | | | | | | | | | | | | | | | 2 | 0.40 |
| Chinese | | | 32 | 100 | 6 | 100 | 6 | 100 | 2 | 100 | 17 | 100 | 3 | 100 | 2 | 100 | 1 | 100 | 91 | 18.31 |
| Buginese | 1 | 8.34 | | | | | | | | | | | | | | | | | 3 | 0.60 |
| Sumbawane | | | | | | | | | | | | | | | | | | | 1 | 0.20 |
| Total | 12 | 100 | 32 | 100 | 6 | 100 | 6 | 100 | 2 | 100 | 17 | 100 | 3 | 100 | 2 | 100 | 1 | 100 | 497 | 100 |

Source : - Kantor Pasar Sampit - 1982.

- Field surveys

21 - Butcher's Trade - Sampit – 1982

| Month | Number of animals imported | | Number of animals slaughtered | |
|-----------|----------------------------|---------------|-------------------------------|---------------|
| | cattle | goats / sheep | cattle | goats / sheep |
| January | | | 136 | 26 |
| February | 141 | 68 | 139 | 34 |
| March | 201 | 41 | 134 | 27 |
| April | 263 | 67 | 135 | 29 |
| May | 227 | 43 | 146 | 33 |
| June | 164 | 21 | 166 | 23 |
| July | 99 | 18 | 236 | 45 |
| August | 87 | 23 | 122 | 26 |
| September | 86 | 87 | 167 | 29 |
| October | 111 | 44 | 130 | 33 |
| November | 119 | 67 | 156 | 32 |
| December | 222 | 34 | 172 | 45 |
| Total | 1720 | 513 | 1839 | 382 |

Source : Dinas Peternakan – Sampit.

22 - Fish Market at Sampit

| Salt - water fish | | | Fresh - water fish | | |
|--------------------------|---------------|------------|--------------------|--------------|------------|
| Origin | Tons | % | Origin | Tons | % |
| Sampit Bay | 59,05 | 36.60 | Mid Mentaya Valley | 1,97 | 16.54 |
| Sebangau Estuary | 6,51 | 4.04 | Seranau | 1,43 | 12 |
| Pegatan/P.Buaya/K.Waring | 15,17 | 9.41 | Tualan | 2,62 | 22 |
| Bj.Masin/Kota Baru | 6,4 | 3.97 | Mentaya Estuary | 0,95 | 7.98 |
| K.Pembuang/Kemarayan | 56,54 | 35.06 | Katingan | 1,38 | 11.59 |
| Tg.Silat/Tg.Puting | 14,66 | 9.09 | Seruyan | 2,88 | 24.18 |
| Madura | 2,95 | 1.83 | Sebangau | 0,68 | 5.71 |
| Total | 161,28 | 100 | Total | 11,91 | 100 |

Source : Field Surveys — April— May— June 1983.

The Orang Sampit are present in nearly every type of commerce, but have a predominant hold on the services and especially on the fresh fish market. The latter is supplied through two distinct commercialization networks : that of salt - water fish and that of fresh - water fish. Every year around 700 tons of fish are sold, with salt - water fish representing 90% of the total tonnage.

The salt - water fish are stocked by 6 Sampit wholesalers who are supplied by a dozen or so "klotok" that scour the estuary and the southern Kalimantan coast. Retail trade is carried out by 39 retailers in the port market as well as by about 40 Madurese women who hawk the fish in the residential areas. The wholesalers buy up and ice roughly 5 to 6 tons of fish per week, then offer a one - to - two day credit to the retailers at the market. The latter hold a near - monopoly (*numerus clausus*) and buy quantities ranging from 40 to 100 kg. They also supply the Madurese fishmongers, each of whom sell 4 to 5 kg of fish per day.

The yearly sale of salt - water fish at Sampit represents 600 to 650 tons. This fish comes from a vast gulf which stretches from Cape Tg. Puting in the west to Cape Tg. Malacca in the east; more precisely, the fish comes for the most part from Sampit Bay (37%) and from the mouth of the Seruyan (Tg. Siamok to Tg. Puting : 35 %). The waters are not very deep, only 10 m at 20 km out to sea. The third zone which supplies the fish is the mouth of Katingan (Pegatan and Pulau Buaya), with slightly more than 9% of the total catch. Only occasionally does the fish come from South Kalimantan (Banjarmasin or Kota Baru) but this fact deserves to be pointed out because it attests to the extremely attractive nature of the Sampit market, whose stocks are still not sufficiently abundant.

Catches (Table No. 23) are made up mostly of pelagiens, both large (tenggiri, tongkol, various Thunnidae) and small (layang, or chinchard ; anchovies; mackerel; etc). On the other hand, deep - water fish such as sea - bream and thread - fin (Kakap and Senangin) are under - represented.

With respect to freshwater fish, the large fishing zones are found along the middle Mentaya between Hanjalipan and Kota Batu (especially the villages of

Tangar, Baampah, and Penda Durian); the Tualan from Tehang to Kabuau; the section of the Seruyan between the estuary and the Danau Sembuluh (Pokon Kellua, Tanjung Rangas, Muara Dua); and the village of Muara Pulau on the Katingan. Each of these zones corresponds to sedimentary plain scattered with oxbows and cut - off meanders. The rivers flow between two levees, but overflows are frequent. On the other hand, in the places where the rivers cut through bedrock (north of Kuala Kuayan, for example), the catch is very limited.

Sampit's Chinese community totaled 1058 persons ¹ in 1980. Ninety - one shops are run by Chinese - most of whom are Indonesians. only 9 merchants were still considered as "foreigners" in 1980.

The Chinese hold 18.31% of the shops on the port. However, they pull much more weight than these figures would lead one to believe, for they own all the businesses that necessitate a large amount of capital : all the wholesale food stores, all the general hardware shops, all the ready - to - wear clothing shops, and naturally, all the jewelry stores thus all the gold trade.

To this can be added the ownership of commercial firms that handle the exportation of cash crops, as well as a large number of boats that carry out inter - island trade. These topics have already been treated in detail in Chapter 3.

4.2. The Night Market.

The night market opens by 17:00 or 18:00 and continues business where the main market leaves off. The composition of this second market is much less structured and varies from one week to the next. Therefore, the figures given in the next table should be considered as valid only for December 1982.

The small temporary restaurants set up with a few benches and a canvas shelter are particularly numerous, as are the "kaki lima" (ambulant street stalls set up on wheels) where one can buy cakes or shish - ka - bobs.

Only two shops built of solid materials stay open in the evening. More

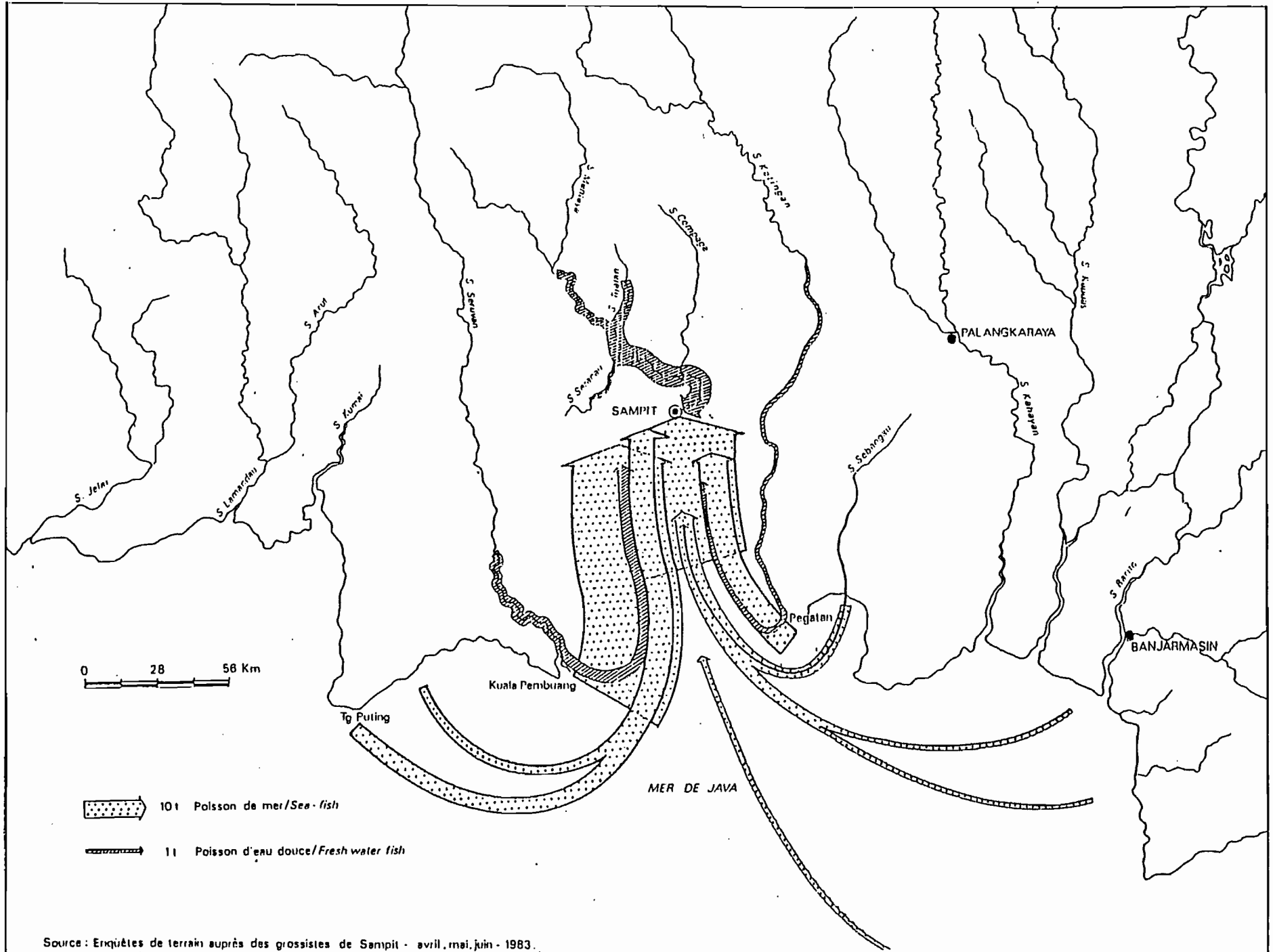
¹ Kecamatan Baamang and Mentawa Baru Ketapang.

23 - Composition of the fish Market Sampit - May 1983.

| Species | Kg. | % | Average wholesale price in Rp/Kg. | Average retail price in Rp/Kg. |
|------------------|----------------|--------------|-----------------------------------|--------------------------------|
| Otek | 2226 | 4.10 | 382 | 656 |
| 1 Kakap | 69 | 0.13 | 1200 | 1333 |
| 2 Tenggiri | 12805,30 | 23.59 | 783 | 1388 |
| Tenggiri papan | 1225 | 2,26 | 762 | 1450 |
| 3 Senangin | 1662,80 | 3.06 | 985 | 1500 |
| 4 Tongkol | 8617 | 15.88 | 776 | 1053 |
| 5 Telang | 50 | 0.09 | 500 | 750 |
| 6 Belanak | 1125 | 2.07 | 466 | 750 |
| Puput | 1594,50 | 2.94 | 410 | 647 |
| Layur | 1202 | 2.21 | 409 | 641 |
| Hiyu | 690 | 1,27 | 400 | 630 |
| 7 Pari | 153,50 | 0.28 | 333 | 583 |
| 8 Bawal Putih | 110 | 0.2 | 750 | 1000 |
| 9 Bawal Hitam | 963 | 1.77 | 541 | 775 |
| 10 Selar/Kembang | 3304,50 | 6.09 | 592 | 861 |
| Parang | 85 | 0.16 | 400 | 650 |
| 11 Udang Bajang | 6250,50 | 11.52 | 509 | 744 |
| 12 Layang | 5640 | 10.39 | 427 | 675 |
| Bau Bau | 3333,50 | 6.14 | 391 | 668 |
| 13 Teri | 2540 | 4.68 | 219 | 500 |
| Selayar | 188,50 | 0.35 | 300 | 550 |
| Bulu2 | 4 | 0 | 200 | 450 |
| 3 Kurau | 39,50 | 0.07 | 750 | 1000 |
| Sambola | 400 | 0.75 | 400 | 750 |
| Total | 54278,6 | 100 % | | |

- | | |
|--|---|
| 1. Sea - bream - <i>Lates calcarifer</i> | 8. Silver Bream - <i>Pampus argenteus</i> |
| 2. <i>Scomberomorus</i> | 9. Black Bream - <i>Formio niger</i> |
| 3. Thread - fin - <i>Polynemus spp</i> | 10. Mackrel - <i>Rastrelliger spp</i> |
| 4. Coastal Bonito - <i>Euthynnus spp</i> | 11. Giant Shrimp |
| 5. <i>Chorinemus spp</i> | 12. Chinchard |
| 6. Mullet - <i>Mugil spp</i> | 13. Anchovy - <i>Stolephorus spp</i> |
| 7. Ray - <i>Trigonidae</i> | |

Source : Surveys made at the wholesale houses



Source: Enquêtes de terrain auprès des grossistes de Sampit - avril, mai, juin - 1983.

often than not clothing peddlers set up shop on the doorstep and expose their wares on saw - horses by the light of a pressurized lamp.

The madurese are ever - present on the port, but the morning's vegetables are replaced by fruits. About twice a month, when the fruits are in season, a "Madurese agent" makes the round trip from Madura to Sampit on different boats. He obtains supplies of mangoes, peppers, and whatnot; pays on very short - term credit; and distributes part of his cargo to his compatriots who then sell it on the port.

24 – The Night Market

| Shops | No. | Shops | No. |
|--------------|-----|--|-----|
| Big stores | 2 | Photo / photocopy | 2 |
| Clothing | 20 | Restaurants | 8 |
| Shoes | 2 | Small stalls (kios) | 23 |
| Foodstuffs | 7 | Kaki 5 (1) : Cakes, shish - ka - bobs. | 23 |
| Medicines | 4 | Small temporary restaurants | 50 |
| Hardware | 3 | Fruits | 14 |
| Radio repair | 1 | | |

Source : field surveys - Dec. 1982.

(1) Kaki 5 : literally, "five feet", Popular name for the peddlers selling shish - ka - bobs or cakes who push their wheeled stalls from place to place.

CHAPTER 5 : A Town With Little Controlling Power in Regional Affairs

Despite the absence of a large urban center in the two adjacent valleys, the the Seruyan and the Katingan, Sampit holds little attraction other than for the Kabupaten Kotawaringin Timur, which covers the Mentaya and its tributaries. To the east, the Kahayan, the Rungan and the Manuhing are oriented towards Banjarmasin and its satellites ¹ (Kuala Kapuas) while to the west, Sampit's influence comes up against that of Pangkalanbun and Kumai. This chapter will attempt to define Sampit's controlling power through the example of its trading houses and of the attraction held by its market and secondary schools system.

5.1. Trading Houses and the Collection of Cash Crops (Tables No. 25 and 26)

Two large trading houses, P.T. ² Berkat Sampit (Makmur Baru) and C.V Tunas Kembang collect the commercial crops (rattan, rubber) and the products gathered from the forest (jelutung ³ , tengkawang ⁴ , gemur ⁵ bark). Two rubber remilling factories and one for processing the rattan are subsidiaries of these firms ⁶ .

¹ Palangkaraya, the provincial capitol, is not an important economic center. It is is a new town, built in 1957 for political reasons, that remains today a city of civil servants which is very dependant on Banjarmasin for its supplies.

² P.T. = Ltd. (limited). Public company limited by shares.
C.V. = Pvt. (private). Private company of limited liability.

³ *Dyera costulata*.

⁴ *Shorea pinange* Scheff

⁵ *Shorea seminis*

⁶ P.T. Sampit (remilling) is a subsidiary of Tunas Kembang while P.T. Hidup Sentosa (remilling) and P.T. Nata Nasia Perama (rattan) are subsidiaries of Berkat Sampit.

25 - Purchases made by the Samplt trading houses in 1982.

| Month | C.V. Tunas Kembang | | | | | P.T. Berkat Samplt | | | | | Recapitulation | | | | |
|-------|--------------------|-------------|----------|---------------|--------------|--------------------|-------------|----------|---------------|--------------|----------------|-------------|----------|---------------|--------------|
| | Slab rubber t | Jelu-tung t | Rattan t | Tengka-wang t | Gemur-bark t | Slab rubber t | Jelu-tung t | Rattan t | Tengka-wang t | Gemur-bark t | Slab-rubber t | Jelu-tung t | Rattan t | Tengka-wang t | Gemur-bark t |
| Jan. | | | 691 | | | 163 | 111 | 698 | | | 163 | 111 | 1389 | | |
| Feb. | 320 | 87 | 60 | 209 | | 177 | 76 | 748 | | | 497 | 163 | 808 | 209 | |
| Mar. | 330 | 27 | 880 | 88 | | 262 | 127 | 1012 | | | 592 | 154 | 1892 | 88 | |
| Apr. | | | 242 | | | 251 | 99 | 549 | | | 251 | 99 | 791 | | |
| May. | | 40 | | | | 290 | 61 | 534 | | | 290 | 101 | 534 | | |
| June | | | 705 | | | 374 | 54 | 575 | | | 374 | 54 | 1280 | | |
| July | 440 | 49 | 71 | | | 302 | 76 | 432 | | | 742 | 125 | 503 | | |
| Aug. | | 19 | | | 33 | 230 | 84 | 527 | | | 230 | 103 | 527 | | 3 |
| Sept. | 1100 | 11 | 625 | | 66 | 137 | 52 | 431 | | | 1237 | 63 | 1056 | | 66 |
| Oct. | | | | | | 116 | 118 | 359 | | | 116 | 118 | 359 | | |
| Nov. | 678 | | 60 | | 66 | 164 | 86 | 427 | | | 842 | 86 | 487 | | 66 |
| Dec. | | 55 | 112 | | 110 | 168 | 142 | 547 | | | 168 | 197 | 659 | | 110 |
| Total | 2868 | 288 | 3446 | 297 | 275 | 2634 | 1086 | 6839 | | | 5502 | 1374 | 10285 | 297 | 275 |

Source : C.V. Tunas Kembang and P.T. Berkat Samplt.

26 - Export carried out by the Sampit trading houses in 1982.

| Month | CV. Tunas Kembang | | | | | PT. Berkas Sampit | | | | | Recapitulation | | | | |
|-------|---------------------|---------------|-------------|----------------------|--------------------|---------------------|---------------|-------------|----------------------|--------------------|---------------------|---------------|-------------|----------------------|--------------------|
| | Blanket rubber t | Jelutung t | Rattan t | Tengka- wang t | Gemur bark t | Blanket rubber t | Jelutung t | Rattan t | Tengka- wang t | Gemur bark t | Blanket rubber t | Jelutung t | Rattan t | Tengka- wang t | Gemur bark t |
| Jan | | | 628 | | | 114,47 | 45 | 75 | | | 114,47 | 45 | 703 | | |
| Feb | 150 | 79 | 55 | 190 | | | | 562,80 | | | 150 | 79 | 617,8 | 190 | |
| Mar | 150 | 25 | 800 | 80 | | 69,69 | 30 | 240 | | | 219,69 | 55 | 1040 | 80 | |
| Apr | | | 222 | | | | | 350 | | | | | 572 | | |
| May | | 36 | | | | | | 690 | | | | 36 | 690 | | |
| June | | | 644 | | | | 50 | 447,70 | | | | 50 | 1091,7 | | |
| July | 200 | 45 | 65 | | | 156,60 | | 175 | | | 356,60 | 45 | 240 | | |
| Aug | | 18 | | | 30 | | 43,11 | 65 | | | | 61,11 | 65 | | 30 |
| Sept | 500 | 10 | 568 | | 60 | 191,50 | | 772 | | | 691,50 | 10 | 1340 | | 60 |
| Oct. | | | | | | | | 38 | | | | | 38 | | |
| Nov. | 304,8 | | 55 | | 60 | | | | | | 304,80 | | 55 | | 60 |
| Dec. | | 50 | 102,5 | | 100 | 245,05 | 125 | 115 | | | 245,05 | 175 | 217,5 | | 100 |
| Total | 1304,8 | 263 | 3139,5 | 270 | 250 | 777,31 | 293,11 | 3530,60 | | | 2082,11 | 556,11 | 6670 | 270 | 250 |

Source : CV. Tunas Kembang and PT. Berkas Sampit.

The trading houses buy the rubber in slab¹ form and export it in blanket² form. The firms do not export smoked sheet but nevertheless market 68% of the entire amount of rubber that leaves Sampit port.

As to the rattan, purchases come to more than 10,000 tons of raw rattan and exports to 6670 tons of processed rattan.

Jelutung exportation amounts to around 550 tons of pressed jelutung in bantal³ form. The latex is mixed with phosphoric acid (coagulant), and the resulting mixture is poured into large kettles and heated twice in order to eliminate the larger impurities before the jelutung is pressed and molede into cubes ready for export. At the end of this first processing the reduction in weight is on the order of 60%; the remaining 40% is used in the fabrication of chewing gum.

The purchases and exportations of tengkawang are quite modest, about 250 to 500 t. The tengkawang fruit is first dried and hulled; only the brownish seeds are marketed. The seeds are exported to Singapore, where they are processed for the oil they yield. Tunas Kembang only markets part of the tengkawang (50 to 60%) and the rest is handled by small - scale exporters.

The same is true of the gemur bark, used to make insecticide coils. The large trading houses only handle 15% of the total amount exported at Sampit.

The erratic monthly variations in the purchases made by the trading houses are to be considered with respect to the crop calender for the ladangs of

1 Slab : "cake" of coagulated rubber. Latex which has auto - coagulated after having been poured into plank molds. During the transformation from slab to blanket, the reduction coefficient (weight) is around 50%.

2 Blanket : long ribbons of processed rubber that have been dried in drying sheds heated by wood fires, for 15 to 20 days.

3 Literally "pillow" — cylinders of coagulated jelutung.

the upper valley ¹ . For the rattan, the largest transactions take place in May, just before the rice harvest, and in June, immediately after the rice harvest and before the clearing and felling operations on the new plots. Then, in September, while the felled trees and brush are drying in preparation for the burning operations, the transactions pick up again. Inversely, the most notable slack period corresponds to that of the October rice sowing period.

The general aspect of the rubber curve is the same as that of the rattan, though there are a few slight differences. The highest point, in September, corresponds to the let - up of rain while the lack of business in April results from the 25 days of heavy rain in March (Graph No. 11).

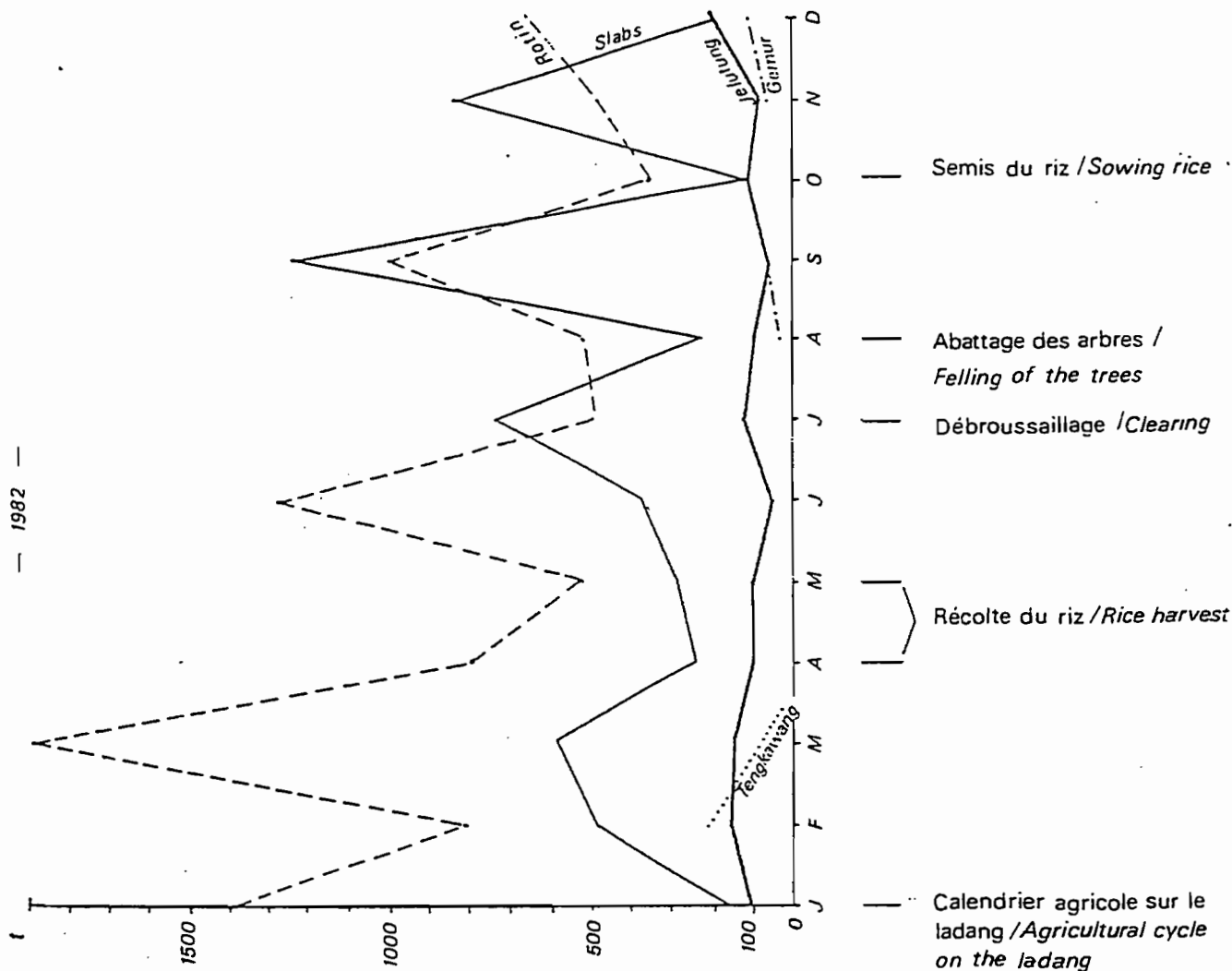
Another slight difference appears in July when the curve for rubber purchases marks a high point while that of the rattan is at a low point. This is because because working in the rattan is an essentially masculine job, whereas tapping the heveas can be done by either men or women. In July - August, the men are busy with clearing operations on a new field and therefore have no time for cash crops. On the other hand, their wives have more free time and can still tap rubber. However, during the month of August when the rains have stopped the brush and trees that were cut must be piled up to dry; the wives help their husbands in this task and the latex production falls.

5.1.1. Remilling and Primary Treatment of Yields Before Exportation.

The raw slab rubber cannot be exported as is. It must first be processed at two remilling factories in the lower valley. The slabs are first laminated by running them through toothed rollers over which water is poured in order to wash away the largest impurities. These sheets are then drained and dried. The "blankets" obtained in this way are hung over lattice - work flooring in drying

¹ See EAST MENTAYA PRIORITY, AREA PART II, "Human Environment" ORSTOM. Transmigration Project PTA 44. Jakarta 1981.

11- LES ACHATS MENSUELS DES MAISONS DE COMMERCE DE SAMPIT
 MONTHLY PURCHASES MADE BY THE TRADING HOUSES IN SAMPIT



sheds heated by wood fires. The "blankets" measure approximately 50 x 75 cms each and are piled together into 1 - meter - high bales, with an average weight per bale of 115 kg. During the processing of "slabs" into "blankets" the reduction coefficient is about 30% ¹.

The P.T. Sampit factory has been in operation in its present form since 1952, after having taken over a former Dutch enterprise. The amount of "slab" rubber purchased is not sufficient to permit the factory to run at its full capacity, and therefore the plant shuts down one or two months per year (Table No. 27).

Since November 1982, part of the rattan has undergone pre - export processing at the factory of P.T. Seri Nata Nasia Perama, a subsidiary of the Tunas Kembang group. The first exportation of processed rattan took place on April 5, 1983 (49 t, to Singapore). However, this factory is too recent to have changed the physiomy of the lower valley.

The stalks of rattan are first cleaned of their rough bark with a simple knife, then washed and scrubbed in a bath of water and sand. Next, they are dried overnight in a sulphurated atmosphere, then aired for two consecutive days. The rattan is then sorted into three categories (Blue tie, red tie, yellow tie) in function of the diameter of the stalks before being processed. The machine pulls off the inner bark and divides the heart into three or four strands which are sulfurtreated a second time in order to avoid rot. Afterwards, there is only to tie the the strands into 50 - kg "bundles".

5.1.2. Supply sources.

The dominant role of the Mentaya valley shows up very clearly in the geographic origins of the supplies which feed the trading houses (Table No. 28). The production of the other valleys is practically never commercialized in Sampit . For the Katingan, the Seruyan, et cetera, the production is exported directly .

¹ If the rubber is of mediocre quality, the "blankets" only represent 68% of the weight of the "slab" rubber, but when the quality is excellent this percentage can be as high as 73%.

27 - Rubber processing in the two remilling factories – 1982.

| Month | P.T. Sampit | | P.T. Hidup Sentosa | |
|-----------|----------------------|-----------------------------------|----------------------|-----------------------------------|
| | Laminated slabs t | Export rubber (115 kg bales) | Laminated slabs t | Export rubber (115 kg bales) |
| January | 236,25 | 1426 | 121,91 | 1163 |
| February | 201,39 | 775 | 126,69 | |
| March | 316,45 | 1504 | 37,51 | 708 |
| April | 177,72 | 1012 | 145,31 | |
| May | 159,90 | 868 | 124,41 | |
| June | 360,05 | 903 | 130,21 | 1566 |
| July | 400,89 | 1019 | 100,07 | |
| August | 407,06 | 1978 | 78,44 | 1907 |
| September | 338,64 | 1947 | 114,14 | |
| October | 330,15 | 2097 | 129,05 | |
| November | 410,90 | 2096 | 127,12 | |
| December | 343,99 | 2114 | 122,01 | 2243 |
| Total | 3683,39 | 17741 | 1356,87 | 7587 |

Source : P.T. Sampit and P.T. Hidup Sentosa.

28 - Supply Sources of the Sampit Trading Houses – 1982.

| Origin | Rattan | | Rubber | | Jelutung | | Gemur bark | |
|------------------|--------|-------|--------|-------|----------|-------|------------|-------|
| | t | % | t | % | t | % | t | % |
| Pegatan | 349 | 3.40 | 79 | 1.44 | | | | |
| K. Pembuang | 15 | 0.14 | 108 | 1.96 | 1 | 0.07 | 2 | 0.73 |
| K. Jelai | | | | | 12 | 0.87 | | |
| Kumai | | | 4 | 0.07 | | | | |
| Pangkalanbun | | | 16 | 0.29 | 20 | 1.46 | | |
| K. Bengkirai | 6 | 0.06 | 5 | 0.09 | | | | |
| Mandomai | 15 | 0.14 | | | | | | |
| K. Kapuas | | | 25 | 0.45 | | | | |
| Mentaya valley . | 9900 | 96,26 | 5265 | 95.70 | 1341 | 97.60 | 273 | 99.27 |
| Total | 10285 | 100 | 5502 | 100 | 1374 | 100 | 275 | 100 |

Source : – Field Surveys

– CV Tunas Kembang and PT Berkat Sampit.

from Pegatan, Kuala Pembuang, and Pangkalanbun, and in these cases Sampit does not play the role of relay center for the collection of cash crops. Sampit's commercial attraction, then, does not reach any farther than the Mentaya valley and its tributaries¹. The same is true for all the small ports on the southern coast of Kalimantan, with perhaps only Banjarmasin as the exception to the general rule. The economic and human environment remains very cloistered in function of the valleys, each of which is a very distinct entity.

5.2. The commercial attraction of the Sampit market.

Sampit's influence appears much more strongly where the redistribution of foodstuffs is concerned than it does in terms of the collection of cash crops. In order to evaluate this influence, enquiries were carried out for a 29 - day period² at a wholesaler's in the port market. The total number of transactions has been listed along with the indications of the clients' places of origin (Tables No. 29, and 30).

The first notable finding is the variety in the products that are sold, both in the range of consumer goods and foodstuffs. Beauty products, toothbrushes and toothpaste were sold in large amounts, as were diverse cleaning products, lamp chimneys, etc. The most sought after foodstuffs were rice, sugar, tins of sardines, and quick - cooking noodles.

As far as rice is concerned, one part of the survey was made in March, when the amount of available rice is at its lowest, and another was carried out in June, just after the paddy had been harvested. One can thus consider that the two effects cancel each other out and that the shop sells 30 tons of rice per month.

¹ The trading houses doubtless have a much larger attraction. They are run by the same families who have controlling shares in the trading houses established in the other valleys that export their respective production without going through Sampit.

² March 20, 1983 to April 6, 1983, and June 24, 1983 to July 4, 1983.

29 - Sales at the "Toko Aneka"

| Foodstuffs | | | Consumer goods | |
|------------------------|----------|--|----------------------------|------------|
| Type | Kg | Packs (pk) Boxes (bx) Bottles (bt) | Type | Quantity |
| Rice | 34,980.5 | | Castile soap | 1453 bars |
| Sugar | 16,306 | | Scented soap | 2361 bars |
| Wheat flour | 4,532 | | Washing powder | 188 kg |
| Tapioca | 710 | | Mosquito repellent | 9110 bx |
| Green soya bean flour | | 340 pk | Cigarettes | 8014 pk |
| Agar - agar | | 632 pk | Matches | 8420 bx |
| Green soya bean | 3,075 | | Tobacco | 1978 kg |
| Peanuts | 1,448.5 | | Batteries | 4603 |
| Salted peanuts | | 2287 pk | Flashlights | 6 |
| Coffee | 3,161.2 | | Dishes | 219 |
| Tea | | 142 pk | Buckets/Jerrycans | 135 |
| Margarine | | 24 pk | Beauty products | 165 bt |
| Milk | | 3701 bx | Toothbrushes | 159 |
| Rice noodles | | 532 pk | Toothpaste | 423 tubes |
| Noodles (Super mies) | | 10160 pk | Shoes | 26 pairs |
| Macaroni | 10 | | Diverse bags | 12 |
| Peppers | 23.7 | | Cloth | 1563 m |
| Diverse sauces | | 466 bx | Rugs | 160 m |
| Tinned sardines | | 2448 bx | Pressure lamps | 1 |
| Juniper alcohol | | 21000 bt | Lamp chimneys | 1101 |
| Wine | | 100 bt | Nails | 202.5 kg |
| Biscuits | | 1609 cartons | Beds | 1 |
| Dates | 140 | | Mattresses | 2 |
| | | | Scales | 19 |
| | | | Zinc | 138 sheets |
| | | | Ink | 40 bottles |
| | | | Thermos | 14 |
| | | | Tawas (chlorhydric acid) | 752 kg |

Source : enquiries, periods from March 20, 1983 to April 6, 1983, and from June 24, 1983 to July 4, 1983.

30 - Origins of the clients of a Sampit shop.

| Origin of the clients | Frequency | | |
|--------------------------|----------------------|-----------|-------|
| | Private individuals. | Retailers | Total |
| Sampit | 289 | 26 | 315 |
| Lower Mentaya Valley | 6 | | 6 |
| Middle and upper Mentaya | 33 | 5 | 38 |
| Tualan | 2 | 2 | 4 |
| Cempaga | 8 | 3 | 11 |
| Seruyan | 9 | 1 | 10 |
| Katingan | 3 | | 3 |
| Other | 3 | | 3 |
| Total | 353 | 37 | 390 |

Sources : — Enquiries made at the "Toko Aneka"
— Periods from March 20, 1983 to April 6, 1983 and from June 24, 1983 to July 4, 1983.

The amount of sugar consumed attests to an improvement in the standard of living. The purchasing of sugar is a sign of wealth which must be compared with the increase in earnings that is consecutive to the boom in commercial crops. This is also true for the consumption of milk or of coffee in the morning or during the afternoon. Canned sardines allow one to improve the habitual diet and to season the rice. The large amounts of sardines consumed attests to the success of the publicity jingles that glorify the merits of modern, rapid forms of cooking that relieve the wife of household chores offering, in fact, a civilized style of life.

80% of the clients live in Sampit, 8 to 9% live in the middle or upper valley, but only 1 to 2% live in the lower valley. The inhabitants of the villages on the estuary get their supplies directly from Samuda, a relay center, without going through Sampit. Clients from the nearby valleys are rare (3%) but their numbers are not proportional to their importance, for these clients are often retailers.

On the whole, 9 to 10% of the clients are middlemen who will re - sell their purchases in the various quarters of Sampit or else in the small towns strung out along the valley.

A selection of the most common foodstuffs and consumer goods has been made, along with the breakdown of sales in function of the clients' place of residence ¹ . Sampit absorbs 40 to 50% of the sales of consumer goods. This should be considered in view of the fact that people live more comfortably in town than in the villages (purchase of insecticide coils, soap,).

The middle Mentaya valley represents 15 to 20% of the purchases. The small town of Kuala Kuayan alone absorbs 12 to 13% of the goods. This secondary commercial center acts as a base for the retailers who sell, among other things, a great deal of "tawas" (chlorhydric acid) which serves as a coagulant for the latex.

¹ It was impossible to carry out a global price breakdown for the shop's sales in function of the clients' residences, for two reasons : the merchant's reticence and the variation in prices from March to July which would have made the data incompatible.

31 - Breakdown of Sales Made at a Samplit Shop.

| Type of goods | | Samplit % of sales quantity | Lower Mentaya valley % of sales quantity | Middle & Upper Mentaya valley ¹ % of sales quantity | Tualan (Bejarau) % of sales quantity | Cempaga % of sales quantity | Seruyan (Kua- la Pembuang) % of sales quantity | Katingan % of sales quantity | Other % of sales quantity | Kuala Kuayan ² % of sales quantity | Total sales (quantity) |
|----------------|-------------------------------|-----------------------------------|---|---|---|-----------------------------------|--|------------------------------------|---------------------------------|---|------------------------------|
| Foodstuffs | Rice | 54.83 | 0.63 | 14.35 | 2.86 | 0.74 | 5.15 | 21.44 | | 10.58 | 34980,5 kg |
| | Wheat flour | 61.35 | | 12.53 | | 0.48 | 14.78 | 7.95 | 2.91 | 11.10 | 4532 kg |
| | Sugar | 55.14 | 0.80 | 9.93 | 1.84 | 11.96 | 17.17 | 3.16 | | 6.75 | 16306 kg |
| | Milk | 48.61 | | 4.27 | 2.92 | 0.97 | 29.72 | 13.51 | | 2.70 | 3701 boxes |
| | Tinned sardines | 35.87 | 20.42 | 16.18 | | 7.03 | 20.50 | | | 12.09 | 2448 boxes |
| | Biscuits | 81.60 | 2.92 | 3.98 | | 9.64 | 3.44 | 1.86 | | 3.91 | 1609 cartons |
| | Noodles (Supermie) | 35.76 | 8.85 | 23.32 | | 4.03 | | 24.60 | | 23.32 | 10160 packs |
| Consumer Goods | Castile soap | 88.23 | | 3.10 | 3.30 | 5.37 | | | | 2.68 | 1453 bars |
| | Scented soap | 52.89 | 1.52 | 7.54 | 8.47 | 4.07 | | 25.41 | | 5.08 | 2361 bars |
| | Washing powder | 8.51 | 2.68 | 55.32 | | 30.85 | 2.66 | | | 55.32 | 188 kg |
| | Mosquito repellent | 98.63 | 0.55 | | | 0.82 | | | | | 9110 boxes |
| | Cigarettes | 38.75 | 0.75 | 16.40 | 0.50 | 27.60 | 6.25 | 9.80 | | 12.10 | 6014 packs |
| | Matches | 93.53 | | | 0.12 | 4.93 | 1.42 | | | | 8420 boxes |
| | Batteries | 44.95 | 0.52 | 36.83 | | 9.12 | 4.13 | 4.35 | | 35.63 | 4603 |
| | Toothpaste | 65.25 | | 6.38 | 5.67 | 8.51 | 2.84 | 11.35 | | | 423 tubes |
| | Tawas (chlorhydric acid) | 13.30 | 12.76 | 68.62 | 6.65 | 0.67 | | | | 66.49 | 752 kg |

Source : enquiries made at the "Toko Aneka" - Samplit Periods from March 3, 1983 to April 6, 1983 and from June 24, 1983 to July 4, 1983.

1) Kuala Kuayan Included

2) Kuala Kuayan separate from the column "Middle Mentaya valley".

The seruyan and the Katingan, two nearby valleys, feel Sampit's attraction quite strongly, but their purchases only concern a limited number of products, for the most part foodstuffs. The inhabitants of the Katingan come to Sampit to buy : rice, noodles, cartons of milk and soap - all indispensable products. On the other hand, they are not interested in insecticide coils, batteries, washing powder, to wit, the luxury products. These valleys have a standard of living that is relatively low, for cash crops are not very developed.

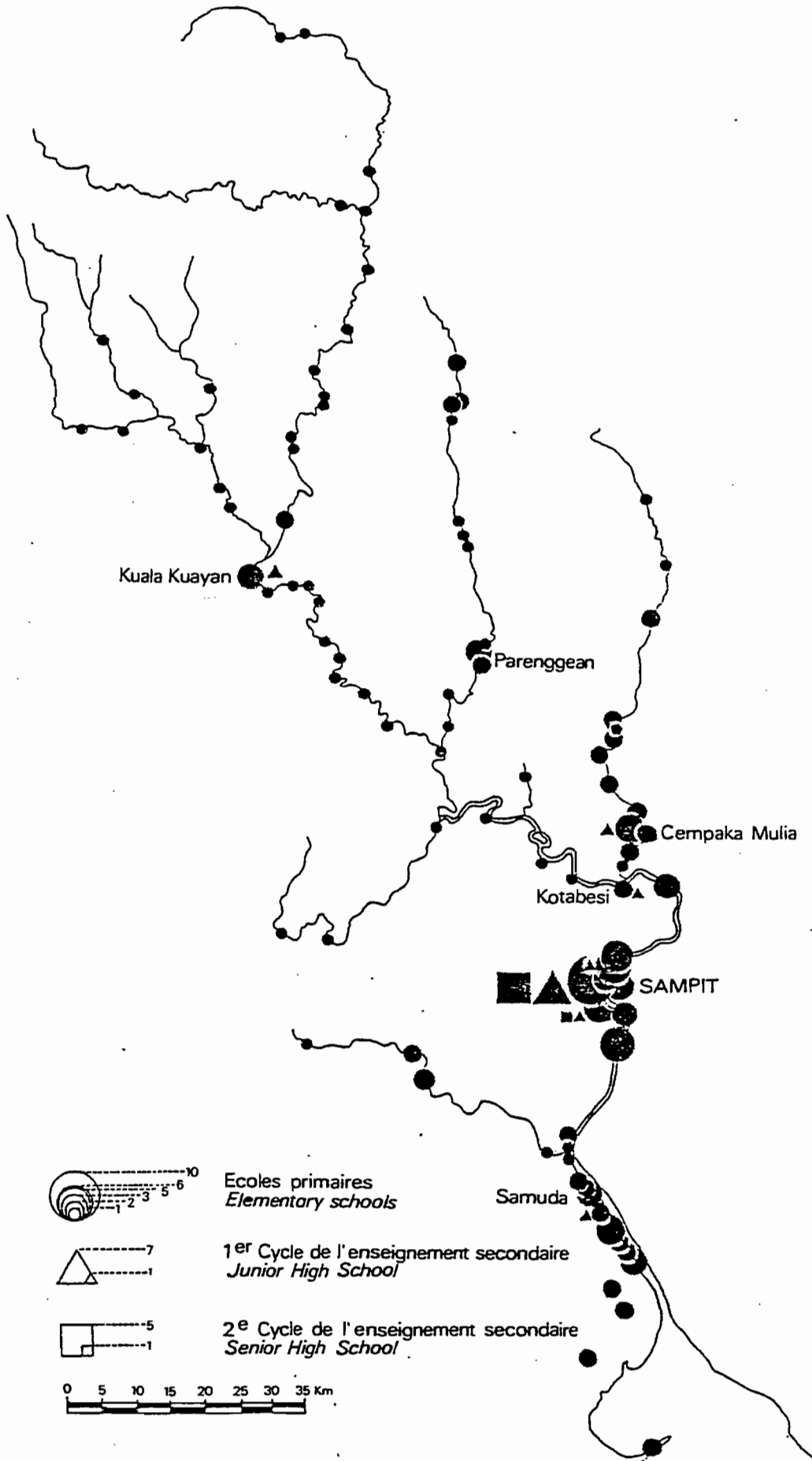
Among the Mentaya's tributaries, the Cempaga is better represented than the Tualan. The former is a wealthier valley where rattan cultivation is intensive. On the contrary, the Tualan. inhabited by Tamoans - Dayak populations that were driven back by the Para - Malays - and bordered by infertile soils (podzols), is, economically speaking, somewhat marginalized.

Finally, one will note that Sampit has absolutely no influence in the East towards the Kahayan basin (Kahayan, Rungan, Manuhing) which is already within the range of attraction of Banjarmasin and Kuala Kapuas. Nor does Sampit's attraction extend west in the direction of the Arut River which depends upon Pangkalanbun.

5.3. The attraction of Sampit's school system.

The rate of school attendance is quite high all along the valley : almost every village has its elementary school (Map No. 12) and many Kecamatan seats have a junior high school (S.M.P.) (Table No. 32). At Sampit the choice is relatively large since aside from 33 elementary schools, the town has 6 junior high schools, and 2 teachers' colleges, as well as 3 specialized establishments of secondary education : technical studies in wood, economics, and agricultural studies. However, Sampit is not a university town. The closest universities are in Palangkaraya (the regional capitol) and Banjarmasin. Only at the university in Banjarmasin are all disciplines represented. The single establishment of higher learning in Sampit in the "Academy of Business Administration", a private school which operates through evening classes.

CARTE SCOLAIRE
12 - DISTRIBUTION OF SCHOOLS



Source : Monografi kecamatan - Biro statistik. SAMPIT 1980

32 - School Map — 1980.

| Kecamatan | Kinder - gardens | Elementary school | Secondary Schools | | | | | Teachers college | Moslem Teachers' college | Higher learning Institute (Business Administration.) |
|------------------|------------------|-------------------|--------------------|--|---|--------------------------------|---|------------------|--------------------------|--|
| | | | Junior high School | Senior high School (general education) | Senior high School (technical studies in wood). | Senior high School (economics) | Senior high School (agricultural studies) | | | |
| Mentaya Hulu | | 35 | | | | | | | | |
| Parenggean | | 18 | | | | | | | | |
| Cempaga | 1 | 30 | 1 | | | | | | | |
| Kota Besi | | 9 | 1 | | | | | | | |
| Baamang * | 1 | 17 | 1 | | | | | | | |
| Ment B / Ketap * | | 33 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ment H. Utara | | 13 | | | | | | | | |
| Ment H. Selatan | | 22 | | | | | | | | |
| Pulau Hanaut | 1 | 18 | 1 | | | | | | | |
| Total | 3 | 195 | 10 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |

Source : Monografi Kecamatan — Biro Statistik — Sampit.

* SAMPIT

33 - Spread of Elementary Instruction.

| Kecamatan | % of children aged 7-12 years that attend school | % of children aged 7.12 years that do not attend school. | |
|---------------------------------|--|--|-----------|
| | | Never attended school | Drop outs |
| Mentaya Hulu | 76,35 | 20,56 | 3,09 |
| Parenggean | 87,89 | 11,02 | 1,09 |
| Cempaga | 61,08 | 32 | 6,92 |
| Kota Besi | 81,73 | 13,75 | 4,52 |
| Baamang | 87,96 | 9,48 | 2,56 |
| Ment B / Ketapang | 90,43 | 7,20 | 2,37 |
| Ment H. Utara | 89,42 | 9,67 | 0,91 |
| Ment H. Selatan | 86,84 | 10,52 | 2,37 |
| Pulau Hanaut | 89,85 | 8,97 | 1,18 |
| Total (for the entire valley) | 82,12 | 14,62 | 3.26 |

Source : Hasil Sensus Penduduk – Tahun 1980 –

Kantor Statistik - Kabupaten Kotawaringin Timur - Propinsi Kalimantan Tengah, Desember - 1980.

On the whole, the spread of primary schooling is high (Table No. 33). 90% of the children in Sampit from 7 to 12 years of age attend school, and in the upper valley the rate is still at an impressive 76%. The Cempaga has the lowest school attendance rate, which can be explained by the large numbers of recent migrants of Madurese origin, who form a highly mobile sub - proletariat with a very low economic level.

The secondary school attendance rate can hardly be calculated due to a lack of precise statistical data. However, one is able to get a grasp of the social origins of the students (Table No. 34) and of Sampit's attraction through a survey which was carried out among the directors of the establishments. The dispersion of primary schooling is such that only junior and senior high schools have been retained, since they are the only establishments that could attract students from outside the town. More than 3400 students were in this way concerned, which represents 83,91% of the total number of high school students. They were asked to note their birthplace, their present address, and their parents' profession.

From a sociological point of view, the sons of craftsmen / merchants, employees, and coolies are under - represented. However, in the latter case, the fact that more than 8% is represented in the secondary schools and 5% in the teachers' colleges attests to a definite social mobility.

On the other hand, sons of farmers and of civil servants are over - represented. For the former, this over - representation is quite understandable, since they come in from the surrounding villages in order to obtain an education which can only be had in Sampit. However, one will note that they are particularly numerous in the teachers', colleges, which represent a means of upward mobility for the rural elite. As to the sons of civil servants, the over representation is maximal in the high schools offering general educational studies, which permits access to university. Here the sons of civil servants find themselves together with those of the teachers' children who decided not to attend a teachers' college and aspire at more prestigious careers. Teachers are considered as an intermediate group.

34 - Social Origins of the Secondary School Students.

| Profession of the head of the household | Junior High School | | Senior High School (general education) | | Senior High School (technical education) | | Teacher's Colleges | | Sampit's sociological composition * |
|---|--------------------|------------|--|------------|--|------------|--------------------|------------|-------------------------------------|
| | No. | % | No. | % | No. | % | No. | % | % |
| Farmers | 401 | 24.28 | 188 | 26.34 | 304 | 47.65 | 237 | 58.37 | 10.14 |
| Craftsmen and liberal Prof. | 41 | 2.48 | 22 | 3.08 | 21 | 3.30 | 7 | 1.72 | 46.73 |
| Merchants | 238 | 14.42 | 87 | 12.18 | 54 | 8.46 | 24 | 5.91 | |
| Coolies | 138 | 8.36 | 13 | 1.82 | 34 | 5.33 | 20 | 4.93 | 15.03 |
| Employees | 142 | 8.60 | 81 | 11.35 | 37 | 5.80 | 9 | 2.22 | 11.06 |
| Teachers | 62 | 3.76 | 35 | 4.90 | 24 | 3.76 | 8 | 1.97 | 12.81 |
| Other Civil Servants | 590 | 35.74 | 268 | 37.53 | 127 | 19.90 | 98 | 24.14 | |
| Fishermen | | | 2 | 0.28 | 3 | 0.47 | | | |
| No answered and other | | | 18 | 2.52 | 34 | 5.33 | 3 | 0.74 | 4.23 |
| Total | 1651 | 100 | 714 | 100 | 638 | 100 | 406 | 100 | 100 |

Source : Field Surveys.

* Final Report Penyusunan Indikasi Program dan Proyek Pembangunan Kota Sampit. Persero P.T. Indah Karya – Bandung – 1980 – 1981 – P 16.

Concerning the geographic origins of the students, (Table No. 35) it was found that at the junior high school level 60% of the students are from Sampit, 14.5% from the upper valley, 2% only from the lower valley, and almost 10% from the valleys close by the Mentaya (notably the Katingan and the Seruyan). The students born along the Kahayan or else in Palangkaraya are usually the sons of employees in the provincial government.

Sampit's attraction is obviously stronger at the high school level. The number of students born in Sampit falls to 45%; the percentage of students from the upper valley or the ones nearby remains stable, while the number of students from the villages along the estuary increases.

On the whole, 72% of the students were born along the Mentaya. Here again, Sampit appears as the capitol of the Mentaya valley, yet only attracts a limited number (15 to 16% of the school - age population) of young people from from the nearby valleys. Sampit does not play the part of regional capitol in South Kalimantan. This function, which has furthermore totally slipped from Palangkaray's grasp, remains the domain of Banjarmasin. This is where the students from the Katingan and the Seruyan go.

35 - The Attraction of Sampit's School System.
1983

| Students' birthplaces | Junior High School | | Senior High School | |
|-----------------------|--------------------|------------|--------------------|------------|
| | No. | % | No. | % |
| Sampit X | 1027 | 60.23 | 778 | 45.58 |
| Kec. Mentaya H Utara | 3 | 0.18 | 42 | 2.46 |
| Kec. Mentaya H Sel. | 29 | 1.70 | 134 | 7.85 |
| Kec. Pulau Hanaut | 2 | 0.12 | 20 | 1.17 |
| Kec. Kota Besi | 81 | 4.75 | 55 | 3.22 |
| Kec. Cempaka | 72 | 4.22 | 113 | 6.62 |
| Kec. Parenggean | 33 | 1.93 | 16 | 0.94 |
| Kec. Mentaya Hulu | 63 | 3.69 | 91 | 5.33 |
| Kab. Katingan | 53 | 3.11 | 132 | 7.73 |
| Kab. Seruyan | 45 | 2.64 | 79 | 4.63 |
| Kapuas/Kahayan | 30 | 1.76 | 28 | 1.64 |
| Palangkaraya | 18 | 1.06 | 8 | 0.47 |
| Barito | 14 | 0.82 | 7 | 0.41 |
| Kumai | 1 | 0.06 | 3 | 0.18 |
| A r u t | 4 | 0.23 | 11 | 0.64 |
| S. Kalimantan | 102 | 5.98 | 65 | 3.81 |
| W. Kalimantan | 1 | 0.06 | 3 | 0.18 |
| E. Kalimantan | 1 | 0.06 | 2 | 0.12 |
| E. Java | 55 | 3.22 | 39 | 2.28 |
| C. Java | 29 | 1.70 | 30 | 1.76 |
| W. Java | 11 | 0.65 | 12 | 0.70 |
| Madura | 3 | 0.18 | | |
| B a l i | 1 | 0.06 | | |
| Sulawesi | 2 | 0.12 | | |
| Sumatra | 11 | 0.65 | 6 | 0.35 |
| Nusa Tenggara Timur | | | 1 | 0.06 |
| Other | 14 | 0.82 | 32 | 1.87 |
| Total | 1705 | 100 | 1707 | 100 |

X Kec. Mentawa Baru Ketapang et Baamang

Source : Enquiries made of High School headmasters and principals - 1983.

Part III

The teachings of an ancient, little - known transmigration which has already made radical changes in the landscape of the lower valley.

CHAPTER 6 : Spontaneous Transmigrants previously installed in the lower valley

6.1. Populations and densities in the lower valley

In 1980, 93,481 people inhabited the six kecamatans than make up the lower valley. This figure represents 70.18% of the populations of the entire Mentaya River basin (132,211 inhabitants).

Densities are high for Kalimantan. In the two kecamatans that constitute the heart of Sampit, Mentawa Baru / Ketapang and Baamang, the densities are, respectively, more than 50 inhab / km² and almost 30 inhab / km². In Kecamatan Pulau Hanaut and Mentaya Hilir Selatan, the spread of plantation economy and the success of the coconut groves explains the densities which fluctuate between 17 and 20 inhab / km². On the other hand, where plantation economy is not very developed particularly along the Sampit River, the densities drop to below 10 inhab / km² (Kecamatan Mentaya Hilir Utara). Kota Besi is a transitional kecamatan, on the border of Ngaju country; the densities of around 5 inhab / km² are similar to those found in the Dayak areas where ladang and very extensive rattan plantations are predominant.

Over the 9 years from 1971 to 1980, the population increased 49.80%, which represents an annual growth of 5.53% (4.28% from 1971 to 1976 and 5.8% from 1976 to 1980). It will be seen that these high rates as well as the acceleration of their growth pattern is due to a heavy immigration.

Almost every one of the 43 villages strung out along the river saw its number of inhabitants increase progressively from 1976 to 1980. Only 4 villages lost population, but these were cases of administrative redivision in which sections of village separate from the central area became villages in their own right.

However, there have been some notable differences in the dynamism of certain villages. Bagendang Tengah and Palangnian marked considerable progress (more than 40%). In the first case, the increase in population is due mainly to

36 - Population and Religions in the Lower Mentaya Valley.

| Kecamatan | No. of inhabitants | | | Area km ² | 1980 density inhab/km ² |
|------------------|--------------------|-------|-------|----------------------|------------------------------------|
| | 1971 | 1976 | 1980 | | |
| Baamang | 13309 | 16610 | 22760 | 774 | 29,41 |
| M. Baru/Ketapang | 21739 | 28672 | 36368 | 772 | 50,37 |
| M. Hilir Selatan | 14349 | 16621 | 18932 | 928 | 20,40 |
| M. Hilir Utara | 2876 | 3121 | 4543 | 723 | 6,28 |
| Pulau Hanaut | 8276 | 9656 | 10878 | 619 | 17,57 |
| Kota Besi | 9327 | 10151 | 11194 | 2177 | 5,14 |

| Kecamatan | Moslems | Catholics | Protestants | Hindu Kaharingan | Budhists | Total |
|------------------|---------|-----------|-------------|------------------|----------|-------|
| Kota Besi | 7976 | 296 | 546 | 2376 | - | 11194 |
| Baamang | 21899 | 93 | 638 | 42 | 25 | 22697 |
| M. Baru/Ketapang | 33125 | 512 | 1444 | 64 | 369 | 35514 |
| M. Hilir Selatan | 18652 | 36 | 28 | 203 | - | 18919 |
| M. Hilir Utara | 4175 | 10 | 62 | 279 | - | 4526 |
| Pulau Hanaut | 10876 | 2 | - | - | - | 10876 |

Source : Kantor Statistik – Sampit.

Note : The differences seen in the figures given for population from one table to the next are due to the diversity of the sources. It is unfortunately impossible to conduct field surveys in order to verify the population of each village.

37 - Population of the villages along the lower Mentaya Valley.

| Villages | 1976 | 1980 | Yearly evolution 76 - 80(%) |
|------------------------------|-------|--------|----------------------------------|
| Ujung Pandaran | 240 | 261 | 2.19 |
| Lampuyang | 280 | 352 | 6.42 |
| Bapinang Hilir Laut | 3901 | 4405 * | |
| Parebok | 1267 | 1516 | 4.91 |
| Basawang | 1180 | 819 | -7.65 |
| Sebamban | 1668 | 2081 | 6.19 |
| Samuda Besar | 922 | 1078 | 4.23 |
| Samuda Kecil | 807 | 846 | 1.20 |
| Samuda Kota | 3131 | 3503 | 2.97 |
| Bapinang Hilir | 2768 | | |
| Bapinang Hulu | 2987 | | |
| Basirih Hilir | 3116 | 3997 | 7.07 |
| Jaya Jelapa | 1443 | 1488 | 0.78 |
| Basirih Hulu | 1302 | 1560 | 4.95 |
| Jaya Karet | 1265 | 1430 | 3.26 |
| Bagendang Hilir | 1356 | 844 | -9.44 |
| Bagendang Tengah | 502 | 1321 | 40.79 |
| Bagendang Hulu | 512 | 597 | 4.15 |
| Palangsian | 1757 | 4630 | 40.88 |
| Ketapang | 3760 | 4265 | 3.36 |
| Mentawa Baru Hilir | 6642 | 9274 | 9.91 |
| Mentawa Seberang | 2826 | 1822 | -8.88 |
| Mentawa Baru Hulu | 13687 | 16377 | 4.91 |
| Baamang Hilir | 5383 | 6302 | 4.27 |
| Baamang Tengah | 5821 | 7924 | 7.78 |
| Baamang Hulu | 2624 | 5532 | |
| Ramban | | 765 | |
| Natai Baru | 596 | 284 | -13.08 |
| Pondok Damar | 155 | 213 | 9.35 |
| Sulu Bakung | | 124 | |
| Natai Nangka / Paring Dua | | 395 | |
| Terantang | 2782 | 3067 | 2.56 |
| Kota Besi Hilir | 1037 | 1149 | 2.7 |
| Kota Besi Hulu | 1800 | 2066 | 3.69 |
| Kandan | 901 | 917 | 0.44 |
| Camba | 710 | 815 | 3.70 |

Simpur

| | | | |
|-------------|------|------|------|
| Simpur | 775 | 941 | 5.35 |
| Palangan | 1012 | 1096 | 2.07 |
| Hanjalipan | 819 | 956 | 4.18 |
| <hr/> | | | |
| Pamalian | | 587 | |
| Tanah Putih | | 1404 | |
| Sebabi | | 1269 | |
| <hr/> | | | |
| | | | |

Figures : 1976 — 1980 : Biro Pusat Statistik — Propinsi Kalimantan Tengah.

———— Tributary : Sungai Sampit, Seranau

* 1981 figure -

the influx of Dayaks who were isolated along the Sampit River and came to settle along the banks of the Mentaya. In the second case, the large increase is due to the close proximity of Sampit and the creation of truck gardens destined to provide supplies for the urban market.

The villages settled by farmers such as Parebok, Sabamban, and Lampuyang, underwent a moderate progression (4 to 6%). Recent immigrants, most of whom are Madurese, are developing the lower plain on a 5 - to - 6 - km - wide strip along the river and are establishing coconut groves.

Inversely, the villages where the plantations are old (Jaya Kelapa, Samuda Kecil) are stagnating. The total area which can be planted in coconut groves with traditional methods has been occupied. The groves are planted on a 5 km - wide area along the river while further out only peripheries of rice paddies could be developed. However, they bring in much less money than the coconut groves.

Upstream from Sampit, especially from Terantang to Hanjalipan, the growth rate is at its lowest. Along the borders of the Ngaju country the coconut groves have disappeared, and the natural environment is unfavorable to the extensive cultivation of rattan : vast zones of detrital sands, cutoff meanders, ox - bows, amphibious terrain

6.2. Migrants and Transmigrants.

The inhabitants of the lower valley should be divided into three groups. For the purposes of this report, a difference will be made between the autochthonous populations (Dayak and Sampit), the migrants from the other valleys in Kalimantan (Pembuang, Banjar,) and finally the Transmigrants who arrived by sea from other islands in the archipelago. These are all spontaneous transmigrants. Table No. 38 recapitulates the respective numbers of each of these groups.

Since the Indonesian national census only counts Indonesians, without taking into account the ethnic origins, a field survey was necessary in order to

38 - Spontaneous transmigrants in the Lower Mentaya Valley , 1980.

| Autochtons Dayak + O. Sampit | | Migrants O. Pembuang + Banjars | | Spontaneous transmi — grants Javanese - Madure- se - Buginese | | Other | | Total | |
|---------------------------------|-------|-----------------------------------|-------|---|-------|-------|------|--------|-----|
| Inhab | % | Inhab | % | Inhab | % | Inhab | % | Inhab | % |
| 43277 | 41.17 | 34046 | 32.39 | 27031 | 25.71 | 771 | 0.73 | 105125 | 100 |

Source : field surveys.

specify the respective numbers of each of the human groups. To this end, the lists of inhabitants kept by the village headmen were consulted and narrowed down to include only the heads of families, who alone were polled. Thus, to obtain the numbers in each human group, it was necessary to refer the percentages of heads of families obtained in this manner to the figures given for each village in the 1980 census. As result, these figures are only approximates, but very close approximates nevertheless. The children were considered as being of the same ethnic group as their fathers, and the influence of various mixed marriages was considered to cancel itself out.

6.2.1. The Autochtons.

Converted to Islam during the last century, the Orang Sampit are the descendants of a fusion between Dayaks and Malaysianised populations, or Para - Malays, who came from the Banjarmasin sultanate and notably from the Alalak region. In this case, they have been grouped together with the Kahayan and Kapuas Dayaks who arrived at a later date from the lower valleys of the Kahayan and the Kapuas. Today the two groups are difficultly distinguishable in the lower valley, as mixed marriages are frequent.

The tamoans are Dayaks of the Ngaju branch, as are the Kahayans and the Kapuas, but they refused to convert to Islam in the last century, were driven out by the Sampit, and thus settled along the Seranau the Tualan, and the Cempaga. They do not make up a homogenous group; the dialects spoken on the Seranau and the Tualan are mutually inintelligible. The term "Tamoan" (which is derived from the root "temu", meaning "to meet") was used by the Malaysianised populations along the coast to designate those Dayaks who refused to become integrated, but it does not cover any ethnic group in particular.

What must be stressed is that this group of peoples who previously settled the lower valley only represented slightly more than 40% of the total population in 1980.

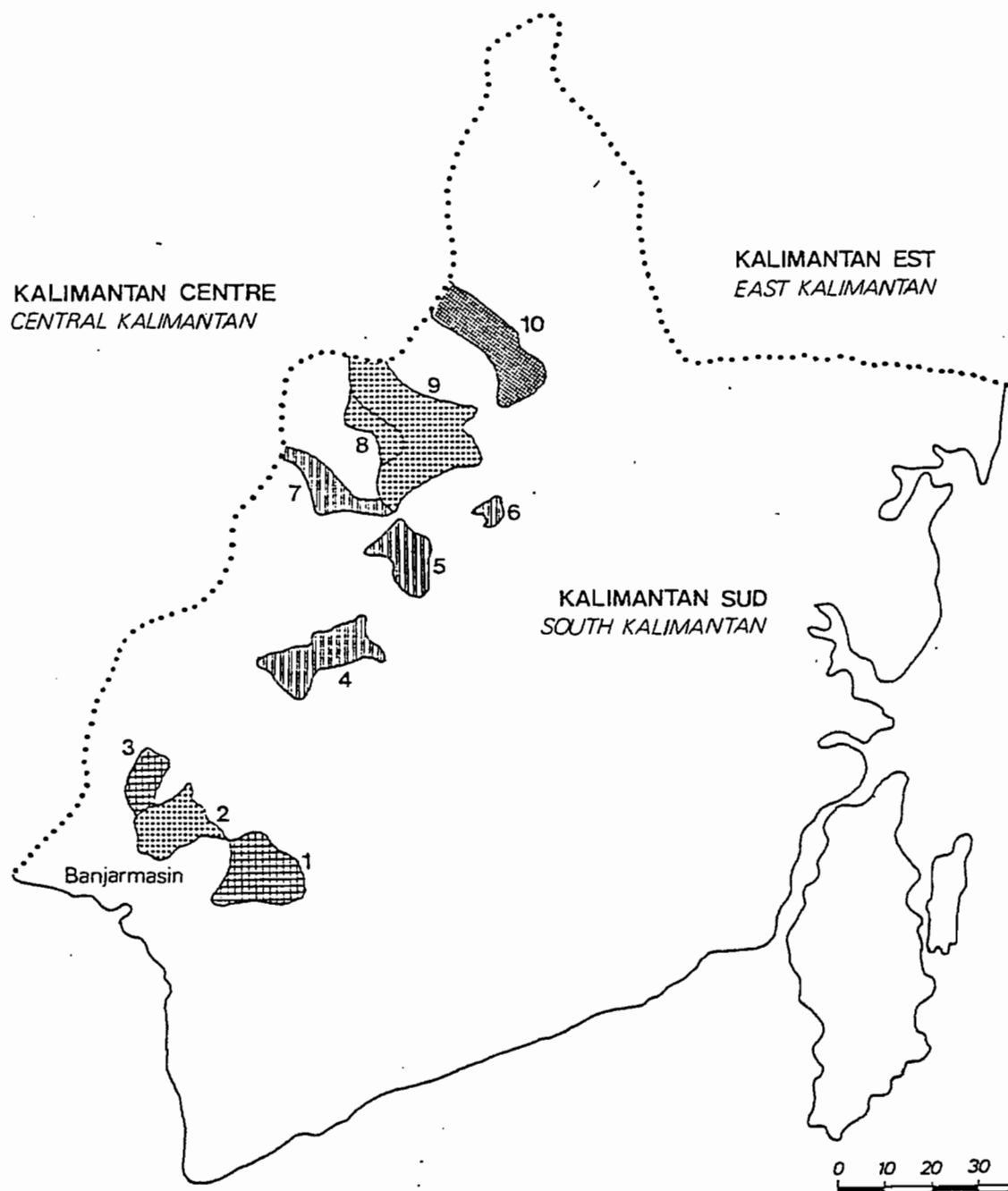
6.2.2. The Migrants.


Considered as "migrants" are the Pembuang who arrived from the Middle Seruyan valley, and especially the Banjarese. The Banjarese people originates from a fusion of the autochthonous elements around Banjarmasin, Martapura, and Pleihari, with Malays who came in part from Sumatra in the 1st millennium A.D. (a small Malay colony was founded during the Sri Wijaya empire) and with Javanese and Sundanese during the Modjopahit era, as well as Arabs, Chinese, and Bugis navigators from Sulawesi. This Moslem population speaks a dialect of Malay origin within which there are various local dialects at Amuntai, Kadangan, Tanjung, Kelua

Banjars make up 30% of the total population of the lower valley, and are the largest ethnic group. Those who settled along the Mentaya come mainly from Banjarmasin or the surrounding area, as well as from the Alalak region. With respect to this, there is a great continuity between the first migrants who arrived from Alalak in the last century and who are today considered as Orang Sampit, and the more recent ones who, even though they too are from Alalak, are still considered Banjars. At any rate, the dialect spoken in Sampit is very similar to that spoken in Alalak. The third Banjarese group comes from the region called Hulu Sungai, located upstream from the Negara River. In the XVIIIth century this area was inhabited by Dayaks who were pushed back by the spread of pepper cultivation, which was the source of wealth for the Banjarmasin Sultanate. These Banjars who have settled on a "borderline" have always been very heavily impregnated with Dayak culture. On the other hand, those populations from the eastern part of South Kalimantan, who turn their backs on the Dayaks, are completely absent.

The large majority of Banjars settled in the lower Mentaya valley during the period between WWI and WWII. These days one generally meets the third-generation migrants in the villages.

13- PROVENANCE DES BANJAR ETABLIS SUR LA BASSE VALLEE DE LA MENTAYA
ORIGIN OF THE LOWER MENTAYA BANJARESE



| | % | |
|---|---------|----------------|
|  | < 2 | 1. Banjarmasin |
|  | 3 - 4 | 2. Aluh - aluh |
|  | 5 - 9 | 3. Alalak |
|  | 35 - 40 | 4. Margasari |
| | | 5. Kandangan |
| | | 6. Barabai |
| | | 7. Negara |
| | | 8. Alabio |
| | | 9. Amuntai |
| | | 10. Kelua |

Source : Enquêtes de terrain 1983



6.2.3. The Spontaneous Transmigrants.

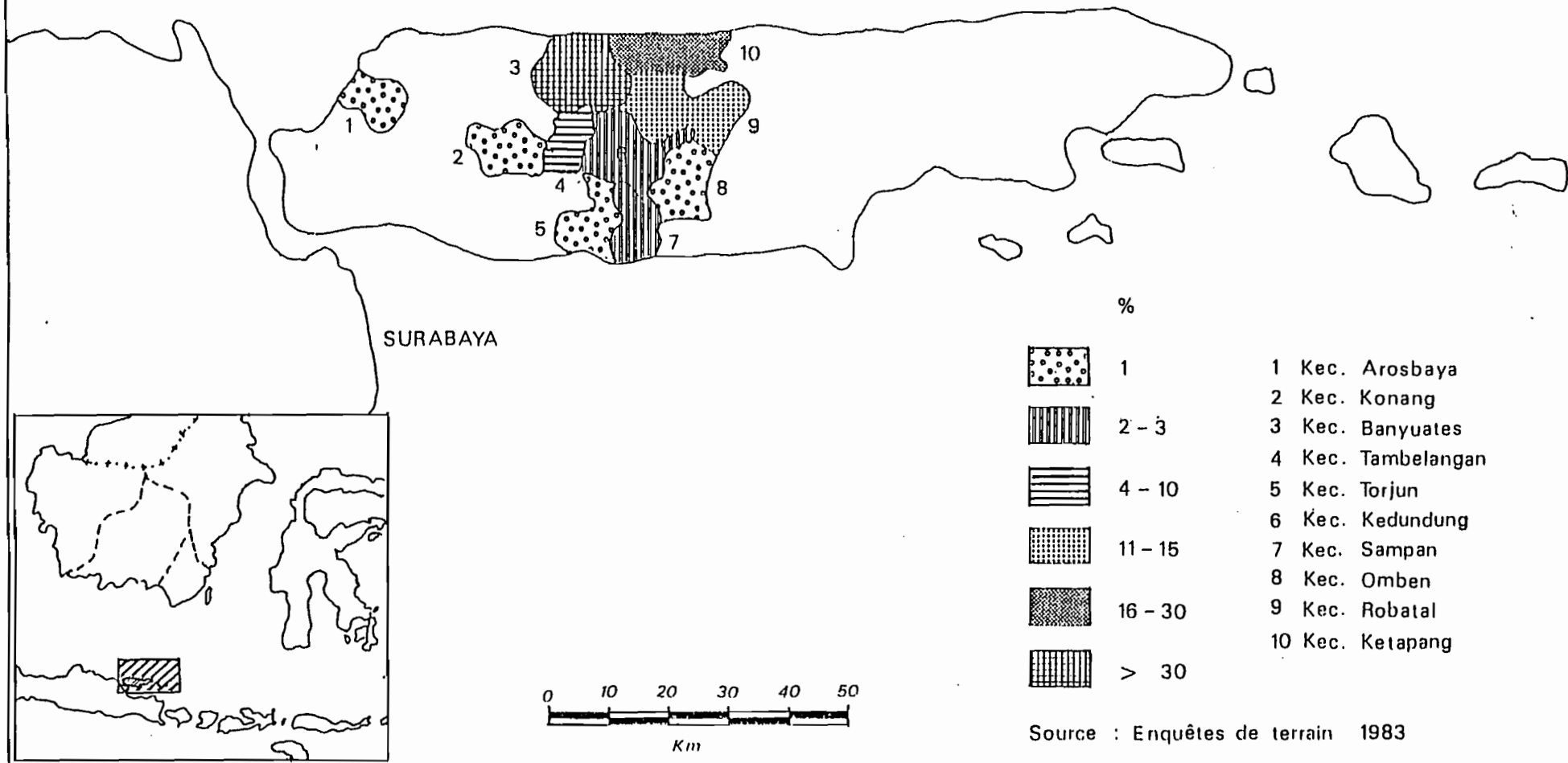
This group represents between 25 and 26% of the total populations of the lower valley. The largest group is made up of Madurese (14%). Certain villages are essentially Madurese : Tamyangan, Bejarun upstream from Sampit, Parebok, and to a lesser degree Basawang on the estuary. In the two first cases, the Madurese are truck farmers and supply the urban market, while the two latter villages are agriculturally - oriented.

These Madurese are native to central Madura (Map No. 14), in particular Kecamatans Banuyates, Ketapang, and Robatal. Their migration takes place in several stages. During the dry season there is hardly any work from June to October on Madura, and the Madurese seek jobs on other islands. They call upon the services of the Bugis navigators who arrive from Ujung Pandang to pick up a cargo of salt from Madura before steering towards the south coast of Kalimantan from which they will return with sawn wood and coconut oil.

The Madurese will then build up a savings by working for 4 or 5 months in the Banjar - owned coconut groves before returning home. After a few years, through various procedure ranging from outright rental to the clever "system handi" which will be dealt with in the next chapter, the Madurese obtain land, bring over their families, and are registred with the village headmen as permanent residents.

Numerous, then, are the seasonal Madurese transmigrants who cannot be counted with any precision. These job - hunters get off the Bugis sailboats at the first sign of available work in one of the villages on the estuary. Counting them in Sampit as one would count passengers on the regular lines would be wasted effort. The village headmen themselves have no idea just how many of these Madurese "forget" to declare themselves upon arrival. For the village of Parebok alone, the headman estimates their numbers at about 50; there are perhaps 2000 to 3000 for the entire lower valley, Sampit included.

14. PROVENANCE DES MADURAIS ETABLIS A PAREBOK ET A SAMUDA KECIL (BASSE VALLEÉ DE LA MENTAYA)
 ORIGIN OF MADURESE WHO SETTLED IN PAREBOK AND SAMUDA KECIL (LOWER MENTAYA)



The Javanese make up 9% of the population, but they are rather unevenly distributed. They are essentially concentrated in Sampit, where they hold civil service posts. The Mentaya Hulu Utara military camp with its 410 Javanese families represents 48% of the population of this kecamatan. Inversely, the Javanese are few in the plantation areas (Kecamatan Mentaya Hilir Selatan and Pulau Hantaut, less than 5% of the population).

CHAPTER 7 : Development of the lower valley and the lessons it provides
for directed Transmigration.

The development procedures and agrarian choices carried out by the migrants and spontaneous transmigrants in a different environment from the one they had previously known, are all lessons in themselves.

— The Banjarese succeeded in combining food crops and cash crops on the same parcel during the installation of the plantations, before securing themselves a regular income at a later date. This is the goal of every Transmigration Center.

— Above all, however, the Banjarese have succeeded in developing a lowland plain that was considered unhealthy (malaria), disgusting, and thus unsuitable by the Dayak peoples. To do this, the Banjarese drew upon the potentials of a human environment strongly characterized by a positive migratory balance (Table No. 38 and Map No. 14).

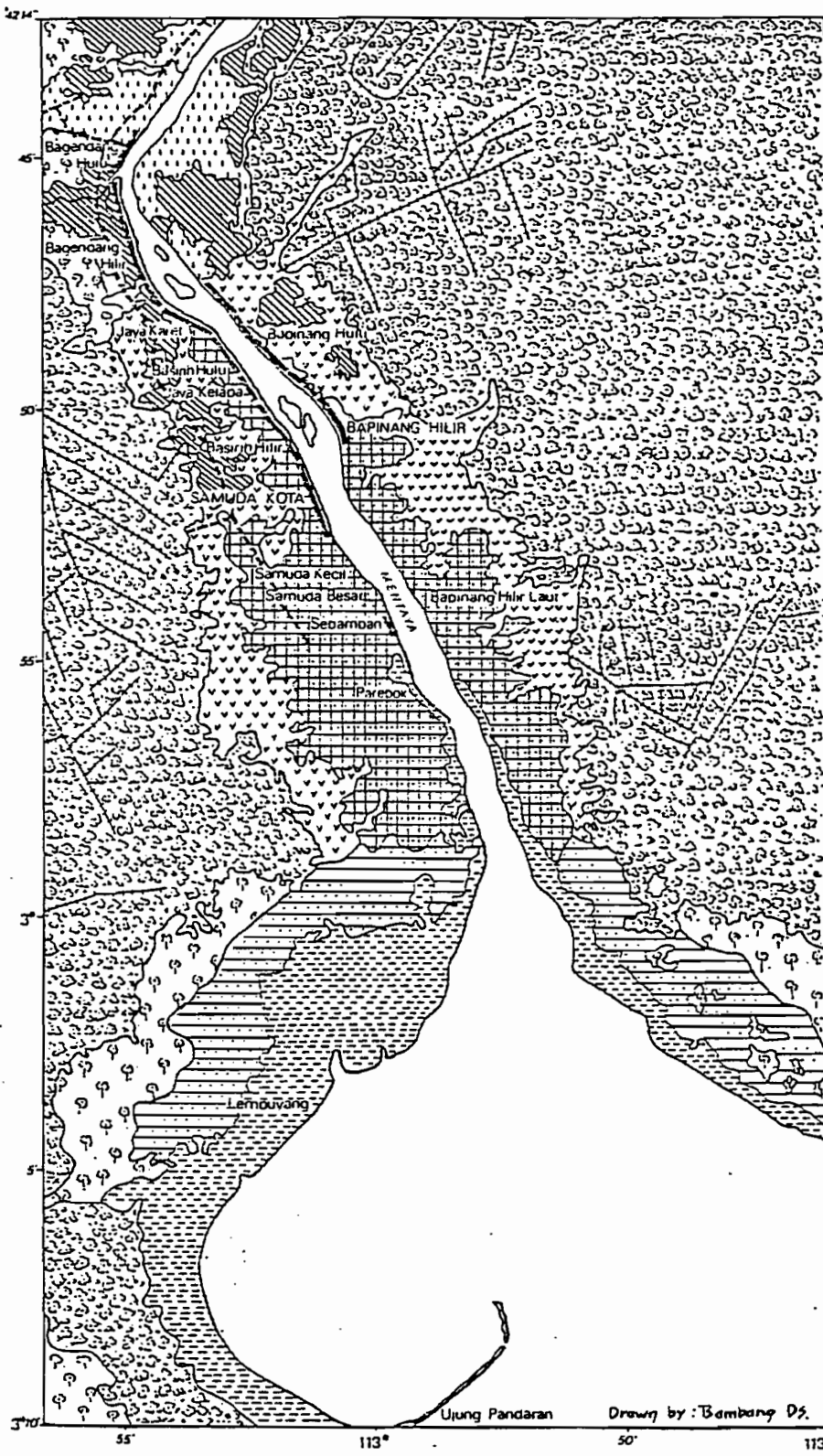
This is thus an example of a twofold adaptation : that of applying agricultural techniques to a particular natural surroundings and that of valorizing a seasonal labor force.

From Basirih Hilir to the sea, the uncertain landscape of Dayak country, with its recent clearings (ladang), its secondary forests and its small rattan or rubber plantations, abruptly gives way to an orderly landscape that is more heavily civilized and marked by the ever - present coconut tree. The canal running perpendicular to the river has become the main line of force, being both a major traffic route and principle of organization. The coconut trees line up perpendicular to the canal, while the houses border it or are scattered along the riverbank.

7.1. Setting up a coconut grove.

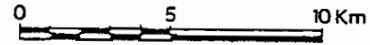
The story of a coconut grove illustrates the mechanics of land settlement. At the outset (A), there is the parcel bordered by a small stream that will be

LES COCOTERAIES DE LA BASSE VALLEE DE LA MENTAYA
 15- COCONUT PLANTATIONS ON THE LOWER MENTAYA RIVER



LEGENDE / LEGEND

- Route principale / Main road
- Voie ferrée d'exploitation forestière / Logging rails
- BAPINANG : Chef lieu de Kecamatan / Head of Kecamatan
- Jaya Kelapa : Village / Village
- Habitat dispersé / Scattered houses
- Forêt marécageuse / Swamp forest / Tropical heath forest
- *Nypa fruticans* Wurm & *Pandanus* sp
- Cocoteraies en production / Productive coconut plantations
- Jeunes cocoteraies / Young coconut plantations
- Plantations d'héveas / Rubber plantations
- Rizieres inondées / Lowland rice
- Ladang et forêt secondaire / Ladang and secondary forest



Source : Photographies aériennes - BAKOSURTANAL 1980



Drawn by : Bambang Ds.

progressively canalized (handil). This plot is summarily planted in lowland rice for one or two years.

When the rice yield drops and the salinity increases, the Banjars construct ridges running perpendicular to the stream. These ridges are 2 armspans¹ wide by 80 long and spaced 3 spans apart (B). On these are planted the young coconut trees (yellow dwarfs, red dwarfs) in 5 - span - wide lines. Between the coconut trees, 3 banana trees are set out, along with various vegetables (cucumbers, gourds,)

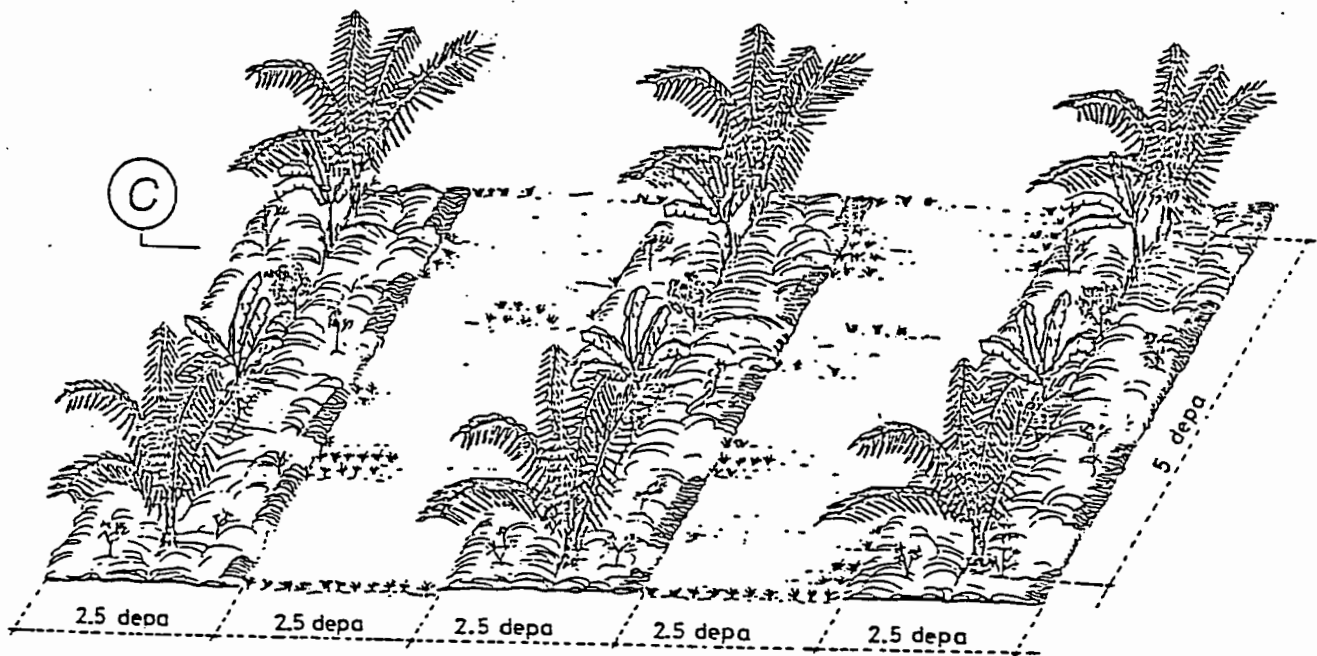
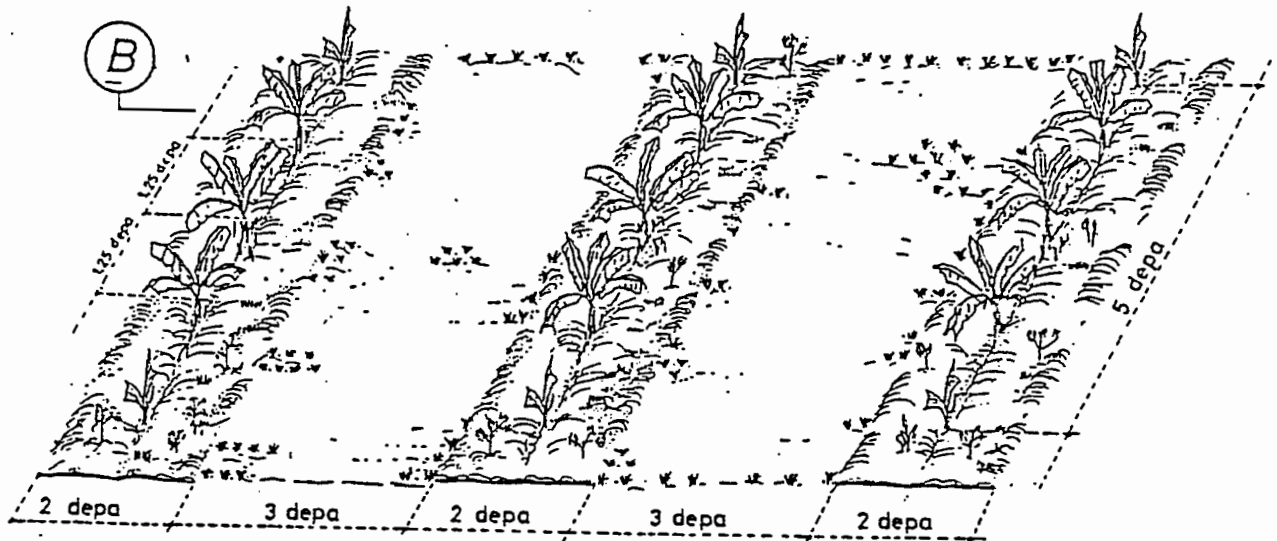
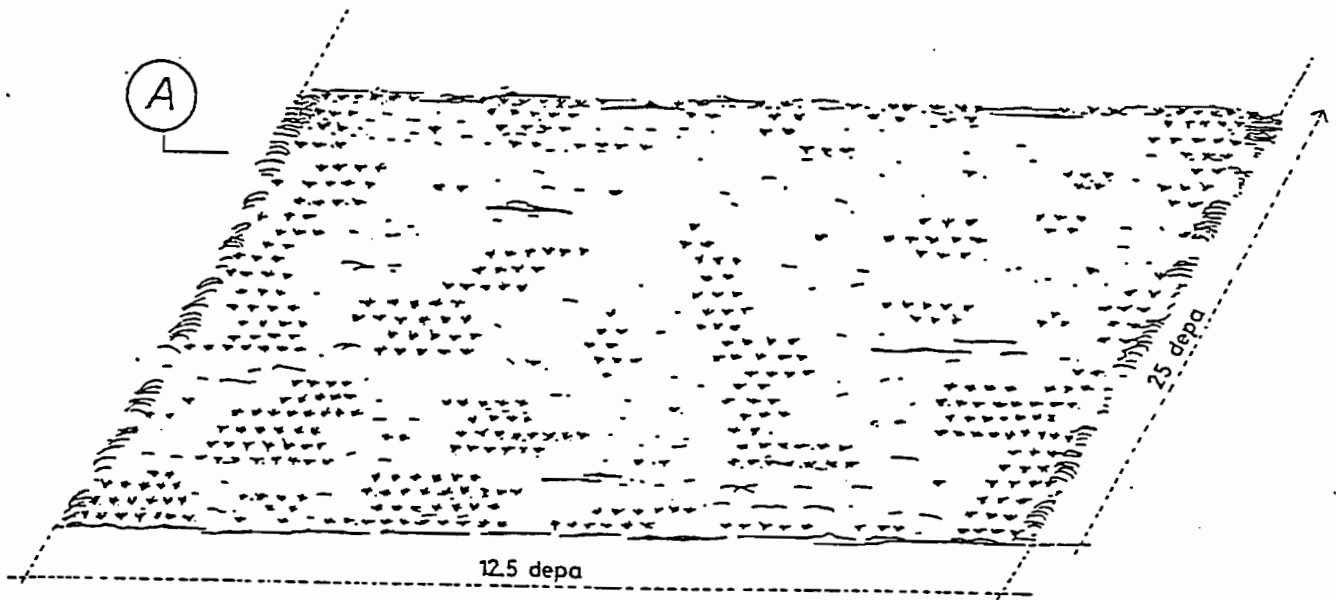
The 4th and 5th years (C), the grove begins to take shape : from this point on trenches contrast with the ridges that have been widened, then elevated with layers of soil from the deepened trenches. Both trenches and ridges are 2.5 spans wide. The rice, whose area is continuously diminishing, is planted in the trenches, while in the ridges the banana trees are producing and the vegetables have been replaced by young coffee plants which profit from the shade that the coconut palms are starting to provide.

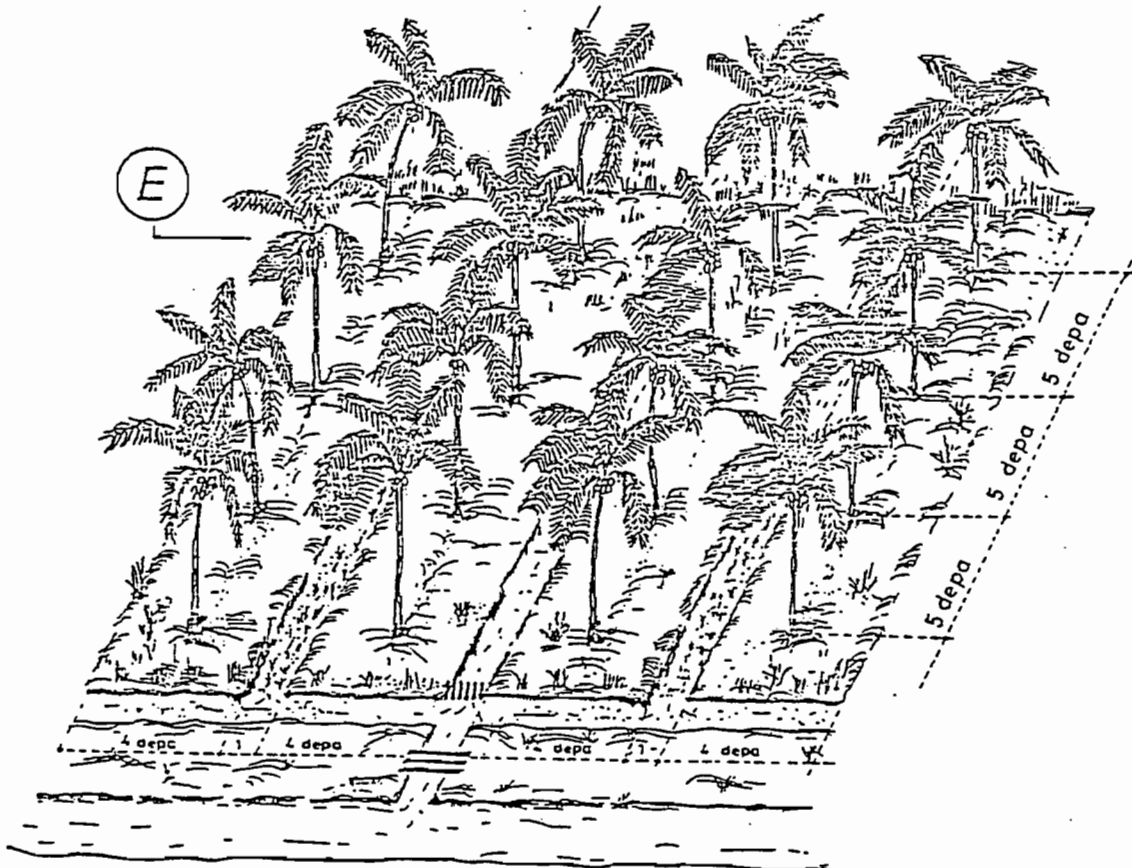
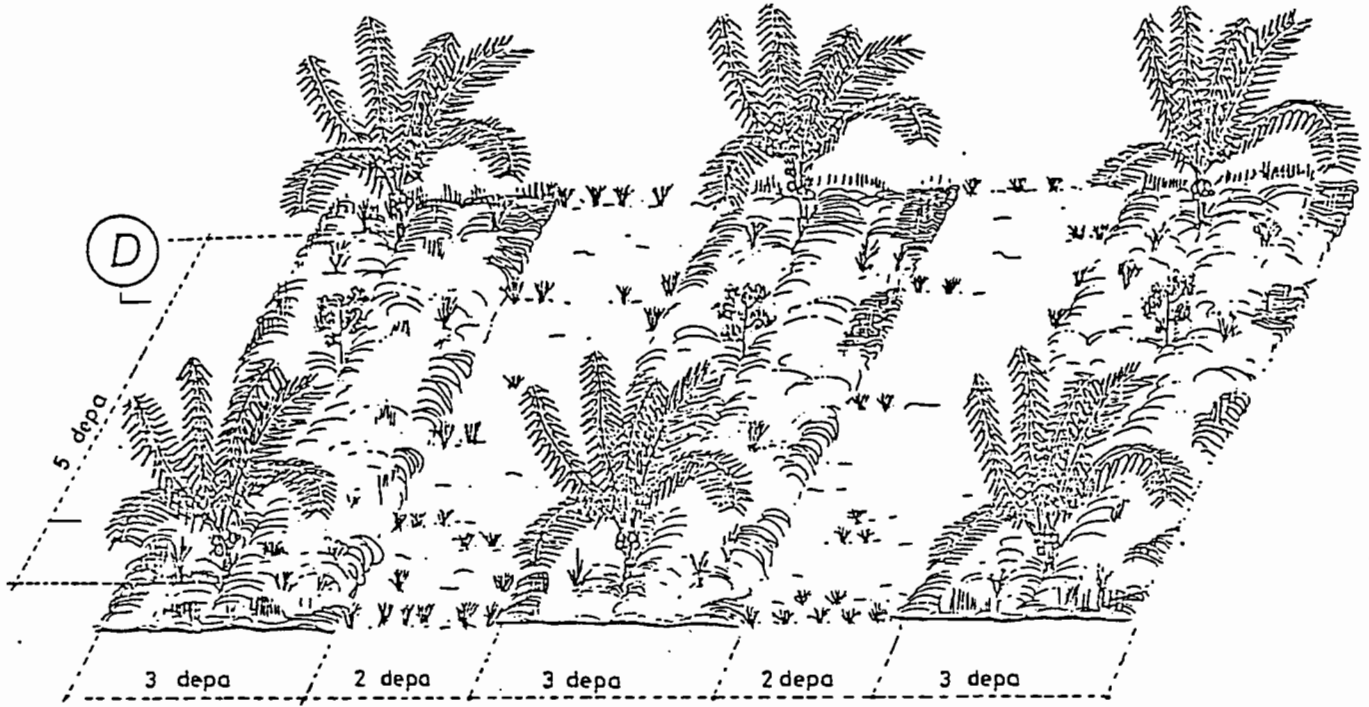
The fourth phase takes place between the 6th and the 8th years (D). The ridges are enlarged, and the trenches, deeper still, have shrunk to only 2 spans in width. The banana trees have disappeared, the coffee shrubs begin progressively producing, and the first coconuts appear. Rice is still grown in the trenches, but in order to compensate for the declining production, a new parcel is cleared along the borders of the grove. The colonization is progressing.

From the 9th year on (E), the plantation takes on its definitive appearance. The ridges take up most of the surface area, each being now 4 spans wide and the trenches only one. One trench out of every two progressively fills in, while the remaining is deepened. Mean while, the stream that borders the grove has been canalized and a path has been built alongside it. The coffee plants disappear, and little by little there remains only a homogeneous coconut grove.

¹ The depa, or "armspan", measures about 1.50 to 1.70 meters. In the present case, various surveys tend to bring the span's actual value closer to 1.50 m. The labor needed to set up a coconut grove is extensive, and the planter tends to squeeze in each tree.

16 LES ETAPES DE LA CONSTITUTION D'UNE COCOTERAIE SUR LA BASSE MENTAYA
THE STEPS LEADING TO A COCONUT SMALL HOLDING ON THE LOWER MENTAYA RIVER





Drawn by BAMBANG DS.

- A. 1^{ère} et 2^e années / 1st and 2nd years
- B. 3^e année / 3rd year
- C. 4^e et 5^e années / 4th and 5th years
- D. 6^e, 7^e, 8^e années / 6th, 7th, 8th years
- E. A partir de la 9^e année / From the 9th year

1. depa ("brassée") = 1.5 m environ / 1 depa ("armspan") = 1.5 m or so

7.2. Distribution of the plantations (Table No. 39).

The coconut groves cover a 15,500 - hectare area of which 8,800 is actually in production. On 6,700 ha. the trees are less than 10 years old and therefore not fully mature. (Thus there is an increase in surface area of 600 to 700 ha. per year). A 1/10 th scale survey was carried out in three villages : Jaya Karet, Sembaban and Parebok.

7.2.1. Jaya Karet : Early coconut groves.

The oldest coconut groves are found from Basirih Hilir to Samuda. This area does not have the habitually landscape, the trees are not in line, the space between them varies, and the plantations are not always homogenous : banana groves and coffee plantations alternate.

The village of Jaya Karet has a longstanding tradition of commercial agriculture. During the colonial period, before the arrival of the coconut plam, the inhabitants cultivated rubber trees (karet in Indonesian), thus giving the village its name. In the 1905's another speculation appeared : pineapple (nanas), cultivated 6 km from the river on the borders of the coconut groves; one dependancy is still called Jaya Nanas.

Surfaces areas average 1.73 ha. for the parcels and 2.68 ha. for the landholdings, but 60% of the trees are more than 10 years old as opposed to only 19% of less than 5 years. The groves are ageing and the costs of renewing them are high. The large - scale planters prefer to open new parcels towards the river's mouth at Besawang, Parebok, and especially Setirok (Table No. 40). In most cases they no longer work the soil themselves, and are content to trade in coprah or perhaps to manage a small oil factory.

39 - Land Development.

| Type of Development | Ha. | % |
|---------------------------------|-------|-------|
| Producing coconut groves | 8800 | 22.70 |
| Recently planted coconut groves | 6700 | 17.28 |
| Rubber small holdings | 3680 | 9.49 |
| L a d a n g | 3350 | 8.65 |
| Lowland rice | 8500 | 21.93 |
| Pandanus and Nypa | 7730 | 19.95 |
| T o t a l | 38760 | 100 |

Source : Aerial photographs – BAKOSURTANAL – 1980.
(See Map No. 15).

40 - Geographic distribution of the coconut groves belonging to the planters at
JAYA KARET

(% areas)

| Jaya Karet | Pulau Lepeh | Samuda kecil / besar | Besawang | Parebok | Setirok |
|------------|-------------|-------------------------|----------|---------|---------|
| 46.2 | 3.57 | 1.19 | 11.21 | 10.95 | 27.06 |

7.2.2. Parebok : A recent settlement.

The village of Parebok is definitely the opposite. It is not really a village per se, but rather the administrative joining of several pioneer fronts in full expansion. There is no centralized village, and each landholder lives on his own plantation. The parcels are larger (2.09 ha.) and the landholdings attain an average area of 4.06 ha. Land access is not yet a crucial problem, and only one fringe along Sampit Bay where the soil is too saline has been left to the Pandanus and Nypa that grow there.

7.2.3. Sebamban : The intermediate case.

The village is made up of two units : a one - street village along the river and scattered houses in the groves. 58% of the trees are more than 10 years old, but there is a certain renewal as 24% of the palms are less than 5 years old. The landholdings are of moderate size (2.89 ha.) but division is maximal and the average size of a parcel does not exceed 1.14 ha. The older groves, near the river, are of small dimensions. The buying up of land to concentrate one's own holding is much less advanced than at Jaya Karet, and on the interfluvium the small settlers must share a favorable area of limited size. The fact is that a privileged zone does exist, and only here can such coconut groves be created.

7.3. Two clever adaptations : the use of the tidal force, and the valorization of human potential.

Such coconut groves as these are not often seen on the southern Kalimantan coast. Only the lower valleys of the Kahayan (Bahaur region) and the Mentaya have been developed in this manner, while those of the Seruyan, the Katingan, and the Seranau have remained untouched. The demands both in terms of labor force and of natural surroundings are very restricting.

41 - Size of Parcels

| Area of parcels Ha. | Jaya Karet | | Sebamban | | Parebok | | Total Sample | |
|------------------------|------------|-------|----------|-------|---------|-------|--------------|-------|
| | Freq | % | Freq | % | Freq | % | Freq | % |
| 5 | 3 | 9.68 | 21 | 21.88 | 5 | 8.33 | 29 | 15.51 |
| 0.5 - 0.99 | 7 | 22.58 | 29 | 30.20 | 11 | 18.33 | 47 | 25.13 |
| 1 - 1.49 | 8 | 25.81 | 27 | 28.13 | 13 | 21.67 | 48 | 25.67 |
| 1.5 - 1.99 | 2 | 6.45 | 7 | 7.29 | 12 | 20 | 21 | 11.23 |
| 2 - 2.99 | 8 | 25.81 | 9 | 9.38 | 8 | 13.33 | 25 | 13.37 |
| 3 - 3.99 | 2 | 6.45 | 2 | 2.08 | 6 | 10 | 10 | 5.35 |
| 4 - 4.99 | 0 | 0 | 0 | 0 | 3 | 5 | 3 | 1.60 |
| 5 | 1 | 3.22 | 1 | 1.04 | 2 | 3.34 | 4 | 2.14 |

Source : Field Surveys, 1983. Survey at 1/10 scale. Sample of 31 parcels at Jaya Karet, 96 at Sebamban, 60 at Parebok. Average size of parcels : Jaya Karet 1.73 Ha, Sebamban 1.14 ha, Parebok 2.09 ha.

Size of land holdings

| Area of land holding Ha | Jaya Karet | | Sebamban | | Parebok | | Total Sample | |
|-------------------------------|------------|-------|----------|-------|---------|-------|--------------|-------|
| | Freq | % | Freq | % | Freq | % | Freq | % |
| 0 | | | 2 | 5.26 | | | 2 | 2.35 |
| 0.5 | 3 | 18.75 | 0 | 0 | 2 | 6.45 | 5 | 5.88 |
| 0.5 - 0.99 | 3 | 18.75 | 6 | 15.79 | 3 | 9.68 | 12 | 14.12 |
| 1 - 1.99 | 2 | 12.5 | 11 | 28.95 | 5 | 16.12 | 18 | 21.18 |
| 2 - 3.99 | 3 | 18.75 | 11 | 28.95 | 8 | 25.81 | 22 | 25.88 |
| 4 - 5.99 | 2 | 12.5 | 5 | 13.16 | 7 | 22.58 | 14 | 16.47 |
| 6 - 9.99 | 2 | 12.5 | 2 | 5.26 | 3 | 9.60 | 7 | 8.24 |
| 10 - 14.99 | 1 | 6.25 | 0 | 0 | 2 | 6.45 | 3 | 3.53 |
| 15 | 0 | 0 | 1 | 2.63 | 1 | 3.23 | 2 | 2.35 |

Source : Field surveys, 1983. Survey at 1/10 scale. Sample of 16 families Jaya Karet, 38 at Sebamban, 31 at Parebok. Average area per family : Jaya Karet 2.68 Ha, Sebamban 2.89 Ha, Parebok 4.06 ha.

Age of coconut - trees

| Age of the trees (years) | Jaya Karet | | Sebamban | | Parebok | | Total Sample | |
|----------------------------------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|
| | No. (trees) | % | No. (trees) | % | No. (trees) | % | No. (trees) | % |
| 5 | 1290 | 19.42 | 3072 | 24.30 | 3638 | 25.85 | 8000 | 23.98 |
| 5 - 9 | 1485 | 22.36 | 2195 | 17.31 | 4485 | 31.87 | 8165 | 24.48 |
| 10 | 3866 | 58.22 | 7373 | 58.33 | 5951 | 42.28 | 17190 | 51.54 |

Source : Field survey , 1983. Survey 1/10 scale.

7.3.1. An original adaptation to the environment : the use of the tide.

For such groves to be a success, there must absolutely be a means by which water can circulate, providing a double system of drainage and irrigation. A drainage system is indispensable for the evacuation of the acid water from the peat bogs which, blocked by the embankment of the river, stagnate and render any agricultural development impossible. Yet irrigation is just as imperative, for two reasons. First, in this peaty environment, the superficial horizon quickly dries out after drainage. Furthermore, the soil must be "rinsed" using fresh water from the river in order to reduce the acidity. As there is no available mechanical force, nor even a pump, the Banjars rely upon the ebb and flow of the tide.

When the tide ebbs, the waters from the peat bogs run off via the river, and this is the drainage system. As the tide comes in, the river waters are blocked by the tidal surge and run off through the canals, thus providing the irrigation. Between times, the aeration of the surface horizons has favored the production of coprah. Moreover, these flows contribute to the salt deposits which are beneficial to the coconut palm. The absorption of chlorine produces a parallel absorption of calcium. The yields are thus larger by 10 to 20% for the amount of coprah and 50 to 100% for the number of coconuts¹.

Thus, the conditions necessary to set up a coconut grove are very strict. Upstream from the river, above Basirih, or else beyond the five first kilometers on the interfluvium, the tidal amplitude (2.50 to 2.80 m in Sampit Bay) is no longer sufficient to ensure the double flow of drainage and irrigation. Only fringes of irrigated rice are developed. On the other hand, the plantations cannot be installed too close to the coast, as in this case the briny water would surge up the canals at flood tide. Fortunately, Sampit Bay is a favorable factor in the mixage of waters; only a coastal fringe is neglected.

¹ R. MANCIOT – M. OLLAGNIER – R. OCHS – IRHO Doc. No. 1485

7.3.2. A valorization of human potential that is no less clever : seasonal migrations and work in the coconut groves.

Without a strong tide, without a minimum of salinity, it might have been impossible to set up such coconut groves. However, the amount of work per hectare is far beyond the capacities of an exclusively familial labor force. The presence of seasonal Madurese workers, who are numerous and not overly demanding, is an asset the Banjarese learned to make the most of early on.

In the first year, the amount of labor is not much different from that needed for any lowland ricefield in the upper valley , to wit around 220 days/ha. Water control is very aleatory and risks are high of getting only a mediocre yield, which hardly encourages the employment of paid laborers; the work is therefore strictly a family affair.

Sometime around the third year, when the plantation has entered its second phase (B), the amount of work needed to run it is at its highest level, about 600 days / hectare. The hardest operation, ridging with a cangkul (a small, short - handled hoe), is consigned to the Madurese workers. In one day they can labor one borongan ¹ for a salary of Rp. 3000 ². This is the best - paid operation.

The other tasks - planting the coconut trees, banana trees, and vegetables - are also assigned to the Madurese, who estimate that about 20 trees can be planted per day, transport included.

¹ The borongan is both a job done at a fixed rate and a unit of surface measure and thus the borongan evolves according to the amount of progress made in the job ! In the ricefield, the borongan measures 10 x 10 armspans; during the "B" phase, 10 x 3, then 10 x 2.5, 10 x 2, and finally 10 spans long by one wide when the grove has reached maturity.

² 1 FF = 120 Rp. in 1983.

42- Amounts of labor needed in the coconut groves.

| Years | Phase | Cropping Operations | WD/HA | Years | Phases | Cropping Operations | WD/HA |
|---------------------|-------|-------------------------------|-------|-------------------------------|--------|-------------------------------|-------|
| 1 st and 2 nd | A | flooded ricefield | 220 | 6 th, 7 th 8 th. | D | weeding | 60 |
| 3 rd | B | ridging | 90 | | | widening ridges | 90 |
| | | plant coconut trees | 10 | thrashing/husking coconuts | 35 | | |
| | | plant banana trees | 30 | Total | | 185 | |
| | | plant vegetables | 180 | 9 th | E | weeding | 40 |
| | | transplant rice | 180 | | | deepening trenches | 90 |
| weeding | 40 | Thrashing/husking coconuts | 50 | | | | |
| rice harvest | 80 | Total | | 180 | | | |
| Total | | 610 | | | | | |
| 4th and 5 th | D | clearing brush | 60 | After 10 years | | thrashing/husking coconuts | 80 |
| | | widening ridges | 90 | | | clearing brush * | 30 |
| plant coffee shrubs | 10 | upkeep trenches * | 45 | | | | |
| Total | | 160 | | Total | | 155 | |

* 1 year out of 2

When the plantation is 4 to 8 years old (C & D), the amount of necessary labor begins to decrease. The most difficult task is still assigned to the Madurese, who widen the ridges and deepen the trenches. They consecrate about 90 days / ha. to this work, but as the labor is less strenuous than in the preceding phase, the salary paid is only Rp. 2000 to Rp. 2500. Once the ridging is completed, the area beneath the young trees must be weeded and cleared of brush, at Rp. 1000 per borongan. Around the 9 th year the irrigation and drainage ditch, or "parit dalam," must be dug and connected to the circulation canal. This is a very heavy investment of about 90 D / ha. which can scarcely be postponed.

On the other hand, by the 10 th year the upkeep has become easier. The canals have to be cleared out and cleaned only every 24 to 30 months. Most of the paid labor, then, is devoted to harvesting the coconuts. When the grove is old the workers must climb the trees, and labor thus becomes scarce. This is why coconuts are generally thrashed. They are then piled into the main trench, which has been blocked for this purpose. At ebb tide the coconuts drift down the trenches and canals to the planter's house, where they are hulled on a husking pike. It is estimated that one can thrash, gather, and husk 200 coconuts per day , for a salary of Rp. 600 / 100 coconuts.

According to the planters, a 10 - year - old tree is at peak production, whereas at 7 years a tree is at only 50% of its full capacity and only 15% at 5 years. The coconuts are harvested every 2½ months; 2 to 3 bunches averaging 7 nuts each come down; thus giving a total of 70 to 80 coconuts per tree and per year on a plantation whose yield is good.

7.3.3. The "Handi" system.

To ensure the loyalty of the Madurese workers, who have become familiar faces over the years and who, fed up with the eternal migrations back and forth between Madura and Kalimantan, wish to settle in the lower valley, the Ban-

jarese make it easy for them to obtain land by using a well - established procedure, the "sistim handi".

The landowner pays the Madurese to clear and clean up a parcel. He also provides the coconut saplings. For his part, the Madurese provides the labor, shaping the ridges, planting the trees, and generally building the plantation, without, in this case, receiving a salary. To provide for his family, he plants vegetables and banana trees, keeping the income from the sale of the yields for himself. When the coconut trees are 10 years old, the groves is shared. The Madurese receives half of the ridges and trees in full proprietorship, while the landowner keeps the other half; a deed is drawn up before the village headman.

When the favorable parcels have become rare and very expensive, this arrangement is quite advantageous for the migrant who could not obtain land otherwise. But from a different point of view, the landowner secures himself the permanent services of an agricultural laborer who, at any rate, does not earn enough from his own plot to feed his family.

7.4. Coconut groves and the economy of the lower valley : a financial "gold mine".

The 8800 hectares of producing coconut groves represent a "gold mine" of around two billion rupiah per year, that is, enough to animate the economy and stimulate a budding industrialization.

7.4.1. Operating accounts of a coconut grove.

The amount of investment necessary to set up a coconut grove as well as the income it provides are given in Table No. 43. Of course, this is an average case; there are many small differences from one planter to the next, and even at one planter's from year to year.

PHASE A (1st and 2nd years).

In a good year, one can reasonable expect to harvest 2 t of paddy (gabah) per hectare. It is useless to hope to bring in 3 harvests in 2 years and yields of 4 to 5 t/ha., like those on the polders in the Banjarmasin area where water control

43 - Operating Accounts For a One - Hectare Coconut Grove 1983.

| Phase | Investment | | | Cross Income | | | Net Income in Rp. |
|----------------|---|--|-----------------------------------|------------------------------|---|---|-------------------|
| | Agricultural operations | Amount labor W - D/ha | Cost Rp | Type yield | Qty | Yield value (Rp) | |
| A | - clearing/felling - nursery - double transplanting - weeding - harvesting | family labor force | | paddy | 2000 kg ¹ | 220,000 | |
| | Total | 220 | | | | 220,000 | 220,000 |
| B | - ridging - plant coconut trees - plant banana trees - plant vegetables - transplant rice - weeding - rice harv | 90 10 30 180 180 40 80 | 270,000 15,000 45,000 | paddy vegetables | 1200 kg ² | 132,000 200,000 | |
| | Total | 610 | 330,000 | | | 332,000 | 0 to 2000 |
| C | - weeding - widening ridges - plant coffee | 60 90 10 | 60,000 225,000 family labor | paddy bananas coconuts | 1000 kg ³ 1800 kg 2000 | 110,000 108,000 ⁶ 70,000 | |
| | Total | 160 | 285,000 | | | 288,000 | 0 to 3000 |
| D | - weeding - widening ridges - thrashing/husking coconuts | 60 90 35 | 60,000 225,000 42,000 | paddy coffee coconuts | 800 kg ⁴ 100 kg 7000 | 88,000 120,000 ⁷ 245,000 | |
| | Total | 185 | 327,000 | | | 453,000 | 126,000 |
| E | - thrashing/husking coconuts - weeding - deepening trenches | 50 40 90 | 60,000 40,000 180,000 | coconuts | 10,000 | 350,000 | |
| | Total | 180 | 280,000 | | | | 70,000 |
| After 10 years | - thrashing/husking coconuts - clearing - upkeep trenches | 80 60/2 90/2 | 86,400 60,000/2 180,000/2 | coconuts | 144,000 ⁵ | 504,000 | |
| | Total | 155 | 206,000 | | | | 290,000 - 300,000 |

Source : field surveys — 1983 prices. 1 FF = about Rp. 120.

- Notes :
- 1) Very aleatory yield : 1 kg paddy = Rp. 110
 - 2) 60% of surface area : Yield 2 t / ha - coefficient rice : paddy = 0.6
 - 3) 50% of surface area
 - 4) 40% of surface area
 - 5) 180 trees X 20 coconuts / tree X 4 harvests/year X Rp. 35 / nut
 - 6) Oct. 1983 : 1 kg of bananas = Rp. 60
 - 7) Oct. 1983 : 1 kg of "dealer's" coffee = Rp. 1200.

is perfect. At Rp. 110 per kilogram, the gross income comes to Rp. 220,000, which, considering the use of a family labor force, is equivalent to a return on the labor invested of about Rp. 1000 per day. However, the large interannual variability must not be forgotten.

PHASES B & C (3rd, 4th, and 5th years).

The investments are so heavy that the planter can barely hope to break even. The largest expenditure is for ridging (220 to 270,000 Rp./ha.). A theoretical yield in paddy of about 2 t/ha. has been retained, but the area devoted to rice is continually shrinking. The income brought in by the vegetables and bananas is more difficult to pinpoint and varies from planter to planter.

PHASE D (6 th, 7th, and 8th years).

Beginning in the 6 th year, the planter starts making a profit. The costs of ridging remain high, but aside from the paddy which is diminishing, other sources of income appear. Yields of 100 kg of "dealer's" coffee (dried but not roasted) per hectare are frequent. In October 1983 one kilogram of this coffee was worth Rp. 1200. The coconut harvest begins to be considerable; the trees are at 50% of their capacity. The planter's net profit can be estimated at Rp. 120,000 per hectare.

PHASE E (9 th year)

The net profits drop despite the increase in the production of coconuts, as the imperative deepening of the trenches costs about Rp. 180,000 / ha.

After 10 years.

The plantation has reached maturity, the upkeep of the trenches and weeding are now necessary only every 2 years, and the main expenses are

incurred during the harvesting and husking of the nuts (Rp. 600 / 100 nuts in Oct. 1983, to wit 85 to 90,000 Rp./ha.). On the other hand, the coconuts bring in Rp. 500,000 / ha. on the average for a profitable plantation (Rp. 35 / nut). The estimated net profit is Rp. 300,000 / ha.

7.4.2. The coprah ovens.

Once the nuts have been husked on a stake thrust into the ground, they are split open and left to dry in the sun for one or two days. The half - coconuts are then placed in orderly layers in a coprah oven beneath which is lighted a fire that is fed by the fibrous shell from the nuts themselves. The quality of the coprah depends in part on the quality of the drying, so the coconuts are treated as as many as 4 to 5 times and sorted throughout the process.

When the nuts are considered satisfactorily dried, the coprah is removed : the white meat is separated from the half - shell with a wide - bladed knife. In this manner two men can treat 1000 nuts per day for a salary of Rp. 3500 to be shared at the end of the day. In general, it is the small planters who do not own : a sufficiently large grove but who do have a small capital of around Rp. 150,000 that invest in a coprah oven, source of secondary income.

7.4.3. The oil factories.

In the lower valley, there were 20 oil factories in 1981 : 6 at Jaya Karet, 5 at Jaya Kelapa, 6 at Samuda, 2 at Basirih, and one at Sebambam; in other words, they are concentrated in the middle sector of the estuary in those villages where coconut farming is an established tradition. At the end of 1982, there remained only 12 factories, the worldwide recession and the severe drop in oil and and coprah prices having forced the small enterprises to close down.

At Jaya Karet, a small oil factory can treat 4500 to 5000 kg of coprah per day. The owner estimates that 1000 coconuts yield either 300 kg of coprah at 46% oil, or 275 kg at 50%, or even still 225kg at 57%, which means that in one day he can process about 2 tons of oil (the coconut groves in the lower valley have a yield of 3.5 tons of coprah per hectare ¹ or of 1.76 t of oil a year).

The rudimentary equipment is composed of two machines and a drying floor. The first operation consists in transforming the coprah into shavings (4 to 5 hours for 5 workers for 4500 kg). The coprah is then dried in a hot - air dryer before going to the press. The oil extracted in this way can keep for 6 months but in order to obtain long - conservation oil, a final treatment and conditioning must be done in Surabaya.

On the whole, the factory, directed by 3 members of the same Banjarese family, employs - on the average - 6 workers. These employees are paid Rp. 4000 per ton of coprah treated, which means that in one day's work they can each earn Rp. 3000 ². Stocks of coprah are evaluated at 2 months labor's worth and monthly production at 45 to 50 tons ³ of oil sold in part in Banjarmasin and Kuala Kapuas (immediate local consumption) and in part to Surabaya (conditioning).

¹ 160 trees - 80 coconuts / tree / year, to wit, 12,800 coconuts / ha. or 3.52 tons of coprah at 50% / oil.

² $\frac{\text{Rp. } 4000 \times 4.5 \text{ t}}{6} = \text{Rp. } 3000$

³ 250 drums of 190 kg each.

CONCLUSIONS AND RECOMMENDATIONS

- 1) Create a large number of small centers rather than a few large projects.

First of all, it should be pointed out that 48% of the population in the lower valley is made up of spontaneous transmigrants who have never been counted as such and who have blended perfectly into the local population. (Chap. 6). These transmigrants adapted so well because they found work in the coconut groves and because land access was made easy for them. (Chap. 7).

There is here a lesson to be learned for the future Transmigration projects : it is altogether possible to attract, spontaneously, 50% more families if the following principles are respected :

- It is better to give preference to the small projects, though they be numerous, rather than the large centers, since the spontaneous transmigrants tend to settle on the borders of the centers and try to obtain land. The more small centers there are, the more possibilities there will be of settling on their outskirts. On the other hand, for the very large projects, the problems of land access crop up very rapidly and severely.

- It would be suitable to encourage the hiring of Transmigrants on the local plantations (Coconut groves in the lower valley, rattan or rubber plantations in the upper valley). Their assimilation will only be that much easier; any refusal to accept them will be avoided if the local populations need the transmigrant labor force.

- 2) Improve the infrastructures.

So that Sampit can develop and become an important center for the commercialization of the Transmigrants' cash crops, the navigation conditions and port infrastructure must be improved.

2.1. Navigation.

The estuary needs to be developed and the canal cleared of the numerous wrecks at the entrance to the estuary that make navigation dangerous. Furthermore, the canal is filled with sand and should be dredged so that the cargoes can load at Sampit and avoid having to break up loads in the Bay. Using clusters of spikes, it would be possible to deepen the canal and thus increase the ships' draft. (Chap. 1 & 2).

2.2. The port.

There are almost no quays and the number of docks is very insufficient. Should the increase in production of cash crops be large, there would soon be a problem of lack of space and storage area.

3) The crops to develop at the Transmigration Centers.

The analysis of the trade network (Chap. 3 & 5) shows that the cash crops most likely to be developed are, by order of priority : rattan, rubber, and coconut palm.

3.1. Rattan

The Kalimantan strain of rattan, perfectly adapted to the environment, provides high returns ¹ , benefits from an excellent commercialization network, and furthermore can be treated at the factory that has been installed on the estuary (Chap. 5). Thus it would be necessary to :

- carry out a study of the different varieties of rattan and the possible selection of highly productive ones, and to define an appropriate fertiliser;
- favourise the creation of plantations that are rationally organized and follow modern methods (optimal spacing of stocks and appropriate facilities for

¹ See EAST MENTAYA PRIORITY AREA, Part II "Human Environment".
ORSTOM - Transmigrasi. PTA 44. Jakarta 1981.

the collection and expedition of the production);

- allow for an in - depth settlement of the interfluve by opening roads.

The main obstacle to the extension of rattan plantations is in fact the difficulties in shipping out the production, while a great many favorable spots remain unsettled. However, an arrangement with the Forestry Services in charge of protecting the productive forest is an indispensable preliminary.

- study the absorption capacities of the world market.

3.2. Rubber

Despite the extreme variability of the market, this speculation should be developed in order to diversify the Transmigrants' sources of income. It would be preferable to :

- rehabilitate the Dayak plantations that could offer jobs to the settlers and eventually attract spontaneous transmigrants;

- set up nurseries of selected clones and teach grafting methods. There is a serious effort to be made in terms of popularizing modern techniques in heveaculture. In this respect, the opening of a tapping school in Tumbang Sangai would help avoid the permanent spoilage of an excessively large number of trees.

- improve the treatment of the latex in order to permit the fabrication of crumb rubber, instead of blankets. (Chap. 5)

Thus, in spite of a possible drop in the market, rubber could still provide the Transmigrants with a satisfactory income, provided the yields are increased.

3.3. Coconut

Along the estuary, coconut palms provide very high returns and have introduced small - scale industrialization. The oil factories all too often lack stocks and cannot function at their fullest capacity. It would therefore be best

to diversify the supplies in coprah (Chap. 7). The transmigrants installed in the upper valley could provide coprah, but to do this it would be necessary to :

- distribute selected varieties,
- come up with an adapted fertiliser in order to obtain a proper yield in coprah despite the numerous deficiencies, notably in chlorine, in the soils of the upper valley.

3.4. The other commercial crops.

Complementary crops could be proposed to the Transmigrants so that diversified sources of income could be secured. The commercialization networks are sufficiently flexible to adapt very rapidly to a new offer.

- Cloves : There is a risk of a drop in the prices as many of the islands in the archipelago have begun producing cloves.

- Coffee : The creation of coffee smallholdings is highly desirable, especially since a great deal of coffee is imported from Java. Furthermore, there is no problem of consumption or marketing, though prices are not very favorable on the world market.

- Cocoa : There are greater difficulties in this case, for a factory must be provided for in order to treat the production, since the cacao - pods do not keep very long. Moreover, the soils of the upper valley might not be rich enough. Spreading fertiliser is always possible, but this might burden the returns on such cocoa and limit the profitability of a potential factory. Finally, the overly - humid climate could favorise the multiplication of pests.

4) The concurrence of food - crops and cash crops on the Transmigrant farms of the upper valley.

Here again, one will note that the Banjarese cultivate irrigated rice mainly

to valorize a necessary clearing while at the same time carefully avoiding any investment in paid labor. As soon as possible, they drop rice cultivation and devote their energy to cash crops - bananas, coffee, coconut. In this they imitate the Dayaks of the upper valley for whom the ladang planted in upland rice is only the beginnings of a new plantation ¹. Of course, there are a few fringe rice-fields whose irrigation is summarily controlled, but these concern only recent immigrants who are excluded from competition for the coconut tree.

Therefore, it would seem altogether desirable for the Transmigrants to invest in perennial crops after devoting the first years to food crops. In this way, progressively, only the most favorable parcels - in other words, the low - lying ones - should be set aside for food crops, while the higher ground should be converted into commercial plantations.

One cannot emphasize too heavily that it is vain to hope for comfortable cash incomes from rice cultivation alone. The yields in paddy would have to be on the order of 5 t / ha. with 3 harvests in 2 years at the present prices for paddy (1 kg = Rp. 110 in 1983) if the farmer wishes to obtain a proper return on the work - day. Such results are possible only on Java where the soils are very fertile and development particularly intense, or else in South Kalimantan in those areas where water control is perfectly assured at the cost of enormous investments (polders).

In the present state of affairs, the "vocation" of the upper valley seems to be oriented towards tree crops. The incomes from the plantations will then allow the farmers to buy food supplies and to invest in agricultural. In this respect, the "Nucleus Estate System" appears to be the best adapted.

¹ EAST MENTAYA PRIORITY AREA, Part II, op. cit.

5) The limits of the "sistim garpu"

On the lower Kahayan, in the Maluku region, and in South Kalimantan, some Transmigration Projects have been opened that make use of the tides (pasang surut) to drain and irrigate and whose parcels are laid out in such a way as to suggest, by their form, a fork, giving rise to the name "sistim garpu"¹. This method, based on the Banjarese settlement methods, does not always work, for various reasons :

– For this system to work, the tidal force must be strong, which excludes any in - depth settling of the interfluves as well as the upstream portion of the estuary. (Chap. 7) Now, Maluku is 50 km from the sea !.

– The Banjarese method is based on slight differences in level, on the order of a few dozen centimeters, thus making irrigation possible when the rising tide pushes the river waters back and into the canals. On projects of the "garpu" type, the use of machinery and the digging of deep trenches (almost 2.5 meters) have resulted in the realization of the drainage alone. In consequence the soil has compacted, the surface horizons are completely dired out, and the shrinkage cracks are extremely widespread!.

– Some of the Transmigrants have developed their plots by transforming the "irrigated ricefields" into rubber plantations and are having a go at raising manually - watered vegetables. However, the large majority of Transmigrants work in the nearby forestry exploitations or else leave the Center altogether.

In order to rehabilitate such projects, the existing canals could be used as drainage canals and a network of irrigations ditches fed by pumps could be created. However, it remains to be seen whether the high cost of rehabilitation is justified.

¹ "Garpu" = "fork" in Indonesian.

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