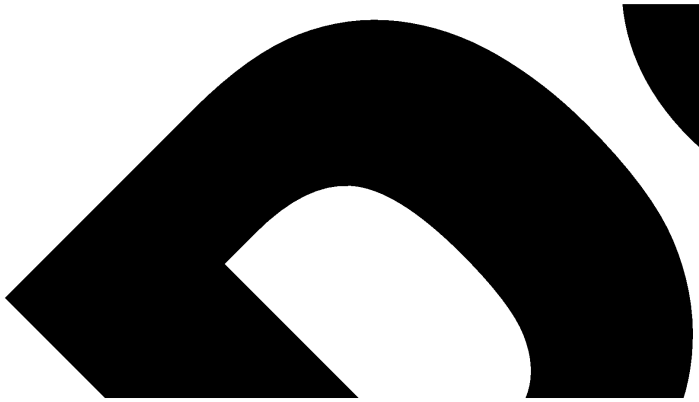

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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Indonesia's Transport Problems

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September 1969

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
September 1969

INTELLIGENCE MEMORANDUM

Indonesia's Transport Problems

Introduction

Indonesia's transport system has been in poor condition for years as the result of war damage, withdrawal of Dutch administrators and ships, and the economic disruptions and poor management of the Sukarno regime. The Suharto government, realizing that a viable transport system is essential for political control and economic development of the more than 3,000 islands of the archipelago, has taken steps to improve the situation with foreign assistance.

This memorandum will discuss the basic problems and assess the impact of the poor transport service on the economy. It will examine the priority given to transport in the new Indonesian five-year plan and consider whether large amounts of new investment are needed immediately for transport or whether there could be adequate improvement in the near future with modest investments and with more emphasis on management and greater operational efficiency.

Note: This memorandum was produced solely by CIA. It was prepared by the Office of Economic Research and was coordinated with the Office of Current Intelligence.

Status of the Transport System

1. During their long colonial rule in Indonesia, the Dutch built an efficient transport system that connected producing areas with ports and population centers and facilitated political and military control. Shipping was the system's backbone for some 3,000 islands of the archipelago. Land routes were mostly short links from the agricultural and mineral producing areas to the ports, but they also connected surplus and deficit areas within the islands.

2. This transport system was extensively damaged during World War II and the conflict that preceded Indonesian independence in 1949. Restoration was assigned a high priority after independence. Except for motor transport, nearly all transport facilities were nationalized. The system improved rapidly until about 1957 when transport as well as other sectors of the economy began to show the cumulative effects of Sukarno's economic and political mismanagement.

3. Merchant shipping suffered most during Sukarno's rule. In 1957, Sukarno evicted the Dutch shipping company that accounted for about 80 percent of all interisland tonnage. Indonesia lost not only the company's ships but also about 90 percent of the operating personnel as well. Although the government gradually chartered or purchased more than enough replacement tonnage, the newly hired Indonesian personnel were ill-trained and service deteriorated. While the volume of shipping available increased rapidly after 1957 (see Table 1), operating efficiency decreased markedly. During the early 1960's, more than half of the merchant fleet was inoperative and most of the ships still working were used to only 30 percent of capacity. There were incredible port delays. The causes were manifold and included poor organization of port and repair facilities, lack of spare parts, and red tape. Shipping was also disrupted seriously during the confrontation with Malaysia beginning in late 1963. Some improvements have been made since 1966, but sailing boats are now handling about half of the interisland shipping.

4. Motor transport, of minor importance before independence, expanded rapidly until about 1957 when that system also began to deteriorate. The vehicle inventory grew markedly (see Table 2), but an increasing proportion of the vehicles were inoperative for want of mechanics and spare parts. The spare-parts problem was complicated by the great variety of foreign models in the inventory and the cutback by some countries in foreign aid used to purchase spare parts. By 1966 at least half of the trucks and buses in the country were inoperable. Since then, spare parts have constituted an increasing proportion of automotive imports and fewer stalled vehicles have been observed on the streets and roads.

5. The road network also deteriorated after 1957 and adversely affected road transport. By the end of the Sukarno era, sections of many roads were impassable and much of the remainder was so run down that wear and tear on vehicles was extremely high. The result was high transport costs. In addition, most roads and bridges were built to prewar structural standards and were inadequate for modern traffic. Only 3 percent of the country's network was designed for axle loads of 5 tons or more, about 22 percent for 2.75 to 3.5 tons, and 75 percent for 1 to 1.5 tons. Only 19 percent of the roads now have asphalt or bituminous surface, 41 percent are gravel, and the remainder are earth. Road conditions in Java improved noticeably during 1967-68 mainly as the result of Food-for-Work programs and the formation of civic action groups. Thus far, the improvement has been limited for the most part to main roads between major cities. Roads in outlying areas have received little attention.

6. Intra-city transport developed even more acute problems than road transport generally, as rapid population growth and even more rapid urbanization coincided with a marked decline in buses. In Djakarta in 1966-67, for example, open trucks were used for passengers, and hundreds of two-wheeled, horse-drawn carts carrying four to six passengers functioned as public carriers. Recent reports indicate that the situation in Djakarta has improved in terms of safety and the amount of transport available, but tremendous problems remain. Other cities have made less progress.

7. The railroads weathered the Sukarno years better than road and water transport and actually could handle more freight than was offered. During Sukarno's rule, rail transport shifted from a predominance of freight traffic to passenger traffic. This shift reflected the concentration of railroads in densely populated Java, relatively low rail passenger fares, the decline of the sugar industry for which the railroads were principally built, and competition for freight from road transport. About 3,000 miles of meter-gauge railways on Java and Madura serve all principal cities on the islands and extend to outlying areas. The remainder of the country's railroads -- about 1,000 miles -- consist of four unconnected lines on Sumatra that principally carry mine and plantation output to the ports. The rail equipment inventory currently is below pre-war levels (see Table 3), nearly two-thirds of the entire rolling stock is over 40 years old, and two-thirds of the locomotives are steam powered. There was almost no capital investment in railroads from the early 1930's until 1949, and subsequent investment failed to cover even replacements. Track and bridge maintenance was neglected. Poor management and serious overstaffing also contributed to the exceedingly low operating efficiency.

8. Civil air transport, like motor transport, grew rapidly following independence although service was limited. After World War II the Dutch airlines did not resume service in Indonesia but instead provided advisers and technical assistance to Garuda, the Indonesian national airline. After the Dutch withdrew in 1957, Garuda hired other foreign advisers and technicians. Routes were limited to serving only about 50 domestic points. Garuda and another small national company that operated feeder service on outer islands monopolized domestic service. Garuda also operated a few international routes, and losses on these routes were more than compensated from domestic revenues. By the end of the Sukarno era, however, air transport was run down and operating in the red because of taxes, deteriorating management, and a lack of investment in airports and ground support facilities (which were not under Garuda control). Nearly half of Garuda's fleet of 35 planes were old DC-3's; spare parts were not always available, partly because of lack of

foreign exchange; operation of the planes was unpredictable with poor runways; and planes were underutilized because of lack of lighting and communications equipment at airports. During 1968, Garuda's performance improved appreciably in quality of service and operations. Surplus employees were discharged and new planes ordered. Because of limited airport services, however, the existing fleet is still not fully utilized.

Major Problems in the Transport System

9. A basic problem in all modes of Indonesia's transport is the dire shortage of competent administrative, managerial, and technical skills. This shortage affects government control of transport organs, daily transport operation, and maintenance of network and equipment as well as planning for transport development. For example, the central government directorate responsible for detailed planning of national roads has only 20 civil engineers for a country one-fourth the size of the United States. This deficiency is common to all sectors of government and private business, as only about 120 engineering graduates are available each year for the public and private sectors combined. In the case of transport this shortage is aggravated by an overly complicated organizational system. Of all the transport systems, port operations probably have the most complicated and overlapping administrative responsibilities. Control of ports is vested in the General Directorate of Sea Communications, but in the major ports responsibility is divided among the heads of the shipping regions, a port authority, a port council, a technical advisory staff, and the local harbor state enterprise. Port operations, dredging of ports and access channels, and maintenance of navigational aids are under separate agencies.

10. Another problem is the poor financial position of the various transport agencies and their lack of working capital and investment funds. Most have large debts, and sometimes large uncollectable claims, often with other state enterprises and agencies. As a result, private and state enterprises are reluctant to contract with transport agencies because they might not get paid. Lack of funds also has restricted imports of replacement parts.

Foreign countries have extended credits for transport systems, but local transport agencies often have had insufficient local funds to buy the needed foreign exchange.

11. The development of the transport system in Indonesia after World War II was financed mainly by foreign capital. Loans, grants, and long-term credits extended by all donors for economic purposes totaled $3.1 billion from 1950 through 1964 of which about $536 million, or 17 percent, was allocated to transport projects. The merchant marine received 38 percent, road transport 32 percent, railroads 25 percent, and civil aviation 5 percent. Much of the foreign investment in transport was spent on new transport equipment. Relatively little was spent for spare parts, repair shops, maintenance, and training of administrative and technical personnel, which were needed to utilize the new equipment efficiently. Government controls resulted in some improvement on this score in 1967 and 1968 -- about half the value of material imports for the transport sector consisted of spare parts, a much larger proportion than in previous years. A little less than half the value of the imports during 1967-68 was financed by project aid. Project aid would have been larger had suitable large-scale projects been available for financing as individual projects, but by far the highest priority requirement in transport has been the repair and rehabilitation of existing equipment and facilities.

12. Government freight rate policies also have contributed to the financial problems of the transport agencies. The government controls freight rates except for road transport for which it fixes a maximum. The Sukarno government kept freight rates very low, making transport agencies dependent on inadequate budget subsidies. Efficiency of operation declined because of this lack of funds. Since early 1967 the Suharto government has raised rates in an attempt to make transport agencies cover their costs. By setting rates in relation to present high costs of operation, however, all rates are now high and the more inefficient modes -- water and rail transport -- have relatively higher rates. Thus truck transport is used whenever a shipper has a choice of modes as

he does on Java where rail, truck, and coastal shipping are usually available. This situation has left rail transport in particular, and water transport in some areas, with unused capacity and has further lowered their efficiency.

13. The accumulated backlog of needed repair, rehabilitation, and new construction is formidable. It results principally from the shortage of funds, dissipation of purchasing power by inflation, and mistakes in planning and priorities. The backlog includes rebuilding nearly the entire road and rail networks in addition to repairing or replacing a major share of the equipment and facilities in water and air transport.

Adequacy of the Transport System

14. Although there is general agreement that the Indonesian transport system needs improvement, opinions vary regarding the adequacy of the current transport support to the economy. Indonesian government officials take the most pessimistic view of the situation, repeatedly saying that transport service is insufficient. The International Monetary Fund, in a mid-1968 report, likewise implied that transport was inadequate:

> The requirements for new equipment, spare parts, supplies and raw materials for relieving the existing transport bottlenecks are very large. The road system ... is inadequate for the current volume of traffic. Interisland shipping suffers from inadequate dockyard facilities and navigation facilities. ... A shortage of locomotives, an inadequate supply of coal, spare parts, and sleepers, and the poor condition of tracks, bridges, and communications equipment have adversely affected rail transport. The situation has not changed materially since the end of 1966 because of the shortage of resources.

American observers in Djakarta have not specifically assessed the adequacy of transport but have cited examples of nonavailability of transport (roads blocked and ports and airports closed) and of inefficient transport service (slow traffic on deteriorated roads, shortages of buses, broken-down

vehicles, and long delays in ports). In early 1968 the International Bank for Reconstruction and Development (IBRD) took the position that Indonesia has a basically sound transport system which, if efficiently operated and maintained, could adequately serve present transport requirements:

> In the longer run Indonesia must plan on larger investments in this field. However, because of the decline or stagnation of trade in recent years, the physical capacity of the transport system is, with some exceptions, not a bottleneck at present.

The IBRD report also noted that the high cost of transportation and the poor utilization of equipment on hand are more important problems than is the physical capacity of the transport system.

15. Indonesia's transport system handled without significant difficulty the increased demand for transport created by the bumper rice crop in 1968 -- an increase of 11 percent over 1967. In addition, there was a slight upswing in industry and construction that also made increased demands on the transport system. This situation suggests that the transport system is able to support the economy at present despite its deteriorated condition. The overall transport system has been able to perform as well as it has since 1962 despite almost complete neglect mainly because of the substantial imports of motor vehicles. Motor transport accounted for about 80 percent of the tons carried in 1962 and at least 90 percent in 1967. During 1968, repair of vehicles previously out of service probably pushed this percentage even higher. Another factor in the capability of the transport system to support the economy at present is the ease with which a developing economy can resort to primitive transport. Primitive forms of transport are still commonly used in Indonesia and are quickly expanded to meet shortfalls in modern service. This has been the case in water transport and in intra-city transport, as already mentioned. While this situation is indicative of the adaptable nature of Indonesian transport, such a transport system cannot be relied upon to continually support a viable economy.

16. The existing transport capacity is very unevenly distributed throughout the country. While transport facilities on Java, the location of a major share of the economy and the transport system, appear to have been adequate to meet demand in recent years, transportation on the outer islands, including parts of Sumatra, has been less abundant and is in poorer condition. Some areas that formerly produced for export are now isolated. Other areas, which have food surpluses and could be developed to produce for the domestic market or for export, lack transportation. In general, development of the outer islands is limited by poor transport. Nevertheless, the outer islands have received a substantial share of new foreign investment, about 80 percent of the total of $534 million approved as of April 1969. Of the 114 projects (excluding petroleum), 68 are located in Java and 46 in the outer islands. Projects in the outer islands were mainly in mining, fishing, and forestry, projects which for the most part provide their own transportation. Smaller, less self-contained projects that would employ a number of people and help develop a broad-based economy in the outer islands have not been forthcoming, partly for lack of transport.

Plans for Transport Development

17. A general plan for transport rehabilitation and development is set forth in the new Indonesian five-year plan that began on 1 April 1969. According to the plan, about one-fifth of the state development funds are to be channeled into transport, second only to the agricultural sector which will get nearly one-third (see Table 4). The relative allocation to transport is about the same as that recorded in 14 ECAFE countries during 1956-60. Furthermore, the plan indicates that investment in transport will be relatively small during the first year and that the sources of investment will be predominantly domestic. Only 38 percent of transport development funds are expected to come from foreign aid compared with about 60 percent for the whole economy.

18. The largest share of the transport investment in the five-year plan is allocated to road transport -- nearly 50 percent of the total. Water

transport has second priority with nearly 25 percent of the total. The remaining investment is to be allocated about equally to rail and air transport. These priorities appear to be in the right order of magnitude for a number of reasons. Road transport has become the major form of transport and is most suitable to support rehabilitation and expansion in a mainly agricultural economy. The road network is badly deteriorated and will need even larger investments in the long run if not rehabilitated in the next few years. Water transport facilities have also deteriorated badly and are handicapping Indonesia's domestic and international shipping. Rail and air transport, although in need of considerable investment, play relatively minor roles in Indonesia's transport picture. Priorities during the first year of the plan, however, place relatively less emphasis on road transport and more on rail and water transport. This is a temporary expedient and reflects work already underway to rehabilitate shipping as well as orders already placed for new railroad locomotives while major road projects are still being prepared.

19. The planned amount of investment in transport appears realistic to accomplish the goals set for rehabilitation, but the goals themselves are exceedingly modest compared with the need. For example, a comparison of the funds allocated for rebuilding roads and bridges with World Bank estimates of the cost per mile of road construction in Indonesia shows that the goal probably can be accomplished with the designated funds. The goal, however, calls for only about 11,000 miles, or about 20 percent of the road network, to be repaired or upgraded during the five-year period (see Table 5), compared with an earlier official assessment that about 85 percent of the network was in bad condition. In the case of railroads, only about one-tenth of the rail line is to be rebuilt during the five years. Water transport plans are also conservative -- the fleets are not to be expanded although about 80 percent of the ships are to be rehabilitated or replaced. Fleet rehabilitation has been allocated only 15 percent of the water transport funds and shipping facilities the remainder. The rehabilitation goals probably were determined by considering the expected availability of funds and the physical capability of Indonesia to achieve the goals. It seems very unlikely that Indonesia, even with substantial

foreign assistance and aid, will be able to rebuild more than an average of 2,000 miles of road per year during the next five years. Also appropriate is the emphasis to be placed on reconstruction of roads on Sumatra where the major share of exports are produced. More than 50 percent of the road work is scheduled to take place on Sumatra (see Table 5).

20. Provisions for foreign technical assistance are the most significant aspect of the transport development. International and bilateral agencies are making a major effort to meet the most pressing needs, both technical and administrative, within the transport sector. A number of foreign teams are already at work. In 1968 a Dutch group studied interisland shipping and, as a result, a 14-man technical team has arrived to work with the government in improving shipping. West Germany is providing similar technical assistance to rail and air transport. In September 1968 the United Nations Development Program provided a $3.5 million loan for foreign assistance to improve the road network and coordinate all forms of transport. The coordination aspect of this contract is important in that it provides help in coordinating the development of all modes of transport, including the budgeting of transport investment and operating funds, an area in which Indonesia has done poorly. Consultants for the study, KAMSAX (Denmark) and Louis Berger (USA), inventoried the most important roads in the country as the first phase of their work and presented an interim report in April 1969, proposing an urgent rehabilitation program covering 7,000 miles of roads in 20 provinces.

21. The International Development Agency (IDA) also is providing technical assistance and aid. In June 1969 a $28 million loan was granted for highway improvements during the next four years. Included in the grant is $5 million to be used for technical assistance. The IDA project will concentrate on rehabilitation of about 2,000 miles of the 7,000 miles of roads proposed by the UN Development Program survey. In making the loan, IDA states that it is impractical for Indonesia to carry out at this stage the whole of the rehabilitation program proposed by the consultants, because of technical and managerial constraints. The IDA project will also

include rehabilitation and improvement of workshops and highway maintenance facilities in 20 provinces, introduction of inventory and costing techniques, and implementation of training programs for all phases of highway work.

Conclusions

22. Even though the transport system of Indonesia is in very poor condition after years of mismanagement and shortage of funds, its physical capacity is generally adequate for the current needs of the depressed economy. Some transport routes on Java, where economic development and the transport system are concentrated, have surplus capacity at present, but transport service on the outer islands is scant.

23. However, if the level of economic activity is to rise, the transport system must be further rehabilitated and its efficiency improved. Indonesia's principal transport problems are inadequate funds and a shortage of competent personnel. The general shortage and mismanagement of the funds contributed to the deterioration of the transport network and the high unit cost of transport operations. The rate of disinvestment in transport was undoubtedly greater than in any other sector of the declining economy during the latter years of the Sukarno regime.

24. Indonesia is receiving the help of foreign experts in solving its transport problems. The experts have been given the authority to develop a coordinated transport policy, to reorganize transport administration, and to review rehabilitation plans and help implement them in all modes of transport. Government organs controlling rail, water, and air transport have already been streamlined. Training of managerial and technical personnel is being included as part of each foreign aid loan or grant to transport. The foreign experts have proposed that new expenditures to replace old transport equipment, except in a few cases, be delayed until the networks have been improved and the efficiency of operations with the existing inventory improved. This advice is being followed.

25. The government's new five-year plan (1969/70-1973/74) gives a reasonable priority to

transport investment -- about 19 percent of the total, exceeded only by agriculture which is to receive about 30 percent. The plan gives highest priority to projects for which the rate of return on the investment will be very large -- namely, rehabilitation of the highway network and repair of ships and port facilities. The planned physical improvements together with better organization and management should result in a much better transport system.

26. This approach to Indonesia's transport problems probably is the most economical and will be sufficient to prevent transport from becoming a bottleneck in the economy during the next few years. It cannot be expected, however, that the basic weaknesses in the transport system, in particular the shortage of skilled personnel, will be overcome quickly.

Table 1

Maritime Fleet

Year	Interisland and Coastal: Thousand Deadweight Tons a/	Interisland and Coastal: Million Metric Tons Carried	International: Thousand Deadweight Tons b/
1952	216.4	3.4	N.A.
1956	256.3	N.A.	N.A.
1957	124.2	5.2	96.8
1958	172.1	4.9	94.3
1959	245.0	5.3	113.4
1960	320.5	5.7	150.1
1961	422.4	5.8	187.0
1962	432.3	5.5	239.4
1965	N.A.	1.6	N.A.
1966	N.A.	0.9	N.A.
1967	320.0	1.2	N.A.
1968	306.2 c/	N.A.	354.4
1969 plan	266.4 c/	N.A.	354.4
1973 plan	266.4 c/	N.A.	354.4 d/

a. Excluding ships of less than 500 gross register tons. Chartered tonnage increased from negligible in 1956 to 176,000 tons in 1961. Data for 1967 still include some chartered tonnage, but data for 1968 and plan data apparently do not.
b. Chartered tonnage made up more than half of the total for each year. Data for 1968 and the plan data include 21 chartered ships (about 213,000 tons) in a total fleet of 39 ships.
c. Twenty-one ships, totaling about 40,000 tons, were sold and there are newspaper reports that a total of 54 ships were to be sold. The five-year plan, however, calls for the size of the fleet to be maintained at 194 ships with 266,400 tons. Of these, 30 are to be rehabilitated in 1969 and 10 more each year for a total of 131 ships with 172,000 tons. Forty-three other ships (48,300 tons) are to be replaced during the five years.
d. Fourteen ships (109,200 tons) are planned to be replaced during the five-year period.

Table 2

Road Network and Motor Vehicle Inventory

Year (as of 1 January)	Road Network (Thousand Miles)	Motor Vehicle Inventory (Thousand Units)			
		Total	Trucks	Buses	Passenger Cars
1939	32.8	70.0	9.7	7.2	53.1
1952	26.8	75.0	27.1	8.5	39.4
1957	49.2	136.1	51.4	11.5	73.2
1962	49.3	227.5	76.1	19.2	132.2
1965	50.0	269.8	84.6	18.4	166.8
1966	50.0	292.0	102.5	19.6	169.9
1967	50.9	298.7	95.1	18.6	185.0

Table 3

Railroad Network and Rolling Stock Inventory

Year	Railroad Network a/ (Miles)	Rolling Stock Inventory (Units)		
		Locomotives	Freight Cars b/	Passenger Cars
1939	4,600	1,070	27,185	3,309
1952	4,130	1,054	22,771	2,743
1957	4,130	1,152	22,751	3,085
1962	4,130	1,193 c/	23,856	2,923
1968	4,130	757 d/	9,686 e/	1,229 f/
Additions planned by 1973	444 rebuilt	65 diesels	400	20

a. Approximately 70 percent is on Java and Madura, and 30 percent is in Sumatra; 2,850 miles is 3'6" gauge. The remainder consists of various narrower gauges.
b. Railway owned; private car ownership increased from 1,542 in 1952 to 2,652 in 1962.
c. Of this total, 980 (82 percent) were steam locomotives and at least 680 (57 percent) were more than 35 years old. Many of these locomotives probably were not usable, and the data should have been adjusted downward to be realistic.
d. The number of steam locomotives more than 40 years old reduced to about 300.
e. Not including about 15,000 freight cars more than 40 years old.
f. Not including about 2,100 passenger cars more than 40 years old.

Table 4

Planned Expenditures in the State Development Budget a/

Sector	1969/70 Billion Rupiahs	1969/70 Percent	1969/70 - 1973/74 Plan Billion Rupiahs	1969/70 - 1973/74 Plan Percent
Total	*121.3*	*100*	*1,059*	*100*
Economic	94.4	77	829	78
Agriculture and irrigation	35.1	28	319	30
Transportation	23.6	19	204	19
Industry and mining	18.3	15	130	12
Electric power	10.9	9	100	9
Communications and tourism	3.5	3	26	2
Villages	3.0	2	50	5
Social	19.6	16	172	16
Health and family planning	4.6	4	42	4
Education and culture	10.5	9	95	9
Other	4.5	4	35	3
General	9.3	8	58	5
Defense and security	4.0	3	28	3
Other	5.3	4	30	3

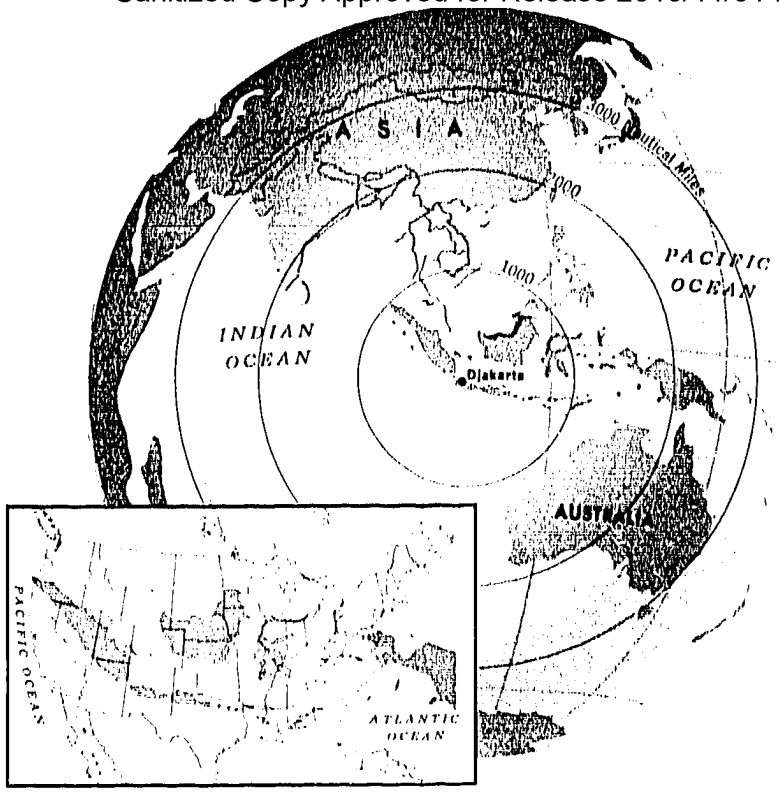
a. Exclusive of domestic and foreign private investment and funds accumulated by state enterprises. These sources could contribute an additional 361 billion rupiahs during the five-year period of which about 8 percent would be used in the transport sector. Because of rounding, components may not add to the totals shown.

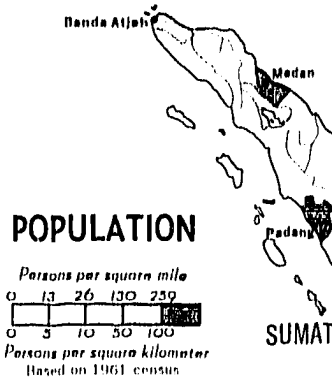
Table 5

Planned Reconstruction of Road Network

Area	Road Network as of July 1967 a/		Reconstruction of Road Network (1969/70 - 1973/74 Plan)	
	Thousand Miles	Percent of Total	Thousand Miles	Percent of Total
Total	*50.9*	*100*	*10.7*	*100*
Java and Madura	17.3	34	2.7	25
Sumatra	17.7	35	5.6	53
Celebes	7.4	15	1.0	9
Kalimantan	3.2	6	0.5	5
Others	5.4	11	0.9	9
Of which:				
Bali	N.A.	N.A.	0.3	3
Lesser Sundas	N.A.	N.A.	0.4	4

a. About 12 percent are national roads, 28 percent are provincial roads, and the remainder are county roads. About one-half of the national roads have a paved surface, the other half gravel surface. Provincial roads consist of 36 percent bituminous-treated surface, 55 percent gravel, and 9 percent earth. County roads are 6 percent paved, 33 percent gravel, and 61 percent earth. Because of rounding, components may not add to the totals shown.





ETHNOLINGUISTIC

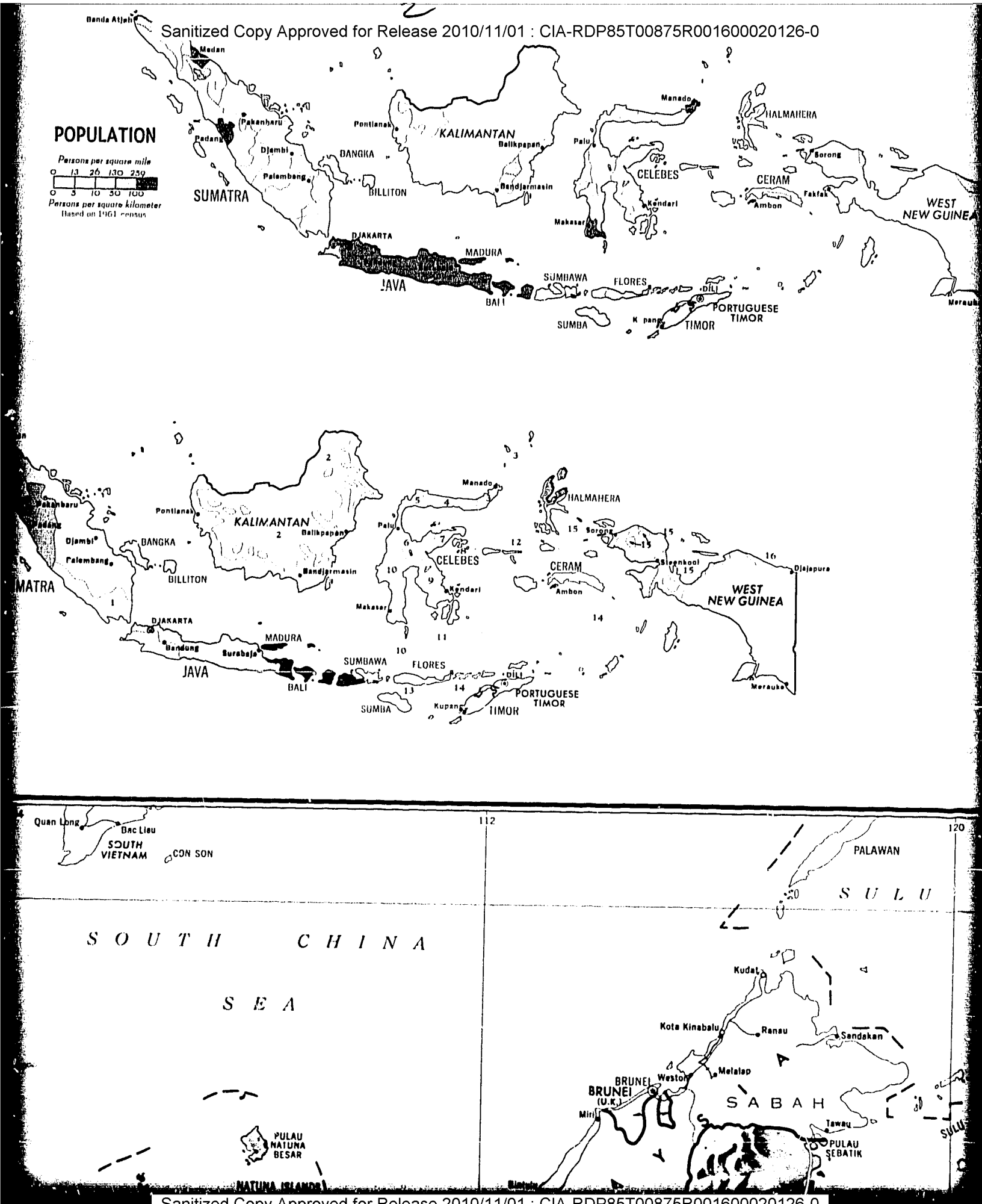
MALAYO-POLYNESIAN INDONESIAN

- Javanese
- Sundanese
- Madurese
- Coastal Malays
- Minangkabau
- Balinese-Sasak
- Bataks
- Atjehnese
- Other Indonesian:
  Other Sumatra (1), Other Borneo (2), Minahassan (3), Gorontalo (4), Tomini (5), Toradja (6), Lolnang (7), Banggai (8), Bungku Laki (9), Makasarese Bugis (10), Muna Buluni (11), Sula Batjan (12), Bima Sumba (13), Ambon-Timor (14), South Halmaheran (15), Melanesian (16).

OTHER ETHNIC GROUPS *

- NORTH HALMAHERAN
- PAPUAN

*Chinese widely distributed, but mainly concentrated in urban areas throughout Indonesia



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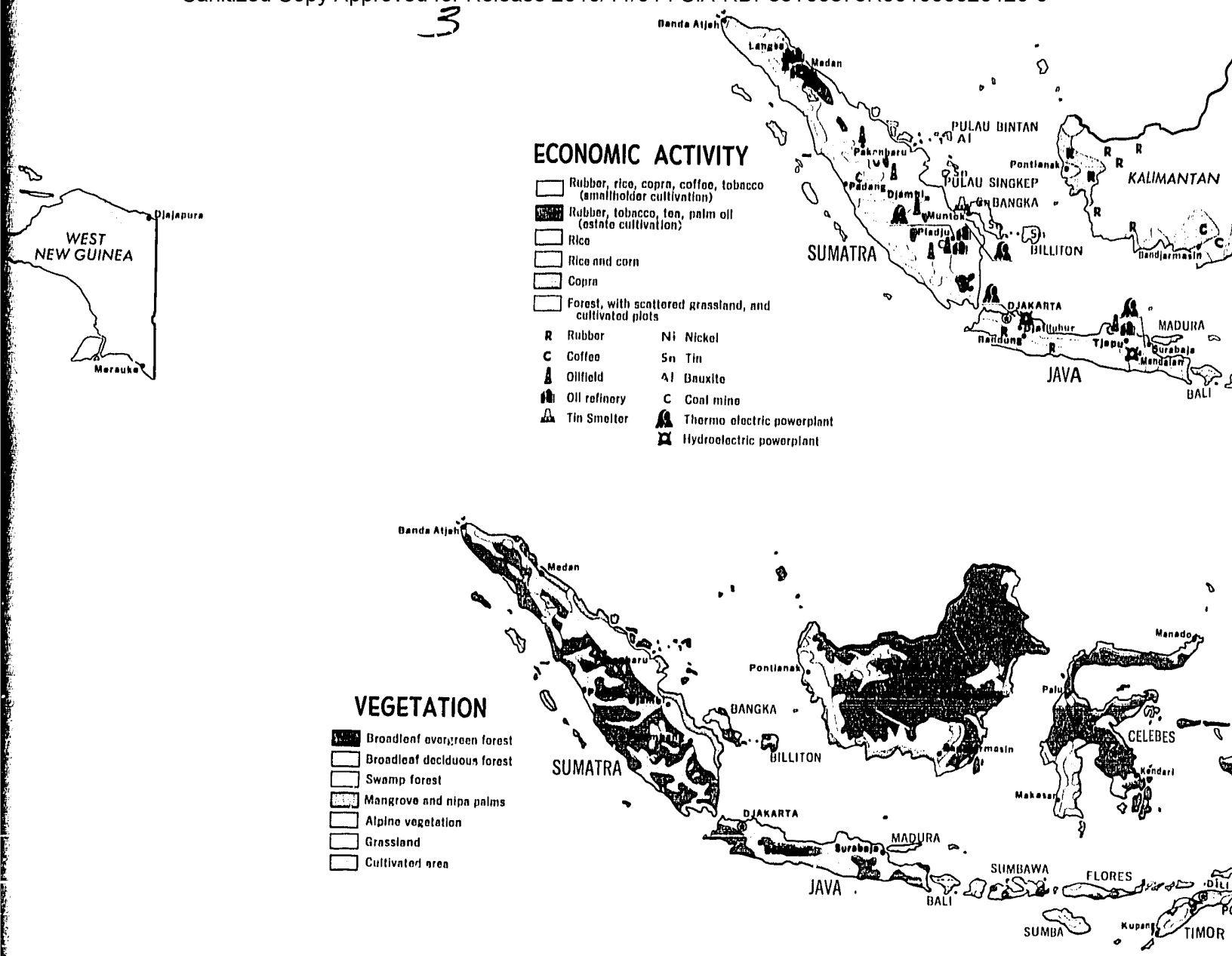

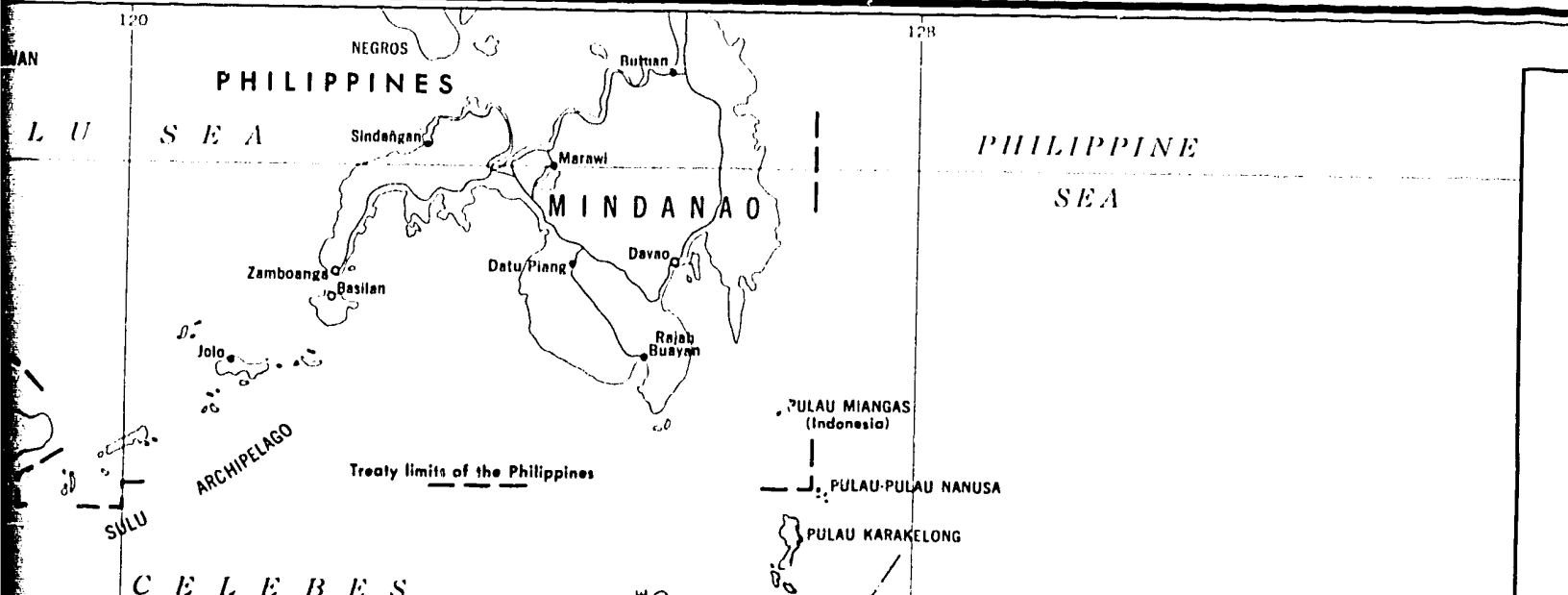

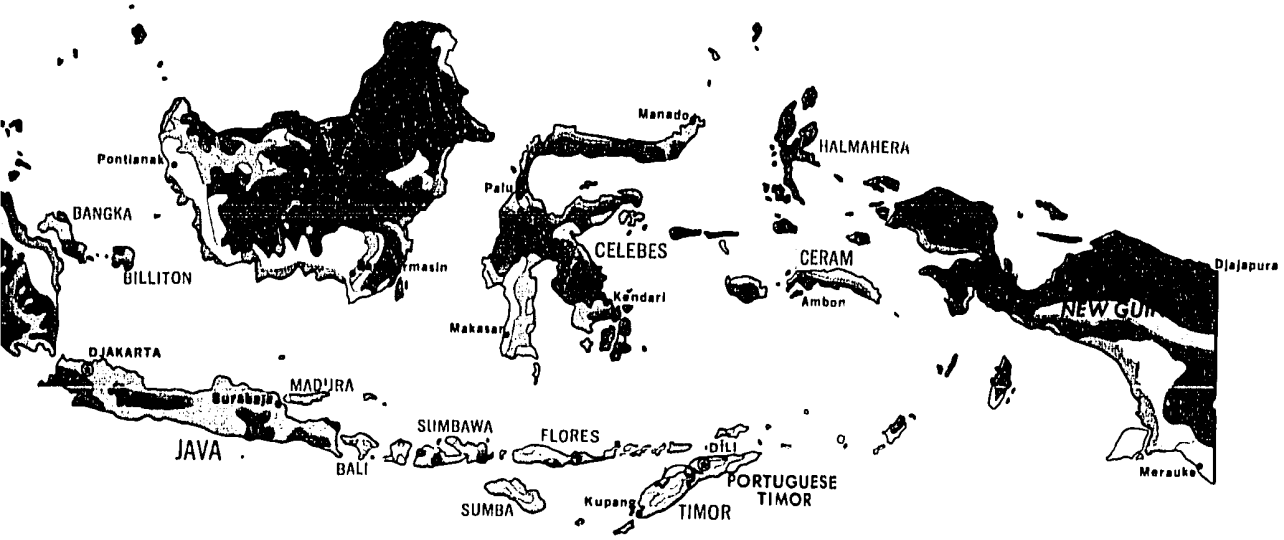

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PHILIPPINE

SEA

IANGAS
nsia)

AU-PULAU NANUSA

KARAKELONG

INDONESIA

International boundary
Province boundary
National capital
Airfield
Principal port
Secondary port
Medan Province capital
Railroad
Road

Populated places
- Over 250,000
- 50,000 to 250,000
- Under 50,000

Spot elevations in feet

Scale 1:7,740,000

0 100 200 300 400
Statute Miles

0 100 200 300 400
Kilometers