

WORLD HEALTH
ORGANIZATIONORGANISATION MONDIALE
DE LA SANTÉMALARIA CONFERENCE FOR THE WESTERN
PACIFIC AND SOUTH-EAST ASIA REGIONSBaguio, P.I., 15-27 November 1954

02 60550

WHO/Mal/103.24 ✓
Baguio Conf./2.24
2 December 1954ENGLISH ONLY

The Secretary of the Expert Committee on Malaria
has the honour to communicate hereunder
the following note:

INFORMATION ON THE MALARIA CONTROL PROGRAMME
IN INDONESIA

Report submitted by the Government of Indonesia

1. Present status of malaria control
 - 1.1 Total population of Indonesia estimated between 70 and 80 millions.
 - 1.2 Population living in endemic to hyperendemic malarious regions estimated at 30 million.
 - 1.3 ?
 - 1.4 Population directly protected at the end of 1953, 2,798,590.
 - 1.5 See annexed map. The malarious areas are roughly indicated, and also the areas where malaria control is carried out at the present time.
 - 1.6 See Annex.
 - 1.7 Infant parasite rate (transmission index) before and after control, see below.
 - 1.8 Figures on the improvement of public health are rarely available. The general feeling in most sprayed areas is that health has been greatly improved and a better school attendance was observed. Economic improvement was most obvious on estates. In some rural areas an increase of food production was also noted.
2. Organization, methods and training facilities on the present programme
 - 2.1 Organizations

The anti-malaria organization has its headquarter in Djakarta in the Malaria

Institute, which is a section of the Ministry of Health. Up till now there are three branches of the Malaria Institute in Djocja (Middle Java), Surabaya (East Java) and Makassar (Sulawesi, Celebes). In each of the 10 provinces of Indonesia there are at the present moment one or more spraying centres with local squads, who are still working under central supervision.

2.1.2 Decentralization is considered and will be effectuated when more key personnel is available. Arrangement for supplies is all central from Djakarta. Supervision of operations is also the responsibility of the central organization.

2.1.3 In Indonesia we have no real field teams. The spraying squads consist mostly of seven men, a headman, the helper of the headman and five sprayers. Several squads are under the supervision of a foreman (not more than six squads). Several foremen are supervised by a technical administrator. Checking and research is done by malaria mantris (technicians), who work under central supervision. Transport bicycles, for supervision jeeps. All spraying and technical personnel is locally recruited and trained (simple school knowledge is required from them). They operate the whole year round.

2.1.4 Each province has its own programme. Commercial estates do their own spraying, sometimes protecting adjacent villages.

2.2 Methods of malaria control

2.2.1 Residual spraying. For town protection we try to rely mostly on permanent sanitation measures, sometimes combined with larvicidal control and residual house ~~spraying in the periphery~~ (barrier spraying), in order to protect the centres of the towns.

2.2.2 Other methods of anopheles control are only applied on a small scale at the present moment. Conditions in Indonesia are not very favourable for hygienic exploitation of fish-ponds and planting regulations in ricefield areas because of the heavy economic stress on the population.

2.2.3 In case of malaria epidemics and serious seasonal peaks of malarial endemicity quinine is distributed free to the malaria patients. Drug prophylaxis is only used for some specific groups: mostly the 4 aminoquinolines (such as nivaquine) is used. Figures about amounts and costs are not available.

2.3 Training facilities

Training facilities are available: the greatest trouble is the lack of enthusiasm of the medical profession to join public-health work, and especially malaria control work.

3. Plans for the future

3.1 The national malaria control plans for the years to come are as follows:

1952	2,000,000	population protected	
1953	5,000,000	"	"
1954	8,000,000	"	"
1955	11,000,000	"	"
1956	14,000,000	"	"
1957	17,000,000	"	"
1958	20,000,000	"	"
1959	23,000,000	"	"
1960	26,000,000	"	"
1961	30,000,000	"	"

It is impossible to give exact maps for every year; our intention is to extend the spraying campaigns from the already existing spraying centres.

3.2 The extension is not only governed by the rate of malarial endemicity, but first priority is given to important agricultural projects, to industrial centres and to new transmigration (resettlement) areas.

Year 1953

1. Area of operations (square miles or square km) ?
2. Number of houses and all other structures sprayed

1st cycle 1951	33,274
2nd 1952	276,640
3rd 1953	599,042
3. Population directly protected (i.e. living in sprayed structures)

1951	138,068
1952	1,260,052
1953	2,798,590
4. Population protected by other methods of control -
5. Number of spraying in the year

one for DDT + Dieldrin
four for BHC (Gammexane)
6. Insecticides and formulations used: total annual consumption

DDT wp. 75%	209,158.20 kg (156,868.65 kg pure)
Gammexane wp. 6.5% gam. BHC	833.8 kg (57.48 kg gamm. DHC)
Dieldrin wp. 50%	307.68 kg (153.84 kg pure)
7. Average dose of insecticide per square metre or per square foot, for each spraying

DDT (in terms of technical grade)	2.- g/m ²
BHC (in terms of gamma isomer)	0.13 "
Dieldrin (in terms of technical grade)	0.388 "
Other	-
8. Types of sprayers used

Compression sprayers (Hudson 341 S + 335 SA with Tee jet nozzle 8002)
9. Are all structures sprayed?

Houses, temples and stables.
10. Average superficial area sprayed during each spraying per inhabitant directly protected (sq. metres)

Tjandjur	Tjilatjap
30.2	73.-

Annex

	Tjiandjur	Tjilatjap
11. <u>Cost of residual spraying operations</u>		
11.1 Total cost per year	Rp. 472,830.99	- 309,360.-
11.2 Percentage of the total sum expended on insecticides formulations	+ 62%	- + 84.1%
11.3 Annual cost per capita of the population directly protected by residual spraying	Rp. 1.55	- 2.80
12. <u>Cost of operations by other methods of anopheles control if any</u>		
12.1 Total cost of operations per year		-
12.2 Annual cost per capita of the population protected by the above methods		-
13. <u>Cost of control operations by drug prophylaxis, if any</u>		
13.1 Total cost per year (specify drugs used)		-
13.2 Annual cost per capita of the population thus protected		-
14. <u>Comments</u>		

For the year 1953 figures on cost are only available for certain areas. We give an example of two areas in West Java, Tjiandjur and Tjilatjap (population 305,161 and 110,294).

Annex

INFANT PARASITE RATE (TRANSMISSION INDEX)

Area	Before spraying in %	After spraying in %		
		I	II	III
Metro	1951: 20.4	1952: 1.6	1953: 0.6	-
Banten Utara	1951: 16.6	1952: 1.6	1953: 0.9	-
Tangerang	1951: 3.4	1952: 0	-	-
Tjengkarent	1951: 4.9	1952: 0.5	1953: 1.3	-
Djakarta Kota	1952: 10.-	1953: 3.5	-	-
Tg. Priok	1952: 20.4	1953: 20.-	-	-
Tg. Priok (with Dieldrin)	1953: 11.6	1953: 5.4	-	-
Marunda	1949: 18.-	1950: 12.-	1951: 0	1952: 0.5
Tjiandjur	1952: 17.2	1953: 0.2	-	-
Ketjamatan Tjilatjap (Daerah pertjobaan WHO)	1951: 5.5	1952: 2.3	1953: 0	-
Ketjamatan Adipala (Daerah pertjobaan WHO)	1952: 15.-	1953: 6.-	-	-
Surabaja (Djawa Timur)	1952: 18.-	1953: 3.-	-	-
Nusa Tenggara	1952: 59.-	1953: 48.5	-	-
Sulawesi	1952: 17.5	1953: 3.-	-	-