



UNITED NATIONS  
ECONOMIC  
AND  
SOCIAL COUNCIL



LIMITED  
E/ICEF/L.975  
26 September 1956  
ORIGINAL: ENGLISH

UNITED NATIONS CHILDREN'S FUND  
Programme Committee

Recommendation of the Executive Director for an Allocation  
IRAQ  
Malaria Eradication

1. The Administration recommends an allocation of \$181,000 for the years 1957 and 1958 for the provision of insecticides, motor transport, vehicular repair shop equipment and supplementary laboratory equipment to assist in the transformation of an existing malaria control programme to one of malaria eradication in Iraq. The Administration also recommends the approval in principle of the entire 5 year project.
2. During 1956, while malaria control operations are continuing, the campaign is undergoing administrative reorganization. Personnel are being reoriented and additional personnel are being trained in anticipation of the 1957 spring spraying season. Protection, at the peak level of spraying operations, will be given to a minimum of 3,800,000 persons. It is planned that a permanent surveillance organization will have been established before three years of intensive spraying operations will have been completed in any one area.
3. The assistance requested of UNICEF for the first two years for the eradication programme approximates 10 per cent of the total requirements for transport, insecticides and sprayers for those years with an additional provision for strategic supplies. Although the full programme for the period 1957/61 envisages a governmental expenditure of I.D. 2,933,600 (equivalent to US \$8,382,080) it is anticipated that additional UNICEF assistance, if required and requested, would not exceed the presently proposed level of participation. Supplies and equipment including vehicles, sprayers and laboratory equipment (previously provided by UNICEF (E/ICEF/R.321 and L.640)) will also be available to this programme to the extent they are usable. It is

worthy of special note that the government request is limited to a modest portion of the total anticipated expenditure.

4. The problem of malaria in Iraq has been reported to the Board on two previous occasions: in March, 1952 (E/ICEF/R.321) and in September 1954 (E/ICEF/L.640). Since that time the programme of malaria control has continued on an expanding scale with an emphasis on residual spraying with insecticides. Particular success has been recorded in the north of the country, where the control campaign has gradually approached dimensions involving complete coverage in areas of malaria transmission. At this stage the Ministry of Health has with a sense of urgency taken note of the risk that the vector might in the course of time develop resistance against DDT. Residual spraying and antilarval measures have, on an expanding scale, been carried out in the country for a number of years, and the Government has expressed concern that a setback might occur within the foreseeable future unless complete eradication of the disease is implemented at this time. The Government is aware that a programme of eradication can only be effective if co-ordinated with adjacent countries, since the international frontiers of Iraq do not in all areas constitute natural barriers against malaria. The Government has for this reason supported a resolution in the WHO Regional Committee in September 1955 to put into effect a co-ordinated regional programme for malaria eradication.

5. In view of these factors, and at the recommendation of the Consultant and the Regional Malaria Adviser of WHO, who visited Iraq in the autumn of 1955, the Ministry of Health developed a plan for malaria eradication within the span of time between 1957 and 1961. The agreement for this plan was given by the Council of Ministers in January 1956, and the Government is preparing legislation which will ensure the effective implementation of this plan.

#### Plan of Operations

##### Extent of programme

6. The malaria eradication programme is planned to cover all communities in the country under risk of malaria infection, irrespective of known endemic levels, by measures of residual spraying with DDT in order to achieve a blanket action over the entire country. Protection would thus be afforded to

/approximately 3,800,000

approximately 3,800,000<sup>a/</sup> people living in these mainly rural areas. This level of protection will be effected as from 1957, by consolidation of protective measures initiated in previous years and by expansion of spraying operations to all such areas not previously reached by residual spraying. During 1956 when continued malaria control operations will have reached a level of 2.2 million protected, the present malaria control setup will be re-organized and enlarged for the eradication phase, and recruitment and training of additional personnel will be undertaken. The population to be protected by the programme is as follows:

	<u>Region</u>	<u>No. of persons to be protected</u>
Southern:	Basrah, Muntafiq and Amarah Liwis	988,680
Central:	Baghdad, Karbalah, Hilla, Kut, Dulaim, Diyala and Diwanayah Liwas	1,736,622
Northern:	Sulaimaniyah, Erbil, Mosul and Kirkuk Liwas	1,086,832
		<u>3,812,134</u> <sup>a/</sup>

7. Full coverage will be given during the years 1957 and 1958, after which a programme of gradual discontinuation of spraying will take place starting with areas which at that time have been under protection by the control or eradication programmes for at least three consecutive years, including the communities where transmission was already interrupted during the control phase (in northern Iraq). In advance of such discontinuation, surveillance work will be organized.

Basis for estimation of requirements

8. Previous control operations have provided data which show that the surface to be sprayed per person protected, and the quantity of insecticides required varies from 40 square metres per person in some parts of the southern region, to 150 square metres per person in some parts of the north.

<sup>a/</sup> In addition to those directly protected there will be approximately 917,000 persons, primarily urban, who will be indirectly protected through spraying of the surrounding countryside.

This is partly due to the use of temporary summer structures in the mountainous areas, to seasonal re-plastering of dwellings and the subsequent need for multiple sprays within the same spraying season. On an average, based on the experience of the programme in 1955 and 1956 in the northern region, 72 square metres of superficial area must be sprayed per person to be protected. With the exception of parts of the northern region, where multiple sprays of respectively 2 and 1 grammes per square of technical DDT is required, operations have provisionally been based on a single annual spray of 2 grammes per square metre, over a period of 60 days each year. The number of actual spraymen to carry out this programme is 3,040, to which must be added auxiliary squad workers and repair workers.

#### Organization of the programme

9. The Government will, in the course of 1956, establish a Malaria Eradication Board to be presided over by the Minister of Health and on which are represented authorities directly interested in the programme, including the Ministries of Development, Agriculture and Finance. Through appropriate legislation the Board will have adequate fiscal and administrative powers to execute the programme. The immediate direction of the eradication programme will be effected by the Director General of the Endemic Diseases Directorate through a Malaria Eradication Department in this Directorate General.

10. The operational organization will comprise three regional centres, in the south, centre and north, each to be in the charge of a medical malaria officer assisted by an entomologist and a sanitarian, the latter being responsible for spraying operations. In each of the fourteen Liwas a branch will be established, where, under the supervision of the regional centre a team of three senior assistants with 8 field assistants will, in addition to supervising spraying operations, have charge of malariometric and entomological surveys before and after the main season of spraying. During the periods when spleen surveys are to be made, the epidemiological section of the Liwa branch will be strengthened by the use of Government medical officers normally stationed in the Liwa. Similarly the Liwa branch will, when required, be strengthened by the recruitment of additional microscopists and field assistants in order to carry out routine parasitological surveys of villages under permanent surveillance and of all other communities during the season of transmission.

/Operation schedule

#### Operation schedule

11. The more detailed schedules for each year's operations, including the successive discontinuation of spraying and setting up of surveillance work will depend on the data which are collected by the survey teams in the Liwas in the course of the programme, and will be determined by the Malaria Eradication Board. The Board will also at intervals adjust the schedule of work so as to achieve operational co-ordination with the programme of adjacent countries.

12. While it is not at present possible to evaluate the degree of eradication in the present areas under control, it is assumed that a portion, at least, of the northern area, particularly Sulaimaniyah, may be organized for surveillance by 1958. Procurement of insecticides is based on a probable 10 per cent reduction in overall coverage by that year. By the end of 1961, if not earlier, it will be possible, through the process of continuing evaluation of results, to establish the cessation of further spraying and to bring the whole country under surveillance.

#### Training

13. A training centre is being established by the Malaria Eradication Department in Baghdad, to undertake the training of staff for epidemiological and entomological work in the Liwas. Training will be given under the direction of the international team provided by WHO, and the Malaria Eradication Department will increase its technical staff to meet the need of this programme. To make available adequate senior supervisory staff for the eradication programme, the centre will train three selected medical graduates in epidemiology, three further graduates in malaria entomology and three graduates from the school of engineering as sanitarians. In addition to other technicians, Liwa medical officers partaking in spleen surveys will receive instruction in this centre.

#### Legislation

14. The formation of the Malaria Eradication Board, together with the provision of such financial and administrative powers which will allow a satisfactory execution of the programme, will in Iraq require special legislation ratified by Parliament. Following a decision by the Council of Ministers in January 1956 the preparation of a Malaria Eradication Law is being undertaken for promulgation at the end of 1956. The Government has reported

/that an amount

that an amount equivalent to \$2,000,000 has already been approved toward the cost of the first two years of operation.

Target time schedule

15. During 1956 recruitment and training of staff will be commenced, along with the establishment of Liwa branches and re-organization of existing malaria control centres in Kirkuk, Baghdad and Basrah into regional centres. During the same period the Ministry of Health is revising its facilities in Baghdad and Basrah into regional centres. During the same period the Ministry of Health is revising its facilities in Baghdad for servicing and maintenance of the vehicle fleet to be used in the programme. By early 1957, all regions and Liwa branches should be manned and equipped for pre-operational surveys, after which the main spraying work will start in April and be completed in May, with the exception of Liwas where there is an autumnal transmission season, or where multiple spraying is required.

UNICEF commitments

16. UNICEF would provide for 1957 and 1958 the following supplies and equipment:

Insecticides

DDT 75% w.

for 1957:	70 metric tons	\$36,960	
for 1958:	63 metric tons	<u>33,264</u>	
			\$70,224

Transport

18 Trucks, 4 wheel drive	48,600	
Spare parts	<u>4,860</u>	
		53,460

Sprayers (300)

and sets of spares (250) and spare nozzles (9,000)		8,960
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Strategic Supplies

i) Laboratory Equipment

28 microscopes	4,500	
ii) 3 workshops	20,000	
iii) 2 marsh boats	<u>4,000</u>	
		28,500

Contingencies

	<u>3,356</u>
	164,500

Freight

	16,500
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Total:	<u>\$181,000</u>
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Government commitments

17. The Government will meet all requirements for the programme, including personnel, supplies and equipment whether locally obtained or imported, except those requested from UNICEF. Specifically the Government commitments will include:

a) Personnel

- i) Technical Staff: 4 malariologists, 4 entomologists, 4 sanitarians, 4 draftsmen, 48 laboratory assistants, 105 senior field assistants and 149 junior field assistants.
- ii) Temporary Staff: 14 Liwa medical officers, 380 squad leaders, 76 team leaders, 835 foremen, 3040 spraymen and 2008 labourers
- iii) Administrative Staff: All the necessary personnel including 4 senior officers, 4 chief accountant transport officers, clerks, secretaries and typists

b) Transport

Now on hand in the present control programme and originally provided by UNICEF or by the Government:

	<u>UNICEF</u>	<u>Government</u>
1½ ton trucks	13	
Station wagon	1	
Pick-up light truck	5	21

In addition to these the Government will provide: 129 trucks, 30 jeeps, 9 pickups and 3 station wagons, plus spare parts for these vehicles. The Government will also provide rented motorized or animal transport as required.

c) Insecticides:

The Government will provide:

For 1957: 630 tons (m) of DDT 75% w. and 100 tons (m) of DDT technical

For 1958: 567 tons (m) DDT 75% and 90 tons (m) 100% technical.

d) Sprayers for 1957 and 1958:

2,700 pressure type sprayers plus spare parts

e) Laboratory equipment for the 14 Liwas.

/18. The total

18. The total estimated cost to the Government for the first two years will be I.D. 1,110,000 (US \$3,107,100), and the total estimated expenses for the malaria eradication programme for the Government are I.D. 2,933,600 (US \$8,382,080).

WHO participation and technical approval

19. A special WHO malaria consultant and the WHO regional malaria adviser visited Iraq in September 1955. This project has the technical approval of WHO. WHO will provide the following personnel subject to the availability of funds: 1 malariologist (senior adviser); 1 entomologist; 1 sanitarian; 1 laboratory technician (The malariologist and sanitarian have been in Iraq since 1954). WHO will also provide the services of a regional sanitary engineer to help in the training programme and in the co-ordination of eradication measures along the frontiers. Their services will be available at least for the first two years of the eradication programme. In addition, subject to the availability of funds, WHO will provide 1 fellowship during 1959 for one malaria officer to specialize in public health and tropical medicine; and 1 fellowship during 1959 for one engineer to specialize in sanitary engineering. WHO will invite the Director General of Endemic Diseases to attend inter-country conferences for the co-ordination of the malaria eradication programme with the neighbouring countries.

Target time table

20. Equipment, insecticides, etc. are to be on hand in Iraq during January 1957 for distribution for the spraying period of April-May.