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AND  
SOCIAL COUNCIL



LIMITED

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UNITED NATIONS CHILDREN'S FUND

Programme Committee

Recommendation of the Executive Director for an Allocation  
SYRIA  
Malaria Eradication

1. The Administration recommends an apportionment of \$154,000 for the provision of insecticides, drugs, sprayers, laboratory equipment and vehicles for the continuation through 1956 and 1957 of the anti-malaria campaign in Syria, these two years being the first part of a re-oriented programme aiming at the eradication of the disease from the country within five years (i.e. by the end of 1960), and involving the protection of 1,150,000 persons. The Board is also asked to approve in principle the five-year plan as outlined below (paras. 9-15). Insecticides, drugs, and possibly some additional equipment would be required from UNICEF for the remaining three years. Three allocations have previously been approved by the Board amounting to a total of \$209,000 (exclusive of freight) (E/ICEF/192, paras. 380-391; E/ICEF/260/Rev.1, para. 132; E/ICEF/276, para. 167). The last of these, approved in September 1954, was for operations in 1955 and 1956. In the light of the new eradication plan, however, there are certain additional requirements for the operation in 1956, as detailed in para. 16 below.
2. The DDT covered by this recommendation will be earmarked for 1957 only. For the revised 1956 plan, sufficient DDT is available from the previous allocation for 1956 together with a balance of unused DDT resulting from reduced sprayings in 1955.
3. For the implementation of the eradication programme, the Government is currently reorganizing the anti-malaria service in accordance with recommendations of WHO experts and will take the necessary measures for underwriting the new arrangements through legislative and budgetary action. (See paragraph 10 below). The estimated cost to the Government of the  
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programme for 1956 and 1957 is LS.1,472,000, equivalent to approximately US \$420,000.

#### Malaria in Syria

4. A comprehensive picture of the malaria problem in Syria was presented to the Board in September 1954 (E/ICEF/L.653). The malarimetric surveys referred to in that document had demonstrated that, with the exception of the central desert lands, the disease was endemic in all the regions of the country and that it was particularly serious in the coastal and northern districts. From other reports prepared by the WHO malariologist who worked in the country from December 1952 until September 1954, it appeared that infant mortality in the malarious districts was above 300 per 1,000 and increased in direct proportion to the degree of malaria endemicity.

#### Earlier plan and accomplishments

5. The plan of action presented to the Board in September 1954 called for the consolidation in 1955 and 1956 of the "control" work carried out in the southern and central districts and for the expansion of that work to the remaining areas. The targets for that plan were set at the protection of 750,000 persons in 1955 and 900,000 persons in 1956. However, the Government's whole budget for 1955 was approved too late for the spraying season, which begins on 1 April, and, as a result, only limited work could be carried out in some districts with the assistance of local municipalities. In addition there was delay in the arrival of UNICEF's vehicles and the post of the international malariologist remained vacant from September 1954 to February 1956. As a result it was possible to protect only 240,000 people in 1955, compared with 260,000 in 1954. The expansion towards the north and northeast was postponed for one year.

#### Redefinition and expansion of the programme

6. In the meantime, a WHO short-term consultant, Dr. M.E. Farinaud, visited Syria and worked out, on the basis of a careful study of the problem and a three-month survey of the country, a redefinition of the programme calling

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for the orientation of the work towards total eradication of the disease through an intensive five-year campaign. The target protection figure was raised to 1,150,000 persons from the target of 900,000 figure previously set for the control programme.

7. In his recommendations to the Syrian Government for the conversion of the control programme into a full eradication campaign, Dr. Farinaud laid stress on the following three points:

- a) Malaria exists throughout the country in varying degrees of intensity often comparable to those encountered in inter-tropical zones.
- b) A. sacharovi is the main vector throughout the country. Resistance has developed in some strains of A. sacharovi elsewhere in the region, and this is an added reason for proceeding to eradicate the vector as rapidly as possible.
- c) Syria ought to consider the elimination of malaria as being as important to the improvement of the national economy as any development project for industrial or agricultural expansion. This is particularly true with respect to the fertile plains of the northeast, where malaria eradication will bring about a reduced infant mortality and a better stabilization of the population.

8. The views of Dr. Farinaud were later confirmed by Dr. Paul F. Russell, WHO special consultant, who visited the Eastern Mediterranean with a view to laying out the bases of a regional malaria eradication programme and to co-ordinating the anti-malaria efforts of the several countries of the region. Dr. Russell and Dr. Farid, the WHO regional adviser, also made specific proposals for the reorganization of the programme in Syria so that it might operate along efficient lines and with a minimum of administrative hindrance.

#### Plan of operations

9. The major objectives of the proposed five-year programme would be:
- a) to achieve complete eradication of malaria from the country within five years, mainly through residual spraying with insecticides. (Larvicidal and drug administration may be resorted to where necessary).
  - b) to develop adequate epidemiological surveillance measures in all areas of the country.
  - c) to train local malariologists, entomologists, sanitarians and laboratory technicians in methods of malaria eradication and epidemiological surveillance.

/10. Basic ...

10. Basic organizational changes: Acting on recommendations of the WHO consultants, the Government will introduce basic changes in its malaria control programme, including the following:

- a) A Malaria Eradication Service will be established, concerned exclusively with the implementation of the eradication programme, and having administrative, financial and transport autonomy.
- b) An autonomous budget will be put at the disposal of the Malaria Eradication Service amounting to the equivalent of US \$210,000 per year. The annual budget will be made available to the Malaria Eradication Service not later than January of each year. An adequate five-year budget, covering the programme from 1956 through 1960, will be established and will be approved in advance by the country's legislative body.
- c) Approval of Parliament will be obtained for the plan of operations, thus giving that document the force of an international obligation.
- d) Improved and more rational conditions of employment will be established for the medical and technical personnel in charge of the programme, including one malariologist, one entomologist and two sanitarians trained abroad on WHO and UNICEF fellowships. The medical, technical and advisory personnel attached to the programme, including foremen, will be given permanent appointments or will be employed under contracts of not less than five years' duration, and adequate allowances will also be given to them for work in the field.

11. Plan of action: The five-year programme, beginning in 1956, is planned to achieve simultaneous protection of the entire population living in malarious areas, approximately 1,150,000 people who are distributed as follows:

	<u>Area</u>	<u>Number of persons to be protected</u>
SOUTH:	Damascus/Hauran districts (including UNRWA operations in the southernmost villages and the Yarmuk valley)	250,000
CENTRE:	Homs/Hama districts (including previous "check" zone and southern part of "Ghab" swamps)	150,000
WEST:	Lattakia district	250,000
NORTH:	Aleppo district (including the "Roujj" and northern part of the "Ghab" swamps)	300,000
NORTH-EAST:	Euphrates/Djezireh districts	<u>200,000</u>
	Total :	<u>1,150,000</u>

/12. Provincial...

12. Provincial Malaria Centres will be set up in the various Mohafazats of the country and each will be staffed by one medical officer and a minimum of two malaria technicians. These units will carry out and supervise epidemiological surveys and will be responsible in the future for the functioning of the surveillance arrangements in their respective localities.

13. Spraying operations will be discontinued in areas where interruption of transmission has been maintained for not less than three consecutive years. Permanent arrangements for epidemiological surveillance will, however, be made at least one year before the cessation of sprayings in any locality. The surveillance units in the various parts of the country will in due course be organized in such a manner as to be capable of detecting and treating all autochthonous and/or imported cases of malaria.

14. Special attention will be given to nomadic tribes and arrangements will be made for the interception of their mass movements for the purposes of epidemiological investigations, protection and/or treatment.

15. With the assistance of the WHO Regional Office for the Eastern Mediterranean, the programme will be fully co-ordinated with anti-malaria measures in neighbouring countries. The Syrian Government has established several contacts in the second half of 1955 with neighbouring countries for this purpose. Arrangements are being made for these contacts to be maintained and broadened in 1956 and the following years, including attendance at the Inter-regional Malaria Conference in Athens, June 1956. The Co-ordination Committee consisting of representatives of the Government, WHO and UNICEF will continue to convene regularly in order to review, and take appropriate measures in respect of, operational, technical and other problems.

/UNICEF.....

UNICEF commitments

16. For the implementation of the programme in 1956 and 1957, UNICEF would provide the following:

	<u>U.S.\$</u>
a) <u>Equipment</u>	
108 sprayers with spares	3,000
b) <u>Transport</u>	34,000
9 trucks (3-ton capacity)	
2 trucks (1½ ton capacity)	
2 station wagons	
2 jeep-type cars	
spares and basic tools for maintenance	
c) <u>Insecticides</u>	
145 metric tons DDT 75% water dispersible powder (for 1957 only)	70,000
4 tons dieldrin	<u>10,000</u> 80,000
d) <u>Anti-malaria drugs (for 1956 and 1957)</u>	
chloroquine, primequine and pyrimethamine	10,000
e) <u>Laboratory equipment and microscopes</u>	3,000
f) <u>Contingencies</u>	<u>10,000</u>
Total supplies and equipment	140,000
g) <u>Freight</u>	<u>14,000</u>
Total recommended allocation	154,000

17. The equipment and transport listed in a) and b) above are required in addition to the 464 sprayers, 21 vehicles of various ages and 14 microscopes already in use in malaria control in Syria, the greater part of them from earlier UNICEF allocations. The new supplies would serve for the duration of the campaign, but some additions and replacement of older equipment may be required. The quantity of insecticides is one year's requirement. Subject to the Government's making the necessary legal and financial arrangements for the implementation of the eradication campaign as outlined by the plan of action above, UNICEF would also agree in principle to assist the five-year programme with the above types of supplies, in quantities according to the technical requirements of each year. These would be covered by further allocations in future years.

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WHO approval and participation

18. This programme has the technical approval of WHO who will contribute the following:

a) Personnel:

one malariologist (senior adviser)  
one entomologist  
two senior sanitarians

b) Fellowships:

two fellowships for medical officers and one invitation to inter-regional malaria eradication conference.

19. Participation by WHO will continue up to five years subject to availability of funds. The annual cost to WHO would be not less than \$25,000 which is available under the Technical Assistance budget, Priority I.

Government commitments

20. In addition to the obligations outlined above in paragraph 10, the Government will provide three senior medical and technical officers to work on a full-time basis as matching members to the international team as well as nine medical officers for the Provincial Malaria Centres, fifty sanitarians/technicians (including a number of female technicians) and 700 labourers to work three months every year in all areas. In addition to these, administrative personnel, drivers, etc. will be provided as required and premises will be made available for the Provincial Malaria Centres and for a principal training centre. All expenses of the campaign, other than the UNICEF contribution, will be covered by the annual budget of LS.736,000 (US \$210,000)

Yearly cost per person

21. The yearly cost of the campaign to Syria, UNICEF and WHO, including the use of equipment already in the country would be the equivalent of \$356,000. For the direct protection of 1,150,000 persons this amounts to 31¢ per head.

/Target .....

Target time schedule

22. The schedule for 1956 operations would be as follows:

- October-December 1955 - Arrival of the new WHO team in Syria.
- End January 1956 - Recruitment for training purposes by the Government of the medical officers, the qualified entomologist and sanitarians to be in charge of the programme.
- March 1956 - Delivery by UNICEF of equipment and supplies provided for under its commitments.
- 1 April 1956 - Recruitment and training of labourers for the spraying operations and beginning of the spraying.
- End June 1956 - Conclusion of spraying operations.

A similar schedule for the recruitment of labourers and for the beginning and conclusion of spraying operations would be maintained in 1957 and in each of the following years.