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UNITED NATIONS CHILDREN'S FUND

Programme Committee

Recommendation of the Executive Director for an Allocation  
IRAN  
Malaria Eradication

1. The Executive Director recommends an allocation to Iran of \$286,000 for the provision of insecticides, spray-pumps and laboratory equipment for continuation during the second year, 1958, of the five-year malaria eradication campaign for which the Board previously approved an allocation of \$1,680,000 (exclusive of freight)<sup>a/</sup>. The 1958 operation would extend residual spraying to 27,800 villages with 7,385,000 inhabitants. In voting the previous aid in March 1956, the Board also gave its approval in principle to assist the entire eradication programme (E/ICEF/L.877). UNICEF's total contribution for the eradication campaign in Iran is estimated at \$3,300,000 to \$4,300,000 while the Government would expend the equivalent of US\$13,000,000 during the five years 1957/1961.

2. The 1957 target was to spray 24,450 villages with 6,500,000 inhabitants and it appears that this target will be reached. The Government expects to extend epidemiological surveys to 13,000 villages in 1957 and to 26,900 villages in 1958, a considerable increase over the amount of surveys previously planned. During the last quarter of this year, an assessment of the 1957 operations and of the plans for 1958 will be made by the Malaria Institute and the Malaria Eradication Organization, and it is expected that international advisers will participate.

<sup>a/</sup> An allocation of \$350,000 (exclusive of freight) was approved for a malaria control campaign in March 1954 (E/ICEF/L.580).

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(10 p.)

The malaria problem in Iran

3. In documents E/ICEF/L.580 and E/ICEF/L.877 the Board was informed of the problem of malaria in Iran. Of the total population of 19,000,000 (census mid-1956), approximately 12,000,000 are living in 40,000 villages in potentially malarious areas. The first malarionetric studies were made in the period 1942 to 1950 on a limited scale. In 1949, a WHO advisory team assisted the Government to organize anti-malaria surveys. From 1952 to 1955 the Public Health Co-operative Organization (PHCO) expanded the malaria control operations with the help of United States bilateral aid. In April 1952, the Malaria Institute of Teheran was established with the co-operation of the Ministry of Health and the Teheran Medical School, and with the assistance of WHO. Since its creation, epidemiological and entomological surveys have covered the most important malarious areas of the country. Control operations were at the same time extended to larger sectors on a more scientific basis.

4. The following table summarizes the progress in malaria control over the past seven years and the operations under way in the first year of the eradication campaign.

Summary of Spraying Activities

| <u>Year</u> <sup>a/</sup> | <u>Number of villages</u> | <u>Population protected</u> | <u>Metres Sprayed</u> | <u>DDT</u> <sup>b/</sup><br><u>used</u> |
|---------------------------|---------------------------|-----------------------------|-----------------------|---|
| 1950                      | 7,258                     | 2,081,300                   | 178,890,000           | 358                                     |
| 1951                      | 5,194                     | 1,572,400                   | 149,732,000           | 296                                     |
| 1952                      | 11,107                    | 3,286,700                   | 383,069,000           | 763                                     |
| 1953                      | 14,542                    | 4,243,938                   | 539,807,642           | 1,086                                   |
| 1954                      | 15,405                    | 3,915,000                   | 557,860,000           | 1,019                                   |
| 1955                      | 16,106                    | 3,855,800                   | 396,599,000           | 784                                     |
| 1956                      | 19,427                    | 4,564,100                   | 337,552,000           | 660                                     |
| 1957 <sup>c/</sup>        | 24,450                    | 6,500,000                   | 481,000,000           | 900                                     |

<sup>a/</sup> Twelve months ending 20 March of the following year.

<sup>b/</sup> Tons of 100 per cent equivalent.

<sup>c/</sup> Planned for the current spraying season and partly completed as of mid-July.

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Operations during 1956

5. During 1956 and the first five months of 1957, financial and administrative difficulties hampered the execution of the plan. At the time of the previous recommendation to the Board (March 1956), it was planned that the operations during 1956, although not aided by UNICEF, would see the revised eradication organization established and eradication operations, i.e. complete coverage, begin in the northwestern part of Azerbaïdjan. However, although 19,427 villages with 4,564,000 inhabitants were sprayed, compared with 17,106 villages planned, the work was not sufficiently concentrated to constitute a beginning of eradication. This has now begun in parts of the country one year later, with the spraying season of 1957. During 1956, 4,113 villages received 13,628 epidemiological survey visits (either for control of operations or for vigilance in villages no longer sprayed), compared with 3,183 villages planned, but it proved possible to stop spraying in only 2,572 villages instead of the 6,500 planned. 93,000 blood smears were taken, among which 430 showed malaria infection (64 out of 40,000 in infants) which is an encouraging result.

Administrative reorganization, 1957

6. "Any country planning to eradicate malaria needs a special malaria service which should preferably be a primary division of the national health department. The direction and supervision of the programme should be in the hands of a central organization, and its execution in those of field organizations of the service" (Expert Committee on Malaria, Sixth Report, section 5-2). Administrative arrangements to give effect to these principles were in the original plan for Iran, and they seem now to have been put substantially into effect as of mid-1957. Again, though delayed, they are somewhat more comprehensive than originally proposed.

7. Instead of the proposed Malaria Eradication Branch of the Department of Public Health, a "Malaria Eradication Organization" was created in February 1957 with Divisions for operations, epidemiology and administration. On 13 June 1957, a full-time Director-General was appointed, responsible directly to the Minister

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of Health and having a delegation of power for administrative, financial and operational questions that hopefully will be adequate for a campaign having to move according to a strict time-table. The Seven-Year Plan Organization, which is providing the funds on the Iranian side, has contributed to this necessary flexibility by arranging for the post-auditing, rather than the pre-auditing of expenditures. The Plan Organization has said that it will review further its administrative controls before the 1958 spraying season, if necessary.

8. The epidemiological services for the campaign were transferred during July from the Institute of Malaria to the Malaria Eradication Organization, thus permitting unified direction of operational and epidemiological services. These divisions also each have a full-time chief. An increase in the salaries and allowances of the field staff is under discussion. This would permit the Organization to recruit and retain better quality personnel. The Institute of Malaria continues to be responsible for preparing the annual plans of eradication operations, training of personnel, epidemiological research and evaluation. The Scientific Council of the Institute continues to be the Iranian authority for the approval of the annual plan of operations and scientific and technical procedures.

9. Responsibility for the execution of the work has been delegated, and funds allotted since the middle of May 1957, to the field organization in the 11 ostan (provinces); to the chief of the **public health department in the 7 largest** provinces and to the chief of the medical and health department in the 4 other provinces, where there is no separate public health department. Within the province, responsibility has been delegated to the sharestan (district); 74 of the 94 sharestans of Iran are the district centres of anti-malaria operations. In Zone I of the eradication plan all sharestans now have their centres of malaria operations.

10. Inspection is at present still understaffed with five groups of two persons each inspecting spraying operations in the provinces having the most operations. Ten such teams are planned for 1958 and training of candidates for the new posts began at the Malaria Institute in July.

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Financing, 1957

11. In mid-April the Plan Organization released 195,000,000 rials (equivalent to US\$2,600,000) to the Malaria Eradication Organization for operations for the fiscal year ending 20 March 1958. A further 20,000,000 rials are in reserve, to be drawn on later in the year if necessary. This total of 215,000,000 rials compares with 170,000,000 foreseen as the Government commitment in the last recommendation (E/ICEF/L.877, para. 44). This financial support was the more significant in that most development projects supported by the Plan Organization have had to be reduced by 10 to 20 per cent because of an expected budgetary deficit of 6,000 million rials for the current fiscal year. Nevertheless, the fact that funds were not released until mid-April delayed spraying operations this year, and an earlier start will be required in future years so that spraying may be completed before the transmission season. UNICEF is requesting the inclusion in the plan of operations of a clause providing that funds for the next fiscal year will be approved and made available before the end of January, as is the case in other plans for countries in this region.

Field operations, 1957

12. For the reasons explained above, spraying operations started everywhere several weeks later than required in a normal eradication year. However, because of heavy late rains, the transmission season is also expected to be later than normal. Spraying began in March in control zones in the South. By mid-May, spraying began in Azerbaidjan and the Caspian Littoral (Zone I) on the eradication basis of overall coverage. By the end of June, 6,000 villages had been sprayed in the whole country and it was expected that the plan of spraying 24,000 villages during the season would be completed.

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Revised plan, 1958 and later years

13. It was pointed out in the last recommendation (E/ICEF/L.877, para. 31) that further experience and technical findings would require revision of the plan. This was the case following the 1956 operation and surveys. The five eradication zones have been reduced to four, as shown in the sketch map attached (see Annex). This has the advantage of grouping into one zone (IV) instead of two, the southern parts of the country which present special technical problems because of the climate, the vectors, the mud walls of the houses etc. The total coverage of these zones would be undertaken as follows: Zone I, 1957/60; Zone II, 1958/61; Zone III, 1959/62; and Zone IV, 1960/62. This will extend spraying for one further year (1963) corresponding to the year's delay in the start of eradication from 1956 to 1957. Total coverage of Zone I has now started, and in the Zones II, III and IV, villages where a good deal of control work has been done in the past have been grouped into "compact sectors" in which spraying will be continued and eradication will be started ahead of the time-table for the zone as a whole. This is hoped to result in progressive cessation of spraying in villages where transmission will have been stopped for three successive years. However, the net result of this revision is to increase substantially the number of villages expected to need spraying, especially in the later years of the campaign.

14. For the greater security of the campaign, it is proposed to increase substantially the epidemiological survey visits to villages. WHO has especially recommended revision in this direction. In particular, many more of the villages, hopefully all of them, having had two years of spraying, will be regularly visited ("100 per cent operations surveillance") to collect evidence of transmission and determine when spraying may be stopped. Whether the transport so far supplied by UNICEF will be adequate for the revised plan will be examined at the end of the year.

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15. Present plans for 1958, subject to revision after the assessment of 1957 operations, are to give the second year of eradication spraying in Zone I (4,987 villages) and the first year in Zone II (16,710 villages). Operations would be continued in the local eradication sectors of Zones III and IV (6,176 villages) making a total of 27,873 villages (population of 7,385,000). Hopefully, spraying would be discontinued in a further 6,115 villages, making a total of 8,690 since the beginning of the campaign. Regular epidemiological-survey visits would be made to approximately 25,000 villages, including all the villages where spraying has been stopped.

UNICEF commitments, 1958

16. UNICEF would provide the following supplies and equipment for continuation of the eradication programme through 1958:

|   | <u>US\$</u>   |
|---|---------------|
| a) <u>DDT</u> , 75% wettable, 430 metric tons     | 218,000       |
| b) <u>Spray pumps</u> with spares, 1,100          | 28,400        |
| c) <u>Equipment for 12 sharestan laboratories</u> | 7,400         |
| d) <u>Contingencies</u>                           | <u>6,200</u>  |
| Total supplies and equipment                      | 260,000       |
| e) <u>Freight</u>                                 | <u>26,000</u> |
| Total recommended allocation                      | 286,000       |

17. The explanation of the requirements is as follows: (The supplies provided under the previous allocation have all been delivered with the exception of DDT for the beginning of the 1958 season.)

DDT needs to be in Iran in January to begin the 1958 season. 830 metric tons of DDT 75 per cent remain, as planned, from the last allocation, and are now under procurement. Allowing for an expected carryover of 120 tons from deliveries for 1957, a further 430 tons will be required to protect the 7,385,000 population planned at 70 square metres per caput. If spraying continues at the rhythm presently planned, it will be advisable to present to the next session of the Board a request to cover DDT for the 1959 season.

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Transport: The last allocation has been used to supply 270 vehicles, spares, and garage tools. Some took as long as three months to pass through the port of Khorramshahr; 226 vehicles were held there on 31 May, of which 194 reached Teheran by mid-July. Hired and borrowed vehicles had to be used for the start of spraying operations. Adding 64 vehicles supplied earlier by UNICEF and still usable, and 171 old and new vehicles provided by the Government, a total of 505 are available for the 1957 and 1958 operations. These are expected to be sufficient unless an examination of the enlarged survey programmes above referred to should show the need for additional vehicles, which would then be recommended to the next session. However, it is hoped that the need can be met by using spraying vehicles for surveys after the spraying season.

Spray pumps: The 1,100 pumps correspond to the 20 per cent increase in surface to be sprayed in 1958 compared with the amount foreseen in the last allocation.

Laboratories: The last allocation provided for 10 ostan (province) laboratories. The proposed allocation would provide for 12 smaller sharestan (district) laboratories in the districts having greatest endemicity in the first two eradication zones, mainly to make rapid examinations of blood slides in relation to surveys.

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WHO approval and participation

18. WHO approval of the technical aspects of this allocation is anticipated. WHO will continue to give technical advice and general guidance to this programme through visits of regional advisers and consultants and will continue to assist in the assessment of the project. WHO will also continue to assist in co-ordinating this campaign with the malaria eradication programmes in neighbouring countries.

Government commitments and matching

19. The Government will provide all necessary funds, personnel, materials, supplies and equipment required for the operation of 1958 (other than those to be provided by UNICEF), and will cover all operational expenses as required for the success of the project. The estimated total cost to the Government for carrying out its 1958 commitments for this project is Rials 250,000,000 (equivalent to US\$3,333,000). For the continuation of the campaign from 1957 to the end of 1961, the Seven Year Plan Organization has given its approval in principle for the total budget (approximately Rials 980,000,000, equivalent to US\$13,265,000).

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ANNEX

IRAN: PLAN OF MALARIA ERADICATION CAMPAIGN  
1957 - 1964

