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UNITED NATIONS CHILDREN'S FUND
PROGRAMME COMMITTEE

Recommendation of the Executive Director for an Apportionment to

THE TRUST TERRITORY OF SOMALILAND UNDER
ITALIAN ADMINISTRATION

Malaria Control *

1. The Administration recommends an apportionment of \$89,000 to Somalia for the provision of vehicles, sprayers and DDT, for assistance in a malaria control programme. The present plan covers a two-year period and represents the first phase of a mass campaign protecting 125,000 persons. It is hoped to acquire sufficient knowledge of the special problems involved and effect training of suitable personnel so as to expand the campaign in orderly stages over a period of some five or more years with a view to complete protection of the population. Further assistance may be requested after the first years experience.

2. Costs to the Government relative to the two-year period covered by this recommendation are estimated to amount to the equivalent of \$100,000.

Origin of the Request

Following the visit of the special Technical Assistance Mission in 1951, the Italian Administration has several times sought the assistance of international agencies to develop some of the recommendations then made by the Mission for specific health projects. In the field of malaria control this resulted in a WHO survey in October 1952. The proposals then made for a pilot zone project, due to some technical and administrative difficulties did not materialize. A second WHO visit concerned, among other subjects, with malaria control, took place last November. The visit was made jointly with the UNICEF

First UNICEF aid to this programme.

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Regional Director, and the plan outlined in this paper was worked out with the Italian authorities on the spot. The Regional Adviser for UN Social Affairs also participated in the ~~visit~~ and the discussion.

4. An extended description of Somaliland under Italian Trusteeship is given in the annual reports of the Italian Administration to the Trusteeship Council. Some geographical information relevant to the malaria problem is contained in the Annex to this paper.

Malaria Incidence

5. Malariologists who have studied the problem consider that there are two types of malaria incidence, distinguished by their character and periods of transmission. Along the banks of the two rivers in Southern Somalia (Uebi Scebeli and the Gimba) and in the area between them, malaria is endemic in varying degrees. It is perennial with a peak in December/January. Some distance from the rivers a peak of shorter duration occurs in May/June. The incidence tails off noticeably northwards. In the desert areas between the two rivers and in the northern part of the country, which resemble British Somaliland, the malaria problem is epidemic - it develops primarily after the Spring rains and reaches its peak about May/June. While it cannot be excluded that Anopheles breeding takes place throughout the year in some locations in the interior, it seems most probable that malaria is introduced each year into these desert areas by the nomads who bring their flocks nearer the rivers and water holes during the dry season, but who move off into the interior with the rains, in search of grazing. In their movement they apparently carry the vectors with their portable huts together with infected individuals.

6. A malariological survey of the whole country, made by the Italian Administration, established that among the 70% of the population who live in the watered area, the spleen index is over 50%. In the alluvial lowlands, malaria is classified as hyperendemic, the spleen index running from 60% to 80%. The population survives because of a precarious "tolerance" acquired at the cost of an infant mortality rate which competent observers estimate at over 50% of births. But the survivors are deprived by the disease of that persistent energy which is essential to extensive agriculture on a scale which would support

/the whole people

the whole people in permanent settlements and provide the basis for economic and social development.

Present remedial efforts

7. The Italian Administration has conducted anti-malarial campaigns for several years in and around some 16 centres of habitation in the watered area. In the 1953-54 campaign 43,965 people were protected, at a cost of 2.27 Somalos (32 US cents) per caput, by residual spraying with DDT emulsion, the average area of dwelling surface sprayed per inhabitant being 55 square metres.

8. This has been done by a group composed of 1 Medical Officer, 11 Italian Supervisors, and 88 Somali labourers, who are responsible not only for the anti-malaria work, but also for the control of Aedes Egypti, the vector of yellow fever. The campaign has been greatly assisted by the research work of the Study Centre established in Mogadiscio by the Italian Navy, in technical collaboration with the Malaria Institute in Rome. It has a small staff of one malariologist and a number of non-commissioned officers trained in laboratory and entomological techniques.

/Proposed Plan of Action

Proposed Plan of Action

9. With the assistance of WHO and UNICEF, the Italian Administration proposes to carry out an intensive mass spraying campaign to free from malaria the more heavily populated and economically more important part of Somaliland which is watered by the Rivers Giuba and Uebi Scebeli. The campaign would also cover the nomadic or semi-nomadic population living in the area between these rivers, and deal with the seasonal outbreaks of epidemic malaria in the savannah area between the two rivers. In the central and northern parts of the country the objective would be to protect the population where permanent water places favour seasonal epidemics of malaria after the rainy season. The campaign is expected to run some four to five years.

10. Total Area Coverage: The first phase of the mass attack would be total coverage of an area in the districts of Merca, Afgoi, Balad, and Villaggio Duca d'Abruzzi, along the Uebi-Scebeli to the north of Mogadiscio. It is proposed to extend the total coverage to the other parts of the whole area, in successive phases. Spraying in the centres already protected will be continued until the transmission of malaria is interrupted.

11. Demonstration and Training: At the same time as the first phase of the mass campaign is begun, the Italian Administration plans to establish a Demonstration and Training Area where the work would be under the technical direction of the malariologist of the Mogadiscio Study Centre, who will also act as Technical Adviser to the Malaria Section which is to be established in the Department of Social Services and charged with operational responsibility for the malaria control campaign. The Demonstration and Training Area tentatively selected lies on both sides of the Uebi-Scebeli between Afgoi and Balad, with a population of 25,000 to 30,000 people living in about 7,500 dwellings mostly thatched huts with wooden frames and mud walls.

12. The Italian Administration believes that such a Demonstration and Training Area would be valuable during a period of 2 years for training and experimental work in spraying techniques and in epidemiological surveillance. Selected teams would be trained as intelligence units for malariological surveys ahead of the mass campaign, for control of the work in progress, and as reinforcements where necessary. In the later stage of the campaign the Pilot Zone would be merged into the overall programme.

13. Experience gained in the anti-malarial spraying campaign already carried out by the Italian Administration shows that the work can be done by teams consisting of 1 Italian Supervisor, 1 recording clerk who would also control the mixing of the insecticides, and 6 labourers sprayers. Such a team requires help by the villagers in transportation, particularly of water, and in the labour of mixing. It can spray 50 huts per day, or about 1,250 per month. Since infection in the vicinity of the rivers is known to reach peaks during the two rainy seasons, and there is no transmission-free period in the year, it will be necessary to spray each hut twice annually. Spraying can continue over three months in each half-yearly cycle, so that 2 teams will be required for effective control of malaria in the 7,500 dwellings of the Pilot and Training Zone.

14. The population in the area of the first phase of the mass campaign is estimated at about 100,000 and the number of dwellings at between 20,000 and 25,000. On the basis that 1 team is required for the continuous protection of every 3,750 dwellings, 6 teams are planned to be deployed in the first phase.

15. Later Phases: The later phases of the campaign will be finally determined in the light of the findings of the WHO consultant (see para. 16), in agreement with the authorities, and on the basis of the experience of the first phase. The present indications, based on reasons of density of population and known incidence of malaria, suggest that the second phase would be developed in the lower part of the Giuba river, comprising the Margherita, Gelib and Afmedo districts, involving a total population of about 88,000. The third phase would link the two protected areas in the lower part of the two rivers, primarily the district of Brava, composed of 58,000 persons, and the area north of the lower course of the Uebi Scebeli (north of a line between Gelib and Afgoi). The fourth phase would extend protection northwards along the Giuba river so as to include the district of Bardera, with a population of 71,000. The subsequent phases would first extend to the areas around Bur Acaba and Baidoa (involving some 76,000 and 115,000 people respectively, in areas especially exposed to the risk of epidemic infection); and then reach out to the remaining nomadic populations and the areas along and between the upper parts of the Giuba and Uebi Scebeli.

16. The WHO is being asked to provide a consultant malariologist, to arrive in the country in the late Spring of this year, just after the rains, to make a complete basic study and to establish the detailed plan of campaign.

/17. To protect a total

17. To protect a total of 125,000 people by spraying 55 square metres of dwelling-surface for each, twice a year, at the rate of 3.9 grams per square metre each spraying, would require annually 53,625 kgs of DDT 75% wetttable powder, estimated to cost approximately \$30,000 for one year or \$60,000 for the first two years of the programme.

UNICEF Commitments:

18. UNICEF is asked to provide the following:

Transport:

4	3-ton Trucks, 4 wheel drive, with spares and extra tyre tubes one for two teams	\$13,200
	one Station wagon, 4 wheel drive, with spares, for supervision	2,500

Insecticides:

DDT 75% wetttable, 240,000 lbs. 60,000

Sprayers:

Including spare parts 1,000

76,700

Contingencies:

5,000

Sub-total 81,700

Freight 7,300

Total \$89,000

Government Commitments

19. If this recommendation is approved, the Government will carry out the following:

- a) It will continue the anti-malaria work already started with traditional methods, and the protection of the main centres through spraying in years to come;
- b) The Government will undertake to make enough staff available to develop gradually an organization measuring up to the task of giving mass protection to all of the areas on a gradually expanding basis, in relation to the possibilities of training staff and employing them on a permanent or semi-permanent basis;
- c) After the campaign has reached the continuation and surveillance stage the Government intends to maintain this work on a reduced scale, involving primarily control of endemic foci, careful surveillance, and eventual protective spraying in special border areas.

/20. The additional

20. The additional costs to the Government of carrying out its commitments over the two-year period of this recommendation are estimated at \$100,000.

WHO Approval and Participation

21. This programme has the technical approval of WHO. WHO has also arranged to finance a fellowship at Yaounde French Cameroons for the Italian Medical Officer in charge of malaria control in the territory.

Target Time Schedule

22. It is hoped to commence operations immediately following the late rains, not later than early January 1956. UNICEF equipment and supplies are requested to arrive in Mogadiscio no later than early December 1955.

ANNEX

Some Background Information on the Trust Territory of Somaliland

Under Italian Administration

The country is narrow and extends south-westward from Cape Guardafui, the easternmost extremity of Africa, about 1100 miles along the Indian Ocean coast, down to the Equator. In its northern half the country is arid; in the southern half it contains two great rivers, the Uebi Scebeli and the Giuba, which rise in the mountains and both flow southward, along courses 150-200 miles apart, through the lower half of Somaliland, where alluvial deposits have formed a fertile coastal plain. The Uebi Scebeli is not perennial and during dry seasons is reduced to a mere trickle or may dry up altogether. The Giuba, although in non-rainy seasons considerably reduced, is perennial.

It is of relevance to note that the river Uebi Scebeli does not, like its partner, run out into the sea, but turns southward near Balad, some distance from the coast and flows parallel with the sea until some 30 kms. from the Giuba, when it loses itself in a malarious morass north of Margherita. The authorities are now considering the re-activation of an earlier plan to dig out the old course of the river south of Merca and create an outlet into the sea. This would allow reclamation of valuable agricultural areas now unusable. Plans are also under consideration for construction of dams in both rivers which would provide electric power supplies and permit regulation of the flow of the rivers in the flood periods.

The two rivers exercise a major influence on the life, economy, habits and health of the inhabitants. They provide the only certain source of water for human and animal consumption. Important agricultural and industrial centres are crowded on their banks and the area between them has valuable potentialities for production and development.

At the same time these rivers constitute the principal foci of infection of two of the country's major health problems, malaria and bilharzia. Their varying seasonal flow, one time flooding over areas of 5 kms. on either side, other times receding and leaving series of marshes and ponds, results in abundant breeding grounds for anopheles and contributes to making malaria outbreaks in Somalis of a deceptive latent character which may suddenly flare up into an epidemic such as occurred in 1951, when some 80,000 cases were reported.

Some 70 per cent of the total population of 1,250,000 lives in one-third of the country, the area watered by the two rivers, in which is concentrated 80-90 per cent of the country's material wealth. Yet only one quarter of the population lives in any kind of fixed dwelling. The other three quarters are nomads, partly because agriculture is not sufficiently extensive to permit the permanent settlement of the people, and partly because the people have learned from personal and hereditary experience that when the rains fail, and famine stalks the land, the farmer with his fixed plot often dies, while the man with a large herd of cattle, while losing many, survives with his family on those that remain. Where deep wells have been established with foreign aid during 1954, the settled village population has increased enormously and for the first time in memory, the villagers have not migrated in search of water during the dry season.

/It is a general belief

It is a general belief that the country will only reach a more intensive level of productivity if the nomadic life of the population can be transformed into a more settled one.

The potentially fertile areas are along the lower parts of the two rivers and in a fairly wide band along the coast between the estuaries. The Trust Administration, with the participation of the United States Foreign Operations Administration have launched a very far-reaching programme for tapping existing ground water resources through the establishment of wind and machine driven water pumps. This programme is being developed primarily in the whole region between the two rivers, which offers potentialities for building up a subsistence agriculture with an assured water supply for camels, cattle, sheep and goats.

The intensive irrigation work undertaken by the Italian Agricultural Station is a factor in the problem of malaria control. The plantations require a regular flow of water for the cultivation of bananas, cotton, fruit, and so forth. They have increased the many potentialities for Anopheles breeding on a year-round basis.