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SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN
TROPICAL DISEASES

This paper is presented as background information to the Regional Committee in connexion with the arrangement whereby the Regional Committee is expected to designate two countries which would nominate two representatives as members of the Joint Co-ordinating Board of the Special Programme for Research and Training in Tropical Diseases.

INTRODUCTION

The control of communicable diseases is a pressing need of tropical and sub-tropical developing countries. Current methods of control are not yet sufficiently refined to be applicable at reasonable cost under local conditions. In effect, only the general lines of control strategies are known for some of the most serious vector-borne tropical parasitic diseases such as trypanosomiasis, malaria, filariasis and leishmaniasis.

Much has been learned about the vectors of these diseases, particularly malaria; much is known also about toxicity of insecticides which can be used for their control and more information is coming to light on their toxicity and efficacy. Considerable advances have been made in our understanding of schistosomiasis and its vectors, and in the development of molluscicides and slow-release formulations.

Nevertheless, the cost of controlling these diseases is still prohibitive and beyond the means of many countries where they are most prevalent. It is an urgent matter therefore to develop new control strategies and more effective technologies at low cost and this has to be done by means of research, developing low-cost methods of control, and the training in research methods of scientists and technicians.

The Special Programme for Research and Training in Tropical Diseases deals with six diseases: malaria, schistosomiasis, filariasis (including onchocerciasis), trypanosomiasis, leishmaniasis and leprosy.

All except leprosy are parasitic diseases the control of which is based on a dual approach: vector reduction and case treatment.

Special studies are being carried out in tropical countries to identify the needs, specify the tools required and assess them in each specific tropical environment.

The training component of the programme aims at training national cadres of scientists and technicians in the skills needed to ensure self-reliance in research and technical control methods.

Research is indicated particularly in:

- chemotherapy and chemoprophylaxis (the development and trial of new drugs),
- immunotherapy and immunoprophylaxis (the development and evaluation of new vaccines),

- the control of vectors (the development and evaluation of new biological, engineering and chemical methods),
- the diagnosis of tropical diseases, particularly immunodiagnosis.

Such a programme requires co-ordination at national and regional level of research work in various biomedical and social science areas, the development of appropriately trained manpower and the strengthening of research institutions.

THE PRESENT STATUS OF THE PROGRAMME

The Special Programme for Research and Training in Tropical Diseases is co-sponsored by the United Nations Development Programme, the World Bank and WHO. WHO is the Executing Agency. The Programme operates within a broad framework of inter-governmental and inter-agency co-operation and participation. The Special Programme's financial resources are those made available by governments or organizations to the Tropical Diseases Research Fund - an international fund administered by the World Bank - and to the Voluntary Fund for Health Promotion of the World Health Organization, as well as funds of other agencies.

By April 1978, 32 governments and a number of agencies and foundations were supporting the Programme, and 26 governments and organizations had pledged funds.

In the Eastern Mediterranean Region Iran has contributed US \$ 500 000 for the establishment of a Regional Research Centre, and Cyprus and Iraq have contributed or pledged funds specifically for the Programme. Generous contributions have been made particularly by Saudi Arabia and Kuwait for the development of regional and country programmes which include research and training components though not specifically to this fund.

The administrative and technical structures of the Special Programme have been set forth at a meeting of governments and other co-operating organizations which met in Geneva in February 1978. The co-sponsors, i.e. UNDP, the World Bank and WHO, constitute the Standing Committee whose function is to review the plan of action and budget for each financial period as prepared by the Executing Agency (WHO) and make proposals, examine reports and present findings and recommendations.

The technical and scientific aspects of the Special Programme are reviewed by the Scientific and Technical Advisory Committee (STAC), composed of scientists and other technical personnel representing a broad range of biomedical and other disciplines required for special programme activities.

The actual review of the planning and execution of the Special Programme is entrusted to the Joint Co-ordinating Board (JCB) which co-ordinates the interests and responsibilities of the parties co-operating in the Special Programme.

There are therefore three main groups concerned with the implementation of the Special Programme: the Joint Co-ordinating Board (JCB), the Standing Committee, and the Scientific and Technical Advisory Committee.

RESEARCH IN THE REGION

The problem of malaria is still acute in the Region, varying in degree among many countries. Vector resistance to chlorinated hydrocarbon pesticides is one of the main causes: 13 vector anophelines are resistant to DDT/Dieldrin, of which seven are primary vectors. A further problem is the refusal by the population to permit indoor residual spraying of malathion because of its strong odour; other methods of control have therefore to be devised.

Research is already under way in the Region on methodologies and techniques of biological control; on the application, at low cost, of ultra-low-volume formulations of insecticides; the slow release of larvicides; and on methodology of drug administration.

Further studies are required to devise and evaluate measures of environmental management to reduce potential breeding places and man/vector contact. For biological control more studies are needed of the efficacy of local or imported larvivorous fish.

Schistosomiasis caused by *S. haematobium* is endemic in nine countries and foci exist in almost all countries of the Region. *S. mansoni* is also present in some countries but is underdiagnosed. Research is needed on appropriate epidemiological methods of investigating schistosomiasis, including the use of mathematical models, and to develop simple and cheap immunodiagnostic tests particularly for the diagnosis in the field of *S. mansoni*.

Research is being done in Egypt on alternative methods of schistosomiasis control. A local plant, *ambrosia maritima*, seems to have a powerful molluscicidal effect with long residual action, as well as a lethal effect on the free cercaria of schistosomes.

Other promising biological control methods which should be tested include the dissemination of Tilapia fish and the introduction to local habitats of the white Amour river fish and the Marissa snail.

Studies are being planned on slow-release molluscicides, particularly their toxicological aspects; on engineering methods of snail control such as mechanical screening, lining of canals, use of covered drains and water speed regulators; and on the impact of water development projects on the endemicity of schistosomiasis.

With regard to the treatment of schistosomiasis further studies appear to be necessary on the use under field conditions of relatively new drugs such as oxaniquine and metrifonate against local strains of schistosome.

Human trypanosomiasis is a growing problem in the south of Sudan. Epidemiological studies are required to elucidate the dynamics of the disease, and better laboratory diagnostic tools, possibly serological, have to be developed.

The drugs available to treat human trypanosomiasis are not yet safe and effective enough to be used freely under tropical conditions and by auxiliary health personnel who must be responsible for treatment.

Research is needed also on the bionomics of the vector, its amenability to control and on the actual and potential reservoirs of infection in nature.

Leishmaniasis in its cutaneous form is present throughout the Region, and in its visceral form in Pakistan, Saudi Arabia, Iraq, Sudan and possibly Yemen Arab Republic and Oman.

The visceral form occurs mainly in the very young, to whom the diagnostic technique of bone-marrow puncture is very distressing. Furthermore, bone-marrow aspirates are often negative even when the disease is present. The immunofluorescent antibody test and the immuno-counterelectrophoresis test represent progress in the diagnosis of visceral leishmaniasis and more precise epidemiological tools for studies on population groups at risk and potential animal reservoirs of infection.

Further epidemiological studies are indicated on vectors and their bionomics, the dynamics of transmission, and environmental factors favouring the persistence of the parasite in the animal reservoir.

While research is continuing on filariasis and onchocerciasis and pending the outcome of the Volta river-basin studies there is an urgent need to reduce blindness in the affected population. More needs to be known about the safe use of chemotherapy by auxiliary health workers at primary level.

Leprosy occurs in most of the countries of the Region, and while it is not a serious public health problem there is much interest in the possibility of its control

and elimination because of its social aspects. Research is needed mainly in early diagnosis including its immunological aspects, chemotherapy, its socio-epidemiology, and new preventive and control methods.

Special training in research methods is needed to enable clinical and laboratory specialists to engage in research on the disease.

THE ROLE AND FUNCTION OF THE JOINT CO-ORDINATING BOARD

The Joint Co-ordinating Board¹ has the following functions:

- Review and decide upon the planning and execution of the Special Programme. For this purpose it will keep itself informed of all aspects of the development of the Special Programme, and consider reports and recommendations submitted to it by the Standing Committee, the Executing Agency, and the Scientific and Technical Advisory Committee.
- Approve the proposed plan of action and budget prepared by the Executing Agency and reviewed by the Standing Committee.
- Review the proposals of the Standing Committee and approve arrangements for the financing of the Special Programme in that period.
- Review proposed longer-term plans of action and their financial implications.
- Review the annual financial statements submitted by the Executing Agency, as well as the audit report thereon submitted by the External Auditor of the Executing Agency.
- Review periodic reports which evaluate the progress of the Special Programme towards the achievement of its objectives.
- Endorse the proposals of the Executing Agency and the Standing Committee for STAC membership.
- Consider such other matters relating to the Special Programme as may be referred to it by any Co-operating Party.

¹TDR/CP/78.3 Rev.1, Annex 4, pp.2 and 3.

The JCB consists of thirty members from among the Co-operating Parties as follows:

- Twelve government representatives selected by the contributors to the Special Programme Resources;
- Twelve government representatives selected by the WHO Regional Committees from among those countries directly affected by the diseases dealt with by the Special Programme, or from among those providing technical or scientific support to the Special Programme;
- Three members, designated by the JCB itself, from among the remaining Co-operating Parties;
- Representatives of the three Agencies which comprise the Standing Committee.

Members of the JCB shall serve for three years and may be reappointed.

The JCB operates as follows:

- It meets in annual session, and in extraordinary session if required and with the agreement of the majority of its members.
- It elects each year from among its members a Chairman, who shall:
 - (i) convene and preside over meetings of the JCB; and
 - (ii) undertake such additional duties as may be assigned to him by the JCB.
- The Executing Agency provides the Secretariat and arranges supporting services and facilities as may be required by the JCB.
- Subject to such other special arrangements as may be decided upon by the JCB, members of the JCB shall make their own arrangements to cover the expenses incurred in attending sessions of the Board.

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Of the twelve government representatives of the JCB, selected by the Regional Committees, two will come from the Eastern Mediterranean Region. For the initial period, one will serve for two years and the other for three years. Subsequent appointments or reappointments will be for a period of three years.

In addition, Co-operating Parties not selected for membership may wish to attend the meeting of the Joint Co-ordinating Board as Observers. Therefore, those

governments and/or Organizations wishing to attend the JCB meeting as Observers are kindly requested to indicate their willingness to the Regional Director.

The Committee is therefore called upon to designate the two countries which would be entitled to nominate the two Eastern Mediterranean Regional Members of the JCB.