REPORT OF THE EXTERNAL REVIEW COMMITTEE

SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN TROPICAL DISEASES

1. Overview and Summary

At its December 1980 meeting, the Joint Coordinating Board of the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR Programme) established an External Review Committee to review the first five years of the Programme's operations.

The Committee met for the first time in April 1981; it met three more times and completed its report in April 1982. It met with key persons responsible for the Programme, including the Director-General, WHO, members of the Standing Committee, the Programme Director, and others; it interviewed persons knowledgeable about tropical diseases, both those associated and those not associated with the Programme; it solicited responses to a list of questions circulated to members of the Joint Coordinating Board and to scientists familiar with the Programme's activities; it reviewed extensive documentation on the Programme; and members of the Committee visited institutions concerned with tropical diseases in both industrialized and developing countries. The Committee considers that these activities provided sufficient information on which to base broad conclusions about the Programme during its first five years and recommendations for its second five years.

The Committee's major conclusions and recommendations follow:

The Committee considers that the rationale for the TDR Programme remains valid (Section 3, pages 38-41). With respect to the six diseases included in the Programme, there continues to be a pressing need for better preventive, diagnostic and treatment tools, as well as for increasing research capability in developing endemic countries.

The Committee considered both quantitative and qualitative indicators of the Programme's significance (Section 4, pages 41-44). It concluded that while scientific results thus far are limited, they are significant and entirely appropriate considering the long-term nature of biomedical research. The Programme has added substantially to the resources devoted to research on the six diseases and now accounts for 25-30% of the worldwide effort; it has mobilized important new scientific resources devoted to the six diseases; and it has created through its networks a mechanism that encourages collaboration among scientists around the world. Moreover, the Programme's system for incorporating peer review of research efforts by high quality scientists from many countries and by an independent scientific review committee has enhanced WHO's capacity and standing in the international scientific community. The Committee, therefore, judged the Programme to be well launched and of major significance.

The Committee, while recognizing that there are diseases other than those included in the Programme that represent major public health problems in tropical countries, concluded that in the interest of continuity and cumulative impact no change should be made in the diseases included in the Programme at the present time (Section 5.1, page 44).

With respect to the two objectives of the Programme (Section 5.2, pages 44-45), the Committee noted that, while they are in some ways complementary, they compete for resources. The objective of finding new scientific tools through research and development argues for placing resources in the best facilities, which are now based primarily in developed countries, in order to make progress in the shortest time; the objective of strengthening research capability in endemic country institutions means placing resources where research and development may not progress as fast over the short-term, but must be developed if effective solutions to the problems of tropical diseases are to be achieved over the long-term. The Committee concluded that it is appropriate to include both objectives in the Programme.

The Committee noted that the goal established early in the Programme's history of devoting 20% of the Programme's resources to research strengthening was surpassed in 1979; in 1981 research strengthening accounted for 26.5% of the Programme's total obligations. Recognizing that research strengthening could absorb a greater proportion of Programme resources, the Committee concluded that in view of the urgency of the need for new tools, for the next five years the allocation to research strengthening should be stabilized at 25-30% of the total annual Programme budget. Moreover, the Committee urged that steady effort continue to be devoted to developing close and mutually reinforcing relationships between activities funded under Programme Area II (Research and Development) and Programme Area III (Research Capability Strengthening) (Section 5.3, pages 45-48).

The Committee commended the concentration of research strengthening grants in selected institutions and suggested 20-25 institutions - about the present number - as an appropriate scale, but pointed out also the need to be alert to the situation of outstanding individuals who may not be associated with the selected institutions (Section 5.3, page 48).

The Committee noted that projects in developing endemic countries accounted for 62.3% of Programme Areas II and III funds in 1981, and considered a gradual shift towards more research grants to developing countries desirable, in step with the rising capacity of scientists and institutions in those countries to carry out high quality research (Section 5.4, page 48 and Table III, page 49).

The Committee noted the continuous problem of balancing research and development efforts in laboratories with those in field conditions. There have been special problems facing field research, and the Committee endorsed the recommendations emanating from the recent report of the Scientific and Technical Advisory Committee's Sub-Committee on Applied Field Research (Section 5.5, pages 49-50).

The Committee praised the unique elements of the Programme's structure, and considered its establishment and successful operation as an achievement of the first order, permitting international scientific collaboration of high quality and strong mutual support among scientists from many countries (Section 6, pages 50-51).

The Committee found that the network approach of the Programme has provided a viable means of bringing together developed and developing country researchers to apply their skills towards the development of new tools for controlling tropical diseases. At the same time, it pointed out that special efforts are needed to overcome the inherent weaknesses in the model, namely, that it is a complex mechanism requiring a strong central management to avoid the risk of dispersing efforts over a broad front, and it carries with it the risk of a multiplicity of committees and meetings (Section 7.1, pages 51-52).

The Committee found that while the Scientific Working Groups served a definite purpose at the onset of the Programme, their role since then has diminished and the principal managerial responsibilities for guiding the activities to be carried out now fall to the Steering Committees. The External Review Committee, therefore, recommended that formal arrangements be brought into line with practice by merging the responsibilities of Scientific Working Groups with those of Steering Committees, and Steering Committees continue to call together meetings of larger groups of scientists when appropriate for reviewing strategic plans (Section 7.2, pages 52-53).

Recognizing that these changes place a strong central responsibility on Steering Committees for both formulating and implementing strategic plans, the External Review Committee recommended changes in the selection and rotation of Steering Committee members to include review by the Scientific and Technical Advisory Committee of persons proposed for new members and chairmen of Steering Committees, and the establishment as a general rule of a limit of six consecutive years for membership in Steering Committees (Section 7.2, page 53).

While recommending no change in the current policy of allowing Steering Committee members to receive grants, the External Review Committee emphasized the continued necessity on the part of the TDR management and the Scientific and Technical Advisory Committee to be vigilant for possible conflicts of interest inherent in the policy (Section 7.2, page 53).

In view of the enhanced responsibilities Steering Committee chairmen would carry with these changes, the External Review Committee recommended steps to give them more opportunity to gain a sense of the overall Programme, such as the Scientific and Technical Advisory Committee inviting them periodically to its meetings (Section 7.2, page 53).

The Committee concluded that the overall number of Steering Committees or "sections" currently in operation could be reduced with benefit to the efficiency and integration of the Programme (Section 7.2, pages 53 and 55).

The Committee pointed out the difference in mode of operation of the Research Strengthening Group and its Executive Sub-Group from the Scientific Working Groups and Steering Committees, considered their structure as appropriate and recommended no changes (Section 7.3, page 55).

The Committee considered the role of the Scientific and Technical Advisory Committee in the TDR structure as a crucial element that has contributed greatly to the credibility and success of the Programme to date; endorsed the Scientific and Technical Advisory Committee's responsibilities as appropriately including both scientific and managerial responsibilities, including making recommendations on the number, composition and resources of Steering Committees and the Research Strengthening Group; and commended the Scientific and Technical Advisory Committee in its regular reallocation of funds as the progress of the Programme illuminates research areas where scientific advance is most promising (Section 7.4, page 55).

The Committee concurred with the introduction of Scientific and Technical Review Committees and urged the Scientific and Technical Advisory Committee to emphasize the need that the reviews be analytical and frank (Section 7.4, page 56).

The Committee considered the size and composition of the Joint Coordinating Board as reasonable in providing for the effective representation of both donors and developing endemic countries, and in providing both a measure of flexibility and of continuity in the Board. The Committee suggested that annual Board meetings focus, to a greater extent than has been the case in the past, on substantive issues related to the Programme; to this end, the Committee suggested moving

towards including presentations on substantive areas by two or three Steering Committee chairmen each year on a rotating basis (Section 8.1, page 56).

The Committee pointed to the continuity, flexibility and easily accessible nature of the Standing Committee as making it a valuable part of the Programme's management structure, particularly for resolving matters arising between meetings of the Joint Coordinating Board. It suggested that liaison between the Standing Committee and the Scientific and Technical Advisory Committee, on the one hand, and the Board on the other, might be improved. The Committee, therefore, endorsed the Standing Committee's practice of regularly inviting the Chairman of the Scientific and Technical Advisory Committee to attend its meetings, and suggested the Standing Committee consider making the minutes of its meetings - apart from matters on which confidentiality is appropriate - available to the members of the Scientific and Technical Advisory Committee and the Joint Coordinating Board (Section 8.2, pages 56-57).

The Committee commended the strong leadership that has been provided by the Programme Director and his senior colleagues, and considers it important that adequate mechanisms exist to ensure continuity of strong leadership in the future. The Committee therefore suggested that procedures for selecting the Programme Director include wide canvassing to ensure that as many potential candidates as possible are brought forward for consideration, and close consultation with the Standing Committee before a nominee is put forward to the Director-General of WHO for appointment (Section 8.3, page 57).

The Committee considered that the overall level of TDR-funded staff based in Geneva is not inappropriate, but thought that existing staff could be used more effectively, especially with respect to providing assistance to developing country investigators in research activities and working with developing country personnel in the development of research strengthening activities. The Committee further expressed the belief that a reduction in the number of Steering Committees would allow for additional staff effort to be devoted to research strengthening activities (Section 8.3, pages 57-58).

The Committee, recognizing that WHO regional offices are normally involved in research activities and that support of research forms a part of their wider responsibilities, was not convinced that the present system of TDR budgeting for regional staff in five of WHO's regional offices was a good use of scarce administrative resources. The Committee suggested that the responsibilities of TDR-supported regional staff could be carried out by WHO's regular budget staff in the regional offices (Section 8.3, page 58).

The Committee reviewed the advantages and disadvantages of basing the TDR Secretariat at WHO headquarters in Geneva and concluded that the loss of the close contact with the expertise available in the WHO technical units, the costs and disruption in Programme activities that a move would cause, and the problems of communications and access that would ensue, far outweigh the possible gains of a change in venue. The External Review Committee, therefore, recommended that the Secretariat remain at WHO headquarters in Geneva (Section 8.3, page 58).

The Committee also, while considering WHO headquarters as the best base for the Secretariat, recommended that the Programme consolidate its staff in the TDR unit to increase the effectiveness of the Programme as an operating entity. The Committee considered that such a move would allow for more effective inter-relationships between Programme components and more effective use of a limited staff. Recognizing, however, that it is also important for the Programme to continue to maintain close linkages with the WHO technical units, the Committee suggested several means for accomplishing this, including strengthening the Programme Team concept, and holding regular meetings between the appropriate TDR staff and technical unit staff (Section 8.3, pages 58-59).

The Committee concluded that two modifications in the current procedures for Steering Committee consideration of project proposals would further safeguard high standards in the selection of projects, and therefore recommended that all Steering Committees uniformly provide for a review of all proposals by a minimum of two referees external to the Steering Committee, and clearly record in all Steering Committee minutes the decisions on each project and the reasons that led to the decisions (Section 9.1, pages 59-60).

The Committee noted the substantial authority delegated by the Research Strengthening Group to the Secretariat Research Strengthening Team, and emphasized the importance of the regular reviews made by the Research Strengthening Group of the decisions of the Research Strengthening Team, and the periodic evaluations made by the Scientific and Technical Advisory Committee of the results of the grants (Section 9.1, page 60).

The Committee noted the substantial TDR staff time that is devoted to preparing reports, due to the fact that the Programme not only has its own built-in review system, but is also integrated with WHO's internal planning and reporting systems. The Committee therefore recommended that reporting requirements, including special reviews commissioned by WHO bodies, be reduced, and that to the extent possible the regular reports produced by TDR be accepted as satisfying these requirements. In addition, the Committee recommended that donors to the Special Programme accept TDR reports as sufficient for their purposes (Section 9.2, pages 60-61).

The Committee noted that there is little opportunity at present for the Scientific and Technical Advisory Committee or the Joint Coordinating Board to receive regularly updated information on the prevalence and incidence of the six diseases, and developments with respect to control efforts, against which the relevance of research efforts can be re-examined; it suggested that WHO technical units prepare such assessments at the time of the biennial Programme reports (Section 9.3, page 61).

The Committee noted, that because the first three years of the Programme was a building up period, the scientific results available now are not extensive, but in another five years substantial results will have accumulated, and therefore recommended that another external review be carried out in five years with provision for adequate staff support to assist the review committee to carry out a thorough, in-depth review (Section 9.4, page 61).

The Committee expressed concern that contributions to the Programme appear to be levelling off at about US$ 23-24 million annually in current dollars, which in constant dollars represents an erosion (Section 10, pages 61 and 63 and Table VI, page 64).

The Committee considers that the Programme can effectively use much larger funding and, therefore, strongly encourages an increase over time that keeps pace with inflation and currency fluctuations and provides for a modest increase in real terms. The Committee called upon the Standing Committee to review its fund-raising strategy and to use the resources of its members to carry out the strategy. In particular the External Review Committee encouraged the Director-General of WHO to play a personal role where his intervention could be beneficial, and believed it would be helpful also if the heads of the other two sponsoring agencies were to take a more active role in fund-raising, especially in approaching potential donors not now contributing to the Special Programme (Section 10, page 63).

The Committee considered it important that WHO be seen to be giving the strongest possible support to the Programme. The Committee therefore encouraged WHO to increase its direct financial contributions to the Programme (Section 10, page 63).

The Committee considered it crucial that the interest of the pharmaceutical industry in the Programme be maintained, and encouraged the Programme to continue to develop as strong a collaboration as possible with industry, and to seek direct industry contributions to the Programme (Section 10, page 64).

The Committee noted that with large-scale field trials requiring substantial additional funds likely in the next few years, the Programme is considering accepting earmarked funds. While the Committee suggested caution, it considered such funds acceptable provided they are in addition to existing general purpose contributions; are for activities that have been given priority through the Programme's priority-setting process; and do not disrupt the balance between components established by the Programme (Section 10, pages 64-65).

Finally, the Committee, recognizing long-term commitments and stable funding as prerequisites for a research programme like TDR, deemed it desirable to urge donors to make two-year pledges and recommended changes to allow the Programme to make forward obligations up to 50% of expected contributions for the following two years (Section 10, page 65).

2. The Committee's Assignment and Approach

The Joint Coordinating Board (JCB) of the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR Programme), at its third meeting in December 1980, established an External Review Committee (ERC) to carry out a review and evaluation of the first five years of operation of the TDR Programme, with particular attention to:

a. The goals, scope and balance of TDR activities;

b. The organization and management of TDR, including the location of the Secretariat; and

c. The financing of TDR.

The JCB intended that the review should provide a guide to the planning, organization, operation and management of the Programme over the next five years. The specific terms of reference, objectives, mechanism and operation of the review are contained in document TDR/JCB(3)/80.8, a copy of which is appended as Annex I. Members of the Committee are listed in Annex II.

The ERC held four meetings, at the first of which Dr T. A. Lambo, Deputy-Director General of WHO, welcomed the members of the Committee and provided a general overview of the TDR Programme and the mandate of the ERC. The Committee had other consultations on the Programme with the Director-General of WHO, members of the Standing Committee and the Director of the Programme, and also held interviews with many persons closely associated with the Programme. A list of the persons interviewed is attached as Annex III.

In addition to the interviews conducted by the Committee as a whole, individual members had a wide range of opportunities to meet with researchers associated with the TDR Programme and with others not involved in the Programme, but knowledgeable in tropical disease research, from both developed and developing countries. Meetings of this kind were held in Bangkok, Thailand; Boston, U.S.A.; Caracas, Venezuela; Kuala Lumpur, Malaysia; London, United Kingdom; Manila, Philippines; Nairobi, Kenya; New York, U.S.A.; Ottawa, Canada; Stockholm, Sweden and Washington, D.C., U.S.A.

The Committee circulated a list of key issues and questions concerning the TDR Programme to members of the JCB and to individuals and institutions associated with the Programme. The letter and enclosures are included in Annex IV. A total

of 97 letters was distributed, of which 61% went to developed countries and 39% to developing countries. Forty-one substantive replies were received, for an overall response rate of 42%. A list of respondents is included in Annex V.

The ERC also reviewed extensive documentation on the TDR Programme, including annual reports, reports of the Scientific and Technical Advisory Committee (STAC) and Scientific and Technical Review Committees (STRCs), minutes of the Standing Committee, Scientific Working Groups (SWGs) and Steering Committees (SCs), Facts and Figures documents, programme and budget reports, the list of publications resulting from Programme-supported activities and selected project files. The Committee also benefitted from a review of a further series of memoranda and materials which included the Study of the Organization, Management and Staffing of the Special Programme. The latter was useful in providing an insight into the internal structure and functioning of the Programme within the WHO context.

The Committee considers that these activities have provided it with sufficient information on which to base broad conclusions about the Programme during its first five years and recommendations for its second five years. The Committee has been struck by the degree of consistency on the essential aspects of the Programme, such as its rationale, objectives, scientific management structure and its achievements and impact to date, that marked the views of experts consulted by the Committee. Based on this background, and drawing on its own collective experience in the management of scientific enterprises and development endeavours, the Committee offers its judgements and recommendations in the belief that its report provides a sufficient basis for the JCB to proceed with confidence to consider the next stage of the Programme's evolution.

In carrying out its review, the Committee received excellent collaboration from the Secretariat, which efficiently provided documentation on the Programme and logistic support for the work of the Committee, and from the many persons it interviewed. The Committee wishes to extend its appreciation to them and to all who replied to the circulated list of issues. The ERC recognizes that the list of issues was extensive and demanded considerable time on the part of respondents to provide substantive replies. Finally, the Committee wishes to thank Ms Susan Block and her associates in Geneva, and the convenor and secretary of the Committee wish to thank Ms Susanne Koscielecki and other colleagues in Boston and Ottawa, for their efficient and generous assistance in the preparation of the Committee's report through its several drafts.

3. Programme Rationale

The TDR Programme was established, at WHO initiative and with widespread international support, as a response to major diseases affecting populations in developing countries, specifically to undertake work towards two interdependent objectives:

a. Research and development towards new and improved tools to control six tropical diseases; and

b. Strengthening of national institutions, including training, to increase the research capabilities of the tropical countries affected by the diseases.

The target diseases are malaria, schistosomiasis, filariasis, trypanosomiasis (both African sleeping sickness and Chagas' disease), leishmaniasis and leprosy.

At the time the Programme was established, malaria was estimated to affect some 200 million people and cause more than a million deaths among children every year in tropical Africa alone. Schistosomiasis existed in 71 countries and was spreading. Various forms of filariasis, such as onchocerciasis, elephantiasis, and

loiasis were estimated to affect some 240 million people. It was estimated that at least 35 million people were exposed to African sleeping sickness and 10 000 new cases were known to occur every year. The South American form of trypanosomiasis, Chagas' disease, had a higher incidence. Leishmaniasis affected several million people, while leprosy affected between 11 and 12 million people.

Efforts to control the diseases were hampered by a lack of fully satisfactory diagnostic methods, drugs to treat cases and means such as vaccines to prevent them. Owing in large part to the decline in attention paid to tropical diseases following World War II, not only were available tools inefficient, but even worse, some were becoming ineffective. In the case of malaria, resistance to available chemical technology was developing in both the parasite and the mosquito.

During the colonial period, considerable attention had been given to tropical diseases, but with the close of the period the interest of the former metropolitan powers declined. The pharmaceutical industry was also decreasing its efforts in tropical diseases. This was due to the increased costs and risks of research and development and the lack of sufficient market potential to make such long-term investments in R & D viable. By the time the TDR Programme was being established in 1975, worldwide expenditures on research in tropical diseases were estimated to be only about US$ 30 million annually.

At the same time, however, scientific advances had been made in the basic biomedical sciences, which it was thought could be utilized in tropical diseases if scientists with backgrounds in such fields as molecular biology, genetic engineering and immunology could be attracted to work on these diseases. Most of the qualified scientists and technological facilities for undertaking such research, however, were based in the advanced countries, while the populations afflicted with the diseases were in tropical countries. Hence, there was clearly a need to have the fullest possible involvement of tropical countries themselves and over time to increase their competence to deal with their own disease problems. A build-up in research capacity was needed, not only to carry out biomedical research directed towards the development of new tools, but also to design, analyze and evaluate control activities in order to improve their operations and to ensure that any vaccines or drugs developed could be effectively utilized in developing country control programmes.

Based on these considerations the TDR Programme adopted its two objectives directed towards research and development of new methods to combat disease, and to research capability strengthening in developing endemic countries. In this way, it was expected that the specialized knowledge and technological facilities in different areas of biomedicine that were available primarily in advanced countries could be enlisted and associated with work underway in countries affected by the diseases, while at the same time existing institutions in the endemic countries could be strengthened and additional scientific personnel trained.

When the TDR Programme was established it was recognized that a long-term effort would be needed. It was estimated, for example, that development of a vaccine against leprosy could take at least 15 years, while improvements in chemotherapy were hoped for in perhaps four to six years. Similarly, strengthening research capability, through the training of personnel and the building up of existing institutions, would require sustained effort over a long period of time.

The Committee has reviewed the rationale for the Programme and considers that it has stood up well over the years.

The scale of damage to health caused by this group of diseases has changed but little over the past five years since the Special Programme was inaugurated, and the situation remains a major challenge to health authorities in many tropical countries. On the positive side, there has been an increasing awareness among health authorities and research workers of the problems posed by these diseases and

the need for new approaches to improving control. But the prevalence of some of the diseases, notably malaria, increased during this period, and greater knowledge of the epidemiology of these diseases has resulted in confirmation that some of the diseases are more prevalent than was thought.

Malaria continues to be a major public health problem of high socio-economic importance in many tropical and subtropical countries of the world. In 1981, some 107 countries were afflicted by the disease, with 1800 million people exposed to infection. Approximately 215 million people, most of them in tropical Africa, but also a substantial number in Asia, were affected by chronic malaria; the yearly incidence of new cases amounted to 150 million. Malaria has continued to be endemic in tropical Africa and has increased in parts of eastern Asia and southern and central America. Resistance of parasites to drugs and of vectors to insecticides has continued to spread. In some parts of the world, it has been reported that up to 90% of the infections are resistant to chloroquine. These factors, together with other technical problems and the increasing cost of control operations, have reduced the extent and impact of malaria control. Over the next few years the global malaria situation may be expected to deteriorate.

Schistosomiasis continues to be a serious problem in 73 tropical countries and 200 million persons are estimated to be infected. In many countries reliance on irrigation for agriculture has led to increases in the incidence, prevalence, and intensity of schistosomiasis. The construction of various types of dams, from small village ponds to large manmade lakes, has aggravated the situation in endemic areas. Major advances toward safe, effective oral chemotherapy and low-cost diagnostic techniques have been developed in the past 20 years, but effective control among the poor populations of rural areas in developing countries remains elusive, and depends on finding better methods for applying these advances.

The filarial diseases, which include onchocerciasis and lymphatic filariasis, continue in their different forms to affect several hundreds of millions of people. Intensive efforts have been made to control onchocerciasis in one region where its effects are very severe - the Onchocerciasis Control Programme (OCP) in West Africa. The OCP has achieved remarkable success in controlling blackfly vectors, but resistance to current insecticides, and the lack of an effective therapeutic filaricide, emphasize the need for research to support this major programme. There are no other filariasis control programmes on the scale of OCP in the other countries which are severely affected by onchocerciasis. Better methods of control of all forms of filariasis are urgently needed, especially with drugs which are appropriate for mass treatment.

African trypanosomiases constitute a serious threat to 45 million people in 38 countries in Africa. In many endemic countries systematic surveillance of the population at risk appears more and more difficult to achieve. Neglect of surveillance due to force of circumstances can result in disastrous outbreaks, such as those which have occurred recently in Zaire, Sudan, Cameroon and Uganda. Improvements are required in diagnostic methods and surveillance, in vector control strategies, and in therapy.

At a conservative estimate 24 million persons in Latin America are chronically infected with T. cruzi, the causative agent of Chagas' disease, and 65 million are at risk. At the present time attack on the insect vector is the only practicable control measure. Research is required on all aspects of the disease, including epidemiology, parasitology, the development of diagnostic tests, the understanding of mechanisms of pathogenesis, chemotherapy and possible vaccination.

The number of registered leprosy patients provides a conservative estimate of this disease. Whereas some 3.6 million patients were registered worldwide in 1976, 5 million were registered in 1981. Dapsone is the main anti-leprosy drug in current use, but resistance is a matter of serious concern. Resistance may appear

during the necessarily long courses of chemotherapy, and resistance prior to therapy is also reported.

The leishmaniases constitute a group of several different diseases which are widely distributed in tropical and sub-tropical areas, ranging in severity from self-healing skin lesions to severely mutilating infections which are almost uniformly mortal if not treated. Until recently the extent and severity of this group of diseases as major public health problems were largely unappreciated. The Leishmaniasis Steering Committee has recently estimated that there are 400 000 new cases each year, but the number of people with chronic and longstanding incurable forms of the disease is unknown.

As a general conclusion based on all the reports reviewed, the Committee considers that conditions with respect to the six diseases included in the Programme have not improved since the inception of the Programme. There continues to be a pressing need for better preventive, diagnostic and treatment tools, as well as for increasing research capacity in tropical countries, in order for advances to be made in the battle against the diseases. The Committee, therefore, has no question as to the need for continuing the Programme.

4. Programme Significance and Impact

The External Review Committee has considered a number of different indicators to assess the significance and the impact of the Special Programme to date.

In the first place, knowledgeable scientists consulted by the Committee pointed to a number of important results achieved to date by the Programme, either through its own funds or in association with other funding sources. Such major achievements should certainly include, for example:

- the development of simple and accurate diagnostic field test kits for malaria, leprosy and African trypanosomiasis;
- advancement of testing on the antimalarial drug mefloquine to the clinical evaluation stage, and the beginning of testing of qing hao-su as an antimalarial drug;
- substantial progress in fundamental knowledge required to develop an antimalarial vaccine;
- development of a screening mechanism for filaricidal drugs and stimulation of significant industrial interest in this field;
- clinical trials on praziquantel, an effective schistosomiasis drug;
- more thorough knowledge of the prevalence and distribution of Chagas' disease and leishmaniases;
- further advance in the development of a leprosy vaccine;
- rapid development of Bacillus thuringiensis H-14 as a biological agent for the control of vectors;
- 250 individuals trained and 53 institutions having received institution strengthening support;
- development of the Ndola Tropical Disease Research Centre and transfer of responsibility for the Centre to the Government of Zambia; and

- the initiation of the first global research effort into socio-economic aspects of the six diseases.

It is to be noted that despite some results, such as improved diagnostic tests, that are immediately usable, most of the results obtained to date are intermediate in nature, in the sense that the results consist of knowledge which must be further developed before there are products which can be applied directly in the control of diseases; there has been considerable scientific progress, but no major new drugs or vaccines have yet been introduced as a result of the Programme. The Committee believes that this is to be expected at this stage of the Programme, given the nature of biomedical research, which necessarily requires extended efforts over a long period of time to produce usable end products.

A second element considered by the Committee in assessing Programme significance and impact was quantitative and qualitative information concerning finances.

While precise figures are unavailable on the worldwide level of funding for research on the six diseases, the Committee estimates that the total amount from developed country sources is on the order of US$ 90 - 100 million annually. (The Committee has no corresponding estimate of the funding from developing country sources.) Funding from U.S. governmental and private foundation sources amounts to about US$ 24 million annually, with the Walter Reed Army Institute of Research accounting for the largest single portion of the government's share. Certainly not more than US$ 25 million is provided from similar sources in Europe. Among the private foundations, the Rockefeller, Mellon and Edna McConnell Clark Foundations in the U.S. and the Wellcome Trust in the U.K. are the main contributors to tropical disease research. The pharmaceutical industry also conducts tropical disease research, probably to an amount similar to that of the U.S. or European governmental and private sources.

The TDR Programme's financial obligations amounted to US$ 25 million in 1981. In addition to this direct contribution, the Programme also mobilizes additional contributions for tropical disease research from recipient institutions through its grants policies. Similar to grants from most medical research councils and private foundations, TDR grants exclude salaries for principal investigators and indirect or overhead costs. While it is difficult to estimate the monetary value of these costs which are contributed by recipient organizations, they do add to the resources directed towards research on the six diseases. Thus the financial significance of the TDR Programme, while varying among the different diseases, now accounts in total for 25 to 30% of the annual worldwide effort. The Programme has therefore added substantially to the resources directed towards tropical disease research. Without a doubt, the Programme is now the largest single effort in tropical disease research. The Committee also believes that the TDR Programme has served to promote or to sustain interest and support for tropical disease research in other institutions, such as foundations and private industry.

A third measure of the significance of the Programme has been its positive effect on the strength and quality of the scientific effort devoted to these diseases. It has stimulated interest in the diseases among developed and developing country scientists, as well as among some involved in the pharmaceutical industry. Through its network approach, it has provided a mechanism that encourages collaboration among scientists from diverse fields and countries, and broadly coordinates worldwide activities directed towards applying recent advances in biomedical research to the development of new tools for combatting diseases affecting populations in tropical countries. From its inception to the end of 1981, the Special Programme has involved over 2300 scientists from 118 countries in the planning, implementation and evaluation of its activities. From its inception, the TDR Programme has functioned by means of mechanisms for the award of research grants comparable to those of other public medical research funding bodies. These procedures, which differ in many respects from WHO's previous procedures for

research awards, have strengthened scientific capability in the field of tropical disease research. The incorporation of peer review by the highest quality scientists from all over the world and by an independent scientific and technical advisory group has not only added to the capabilities of researchers involved in the Programme, but has also enhanced WHO's capacity and standing in the international scientific community.

A fourth indicator of the significance of the Programme is found in the statistics concerning publications on the six diseases. A list of publications registered by the Programme through 30 June 1981 enumerates 1100 articles that have resulted from activities supported by the Programme. A bibliographic search for articles published in the six disease areas for the years 1975 through 1979, the latest year for which indexing is relatively complete, is also indicative of an increase in research activity since the Programme's establishment. Between 1975 and 1979, the number of articles published on malaria increased by 14%; on leprosy, by 21%; on trypanosomiasis, by 23%; on filariasis, by 12%; on schistosomiasis, by 24% and on leishmaniasis, by 36%. The details of the data search are included in Annex VI. These figures do not, however, reflect the full impact of the Programme, which could only be expected in the years following 1979, given that the Programme reached a level of activity comparable to its current level only in 1978-79 (1978 expenditures, for example, were double 1977 expenditures).

A final measure of the Programme's significance is that during its first five years, the Programme has evolved into a global effort, as indicated in Table I, which summarizes the number and funding level of training, institution strengthening and research awards directed towards different WHO regions in 1981. Over the five years, projects have been carried out in 84 countries. When the Special Programme was started, it was intended that its initial emphasis should be on the continent of Africa. In total, as the figures for 1981 indicate, the African region has received more funding than the other developing regions, but the latter have also received substantial amounts. The Programme has rapidly acquired a global scope, as planned by the Cooperating Parties.

Table I

Summary of Projects and Funding Level by WHO Region (1981 only)

	Projects		Obligations	
	Number	%	US$	%
Africa	103	16	5 236 690	28
Americas (United States)	227 (121)	36 (19)	5 949 561 (3 413 728)	31 (18)
Eastern Mediterranean	26	4	793 845	4
Europe	132	21	3 362 101	18
South East Asia	68	11	1 821 850	10
Western Pacific	70	11	1 729 401	9
All Regions	626	99	18 893 448	100

In summary, the External Review Committee concludes that the Special Programme has had a significant impact on the research effort directed towards the six diseases. This impact is reflected in a number of ways, beginning with the advancement of knowledge concerning the six diseases. Other important indicators of impact are the fact that the Programme accounts for a high proportion - 25-30% - of total research funds in this area, the involvement of over 2300 scientists from all over the world in a cooperative research network, the publication thus far of 1100 articles based on research supported by the Programme, as well as an increase in the total number of articles published concerning the six diseases. The Programme has evolved into a truly global effort, with activities in all parts of the world. In this perspective, it is the Committee's judgement that the Programme is well launched and of major significance.

5. Goals, Scope and Balance of the Programme

5.1 Number of Diseases

The Programme currently addresses six tropical diseases: malaria, schistosomiasis, filariasis, trypanosomiasis (both African sleeping sickness and Chagas' disease), leishmaniasis and leprosy. While these diseases represent important health problems in tropical countries, there are others, such as diarrhoeal diseases and tuberculosis, that also affect large segments of the populations in developing countries. The problems involved in controlling diarrhoeal diseases are somewhat different from those of the six diseases included in the TDR Programme and the Committee is pleased to note that the programme for the control of diarrhoeal diseases has been significantly expanded in the past few years. The Committee also hopes that the establishment of the Health Resources Group for Primary Health Care will assist in addressing some of the problems associated with the control of tropical diseases, including those which are part of the Special Programme, in developing countries.

Although there are no special programmes available to address other important tropical disease problems, the ERC is strongly persuaded that the TDR Programme should continue at this time with what has already been started. The development of tools to deal adequately with the six target diseases represents in itself an ample task.

Broadening the number of diseases would result in an unwise dilution of the funds available for each disease. On the other hand, reducing the number of diseases after only five years of the Programme's operations would run counter to the need for long-term commitment and support if research of this nature is to bear fruit.

The Committee is also aware that major changes in the epidemiology of any of the diseases, or the development of new technology, outside the Special Programme, such as occurred with respect to tuberculosis and poliomyelitis after World War II, could quickly modify the basis of the Programme. There is therefore a constant need to review the entire context in which the research effort devoted to the six diseases is situated.

On the basis of its review of the current situation, the External Review Committee recommends no change in the diseases included in the Special Programme at the present time.

5.2 Objectives of the Programme

The Programme's two objectives are directed towards research and development of new tools for controlling the six diseases, on the one hand, and on the other, towards strengthening research capability in the countries whose populations are afflicted by the six diseases.

The two objectives of the Programme are different in nature and involve different problems and activities. Research and development of new methods involves focussed, goal-oriented research which is dependent on high scientific quality to produce valid results. In the TDR Programme, proposals are invited for research needed to carry forward strategic plans for tool development laid out by Scientific Working Groups in each disease and transdisease area. After proposals are reviewed by Steering Committees of the SWGs for scientific merit and relevance to plans, grants are awarded to scientists in institutions throughout the world to carry out the research.

Research capability strengthening involves training scientific personnel and building up institutions in developing countries to carry out not only biomedical research, but also epidemiological and operational research and the evaluation of new drugs, vaccines and tests, which by their nature need to be carried out in tropical countries.

In the TDR Programme, training awards, visiting scientist awards and re-entry grants are the main mechanisms for strengthening researchers' and trainers' skills, while various institutional grants of up to five years duration may provide for supplies and personnel costs needed to build up research facilities.

Although the two Programme objectives are in some ways complementary in nature, the External Review Committee recognizes that they compete for resources. For example, the first objective could suggest emphasis on achieving rapid scientific results, through the employment of available resources where they can be most effective, often in the advanced laboratories of developed countries. On the other hand, the need to promote the research capabilities of the tropical endemic countries necessitates the employment of substantial resources over a long period of time with limited scientific results in the short term. Nevertheless the development of scientific research capability in the endemic countries is of critical importance in the struggle against tropical diseases, since these countries must be ultimately responsible for the application of new and improved technology to their own particular situations.

Research strengthening is inherently a long and difficult task. Its success depends not only on the careful selection of recipients and execution of activities, but also on the commitment of recipient countries to continue support when Programme grants are phased out. Such commitment usually involves mobilizing national resources to increase research activities, both to sustain institutional support and to provide adequately salaried posts and career structures for personnel once they have been trained.

On balance, the Committee concludes that it is appropriate to include both objectives in the same Programme; both are important and urgent, and can be implemented in ways that emphasize their complementarity.

5.3 Balance Between the Two Objectives

The ERC has been requested to review the balance of resources allocated to the two objectives of the Special Programme, the promotion of research and development, and research capability strengthening in tropical countries. In the early stages of the development of the Special Programme, it was decided that at least 20% of Special Programme resources should be devoted to Programme Area III, Research Capability Strengthening. It was to be expected that several years would be required to attain this objective, given the need to identify the institutions which would receive institution strengthening support, and to work with them to develop suitable project proposals.

In fact, the Programme surpassed the initial objective in 1979, as shown in Table II, which presents total obligations by Programme Area. This table shows that Programme Area III accounted for 23.5% of total obligations in 1979, 24.5% in 1980, and 26.5% in 1981.

Table II

Obligations by Programme Area (US$ 000)

	1977		1978		1979		1980		1981	
	$	%	$	%	$	%	$	%	$	%
I Technical and Administrative Bodies	55	0.8	102	0.6	70	0.3	184	0.7	331	1.3
II Research and Development	4 945	75.0	13 448	77.1	15 301	66.4	16 400	65.5	16 384	65.1
III Research Capability Strengthening	871	13.2	2 926	16.8	5 415	23.5	6 129	24.5	6 669	26.5
IV Programme Management	723	11.0	963	5.5	2 259	9.8	2 314	9.2	1 765	7.0
TOTAL	6 594	100.0	17 439[1]	100.0	23 045	100.0	25 027	100.0	25 149	100.0

[1] This figure includes US$ 1 095 000 - for unliquidated obligations from 1977.

The Committee recognizes that research strengthening is a long, complex and costly process, and could absorb a greater proportion of funds than is now devoted to it. Nevertheless, the Committee considers that it is important to maintain a suitable balance in the funding between the two objectives, as reflected in the distinction between Programme Areas II and III.

Several considerations lead the Committee to the conclusion that the present balance of funding between the two objectives is reasonable and that the allocation to Programme Area III should be maintained at a stable level of 25 - 30% of total funds for the next five years. The urgency of scientific progress towards better tools requires, in the Committee's judgement, that the main emphasis be placed on Programme Area II (Research and Development). Further, as discussed in more detail below, research institutions and scientists in developing countries are participating to an increasing extent in the research and development activities under Programme Area II, a trend that can be expected to be reinforced as a consequence of the Committee's recommendations concerning the process of institution strengthening.

At the same time, the ERC is concerned that there should be a close and mutually reinforcing relationship between the two objectives, which does not always appear to have been the case. The distinction between Programme Area II and Programme Area III is more an administrative distinction than a scientific or technical one, and should not become an obstacle in the achievement of the overall objectives.

The Committee wishes to emphasize the importance of devoting significant staff time to identifying and assessing potential scientists and institutions for strengthening, working with potential recipients to develop careful and detailed human and institutional development plans, and securing national commitment to continuing support, which is of particular importance in the larger institutional grants. To undertake this work effectively requires adequate staff, extensive travel and a framework which encourages the close integration of all Programme staff, especially those engaged in Programme Areas II and III. While the Programme has undertaken commendable steps in these directions, the Committee considers that further action is called for.

To assist institution strengthening activities, the Programme has made use of linkages between developing country institutions and developed country institutions, to permit direct, continuing and relevant cooperation and assistance. This allows, for example, scientists from developed country institutions to make a series of visits or spend blocks of time in developing country institutions. Such twinning, when carefully arranged, can result in developing country institutions gaining expertise, while developed country institutions become more sensitive to conditions and problems in the endemic countries. The Programme is promoting links between young developing country researchers who have a real interest in doing research, but who may need some assistance in designing and carrying through a project, with young developed country scientists who have expertise and need experience in the endemic countries. Making a special effort to promote the involvement of young scientists in both developed and developing countries also serves to prepare the next generation of scientists with an interest and expertise in tropical diseases. The Programme should continue to encourage complementary funding from developed country sources for the developed country scientists in such arrangements.

In linking developing with developed country scientists, the role of the TDR staff is to act as a catalyst, by identifying situations where such collaboration would be beneficial, working out the arrangements for the link-up and providing the monetary means to make it possible. The more fruitful collaborations tend to arise from a common research interest and usually have a degree of spontaneity. Fruitful linkages of these types will increasingly be feasible between scientists in different developing countries, as research capability in those countries is

strengthened. In short, the Committee encourages the trend toward more extensive use of linking and twinning mechanisms.

The Committee recommends that greater efforts be made to interrelate more closely research capability strengthening and research and development activities in the endemic countries so that they reinforce one another. The Committee is aware of a number of mechanisms which the Secretariat employs to promote interaction between the two Programme components. These include the Research Strengthening Team (RST) and the participation of research and development staff in missions with the research strengthening staff. The membership of the RST includes all secretaries of Steering Committees, as well as the research strengthening core staff. The RST considers primarily applications for research training grants, visiting scientist grants, re-entry grants and small grants. The Committee believes that training and institution strengthening benefit from a close relationship with the research and development component, and commends and encourages the active involvement of the research and development staff, not only in the selection of candidates for training awards, but also in the selection and monitoring of institutions that receive strengthening grants.

Moreover, the Committee encourages the research and development component to become more aware of the research capability strengthening activities. Within the framework set by the priority areas for research, the research and development staff should do more to support the scientists and institutions that have received strengthening awards by encouraging and working with them to develop proposals that can be considered for funding under Programme Area II.

With respect to the research strengthening component of the Programme, the Committee has also reviewed the distribution of grants and in particular the institution strengthening grants. For the effective use of these funds, the Committee commends the concentration of funds in selected institutions. At the same time, however, the Committee recognizes the desirability of a widespread improvement of research capability in tropical diseases, and is aware that conditions in countries can change considerably over time. Hence, it would be ill-advised to select too few a number of institutions for a concentrated strengthening effort, and the Programme needs to be alert to the situation of outstanding individuals who may not be associated with the institutions selected for concentration. In the Committee's view, funds might be directed more effectively towards 20 - 25 institutions - which is approximately the number at present - than towards a significantly larger or smaller number.

5.4 Balance Between Developed and Developing Country Activities

Another important issue in the balance within the Programme is the distribution of the use of funds between developed and developing countries.

The relevant statistics are contained in Table III. These statistics show that a very high proportion of funds is obligated for projects in developing endemic countries, 62.3% of Programme Areas II and III funds in 1981. The figures also show that nearly one half of research and development funds (Programme Area II) are obligated for work in developing endemic countries. This reflects not only the fact that certain types of research, such as epidemiology and field trials, must be conducted in endemic countries, but also the increasing ability of developing country scientists and institutions to perform other types of relevant research.

The Committee considers a gradual shift towards more research grants to developing countries as desirable, in step with the rising capacity of scientists and institutions in those countries to carry out high quality research.

Table III

Programme Obligations in Developing and Endemic (DEC) and in Developed or Non-Endemic Countries (DC)

	1977	1978	1979	1980	1981
	US$ 000				
Programme Area II					
DEC	487.7	4 392.2	4 614.1	5 137.4	5 692.8
DC	2 574.6	5 879.0	7 728.8	7 947.4	7 075.6
Programme Area III					
DEC	560.7	2 325.3	5 306.4	5 475.9	6 012.6
DC	-	-	-	-	-
Programme Areas II and III					
DEC	1 048.4	6 717.5	9 920.5	10 613.3	11 705.4
DC	2 574.6	5 879.0	7 728.8	7 947.4	7 075.6
	Per cent				
Programme Area II					
DEC	15.9	42.8	37.4	39.3	44.6
DC	84.1	57.2	62.6	60.7	55.4
Programme Area III					
DEC	100.0	100.0	100.0	100.0	100.0
DC	-	-	-	-	-
Programme Areas II and III					
DEC	28.9	53.3	56.2	57.2	62.3
DC	71.1	46.7	43.8	42.8	37.7

Note: Adapted from a special classification developed for TDR working purposes.

5.5 Balance Between Laboratory and Field Research

Thus far the Programme has had little difficulty in finding the desired numbers of laboratory projects, but it has had difficulty in identifying sufficient numbers of field research projects. The main difficulty is the scarcity of trained personnel. The situation is complicated by a lack of adequately paid posts, allowances and career structures for field researchers in many developing countries. In addition, field research projects are exceptionally complex to administer and require the full and sustained support of local governments.

Field research, however, is essential for laboratory research to be effectively applied. Trials of new drugs and vaccines and of biological control methods must at some stage be conducted under actual field conditions, preferably in a number of countries simultaneously. Epidemiological and socio-economic

studies are needed not only to assess the effectiveness of new methods, but also to provide information on conditions in the field that should be fed into the development process for new tools as well as the application phase. Field research can also contribute to increasing the effectiveness of currently available technology.

All concerned recognize that at present the Programme is not achieving sufficient results with respect to field research. The Committee concurs. The problems facing field research are serious and real. Yet the Committee is convinced that they are not insurmountable, and endorses the recommendations on this subject that recently emanated from the report of the Scientific and Technical Advisory Committee's Sub-Committee on Applied Field Research.

6. Structural Framework of the Programme

Before considering in more detail the various elements that are involved in the organization and management of the Programme, the Committee wishes briefly to call attention to the unique structural framework that has been created for this Special Programme. It includes:

- a Joint Coordinating Board which permits contributors and developing countries to participate directly in guiding the Programme and reviewing and evaluating its results;

- a Standing Committee, made up of representatives of the three co-sponsoring agencies, which acts as an executive committee for the JCB and permits timely response to management issues between JCB meetings;

- Scientific Working Groups and Steering Committees, plus the Research Strengthening Group (RSG) and its Executive Sub-Group, made up of concerned scientists from industrialized and developing countries, which make the principal scientific judgements concerning the Programme and establish worldwide networks among scientists and others concerned with the Programme's objectives;

- a Scientific and Technical Advisory Committee, made up of persons with extensive experience in scientific research and research management who are not directly involved in the Programme; the Committee functions as an independent review body, providing continuing evaluation of the scientific and technical aspects of the Programme and recommending priorities and budget allocations;

- a Programme Coordinator, a Programme Director and a Secretariat who together provide a strong focus of responsibility and authority for carrying out the work of the Programme; and

- links in every part of the structure with the expertise and supporting services in other parts of WHO.

This structural framework provides simultaneously for the responsible participation of directly interested parties in the planning and guidance of the Special Programme; for the mobilization of worldwide scientific talent to contribute to the Programme's objectives; for independent scientific and technical evaluation and priority-setting; for a clear and strong focus of operational responsibility and authority; and for effective collaboration with the regular budget staff and services within WHO.

The Committee considers that the establishment and effective operation of this structure is an achievement of the first order that permits international scientific collaboration of high quality and strong mutual support among scientists from many countries. In the pages that follow, the Committee will offer a variety of suggestions intended to improve the operation of the Programme. Here at the

outset, however, the Committee wishes to express its admiration for those who designed and have built up this overall structure; it is a unique and valuable asset which should be supported by all concerned with reducing the heavy toll of the tropical diseases.

7. Scientific and Technical Organization

7.1 Network Concept

The TDR Programme chose from the beginning not to focus its research and development resources in a few existing or new institutions, but rather to build on WHO's extensive experience and contacts to develop a network of scientists based in institutions throughout the world, who were mobilized through Scientific Working Groups and Steering Committees formed for each SWG. SWGs, each consisting of up to several dozen scientists, formed for the six disease areas and four trans-disease areas, initially met to review the current state of knowledge and to identify problem areas, and to develop strategic plans for research and development efforts. The Steering Committees, each involving from three to eleven scientists, were then responsible for implementing the plans. This usually involved soliciting and reviewing proposals and meeting to approve projects to carry out the research needed in the plans.

The network concept employed in the TDR Programme has provided a viable means for bringing together developed and developing country researchers to apply their skills towards the development of new tools for controlling diseases in tropical countries. An example serves to illustrate the collaboration that can be achieved. The armadillos used by the Programme to multiply leprosy bacilli are found in the Southeastern United States; the bacilli have been purified in England; antigenic analyses are taking place in Norway, Sweden and the United States; immunization studies in animals have taken place in the United States; skin tests and vaccine studies have been carried out in Venezuela and epidemiological studies are contemplated for Africa. In addition to illustrating the network's worldwide nature, the example shows why only through such a mechanism and working through WHO, this could be done.

There are of course alternative approaches for the organization of a major scientific enterprise. The Committee reviewed several of these in order to draw out contrasts with the network approach. Major alternatives generally involve a stronger institutional focus than the network approach. It would be possible to identify a few major research institutions, in both developed and developing countries, to conduct a large proportion of the required research. These institutions would be given a large degree of responsibility and discretion, as well as substantial financial resources, to carry forward specified research on a contract basis. Another approach would be to create one or a few major research institutions or centres in developing countries, which would then carry out the required research. This is the approach that has been used, for example, by the Consultative Group on International Agricultural Research.

The Committee has carefully weighed the advantages and disadvantages of the various approaches, and endorses the network approach as an appropriate scientific mechanism for the TDR Programme. The Committee recognizes that the concentrated effort possible in centre-based research may be more efficient than a far-flung network for the resolution of specific problems. On the other hand, the Committee considers that the principal strengths of the network approach are its ability to mobilize worldwide scientific expertise towards a common objective, and its widespread impact on strengthening research capacity in endemic countries. In comparison with a more centre-focussed approach, the network approach has substantially lesser requirements for large capital expenditures, and the nature of its institutional support is such as to facilitate the assumption of responsibility by local authorities.

The Committee is aware that a network mechanism is subject to certain weaknesses; special efforts must be made to overcome these weaknesses in order to insure the most effective use of the resources available to the Special Programme. Because of its nature, the network approach is inherently complex to administer, and requires strong central management to avoid the risk of a dispersal of efforts over a broad front with inadequate direction and control. The network approach also runs the risk of a multiplicity of committees and meetings of various sorts, with a large amount of staff time devoted to servicing meetings. In 1980, 69 meetings (55 in Programme Area II) were organized by the Special Programme, primarily for managing the scientific elements of the Programme, for a total cost of US$ 1 135 000; in 1981, there were 80 meetings (58 in Programme Area II). Such a large number of meetings necessarily adds considerably to the overall cost of administration of the Programme. The Committee is aware of these dangers, and has therefore made a number of recommendations in the pages that follow intended to streamline the network approach and make it more efficient.

As with any network, the high quality of leadership is a crucial ingredient for success, and in this case, the leadership has come not only from the Programme's management staff, but also from the many scientists involved in the network, especially those on the Steering Committees and the Scientific and Technical Advisory Committee. To ensure the continued high quality of the TDR Programme, it is important that attention be given to selection procedures for the key groups in the network, as discussed later.

7.2 Scientific Working Groups and Steering Committees

In the initial years of the operations of the Special Programme, SWGs met to review the state of the art in each of the six disease areas and in some sub-areas and in each of four trans-disease areas. They went on to identify priorities for research and to develop strategic plans for the research needed to develop new tools. Steering Committees for each SWG were then charged with implementing the plans.

While the SWGs as a formal entity served a definite purpose at the onset of the Programme, their role since then has evolved considerably and there is some variation among the different disease and trans-disease areas. In the first place, the "SWG" as such is a fairly broad concept, intended to involve the large number of scientists who are involved in the disease or trans-disease area in some way. As a non-formal group, the SWG is a highly flexible instrument, which in general terms does not play a major role in the central management of the Programme, but rather, in most cases, is a reference or collaborating group of scientists who can be called upon when their expertise is required to meet certain problems. While in the early years of the Programme, up to 1978, SWG meetings were held regularly, for example annually, the current practice is to hold only occasional meetings, usually centered around a specific scientific issue or theme. Participants in such meetings can be scientists carrying out the main research experiments in various aspects of the Programme, investigators who have relevant expertise for the topic of the meeting, but who have not been involved previously in the TDR Programme, or scientists from endemic countries where field trials may need to be carried out in the future.

In the "Handbook for Participants in Scientific Working Groups", SWGs are listed as having several managerial responsibilities. In many disease areas, however, these responsibilities are now being carried out by the Steering Committees and the SWG has evolved into a scientific meeting as described above with few if any specific management responsibilities in the Special Programme. The Committee, therefore, recommends that formal arrangements be brought into line with practice, and that the managerial responsibilities of the SWGs be merged with those of the SCs. Since the name Steering Committees becomes somewhat inappropriate without the SWGs, the Committee further suggests that the SCs be renamed disease or trans-disease groups or research and development groups or carry some other

appropriate title, such as "Scientific Committee". There should be no change in size from the present SCs, with a maximum number of members set at ten. Hence, the ERC encourages the Programme to continue moving toward a mode of operation wherein there is no fixed SWG, and in place of annual or biennial meetings of the SWGs, SCs rather view the SWGs as a resource group, small numbers of whose members are called upon as and when necessary, according to the needs of the particular disease area. For reviewing strategic plans, SCs should continue to hold meetings of a larger group of scientists when appropriate.

The ERC is aware that with these changes a strong, central responsibility for both formulating and implementing strategic plans is placed on SCs and this carries with it the risk that SCs may make errors or become too narrow in outlook. This leads to two additional recommendations relating to the selection and rotation of SC members to safeguard against such possibilities and reduce the likelihood of conflicts of interest.

While it is expected that the Director of the Programme will continue to identify candidates for SC members and chairmen, the ERC recommends that, in view of the importance of Steering Committees in the overall management of the Programme, the candidates be presented to the Scientific and Technical Advisory Committee for review and endorsement prior to appointment. STAC will be responsible for reviewing candidates for such considerations as appropriateness in terms of the balance and discipline mix of the SC, bearing in mind the evolving scientific thrust of the particular disease or trans-disease area.

With respect to rotation of SC members, the ERC recognizes the need to balance two desirable aspects: ensuring continuity in the work of the SC and ensuring continual vitality and dynamism by bringing in new people. The current practice is to appoint members for a period of one to three years, renewable. Although there is no fixed rule, members of Steering Committees rotate on a regular basis. The Committee believes that there is advantage in having a more definite system, and recommends introducing a rule that membership on Steering Committees be limited to a maximum of six consecutive years, with possible exceptions in very rare and well justified cases.

Inherent in the current policy of allowing SC members to receive research grants is the possibility of conflict of interest. The Committee considered the implications of changing the policy, but recognizes that excluding SC members from receiving grants would pose difficulties in some research areas because of the small number of scientists working in them. Although the Committee suggests no change in the current policy, it considers it incumbent on the part of the TDR management and STAC to be vigilant for possible conflict of interest in the operations of the SCs.

In connection with the enhanced responsibility they would carry under the recommendations made here, SC chairmen should be given more opportunities to gain a sense of being a part of an integrated programme. The ERC therefore recommends that, in addition to the present practice of involving SC chairmen in Scientific and Technical Review Committee activities, SC chairmen should be invited to meet with STAC on other occasions when the agenda suggests there may be mutual benefit, and in any event at least once every two years.

The Committee also suggests that consideration be given to having periodic meetings of the Steering Committee chairmen, with the participation of members of STAC, to address specific problems or themes, such as field research, or Steering Committee procedures and operations.

The Programme currently operates on the basis of 14 SWGs with specific budget allocations; however, some of the disease groups are further subdivided into several Steering Committees or "sections". These are listed in Table IV, along with their 1981 budget allocations. In terms of budget, the major disease area is

Table IV

Steering Committees and Budget Allocations

1981 Approved Budget (US$ 000)

Steering Committee	Operations	Total Budget
Malaria		4 700
Chemotherapy of Malaria (CHEMAL)	1 920	
Immunology of Malaria (IMMAL)	1 250	
Applied Field Research in Malaria (FIELDMAL)	912	
Schistosomiasis	1 730	1 950
Filariasis	1 880	2 100
African Trypanosomiasis	1 708	2 046
Chemotherapy and Drug Development of African Trypanosomiasis (CHEMAF)		
Immunology and Pathology of African Trypanosomiasis (IMMAF)		
Epidemiology and Vector Biology and Control of *African Trypanosomiasis* (EPIAF)		
Chagas' Disease	742	1 000
Chemotherapy and Parasitology of Chagas' Disease (CHEMCHA)		
Epidemiology and Vector Biology (EPICHA)		
Immunology of Chagas' Disease (IMMCHA)		
Leishmaniasis	675	800
Chemotherapy of Leishmaniasis (CHEMLEISH)		
Immunology and Biochemistry of Leishmaniasis (IMMLEISH)		
Epidemiology of Leishmaniasis (EPILEISH)		
Leprosy		2 270
Immunology of Leprosy (IMMLEP)	1 140	
Chemotherapy of Leprosy (THELEP)	754	
Biomedical Sciences	689	850
Vector Biology and Control	675	1 050
Epidemiology	869	1 150
Social and Economic Research	652	850

Note: In 1981, there were thus -
- 14 Scientific Working Groups with budgetary allocations
- 20 Steering Committees or "sections".

malaria (US$ 4.7 million), with schistosomiasis, filariasis, African trypanosomiasis and leprosy each having budgets of about US$ 2 million, while Chagas' disease, leishmaniasis and the four trans-disease areas each have budgets of US$ 1 million or less. While three SCs may be reasonable for malaria, it seems doubtful that some of the other diseases require three SCs or "sections". The Committee believes that the overall number of SCs can be reduced, resulting in a more efficient and integrated Programme as well as reducing overhead costs which could be devoted to operations. The Committee, therefore, recommends that STAC review the possibilities of reducing the number of SCs. The Committee also recommends that the STAC review the number of meetings held by each SC, with a view to encouraging the present trend towards having only one meeting a year.

The principal document outlining in some detail the structure and functioning of the network system is the "Handbook for Participants in Scientific Working Groups". This is a useful document, but needs to be brought up to date, incorporating changes which have become practice since it was written, and changes that may be made in response to the present recommendations. The Committee therefore recommends that the Handbook be revised in the near future, and that the STAC have the responsibility for approving the content of the Handbook.

7.3 Research Strengthening Group and its Executive Sub-Group

As discussed in Section 5, research capability strengthening involves a different objective and tasks that differ from the research and development component carried out with SWGs and SCs. The functioning of the Research Strengthening Group and its Executive Sub-Group also differ from that of SWGs and SCs; for example the RSG performs functions that are carried out by SCs in other cases. The RSG involves 16 scientists from around the world who guide the research capability strengthening programme and review and approve institution strengthening and training activities and subsequently monitor and evaluate their implementation. The Executive Sub-Group, which consists of six RSG members, supports the Research Strengthening Group in its work.

The Committee considers the structure and role of these groups important and appropriate in guiding activities directed toward the Programme's second objective and recommends no change in their structure or composition.

7.4 Scientific and Technical Advisory Committee

The Scientific and Technical Advisory Committee comprises 15 to 18 scientists and other technical personnel from various parts of the world. STAC meets annually and plays an important role as an independent review committee for the scientific programme, including overseeing and recommending priorities and budget allocations within the Programme, and providing continuous independent evaluation of the scientific and technical aspects of the Programme.

In the opinion of the External Review Committee, the STAC is a crucial element in the TDR management structure; it has contributed greatly to the credibility and success of the Programme to date. It is extremely important that the integrity of STAC be maintained to enable it to continue to play this role in the Programme. Specifically, the ERC endorses STAC's role as appropriately including both scientific and managerial responsibilities, including making recommendations on the numbers, composition and resources for SCs and the RSG. The ERC believes that STAC is also an appropriate group for allocating resources within individual SC programmes and for making recommendations on areas of emphasis, taking into account the findings of appropriate Scientific and Technical Review Committees. The Committee believes it is correct that STAC's review focuses on such broad issues as the emphasis being given to chemotherapy vs. immunology, but not involve comments on specific research proposals. The ERC commends the STAC in its regular review and reallocation of funds as the progress of the Programme illuminates research areas where scientific advance is most promising.

The Committee concurs with the introduction of STRCs to conduct in-depth and careful reviews of various elements of the Programme. Inevitably in the early stages, the STRC reviews have been somewhat uneven, and the Committee urges STAC to emphasize the need for them to be analytical and frank, in order that all concerned can take account of weaknesses in the Programme and improve future performance.

For STAC to be an effective body in carrying out its responsibilities, the ERC considers it important that STAC include, as it now does, both persons with a strong competence in scientific research and those with much experience in the administration of research programmes. It is also important that STAC remain an independent body. Hence, the Committee recommends that the current practice of no overlap in membership between STAC and SCs continue. The ERC recommends that STAC members also continue to be ineligible to receive TDR Programme grants.

8. Management Structure

8.1 Joint Coordinating Board

The function of the Joint Coordinating Board is to coordinate the interests and responsibilities of the parties cooperating in the Special Programme. It consists of 30 members, the majority of whom are government representatives. Twelve members are selected by the contributors to the Programme and another 12 by WHO Regional Committees, from among the countries affected by the diseases of the Programme or providing technical or scientific support to the Programme. The three co-sponsors and three additional members selected by the JCB also serve on the Board. The JCB meets annually to review and decide on the planning and execution of the Programme. This includes reviewing and approving the work programme and budget and arrangements for financing; reviewing the Programme's annual financial statements and progress reports; reviewing longer-term Programme plans and endorsing proposals for STAC membership.

The ERC considers the overall size and composition of the JCB as reasonable as they provide for the effective representation of both donors and developing endemic countries. The structure of the JCB also provides for a measure of flexibility in its composition, and for continuity. The ERC endorses the continuation of the practice of holding JCB meetings annually, and also agrees with the recent proposal accepted by the JCB for the Programme to provide a full report every two years, with an update in alternate years.

In the light of its review of the actual content of JCB meetings, the ERC considers that it would be desirable for the JCB to focus to a greater extent than has been the case on the substantive aspects of the Programme. By circulating administrative documents well in advance of JCB meetings, it would be possible that administrative items could be dealt with in less time at the meetings. This would allow time for presentations on the progress and obstacles in selected programme areas and time for the JCB to express its views on the scientific programme. The ERC, therefore, suggests that the Programme move towards including presentations by two or three Steering Committee chairmen each year, on a rotating basis, in order to provide JCB members with a greater awareness of the work carried out under the Programme. The Committee also recommends that STRC reports be circulated to the JCB. Finally, the Committee also suggests that the TDR organize periodic visits by members of the JCB to endemic countries where TDR-supported activities are underway.

8.2 Standing Committee

The Standing Committee, comprising the three co-sponsors, serves as an executive group to the JCB. According to the Memorandum of Understanding, the Standing Committee is charged with reviewing the TDR work programme and budget prior to their presentation to the JCB; proposing financial arrangements; approving

budget reallocations during the financial year; and reviewing and informing the JCB on other aspects of the Programme.

Because of its continuity, flexibility and easily accessible nature, the Standing Committee has proved to be a valuable, indeed essential, part of the management structure of the TDR Programme. Because the Committee has the flexibility to meet on short notice to consider a wide range of issues, it has been a particularly useful mechanism for resolving matters arising between JCB meetings, not only through formal meetings, but also by means of frequent informal contacts among the representatives of the three agencies. The ERC considers the present composition and functioning of the Standing Committee to be generally satisfactory. However, the ERC believes that there is some need to improve liaison between the Standing Committee and the STAC on one hand, and the JCB on the other. The ERC therefore endorses the practice of inviting the Chairman of the STAC on a regular basis to attend meetings of the Standing Committee, and suggests that the Standing Committee consider making the minutes of its meetings - apart from matters on which confidentiality is appropriate - available to members of the JCB and the STAC.

8.3 Secretariat

The Secretariat handles the day-to-day operations of the Programme. Based at WHO headquarters in Geneva, the Secretariat operates within a framework which includes a Programme Coordinator, who also acts as WHO representative on the Standing Committee, the Office of the Programme Director, a Programme Management unit, programme teams for the disease and trans-disease areas, and the Research Strengthening Team. Each programme team for Research and Development includes a TDR-supported staff member who serves as an SC secretary and, when appropriate, a staff member from the relevant WHO technical unit who serves as SWG Secretary. The Research Capability Strengthening unit includes TDR-supported secretaries for the Research Strengthening Group, for the Executive Sub-Group, and the RST. At the regional and national levels the execution of the Programme is supported by staff in the regional offices (both TDR and regular budget) and by the WHO Programme Coordinators at the country level.

As indicated earlier, the ERC is of the opinion that the Programme's effectiveness has been due to a large extent to the strong leadership it has been fortunate to have, especially from the Director and his senior colleagues. Because quality of leadership will continue to be a primary determinant of the Programme's effectiveness, the ERC considers it important that adequate mechanisms exist to ensure continuity of strong leadership in the future. The Committee therefore suggests that procedures for selecting the Programme Director include wide canvassing to ensure that as many potential candidates as possible are brought forward for consideration, and close consultation with the Standing Committee before a nominee is put forward to the Director-General of WHO for appointment. Appointments to the other senior Programme positions - the officers heading up the TDR units for research and development, research capability strengthening, and programme management and support - should also be made in consultation with the Standing Committee.

According to the 1981 approved budget, a total of 70 staff, comprising 29 professional staff and 41 administrative and secretarial support staff, supported through TDR funding, are based at the Secretariat in Geneva. In addition, the Programme supports 10 staff in the WHO regional offices, making a total of 80 staff paid for by the Programme. Six professional and 18.5 support staff are under the Programme Management Area (which includes the Office of the Director); four professional and 3.5 support staff are under the Research Capability Strengthening Programme Area; and 19 professional and 19 support staff are under the Research and Development Programme Area. Included in the Programme Management Area are six support staff provided to WHO's service units, in lieu of an overhead charge. A number of the staff funded by TDR are physically co-located with and contribute to

the work of the technical units of WHO concerned with tropical diseases, and a number of members of the WHO regular budget staff contribute to the scientific and technical work of TDR in many ways, including joining in site visits and assisting in appraisal of proposals.

In the opinion of the ERC, the overall level of TDR-funded manpower in Geneva is not inappropriate. However, consistent with earlier comments, the Committee believes that the existing staff could be used more effectively, especially with respect to activities directed towards providing assistance to developing country investigators in research activities and working with developing country personnel in the development of research strengthening activities.

The Committee believes also that a reduction in the number of Steering Committees would allow some additional staff effort to be devoted to research strengthening, contributing to the intensified efforts called for in this area.

In addition to the TDR staff based in Geneva, the budget provides for five professional and five support staff based in the WHO regional offices for Africa, the Americas, the Eastern Mediterranean, South-East Asia, and the Western Pacific. WHO regional offices are also involved in other research activities, some of which are related to the TDR Programme, and the support of research forms a part of their wider responsibilities. The ERC is not convinced that the present system is necessarily a good use of scarce administrative resources, and suggests that the responsibilities of TDR-supported regional staff could be carried out by WHO's regular budget staff in the regional offices.

The Committee has examined the question of the location of the TDR Secretariat. Because TDR operates through a network approach involving many hundreds of scientists all over the world, its centre has to be fully operable, with good communications and access. Geneva has good communications and is easily accessible. The Secretariat's location within WHO allows for close collaboration with WHO's technical units, as well as its other programmes. The Committee recognizes that Geneva is a relatively high-cost location, and that residence in a developing country might give Programme staff some increased sensitivity to the reality of tropical disease problems. In summary, the Committee considers that the loss of the close contact with the expertise available in the WHO technical units, the costs and disruption in Programme activities that a move would cause, and the problems of communications and access that would ensue, far outweigh the possible gains of a change in venue. The ERC, therefore, recommends that the Secretariat remain at WHO headquarters in Geneva.

While the Committee considers WHO as the best base for the Programme, it does have suggestions concerning the structure of the Secretariat, especially the placement of TDR staff. At present most of the TDR staff involved in the disease and trans-disease areas are located in WHO technical units, while the remainder of the staff, primarily the research capability strengthening and programme management and support staff and some of the trans-disease staff, are located in the TDR unit. The Committee recognizes that two desiderata are involved in the organization of the TDR Secretariat. On the one hand, for research and development efforts to be relevant to control programmes, collaboration with control activities is needed. Placing TDR staff in the WHO technical units, it is argued, is the most effective way of assuring that this collaboration is maintained. This approach also permits TDR to have direct access to a greater range of expertise than is available among the TDR-paid staff themselves. On the other hand, TDR effectiveness as an operating entity depends on interrelating Programme components, especially between research and development and research capability strengthening, and on making effective use of a limited staff. These objectives are facilitated if staff are located together.

In a programme such as TDR both desiderata are important, but their relative importance can change as programme needs change. While the placement of some TDR

staff in the technical units has facilitated collaboration with WHO regular budget staff, it has resulted in less collaboration among TDR staff as a whole. It has also made it difficult to promote a sense of common purpose among the TDR staff concerned with specific diseases, since they are located in a number of different divisions. In view of the need for the Programme to intensify and interrelate its work with developing countries, the ERC believes a consolidated staff would be more effective than the present arrangements. Consolidation would permit closer collaboration among the staff involved in the most field-oriented Programme areas - research capability strengthening, epidemiology, vector biology and control, and social and economic research - and between those involved in these areas and the staff concerned with research and development for the specific diseases. In addition, travel plans and activities under the different components could be coordinated more easily and cross-reference could be done more frequently. The Committee, therefore, recommends that the Programme consolidate its staff in the TDR unit.

Such a reorganization should, of course, be carried out in a manner that maintains collaboration between research and control activities. This could be accomplished by strengthening the Programme Team concept, including holding regular meetings between the appropriate TDR staff and technical unit staff.

The ERC sees no reason why the expertise available in the WHO technical units would not continue to be available to TDR, given the continued location of the TDR Secretariat at WHO headquarters, the importance of the TDR Programme as part of WHO's overall efforts in these diseases, and WHO's co-sponsorship of the Programme.

The Committee believes that the volume of circulation of TDR documents for comment is somewhat excessive, and that the time currently required for processing could be shortened if such circulation were reduced. The general principle should be that documents are circulated for comment only to persons with relevant expertise, or where special procedures are involved such as the review of proposals involving the use of human subjects. For information purposes, on the other hand, materials should continue to be circulated widely.

In an effort to minimize further the time needed to process documents, while maintaining a high level of information exchange, the Committee suggests that, to the extent possible, materials sent to the WHO regional offices be for information purposes only. In those cases where there are special country protocols, the involvement of WHO regional offices will continue to be important for forwarding grant documents, but nevertheless contracts should be signed by the Director of the Programme or his TDR delegate. Where there are no special country protocols, the ERC recommends that grant documents be sent directly from the TDR unit to the recipient, with copies, of course, to the regional office.

9. Review and Evaluation Mechanisms

9.1 Project Level Review

At the present time, projects considered for funding by the TDR Programme are extensively reviewed by the Steering Committee concerned as well as by the Secretariat itself, before being recommended to the Programme Director for approval. The procedures for the SC review are set out in the "Handbook for Participants in Scientific Working Groups", and include the following:

1. review by referees external to the SC is optional except for proposals requesting support for members of the Steering Committee;

2. presentation by one or two assigned SC members;

3. review on the basis of relevance to the SWG targets, feasibility and probability of success, scientific quality, and budget and time-phasing;

4. the SC votes twice on each proposal, once for relevance and once for scientific criteria, using a secret ballot and a quantitative scale; and

5. all approved proposals relating to human subjects are submitted to the WHO Secretariat Committee on Research Involving Human Subjects for formal ethical clearance.

In general terms, the ERC considers these procedures to be acceptable in ensuring good standards of scientific and technical quality. However, the Committee believes that some modifications should be made to further safeguard high standards in the selection of projects.

First, the Committee recommends that all SCs adopt standard review procedures which include a review of all proposals by a minimum of two referees external to the SC. Exceptions should be made only under very restricted circumstances. Second, all SC minutes should clearly record the decisions on each project and the reasons that led to the decisions.

At the present time, an annual full progress report is required for all TDR-supported projects. For reasons of efficiency, it may be desirable to require less extensive reports from on-going projects at the end of each year. The Committee, therefore, suggests that for projects with a two- or three-year duration, annual reports might be reduced to brief interim progress reports for the first year or two, with more in-depth reports including detailed scientific findings required only after the second or third year, unless more detailed interim reports are required to advance other work in the research plan.

The RSG, unlike the Steering Committees, has delegated substantial authority to the Research Strengthening Team in the TDR Secretariat. This delegation includes authority to recommend to the Programme Director approval of research training grants, visiting scientist grants, re-entry grants and group training grants up to US$ 20 000, and small grants (up to US$ 15 000) for institution support. The ERC recognizes the need for special and flexible arrangements in the case of the Research Strengthening Group, but emphasizes the importance of the regular reviews made by the RSG of the decisions of the RST, and the periodic evaluations made by STAC of the results of the grants.

9.2 Programme Review

Extensive review procedures are built into the TDR Programme itself. Further, the Programme is integrated with the general WHO internal planning and reporting systems and provides information on its activities for special WHO reviews. This results in the TDR Programme having two reporting lines, one related to the Special Programme structures (JCB, STAC, Standing Committee), and the other to the WHO structures (World Health Assembly, Executive Board, Advisory Committee on Medical Research, Headquarters Programme Committee). The need to satisfy the information and reporting requirements of both reporting lines imposes a heavy burden on the TDR Secretariat, to the point that it produces some 225 to 250 reports a year. Although the Management Information System (MISTR) of the Special Programme provides an excellent data base, considerable staff effort is required to prepare reports requested by various bodies, especially when there is a tendency for each body to ask for reports in a different format.

The ERC recognizes that parallel reporting is necessary. However, in order to reduce the staff time devoted to such reporting, the ERC recommends that reporting requirements including special reviews commissioned by WHO bodies, be reduced, and that to the extent possible the regular reports produced by TDR be accepted as satisfying these requirements.

In addition, the Committee recommends that donors to the Special Programme avoid imposing their own special reporting requirements, and accept TDR reports as sufficient for their purposes. Moreover, since WHO's external auditor reviews the TDR accounts, and submits his report to the Joint Coordinating Board, the Committee considers that further audits are unnecessary.

9.3 Regular Re-evaluation of the Relevance of the Programme

The TDR staff maintain continual contact with the current situation with respect to the six diseases and problems encountered in control efforts through contact with the WHO technical units. There is, however, little opportunity at present for the Scientific and Technical Advisory Committee or the Joint Coordinating Board to receive updated information regularly in summary form on developments with respect to the diseases and control efforts. Such an update would be useful for re-examining the relevance of research efforts.

The Committee, therefore, suggests that the WHO technical units prepare regular assessments, correlated with the biennial budget process, summarizing the current incidence and prevalence for each of the six diseases, and the status of control programmes, including major advances or setbacks in control efforts during the year. These should be made available to STAC and the JCB. It should then be possible for the various TDR bodies to appreciate more fully the relationship between the research effort and operational needs, and to make adjustments as required.

9.4 External Review of the Programme

The first three years of the operations of the TDR Programme, up to the end of 1977, were a building-up period. The structure and method of operation were refined, financing was arranged and strategic plans were developed for the scientific programme. By the end of 1978, the Programme reached a level of scientific activity comparable to its present level. Hence, the scientific results available now represent only about three or at most four years of activity. However, after ten years of Programme operations, that is, about 1986 or 1987, eight years of scientific results will have accumulated, and an in-depth review of the TDR Programme would be warranted. To undertake a thorough investigation of this type, an external review committee, or other similar mechanism, should have staff at its disposal in the form of a study team to assist with the compilation of materials and analysis of data. The ERC recommends, therefore, that another external review of the Programme be carried out in five years and that provision be made for adequate resources, including staff support, to assist the review committee to carry out such a task in a thorough fashion.

10. Programme Financing

From its inception until the end of 1981, the Special Programme received a total of US$ 95 million in direct financial contributions (Table V). Since the signing of the Memorandum of Understanding in February 1978 and the establishment in March 1978 of the Tropical Diseases Research Fund managed by the World Bank, the TDR Programme has enjoyed considerable success in attracting funds, which enabled the Programme to expand very rapidly in a short period of time. Total contributions averaged US$ 23 million from 1979 to 1981, reaching US$ 24.4 million with 27 contributors in 1981. This is a remarkable achievement, and is a tribute to the careful planning and preparation which went into the Programme, as well as to its management and accomplishments.

However, there is growing concern over the adequacy of financial resources to meet the requirements of the Programme. For 1981, the JCB approved a budget of approximately US$ 30.1 million, but since it appeared unlikely that funds available in 1981 would reach that sum, the JCB approved a contingency plan for financial

Table V

UNDP/WORLD BANK/WHO
SPECIAL PROGRAMME FOR RESEARCH AND TRAINING
IN TROPICAL DISEASES

FINANCIAL CONTRIBUTIONS (in US$ at 31 December 1981)

CONTRIBUTOR	1974	1975	1976	1977	1978	1979	1980	1981	TOTAL 1974-1981
AFRICAN DEVELOPMENT BANK	-	-	-	-	-	250 000	250 000	250 000	750 000
AUSTRALIA	-	-	-	-	259 637	257 025	253 460	297 125	1 067 247
AUSTRIA	-	5 000	22 605	30 960	104 783	76 353	120 000	43 484	403 185
BAHAMAS	-	-	500	-	-	-	-	-	500
BELGIUM	-	63 946	272 183	-	1 532 616	-	528 355	388 249	2 785 349
BRAZIL	-	-	-	-	-	-	-	20 000	20 000
CANADA	-	-	309 278	-	534 784	608 854	606 849	702 694	2 762 459
CHINA	-	-	-	-	-	-	-	50 000	50 000
CUBA	-	-	-	-	-	2 193	1 909	1 987	6 089
CYPRUS	-	-	-	239	-	-	-	-	239
DENMARK	-	-	-	4 932 982	-	5 796 351	4 171 825	4 587 288	19 488 446
FINLAND	-	-	-	72 251	95 728	125 000	133 689	177 000	603 668
FRANCE	-	-	-	-	-	226 516	240 385	176 772	643 673
GERMANY, FEDERAL REPUBLIC OF	-	-	-	-	333 333	1 167 964	1 129 943	978 261	3 609 501
INDIA	-	-	-	-	-	102 469	-	25 000	127 469
INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC) CANADA	-	75 000	491 200	178 027	-	62 746	-	186 893	993 866
INTERNATIONAL FEDERATION OF ANTI-LEPROSY ASSOCIATION (ILEP)	-	78 120	36 256	63 200	62 439	67 561	72 293	88 393	468 262
IRAQ	-	5 000	-	-	-	-	-	-	5 000
JAPAN SHIPBUILDING INDUSTRY FOUNDATION (JSIF)	-	51 300	500 000	400 000	400 000	400 000	979 616	400 000	3 130 916
LEPROSY TRUST BOARD, NEW ZEALAND	-	-	-	9 804	10 309	9 803	9 804	-	39 720
NETHERLANDS	-	100 000	400 000	1 000 000	1 000 000	955 064	1 000 000	786 395	5 241 459
NIGER	-	-	-	-	2 252	-	-	-	2 252
NIGERIA	-	-	79 800	-	80 495	79 570	92 238	89 286	421 389
NORWAY	-	71 429	180 936	456 317	965 909	1 089 864	1 106 639	1 067 961	4 939 055
ROMANIA	-	-	1 995	-	-	-	-	-	1 995
SWEDEN	57 500	746 969	403 700	1 351 351	1 927 997	2 530 000	2 879 424	2 355 250	12 252 191
SWITZERLAND	-	-	102 040	321 888	554 300	747 161	855 822	880 813	3 462 024
UNITED KINGDOM	-	-	132 743	470 085	889 939	1 333 943	1 229 258	793 970	4 849 938
UNITED REPUBLIC OF CAMEROON	-	-	-	-	-	2 566	-	4 047	6 613
UNITED STATES OF AMERICA	-	-	-	25 000	24 000	2 323 912	4 000 000	4 000 000	10 372 912
WELLCOME TRUST	25 000	-	-	-	-	-	-	-	25 000
TOTAL	82 500	1 196 764	2 933 236	9 312 104	8 778 521	18 214 915	19 661 509	18 350 868	78 530 417
UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)	-	-	50 000	50 000	969 000	1 851 008	1 947 700	2 552 100	7 419 808
WORLD BANK (IBRD)	-	-	-	-	-	-	-	2 480 000	2 480 000
WORLD HEALTH ORGANIZATION (WHO)	-	175 000	331 000	903 000	1 500 800	1 591 700	1 050 000	1 050 000	6 601 500
GRAND TOTAL	82 500	1 371 764	3 314 236	10 265 104	11 248 321	21 657 623	22 659 209	24 432 968	95 031 725

management. By mid-1981, the estimates of available funds for 1981 were below US$ 27 million and the budget was reduced to US$ 26.6 million. For the biennium 1982-83, the JCB approved a maximum Programme budget of US$ 61.6 million. However, total funds available in 1982 were estimated at $ 27 million, about US$ 3.8 million less than half of the 1982-83 budget; contributions for 1982 were estimated at US$ 23 million - somewhat less than 1981.

On the basis of this information, it would appear that contributions to the TDR Programme have reached a plateau, in current dollars, at about US$ 23-24 million a year. In constant dollars, however, there has been a steady erosion in the value of Programme resources, as Table VI shows.

The External Review Committee has been impressed with the degree to which the Special Programme was able to expand its activities significantly in the years when financial resources were increasing rapidly. The ERC considers that the amounts made available have been put to good use, and that the Programme could effectively use much larger resources.

The ERC therefore strongly encourages an increase in Programme resources over time which not only keeps pace with inflation and currency fluctuations, but also provides for a modest increase in real terms. For the immediate future, the minimum target should be to restore and to maintain the Programme at its 1979 level in real terms.

The ERC recognizes that the TDR Programme may be suffering to some extent from what may be termed "donor fatigue". Contributions from many significant donors have levelled off, after a sharp increase around 1978-79, and the only major new donor to the Programme in recent years has been the World Bank. There are many reasons for "donor fatigue", including difficulties in maintaining interest in a research programme over the long period of time required, the emergence of new programmes and priorities, budgetary restrictions, changes in government policy, a lack of direct contact with programme activities, and a sense that some donors may be shouldering an unduly high proportion of the financial burden. Some of these factors are clearly beyond the scope of the TDR Programme, while others may be influenced or modified as a result of Programme initiatives.

Clearly the Programme must review its fund-raising strategy, in order both to maintain and increase contributions from existing donors, and to attract new donors. The ERC considers it a main responsibility of the Standing Committee to develop such an explicit fund-raising strategy, and to use the resources of its members to carry out the strategy. In particular, the ERC encourages the Director-General of WHO to play a personal role where his intervention could be beneficial, and believes it would be helpful also if the heads of the other two sponsoring agencies were to take a more active role in fund-raising, especially in approaching potential donors who are not now contributing to the Special Programme.

In addition to a role as fund-raisers, the co-sponsors have a role as contributors to the Programme's resources. The UNDP has contributed from the onset of the Programme, and the ERC is pleased that in 1981 the Bank began to make financial contributions to the Programme. WHO has contributed over the years by providing facilities and cash contributions, although the amount of its financial contribution has decreased (Table V). Beginning in 1982, however, WHO will be charging the Programme for rent estimated at US$ 520 000 for the 1982-83 biennium. This is in accordance with a decision of the World Health Assembly that rent be charged for the office accommodation of all staff whose costs are provided from extrabudgetary sources. The ERC considers it important that the WHO be seen to be giving the strongest possible support to the Programme, including direct financial support. The ERC therefore encourages WHO to increase its direct contributions to the Programme, as a minimum by an amount sufficient to cover the rent charged to the Programme, and to maintain the constant real value of its contribution.

Table VI

Financial Contributions 1979-82 (US$ M)

	1979	1980	1981	1982*
Current Dollars	21.7	22.7	24.4	23.0
Constant Dollars (1979)**	21.7	20.6	20.2	17.3
Index	1.000	0.949	0.931	0.797

Obligations 1979-82

	1979	1980	1981	1982***
Current Dollars	23.0	25.0	25.1	27.0
Constant Dollars (1979)**	23.0	22.7	20.7	20.3
Index	1.000	0.987	0.900	0.883

* Estimate as of December 1981.

** Discount factor - 10%.

*** Estimated obligations equal to total estimated funds available in 1982.

In its first five years, the TDR Programme has stimulated interest on the part of the pharmaceutical industry in aspects of its research efforts. The ERC considers it crucial that this interest be maintained in order that any tools developed by the Programme will subsequently be manufactured and distributed. The ERC therefore encourages the Programme to continue to develop as strong a collaboration as possible with industry, and to seek direct industry contributions to the Programme.

For the most part, funding to the TDR Programme has come from general purpose, unrestricted grants. But with large-scale field trials, requiring substantial additional funds, likely in the next few years, consideration is being given to accepting earmarked funds. While the Committee suggests caution in general in accepting such earmarked funds, it considers them acceptable under certain conditions. First, earmarked funds should be in addition to, not in place of, existing general purpose contributions. They should be for Programme activities that have been given priority through the Programme's priority setting process and they should not disrupt the balance between components established by the Programme.

The ERC would consider it appropriate to use earmarked funds for some major projects, such as large-scale field trials. Earmarked funds would also be appropriate for a specific disease component, so long as the funds were not tied to any specific projects within the component and they represented only a portion of the total funding for the component.

The ERC considers it important, however, that the Programme, rather than donors, determine the areas in the overall programme where earmarked funding would be acceptable and the conditions under which it would be acceptable. The ERC, therefore, suggests that the Programme develop what it considers its core programme, which should be funded by general purpose contributions and then identify areas over and above this core, for which earmarked funds would be acceptable. The ERC also suggests that the Programme develop a set policy concerning earmarked funds. Once this has been done, efforts can be directed towards soliciting donors for funds.

As indicated earlier, the ERC considers long-term commitment and stable funding as prerequisites for research programmes like the TDR Programme to produce results. The recommendations in this section are, therefore, directed towards these prerequisites.

In 1982, the TDR Programme has moved to a two-year budgeting cycle. The ERC endorses this change as it allows for more forward planning. However, as long as pledges for financial support remain on an annual basis, the programme of work can be a biennial one, but the budget, and commitments against it, continue to be on an annual basis. Commensurate with the new cycle, therefore, the ERC considers it desirable to urge donors to make two-year pledges of contributions corresponding with the budget cycle. This would facilitate financial planning and longer-term commitments in research and research strengthening grants.

Under WHO financial policies applied to TDR, obligations can be incurred against pledges for the current year, and cash receipts are monitored in order to insure that cash disbursements do not exceed cash receipts. Since effectively there is no mechanism for obligating funds against future year pledges, obligations are made only for one year at a time. If future year obligations were made against current year pledges, this would reduce the funds for obligation in the current year. Because of the need to provide an adequate measure of security and stability of funding for many goal-oriented grants, such as multi-year research projects and research strengthening activities, the Committee considers that it would be desirable to have a mechanism by which forward obligations could be made. Two-year contributions from donors would partially overcome the problem of future year obligations. In addition, the Committee recommends that the Programme also be permitted to incur future year obligations up to a limited amount, say 50% of expected contributions for the following two years. This would be based on the reasonable assumption that actual cash receipts of the TDR Programme would be at least equal to this amount. The Committee recommends that the financial procedures be altered along these lines.

Annex I

TDR/JCB(3)/80.8

UNDP/WORLD BANK/WHO SPECIAL PROGRAMME FOR
RESEARCH AND TRAINING IN TROPICAL DISEASES

THIRD MEETING OF THE JOINT COORDINATING BOARD

Geneva, 10 and 11 December 1980

PROPOSED PLANS FOR THE REVIEW AND EVALUATION OF THE FIRST FIVE YEARS OF OPERATIONS

A. TERMS OF REFERENCE

1. INTRODUCTION

The Special Programme for Research and Training in Tropical Diseases (TDR) was established as an international response to major health problems of developing countries in the tropics. The Programme was planned and initiated by the World Health Organization (WHO) with the assistance and co-sponsorship of the United Nations Development Programme (UNDP) and the World Bank and operates under the guidance of, and with resources provided by, its Cooperating Parties represented by the Joint Coordinating Board (JCB). An interdisciplinary group of scientists serve in their personal capacities as the Scientific and Technical Advisory Committee (STAC) to advise the JCB upon the Programme's scientific and technical activities and evaluate progress. The Programme coordinates with members of the world's scientific community in the planning and management of specific goal-oriented lines of research and in training and institution strengthening towards two interdependent objectives:

- Research and development towards new and improved tools to control six tropical diseases; and
- Strengthening of national institutions, including training, to increase the research capabilities of the tropical countries affected by the diseases.

The six target diseases are: malaria, schistosomiasis, filariasis, trypanosomiasis (both African sleeping sickness and Chagas' disease), leishmaniasis and leprosy.

The Programme was established in late 1975 and began operating in 1976, obligating close to US$ 2 million that year. Operations have increased rapidly and in 1980 over US$ 25 million will be obligated. During the five years of operations (1976-1980) over US$ 60 million were granted for direct support to national scientists and institutions throughout the world.

The Joint Coordinating Board, the Special Programme's top administrative body, along with the other governments and agencies cooperating with the Programme decided in 1978 that a review of the Programme should be carried out following the first five years of operation. The review was to provide a guide to the planning, organization, operation and management of the Programme over the next five years.

2. OBJECTIVES OF THE REVIEW AND POSSIBLE QUESTIONS

The objectives are to:

2.1 Review the need for a programme such as TDR

- Are the diseases included in the Special Programme still major public health problems hindering the social and economic development of tropical countries?
- Are new and improved tools still required to aid in the prevention and control of these diseases?
- Can existing tools, if applied effectively in the tropical countries, control the six diseases?
- Is the ratio of investment in TDR to investments for the application of existing control mechanisms reasonable?
- Is the total investment in research and development in the tropical diseases insufficient, adequate, or too large?

2.2 Review the goals, scope, and balance of the scientific and technical activities of TDR

- Are TDR's two inter-dependent objectives logical and compatible, and is the balance of resources allocated to them correct?
- Is the scope of the Programme - the number of diseases included and the thrusts of the scientific and technical activities, i.e. research towards vaccines, new and improved drugs, new diagnostic methods, epidemiological knowledge of the diseases, field research, etc. - too broad, adequate, or too narrow?
- Is the balance between the various disease and trans-disease components of the Programme correct?

2.3 Assess the effectiveness of the scientific and technical organization of TDR

- the global network concept;
- the Scientific Working Groups and their Steering Committees;
- the Research Strengthening Group and its Executive Sub-Group.

2.4 Assess the effectiveness of the management system of TDR

- the role and operation of the JCB;
- the role and operation of the Standing Committee;
- the policies and mechanisms for implementing and monitoring scientific and technical activities;
- the administrative and financial control systems;
- the information and communication systems;
- the geographic location of the Programme Secretariat;

- the procedures for short-, medium- and longer-term scientific, technical and financial planning;

- the role of the Special Programme staff.

2.5 Assess the effectiveness of the mechanisms for review and evaluation in TDR

- project evaluation by peer groups, Steering Committees and the Research Strengthening Group;

- the evaluation of Programme Components, by the Scientific and Technical Advisory Committee, and its sub-committees;

- the scientific and technical evaluation of the entire Programme by the STAC;

- the methods of scientific and financial reporting.

2.6 Assess the mechanisms of Programme financing

- the existing financial policies;

- the role of the Executing Agency and the other co-sponsors;

- the role of the Joint Coordinating Board.

2.7 Assess overall progress during the first 5 years of operations

- scientific and technical progress in relationship to organization, management and investments made;

- the likelihood of practical application in the field of results from Programme activities.

2.8 Assess the Programme relative to similar initiatives in WHO, other international organizations, government institutes and/or agencies and the industrial sector

2.9 Make recommendations regarding the future organization, management and financing of the Programme

B. MECHANISMS

1. Sponsorship of the Review: the JCB

2. Review Mechanisms

The review will be carried out by an External Review Committee (ERC) of five members which will be guided in its work by the Standing Committee. The ERC will report to the JCB.

3. Composition of the External Review Committee

The External Review Committee will consist of five independent individuals with expertise in such fields as disease control and/or

public health in developing countries; the development process; multilateral and/or bilateral assistance; the biological, economic or social sciences; and research administration.

Members of the Committee will serve in their personal capacities.

4. Secretariat Support for the Review

The Special Programme and the Executing Agency will provide secretariat support and arrange for supporting services and facilities as may be required by the ERC.

5. Funding of the Review

The cost of the review is included under Programme Area I of the proposed TDR Programme Budget for 1981.

6. Selection of Members of the External Review Committee

The members, Chairperson and Secretary of the ERC are proposed by the Standing Committee and approved by the JCB.

C. OPERATION OF THE REVIEW

1. General Plan

It is anticipated that the ERC will meet three times, and that the first meeting of the Committee will take place in Geneva early in 1981 in conjunction with a meeting of the Standing Committee. Individual ERC members or sub-groups will carry out specific tasks between meetings of the entire group and meet with the Standing Committee or the Executing Agency as required. The ERC will prepare a report for comments by the Standing Committee in early October 1981. This report, along with the comments of the Standing Committee, will be presented to the Fourth Meeting of the JCB. The Chairperson and Secretary of the ERC will be present at the meeting of the JCB which considers the report of the ERC.

2. Review Process

The ERC will meet as a group or in sub-groups to:

(a) review documents prepared by the secretariat, STAC, the Standing Committee and other available written material such as JCB, STAC and SWG reports;

(b) interview representatives of the co-sponsors, JCB, STAC, SWGs, RSG and Steering Committee chairmen, in Geneva or elsewhere;

(c) visit (if necessary) selected institutions or agencies;

(d) carry out any other activities deemed necessary by the members, the Standing Committee or the JCB.

Annex II

Members of the

External Review Committee

Dr D.E. BELL, Professor of Population Sciences and International Health, Harvard School of Public Health, 665 Huntington Avenue, Boston, Massachusetts 02115, U.S.A. (Convenor)

Dr P.O. CHUKE, Professor and Head, Department of Medicine, University of Nigeria, Enugu Campus, Enugu, Nigeria

Dr H. DANIELSSON, Chairman, European Medical Research Councils, Medicinska forskningsradet, Box 6713, S-11385 Stockholm, Sweden

Monsieur le Docteur J. DIOUF, Secrétaire d'Etat à la Recherche scientifique et technique, Dakar, Sénégal

Dr P.A. LADOUCEUR, Group Chief, Social Programs, Treasury Board, Ottawa, Ontario K1A OR5, Canada (Secretary)

Dr M. ROCHE, Departamento de Estudio de la Ciencia, Apartado 1827, Caracas, Venezuela

Annex III

Persons Interviewed by the Committee

Dr J. Barzelatto, Responsible Officer, Research Capability Strengthening, TDR Programme

Professor A. Capron, Chairman, Steering Committee (Schistosomiasis), TDR Programme

Dr A. Davis, Director, Parasitic Diseases Programme, WHO; Secretary, Scientific Working Group (Schistosomiasis), TDR Programme

Dr A.S. Dissanaike, Secretary, Steering Committee (Filariasis), TDR Programme

Dr J. Evans (World Bank), Member of the Standing Committee, TDR Programme

Dr M. Farid, Former Chairman, Steering Committee (Applied Field Research, Malaria), TDR Programme

Dr C.E. Gordon Smith, Chairman, Research Strengthening Group, TDR Programme

Dr S. Goriup, Secretary, Steering Committee (Malaria Field Research), TDR Programme

Dr N. Gratz, Director, Division of Vector Biology and Control, WHO

Dr I. Jespersen (Denmark), Chairman, Joint Coordinating Board, TDR

Dr P. Jordan, Former Chairman, Steering Committee (Field Research, Schistosomiasis), TDR Programme

Dr L. Levy, Chairman, Steering Committee (Chemotherapy of Leprosy), TDR Programme

Dr A.O. Lucas, Director, TDR Programme

Dr H. Mahler, Director-General, WHO

Mr W.T. Mashler (United Nations Development Programme), Member of the Standing Committee, TDR Programme

Dr A.B. Morrison, Chairman, Scientific and Technical Advisory Committee, TDR Programme

Dr R. Morrow, Secretary, Scientific Working Group and Steering Committee (Epidemiology), TDR Programme

Professor W. Peters, Former Chairman, Steering Committee (Chemotherapy of Malaria), TDR Programme

Dr P. Rosenfield, Secretary, Scientific Working Group and Steering Committee (Social and Economic Research), TDR Programme

Dr D.S. Rowe, Responsible Officer, Research and Development, TDR Programme

Dr P.I. Trigg, Secretary, Steering Committee (Chemotherapy of Malaria), TDR Programme

Dr W.H. Wernsdorfer, Medical Officer, Research and Technical Intelligence, Malaria Action Programme, WHO

Dr R. Wilson, Responsible Officer, Programme Management and Support, TDR Programme

Note: This Annex comprises only persons interviewed by the Committee as a whole. Only TDR-related affiliations, where appropriate, are given.

Annex IV

UNDP/WORLD BANK/WHO
SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN TROPICAL DISEASES

EXTERNAL REVIEW COMMITTEE

Dr D.E. Bell, USA
Dr P. Chuke, Nigeria
Dr H. Danielsson, Sweden
Monsieur le Docteur J. Diouf, Sénégal
Dr P.A. Ladouceur, Canada
Dr M. Roche, Venezuela

c/o Health Sciences Division

International Development
Research Centre
P.O. Box 8500
Ottawa
Canada K1G 3H9

28 August 1981

Dear

I am writing to ask for your comments and suggestions concerning the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR Programme). The Joint Coordinating Board of the TDR Programme, at its meeting in December 1980, established an External Review Committee to carry out a review and evaluation of the first five years of operation of the TDR Programme, with particular attention to:

a) The goals, scope and balance of TDR activities;

b) The organization and management of TDR, including the location of the secretariat; and

c) The financing of TDR.

The terms of reference, objectives, mechanism and operation of the review are contained in document TDR/JCB(3)/80.8, a copy of which is ... enclosed. Members of the Committee are listed in Annex I, attached.

... ENCLS: As stated

28 August 1981

The External Review Committee has now held two meetings, in April and July 1981. At these meetings the Committee decided to canvass a wide range of views concerning all aspects of the TDR Programme. The Committee hopes to have direct meetings and discussions with as many participants in the TDR Programme as possible, but it will not be feasible to meet everyone concerned, since the range of governments, institutions, organizations and individuals involved in TDR is large and growing constantly. The Committee has therefore decided to invite written comments from a number of participants involved in the TDR Programme. This will allow the Committee to benefit from the insights, views and suggestions of a much larger group than would otherwise be possible.

The External Review Committee therefore invites you to send us such comments and suggestions for the future as you may wish to make on the TDR Programme. As a guide to assist in the preparation of comments, the Committee has drawn up an outline of key issue areas and a series of questions (Annex II, attached), based on the terms of reference and objectives as approved by the JCB, and on the Committee's own discussion and meetings to date with the Standing Committee and with various TDR participants, including chairmen and secretaries of scientific working groups, and members of the TDR secretariat. We do not intend this document as a questionnaire, but an indication of some of the more important issues and questions concerning the Programme as we perceive them. We would welcome your comments on these and any other points you may consider significant, in whatever form would be most convenient for you.

The Committee would appreciate hearing from you by 15 October 1981. Any communication you send us will of course be regarded as confidential, for the internal use of the External Review Committee, and will not be identified in any documents or reports of the Committee.

I would be grateful if you could address your replies to:

TDR - External Review Committee
c/o Health Sciences Division
International Development Research Centre
P.O. Box 8500
Ottawa K1G 3H9
Canada

Attention: Dr P.A. Ladouceur

28 August 1981

Please do not hesitate to contact me, or any of the other members of the Committee, should you wish to have further information about the review.

I look forward to your assistance and cooperation in this review of the first five years of operation of this very important Programme.

Yours sincerely,

David E. Bell
Convenor
External Review Committee

July 1981

Annex II

External Review Committee

Key issues and questions concerning the
Special Programme for Research and Training
in Tropical Diseases

1. The importance of the TDR Programme

- How significant is the TDR Programme in relation to the total world-wide research and development effort devoted to tropical diseases?

- What impact has the TDR Programme had in its first five years?

- Is the ratio of funds devoted to TDR, to funds devoted to the application of existing control mechanisms a reasonable one?

2. The goals, scope and balance of the TDR Programme

- Are the two objectives of the Programme logical and compatible, and is the balance of resources allocated to them reasonable? Should the objectives be modified in any way?

- Is sufficient emphasis being placed on field research and the search for better ways to apply technologies?

- Should the number of diseases being addressed by the Programme be narrowed? broadened? Should the Programme focus more strongly on some diseases than is currently the case?

3. The organization and management of the Programme

- Is the global scientific network concept, as employed in the TDR Programme, the most effective organizational model for the Programme? If not, what would be a preferable alternative or complementary approach?

- What are the strengths and weaknesses of the Scientific Working Groups and their Steering Committees, and of the Research Strengthening Group and its Executive Sub-Group, in their operations thus far?

- Should the Special Programme be more active in stimulating and promoting research proposals in accord with strategic plans?

- What comments are appropriate concerning the operation thus far of the Scientific and Technical Advisory Committee, the Standing Committee and the Joint Coordinating Board?

- Is the Programme Secretariat effective? Is its structure appropriate? Is it too large or too small?

- Should the TDR Secretariat be more distinct from the regular WHO Secretariat? Would it be preferable to locate it elsewhere in Geneva or away from Geneva?

- Is the overall management system sufficiently flexible to respond well to changing needs and opportunities for research and training, and to changes in the availability of resources?

- Do donors and others concerned with the Programme receive adequate, timely and useful information concerning the scientific, managerial and financial activities of the Programme?

4. The arrangements for review and evaluation of the Programme

- Are the arrangements for scientific and technical reviews in TDR adequate and efficient?

- Is the STAC an effective instrument for the overall review and evaluation of the Programme, including the allocation of resources among the various programme components?

5. Financing the Programme

- Should the TDR Programme accept earmarked or special purpose contributions? If so, under what conditions?

- Should the Executing Agency and the co-sponsors be more active in fund-raising?

- What steps could be taken to ensure a more stable financial commitment? Would it be feasible to seek medium-term financial commitments (4-6 years), such as those to the Onchocerciasis Control Programme?

6. Achievements and problems

- What have been the principal achievements of the Programme to date, and how could the Programme be improved to increase the probability of continuing and more significant achievements in the future?

- What have been the principal problems and weaknesses of the Programme to date, and what be can done to overcome them?

- How do the strengths and weaknesses of the TDR Programme compare to those of other international research and training efforts focussing on problems of the developing countries?

Annex V

Respondents to the List of Key Issues and Questions

Professor G.L. Ada, Head, Department of Microbiology, The John Curtin School of Medical Research, The Australian National University, Canberra City, Australia

Dr Guilardo Martins Alves, President, Fundaçao Oswaldo Cruz, Rio de Janeiro, Brazil

Dr N. Anand, Director, Central Drug Research Institute, Lucknow, Uttar Pradesh, India

Professor P.A. Andrianaivo, Médecin-Chef, Service de Lutte contre les Maladies transmissibles, Antananarivo, Madagascar

Professor S. Bergström, Rector, Karolinska Institute, Stockholm, Sweden

Mr P. Bog, Director General, International Affairs for Economic and Social Development, Ministry of Foreign Affairs, Oslo, Norway

Professor B.R. Bloom, Department of Microbiology and Immunology, Albert Einstein College of Medicine of Yeshiva University, Bronx, New York, U.S.A.

Professor D. Bradley, Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, London, United Kingdom

Dr N.C. Brady, Senior Assistant Administrator for Science and Technology, Agency for International Development, Washington, D.C., U.S.A.

Mr Peter Branner, Acting Head of Division, Ministry for Foreign Affairs, Copenhagen, Denmark

Dr H.D. Burges, Insect Pathology Group, Glasshouse Crops Research Institute, Littlehampton, West Sussex, United Kingdom

Dr M.C. Chirambo, Chief Medical Officer, Ministry of Health, Lilongwe, Malawi

Dr J.A. Cook, Director, Program in Tropical Disease Research, The Edna McConnell Clark Foundation, New York, New York, U.S.A.

Dr D.B. Copemen, Department of Tropical Veterinary Science, James Cook University of North Queensland, Townsville, Australia

Dr Edmund W.J. de Maar, Somerville, Massachusetts, U.S.A.

Dr I.T. Field, Chief Medical and Health Services Adviser, Overseas Development Administration, London, United Kingdom

Dr John Gill, Director, Health Sciences Division, International Development Research Centre, Ottawa, Canada

Professor H.M. Gilles, Department of Tropical Medicine, Liverpool School of Tropical Medicine, Liverpool, United Kingdom

Dr F.L. Golladay, Senior Economist, Transportation, Water and Telecommunications Department, The World Bank, Washington, D.C., U.S.A.

Dr L.G. Goodwin, Shepperlands Farms, Finchampstead, Berkshire, United Kingdom

Dr Humberto Guerra, Director, Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru

Dr J.B. Henson, Coordinator, International Program Development, Washington State University, Pullman, Washington, U.S.A.

Dr Alina Llop Hernandez, Directora Ciencia y Técnica, Ministerio de Salud Pública, La Habana, Cuba

Mr Eberhard Killinger, Ministry for Economic Cooperation, Bonn, West Germany

Dr L. Levy, Department of Comparative Medicine, The Hebrew University-Hadassah Medical School, Jerusalem, Israel

Ministry for Foreign Affairs, The Hague, Netherlands

Dr R.A. Neal, Head, Parasitology Department, The Wellcome Laboratories for Tropical Medicine, Beckenham, Kent, United Kingdom

Dr B.A. Newton, Molteno Institute, University of Cambridge, Cambridge, United Kingdom

Dr E.K. Njelesani, Director, Tropical Disease Research Centre, Ndola, Zambia

Dr L. Perrin, Université de Genève, Hôpital Cantonal, Genève, Suisse

Dr A. Peter Ruderman, Professor of Health Administration, School of Public Administration, Dalhousie University, Halifax, Nova Scotia, Canada

Professor J.R. Seed, Professor and Chairman, Department of Parasitology and Laboratory Practice, University of North Carolina, Chapel Hill, North Carolina, U.S.A.

Professor Michael Sela, President, The Weizmann Institute of Science, Rehovot, Israel

Miss Anne Sutherland, Section Head, UN Programmes Division, Canadian International Development Agency (CIDA), Hull, Quebec, Canada

Professor H. Tanaka, Department of Parasitology, The Institute of Medical Science, The University of Tokyo, Tokyo, Japan

Dr Luzviminda B. Valencia, Associate Professor, Department of Sociology, University of the Philippines System, Quezon City, Philippines

Professor H.J. van der Kaay, Laboratory of Parasitology, Institute of Tropical Medicine, State University of Leiden, Leiden, Netherlands

Dr Jaroslav Weiser, Head, Department of Insect Pathology, Institute of Entomology, Academy of Sciences, Prague, Czechoslovakia

Dr P.O. Williams, Director, The Wellcome Trust, London, United Kingdom

Dr Xu Shouren, Deputy Director, Foreign Affairs Bureau, Ministry of Public Health, Beijing, China

Annex VI

Results of Bibliographic Search on the Number of Articles Published on the Six Diseases between 1975 and 1979

	Number in 1975	% Increase between 1975-76	Number in 1976	% Increase between 1976-77	Number in 1977	% Increase between 1977-78	Number in 1978	% Increase between 1978-79	Number in 1979	% Increase between 1975-79
Malaria	413	-3%	401	-6%	378	22%	462	2%	473	14%
Leprosy	286	21%	345	-30%	240	22%	294	18%	347	21%
Trypanosomiasis	210	-2%	205	12%	230	9%	252	3%	259	23%
Filariasis	202	1%	204	-1%	202	16%	235	-3%	227	12%
Schistosomiasis	286	14%	325	9%	353	10%	387	8%	355	24%
Leishmaniasis	100	-4%	96	22%	117	13%	132	3%	136	36%