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Report of the First Meeting of the Nongovernmental Organizations Coordination Group for Ivermectin Distribution

Geneva

30 November - 1 December 1992

ABSTRACT

The terms of reference of the NGO Coordination Group for Ivermectin Distribution have been defined. These include promoting worldwide interest and support for the use of ivermectin (Mectizan®, MSD) against onchocerciasis in endemic countries, in consultation with the Mectizan Donation Program and WHO, and assisting interested countries or groups of countries in the planning, implementation and evaluation of ivermectin distribution programmes.

As first priority in its function, assistance will be extended towards the planning and crystallization of national plans for onchocerciasis control in Nigeria and the Cameroon. Resources will be mobilized by increasing the membership of the Group and coopting other NGOs into the activity. Needed operational research for the effective implementation, enhancing of cost-effectiveness and sustainability of ivermectin distribution will be encouraged through the WHO network.

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The first meeting of the NGO Coordination Group for Ivermectin Distribution took place at the headquarters of the World Health Organization in Geneva on 30 November and 1 December 1992. It was opened by Dr B. Thylefors, Programme Manager, Programme for the Prevention of Blindness, who welcomed the participants and expressed his pleasure at the fact that the meeting was taking place to establish the terms of reference for the Group and the working plan for the coordinator. Apologies were received from Dr M. Heisler, Dr E. M. Samba and Dr C. P. Ramachandran, who were absent, and from Christoffel Blindenmission, which could not send a representative to the meeting.

Dr de Raadt, Director of the Division of Control of Tropical Diseases, also welcomed the participants and commended the goal of the Group, which was bound to enjoy success because the Group could build on the relationship of WHO and its network, through WHO representatives, in Member States. Reference was made to the WHO Expert Committee Meeting on Onchocerciasis, scheduled for November 1993, which would reflect on the work of this NGO forum.

Dr B. O. L. Duke was elected Chairman for one year, following the recommendation that the chairperson should remain in the chair for at least one year to allow easy and continued contact between WHO and the Group. The proposed agenda for the meeting (Annex 1) was adopted without amendment. The list of participants is shown in Annex 2.

1. Terms of reference of the Group

After deliberation, the following terms of reference were accepted, with minor modifications:

- To promote worldwide interest and support for the use of ivermectin (Mectizan[®], MSD) against onchocerciasis in endemic countries, in consultation with the Mectizan Donation Program and WHO.
- To assist interested countries or groups of countries in the planning, implementation and evaluation of ivermectin distribution programmes.
- To coordinate the activities of and between nongovernmental organizations for ivermectin distribution, in relation to the Mectizan Donation Program, WHO and interested Member States.
- To facilitate and seek support for operational research of importance, in order further to develop large-scale ivermectin distribution programmes.
- To seek to mobilize needed additional resources for a global effort to control onchocerciasis by means of ivermectin distribution.
- To provide ongoing information.

2. Development of a common information system (data base) for NGO-supported ivermectin projects

The Group recognized the need for standardized data collection and uniform reporting of the results of ivermectin distribution programmes. Discussion centred on the minimum necessary data to be collected at the community level and in what form reports of activities should be made to the Group. It was agreed that the latter should encompass the district rather than the community. The task of developing an appropriate data collection form at the community level and the format for uniform reporting was entrusted to one of its members. It was also considered appropriate to provide ongoing

information on the development of large-scale ivermectin distribution programmes and NGO support. The information on the progress of ivermectin distribution should be included in the reports of the meetings which should be widely disseminated (in French and English).

The Group was presented with elements to be considered in assessing the cost-effectiveness of ivermectin distribution programmes. Essentially, two different phases of funding - start-up and long-term running costs - can be distinguished. Whereas start-up costs, which include among other considerations management and overheads, and equipment and running costs for the first few years, are usually estimated correctly, the estimation of long-term running costs tends to overlook such aspects as the incentives to be paid to government staff, as well as the local management capacity replacing the start-up management. It was also pointed out that comparison of the cost-effectiveness of different programmes is only eligible when the programmes are similar with respect to prevalence, ecology and the size of the communities involved. It was also noted that the cost of running programmes differs from one country to another, and this may in general be related to the cost of living in the country concerned. One way of reducing costs of ivermectin distribution may be by attaching the activity to an existing programme such as the Expanded Programme on Immunization (EPI). In general, programmes should start with the treatment of hyperendemic communities and continue in other communities. It was agreed that reports on ivermectin distribution should include an account of the cost-effectiveness of the programme, as this would be attractive to donors. However, a uniform methodology for this remains to be worked out.

3. Availability and use of a management system for national programme monitoring

A management system being developed as a collaborative effort between USAID, Vector Biology Control and three NGOs - Helen Keller International, International Eye Foundation and Africare - was presented to the Group. The system, which based the collection of data at the level of the household and had a built-in assurance of quality, was found too detailed and therefore unsuitable for the needs of most NGOs. It was suggested that, when developing the second edition of the programme, consideration be given to a system which would allow for the collection of a central core of minimum information plus the collection of any additional information if needed. Meanwhile, the Group decided to develop its own simple management system which would make use of EPI INFO (a free statistical programme for data entry and analysis) whilst awaiting the availability of a modified and suitable USAID management system.

4. Overview of ongoing and planned NGO-supported ivermectin projects

4.1 Latin American Program for the Elimination of Onchocerciasis

The Group was briefed on the progress of the Latin American Onchocerciasis Control Program. The two Inter-American Conferences on Onchocerciasis which were organized in 1991 and 1992 led to the creation of the Strategic Planning Council to oversee the development of national plans. Since then, much progress has been made and the Latin American Onchocerciasis Control Program is due to be launched in January 1993. A trust fund to the amount of US\$ 10 000 000 is being organized by the River Blindness Foundation, which has pledged US\$ 1 000 000 from its own funds and which hopes to have the total funds ready by April 1994. Another committee, the Programme Coordinating Committee, has been created to review national plans and to allocate funding. Funds will start to be allocated as early as April 1993 to the countries whose national plans would have been approved. It is hoped that ivermectin will be distributed in all endemic communities in Latin America by January 1994. Most countries will be working in partnership with an NGO.

4.2 Africare

Africare started a three-year ivermectin distribution in Kwara State, in Nigeria, in November 1989. Three different modes of distribution - mobile teams, community-based (using the house-to-house approach) and clinic-based - have been applied. Over 180 000 people, double the number foreseen originally, will have been treated by the end of 1992. The State Ministry of Health and the local government authorities have been contributing substantial human, financial and logistic input, a sign of the sustainability which the project aims to achieve. Another three-year ivermectin distribution project which started at the beginning of 1992 in Adamawa and Taraba States will cover 150 000 persons, double the number foreseen for treatment. Rapid assessment methods have been used to identify the target population. A three-year distribution project in six prefectures in the south of Chad, funded by the River Blindness Foundation, has started distribution in several communities. In collaboration with the Ministries of Health of Borno, Kogi and Kwara States, in Nigeria, Africare has designed sustainable state-wide ivermectin distribution projects to last over three years and which should distribute over 1.7 million treatments in communities with a prevalence of over 40% by the end of the third year. Furthermore, Africare plans measures to strengthen the capability of the community, local government, and state and national programmes in order to ensure sustainability beyond the end of the project, following the phasing-out of its support.

4.3 Helen Keller International (HKI)

HKI is negotiating with the Ministries of Health of Burkina Faso and Niger to be involved in the implementation of their newly revised devolution plan, which incorporates epidemiological surveillance in sentinel villages in order to detect the occurrence of recrudescence of onchocerciasis. HKI has appointed a country director to Niger, and training of workers for ivermectin distribution and health education has begun. In the Cameroon, in the Central Province, a project is planned to start in 1993 which will treat 100 000 people over three years. Treatment will be carried out in health centres, since the Ministry of Health discourages the use of community health workers. Studies are planned to ascertain the practicality of convincing people to travel to health centres for ivermectin treatment. They will also determine the man/distance and travel time which are practical. There will be an evaluation by age and sex of health centre attendants, to determine the age group which will attend the clinic. HKI is also active in two Latin American countries: in Mexico, it is engaged in modernizing the health information system in Oaxaca and Chiapas States; in Brazil, it is exploring the possibility of working in the onchocerciasis-endemic Yanomani Indian Reserve.

4.4 Sight Savers

Sight Savers is distributing ivermectin in five countries. In Mali, one district is presently being covered, but it is planned to cover four to five districts in 1993 to treat over 300 000 people. In Sierra Leone, distribution is being carried out in one district, but will be carried out in three in 1993. In Uganda, two districts are and will be covered. In Nigeria, one state is being covered and there is a possibility of adding another. In Ghana, staff have been trained, and it is planned to carry out distribution in the forest area to the west. In Guinea, ivermectin will be distributed in one prefecture in 1993. Sight Savers will continue to combine eye care with ivermectin distribution wherever possible. The minimum goal is to distribute ivermectin to 500 000 people.

4.5 Christoffel Blindenmission (CBM)

CBM supports community-based ivermectin distribution programmes in Sierra Leone, Zaire, Ecuador and the Republic of Central Africa. A collaborative programme with the Ministry of Health and the OCP, which started in 1988, is based at the Lunsar Eye Hospital in Sierra Leone. Two mobile teams from the hospital perform outreach distribution, treating approximately 110 000 people annually. CBM supports two programmes in Zaire but their development has been limited because of the unrest in the

country. The first, Dimbelenge focus, Lusambo near Kananga, covering 30 000 people, was started in 1990. The second was started in 1991, is organized by Dr Ukety from Nyankunde and covers 15 000 people in the Uele focus at Dingila to the north-east. In Ecuador, ivermectin is distributed to over 6000 people living around Zapallo Grande to the north-west by Dr Guderian, working in cooperation with the Ministry of Health. In collaboration with RBF and in partnership with the Ministry of Health, CBM is starting (January 1993) ivermectin distribution in two areas to the north-west and south-east of the Central African Republic.

In addition, CBM ensures that ivermectin is available to some 30 hospitals in endemic areas in Africa which are in partnership. MSD supplied 200 000 tablets in 1992 for the treatment of individual patients with the disease who presented to these facilities.

4.6 Organisation pour la Prévention de la Cécité (OPC)

OPC plans, with the assistance of Sight Savers, to fund ivermectin distribution in Mali, Guinea and Senegal. The goal is to treat 100 000 people and the strategy will be community-based distribution.

4.7 River Blindness Foundation (RBF)

RBF has been funding ivermectin distribution through NGOs which are already members of the NGO Coordination Group. Thus it has funded Africare in the distribution of ivermectin in the States of Kwara, Tabara and Adamawa, as well as Borno, in Nigeria. RBF is also funding Africare to conduct ivermectin distribution in six prefectures in southern Chad. Together with CBM, RBF is funding ivermectin distribution in Ecuador and in six prefectures (quasi-national) in Central African Republic. RBF is funding the International Eye Foundation (IEF) to distribute ivermectin in the Division of Dja and Lobo, Southern Province, in the Cameroon; in the Thyolo District in Malawi; and in Guatemala. RBF has also funded the Ministry of Health of Congo to distribute ivermectin in the Brazzaville area and the Ministry of Health of Sudan to distribute ivermectin in the Abu Hamad. RBF is running its own ivermectin distribution projects by agreements with the Ministries of Health in the Cameroon, in the Province du Nord; in Nigeria, in the States of Plateau, Abia, Imo, Edo and Delta; and in Uganda, in all districts not served by other NGOs.

4.8 International Eye Foundation (IEF)

IEF has co-implemented ivermectin distribution with Africare in Kwara State, in Nigeria, over the past three years. In addition, it has provided technical assistance in the areas of project design and evaluation of ivermectin distribution projects in Adamawa and Taraba States. In the Cameroon, in the Division of Dja and Lobo, Southern Province, IEF has been collaborating with the Ministry of Health in the distribution of ivermectin through primary health care, adapted for local conditions with a cost-recovery system in a three-year period. Treatment is through the health centres, which aim to reach 65 000 of the 140 000 people living in the area. In Malawi, IEF has a five-year programme which started in 1990 and which will cover 180 000 of the estimated 250 000 people living in the area. Ivermectin distribution is carried out by mobile teams, community-based distributors, Ministry of Health and mission health centres, and private clinics on the local tea estates. IEF has projects ongoing since 1989 in Guatemala, in the municipalities of Yepocapa and Acatenango in the Chimaltenango Province, where over 12 000 people are being treated yearly through community-based volunteers, "promotores locales". Distribution has been extended to the nearby Suchitepequez Province, in collaboration with the National Committee for the Blind and the Deaf, the Ministry of Health and the Universidad del Valle, drawing on the experience from the first project.

4.9 Mectizan Humanitarian Donation

The Mectizan Humanitarian Donation supplies 20% of the total ivermectin for distribution. Essentially, it is intended to cater for dispensaries located in the zones where there is no mass treatment and for physicians in and outside endemic countries who want to treat a limited number of cases diagnosed as onchocerciasis among their patients.

In addition, it stimulates the development of community-based mass treatment programmes from projects which start in the clinic or pilot projects. It allows continued supply to small treatment programmes which are unable to obtain supplies because of political or social unrest and it helps to collect additional information from the field on such matters as alternative methods of shipment, adverse reaction to the drug, etc. The supply of ivermectin has increased progressively over the years from 41 166 in 1988 to 764 643 in 1992. Most of the requests come from African countries outside OCP such as the Cameroon, Nigeria, CAR and Zaire.

5. Interaction with national authorities

The form which interaction with national authorities should take was discussed at length, as was the plan of activities of the coordinator. Considering the severity of onchocerciasis in endemic countries, it was agreed that efforts should be concentrated in the first instance on Chad, the Cameroon, Central African Republic and Nigeria. In the second instance, Burundi, the Congo, Equatorial Guinea, Gabon, Malawi, Tanzania and Uganda were to be tackled. It was noted that action in Ethiopia, Liberia, Southern Sudan and Zaire has to wait until the security situation improves. The Group decided that the efforts of the coordinator during the first six months should be concentrated on the Cameroon and Nigeria, taking the form of assistance in the planning and crystallization of their national plans.

The following plan of activities was worked out for the coordinator:

Visit to WHO Regional Office for Africa	First week of February 1993
Visit to the Cameroon Republic	National meeting in February 1993 One- to two-week working visit with National Onchocerciasis Coordinator
Visit to Nigeria	6-7 April 1993: NOCP Task Force Meeting One- to two-week working visit to state distribution programmes
Tentative visit to the United States	To make contact with "Interaction", PAHO and US NGOs in the Group

Country group meetings are also planned to be convened by RBF, as follows:

Cameroon Republic, Central African Republic, Chad and Northern Nigeria in July 1993

Malawi, Tanzania and Uganda in September 1993

6. Operational research

6.1 The virtues of operational research in the course of implementing ivermectin distribution for the control of onchocerciasis were discussed. A few operational questions worthy of answers were identified and it was agreed that operational research had to be undertaken to aid in finding these answers. The Group also observed that the River Blindness Foundation or The Edna McConnell Clark Foundation could be approached for funding the research proposal.

The following research themes were identified:

- (1) Long-term effects of annual ivermectin treatment. In recognizing the uncertainty surrounding the lapse of time required to continue annual ivermectin treatment to bring the disease under control and the lack of knowledge on its long-term effects, the Group noted that the controlled studies which have been going on for 4 years in the Cameroon by ORSTOM and in Kaduna by Dr Abiose may be funded for continuation. In this way, these studies will be able to provide the answers. Furthermore, OCP may be urged to continue its studies in Asubende for the same reason, despite the fact that vector control is being conducted there in addition to ivermectin distribution. OCP may be urged to carry out long-term studies in Sierra Leone where control is done by ivermectin distribution alone.
- (2) Because of the cumbersome nature of weighing patients before ivermectin treatment, a simpler procedure, such as height to assess weight, needs to be found. However, since a few extremely tall individuals may be dosed as much as 300-400 µg/kg body-weight, controlled studies need to be undertaken to ascertain if such high doses given to highly infected individuals would not cause excessive Mazzotti reaction, over and above the level which may be provoked by the usual recommended dose of 150 µg/kg body-weight.
- (3) In view of reports that ivermectin given repeatedly over long periods may have a slow macrofilaricidal and/or a permanent sterilizing action on the female *Onchocerca volvulus*, control studies may be undertaken to determine whether ivermectin has a macrofilaricidal action when given in high doses and/or at intervals of 3 months.

6.2 The TDR Initiative on Operational Research for Ivermectin Distribution

The Group was informed of some of the results of TDR collaboration with the Ministry of Health of Nigeria on operational research on ivermectin distribution, which has been ongoing since 1991. Some of the topics dealt with in the first round include rapid assessment, social factors relevant to control, the importance of skin disease and the intestinal effect of ivermectin, as well as the impact of health education on the coverage of distribution. House-to-house distribution with the provision to the heads of families of the requisite number of tablets to treat family members proved to be not always acceptable, as some heads of households withheld the treatment of certain members for several reasons, including ongoing dissension with one of the several wives.

Results on rapid assessment surveys conducted by five groups gave good agreement. In the savanna, as in the forest, the prevalence of nodules and leopard skin proved to be very good indicators

for a given prevalence of skin snip. The prevalence of nodules and leopard skin was higher in the forest than in the savanna. The count of the blind per household is not reliable, whilst the count per village is acceptable. The recommended sample of adult males for examination during the rapid assessment is 50 per 300 population and above. For populations of less than 300, all adult males need to be examined.

The Nigerian Onchocerciasis Control Programme (NOCP) accepted rapid assessment examination (nodule palpation and leopard skin) to replace skin snip for nationwide mapping of onchocerciasis.

In the second and third rounds, topics being treated include classification of severity of onchocerciasis in the forest by relating skin disease to skin snip, multicentre studies on health education for sustained treatment, and monitoring of ivermectin distribution by community-based distributors, for example sending questionnaires to schoolteachers and monitoring communities' mobilization for treatment.

6.3 Nodule palpation for rapid assessment of onchocerciasis

The meeting supported the increasing use of nodule palpation for rapid assessment of onchocerciasis endemicity. However, it expressed some concern at the inconsistent application of criteria to identify communities which are eligible for large-scale ivermectin treatment. It was noted that recent studies had basically reconfirmed the criteria defined during the international meeting on "Strategies for ivermectin distribution through primary health care systems", held from 22 to 25 April 1991 in Geneva, and that large-scale treatment in all communities with a nodule prevalence of more than 20% in adult males would take care of more than 95% of onchocercal blindness.

With the uncertainties around the use of nodule palpation for rapid assessment of onchocerciasis resolved, the Group felt that there was now a need for bringing out a manual giving clear guidelines on the steps to be taken to conduct simple and rapid epidemiological mapping of onchocerciasis by rapid assessment of endemicity levels.

7. Mobilization of resources

To intensify the distribution of ivermectin for the control of onchocerciasis, resources need to be mobilized. Efforts have to be made to increase awareness and stimulate participation in future ivermectin distribution schemes. The following sources were identified as areas where resources could be tapped:

"Interaction" could be mobilized to join the Group.

The primary health care group of NGOs to WHO could be approached in their annual pre-Assembly meeting in May 1993, for dissemination of information to interested member organizations.

A display could be mounted during the Forty-sixth World Health Assembly, in 1993. This could be based on existing photographs and other material available through members of the Group.

A pamphlet could be developed for distribution at this same World Health Assembly. Such a pamphlet, in French and English, should explain what onchocerciasis and ivermectin treatment are about, highlight what action is being taken by the NGO Group, and what assistance can be expected. A statement could be made to the World Health Assembly by one of the member nongovernmental organizations in official relations with WHO.

8. Other matters

NGO membership

The Group decided to make specific efforts to increase its membership to include other nongovernmental organizations which are not necessarily connected with the prevention of blindness. One way of doing this would be to approach "Interaction", an NGO forum grouping a multitude of US organizations. An information meeting could be arranged with the coordinator and some Group members involved with "Interaction", and interested NGOs could be invited to the Third Meeting of the Coordination Group scheduled for December 1993 in the USA. It may be desirable for this group to carry out the epidemiological groundwork involved and indicate to the interested members where they can work. In addition, an approach can be made towards the WHO/NGO group supporting primary health care during the forthcoming World Health Assembly in 1993. This could be an informal meeting during the first few days of the Assembly. In addition, poster stands could be mounted on this occasion, giving information in connection with the Group's activities on ivermectin distribution to control onchocerciasis in endemic countries.

CONCLUSIONS AND RECOMMENDATIONS

The NGO Coordination Group

1. The NGO Coordination Group for Ivermectin Distribution will have to assume rapidly its functions in relation to numerous project developments. It is therefore recommended that:

- the Group should meet twice per year over the first two-year period;
- the venue of the second meeting should be Geneva, but the third meeting could be hosted by an American-based member organization;
- the chairmanship will be for a one-year period, to allow for continuity.

2. The reports of the NGO Coordination Group will be useful for dissemination of regularly updated information on ivermectin programme developments. It is therefore recommended that these reports be made available in English and French, and that they be as widely disseminated as possible through WHO and NGO channels, including the Mectizan Donation Program partners.

Data base

3. There is a need for uniformity and standardization of data collection and reporting by the Group. Different options were discussed and the Group recommended the development of an appropriate simple data base to be undertaken by one of its members, initially making use of EPI INFO and later the USAID-supported software as appropriate.

4. In view of the world economic situation and to continue to stimulate donor interest in funding, it was recommended that reporting of activities give an account of cost-effectiveness. Modalities for uniform reporting should be developed between the Group members.

NGO membership

5. The NGO Coordination Group should be expanded to include more "non-blindness" NGOs, particularly those working in the field of primary health care. It was recommended that:

- (i) in the United States an approach be made to "Interaction", which is an NGO forum grouping a multitude of organizations. An information meeting, with the coordinator and some of the Group members involved, could be arranged where appropriate, and interested new NGOs could be invited to the Third Meeting of the Coordination Group, scheduled for December 1993 in the United States;
- (ii) an approach be made to the WHO group of primary health care supporting NGOs, in connection with the forthcoming World Health Assembly in 1993; this could be through an information meeting during the first few days of the Assembly.

Project development

6. In discussing project development, the Group agreed that the main function of the coordinator should be the development and crystallization of national or intercountry ivermectin distribution programmes, integrated within the primary health care system and/or other health delivery systems. In this regard, high priority should be given to the programmes of Cameroon and Nigeria over the next six months.
7. Intercountry meetings of geographically grouped countries, for example (1) Cameroon, Central African Republic, Chad and Northern Nigeria, and (2) Malawi, Tanzania and Uganda, should be envisaged to promote the development of these countries' programmes in consultation with WHO/AFRO and, when necessary, with the Onchocerciasis Control Programme in West Africa.
8. Member NGOs should try to integrate ivermectin distribution into other health care delivery systems such as EPI and to evaluate the outcome.

Resource mobilization

9. In order to increase awareness and stimulate participation in future ivermectin distribution programmes, it is recommended that:
 - (i) a pamphlet be prepared by the Group, explaining what onchocerciasis and ivermectin treatment are about, highlighting what action is being taken by the NGO Group, and what assistance can be expected. Such a pamphlet should be made available in English and French; it could be distributed during the World Health Assembly in 1993 in connection with a display (see below);
 - (ii) a display on NGO collaboration with WHO for ivermectin distribution be prepared for the 1993 World Health Assembly. This could be based on existing photographs and other material available through the Group members.

Operations research

10. (a) The streamlining of field operations for the most effective distribution of ivermectin under a variety of conditions will be of great importance for future programme developments. It is therefore recommended that operational research issues be regularly included in the NGO Coordination Group considerations, paying attention to research needs and opportunities, in coordination with other WHO programmes.
 - (b) It is of particular practical importance that height-for-weight assessment of patients' dosing be applied. To investigate if, as a result, higher-than-usual levels of Mazzotti reactions would occur in patients being treated with doses of ivermectin in excess of 300 µg/kg, it is recommended that the Onchocerciasis Chemotherapy Project (OCT) of WHO be asked to compare the dose of 400 µg/kg to the standard 150 µg/kg through a study at the Onchocerciasis Chemotherapy Research Centre in Ghana.

(c) The possible macrofilaricidal effect of ivermectin merits further investigation. It is recommended that the TDR Programme, through its Filariasis Steering Committee, be approached as to a study utilizing more frequent dosage (three-monthly) both at the present standard treatment and at higher doses (400-600 $\mu\text{g}/\text{kg}$) for an extended period of time (4-6 years).

(d) The Group noted the need for preparing a manual with guidelines for epidemiological mapping of onchocerciasis by rapid assessment of endemicity levels. It recommended that TDR be contacted for funding of such an undertaking.

AGENDA

Opening of the meeting

Election of Officers

Adoption of Agenda

1. Proposed terms of reference of the Group
2. Development of common information system (data base) for NGO-supported ivermectin distribution projects
3. Availability and use of management systems for national programme monitoring
4. Overview of ongoing and planned NGO-supported ivermectin projects
5. Interaction with national authorities
6. Operations research
7. Mobilization of resources
8. Other matters

Conclusions and recommendations

Closure of the meeting

ANNEX 2

LIST OF PARTICIPANTS

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