REPORT OF THE EXTERNAL MID-TERM EVALUATION OF THE AFRICAN PROGRAMME FOR ONCHOCERCIASIS CONTROL
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OCTOBER 2010
Acknowledgements

This report was prepared by a team of independent international consultants. It represents the final stage of an intensive process of literature review and consultations to determine progress and make suggestions for the future. We acknowledge the invaluable insight provided by the various persons we interviewed during the process at global, regional and country level. We appreciate the excellent support we received from all the APOC secretarial, administrative and technical staff who facilitated the entire work and made this review more manageable than it will otherwise have been. Special gratitude is being extended to Dr. Uche Veronica Amazigo, Director, for her unerring support throughout this entire exercise.

Above all, we are encouraged immeasurably by the vision and zeal of the Regional Director, Dr Luis Gomes Sambo, CSA partners and the countries ministerial leadership whose enthusiasm for seeing the elimination of onchocerciasis become reality in the African region, has lead to the high quality of work that we were privileged to assess.

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Limitations to this review document

This report is mainly limited by the time allotted for work and our inability to represent in detail all the mass of evidence made available by the secretariat and various countries. In a general sense, the comments and suggestions are limited to the extent that available data and information synthesis permits. However, the direction and emphasis on the future was not lost and we were able to articulate to a high extent, how far the strategic direction has been achieved and what it might take to get countries past the elimination target. We do not in any way suggest in our comments that deliberations on all the issues is finalized. Any recommendations and suggestions made need to be discussed extensively with the APOC management team and its governance stakeholders for consensus.

Abbreviations

APOC African Programme for Onchocerciasis Control
SIZ Special Intervention Zones
AIDS Acquired Immune Deficiency Syndrome
CDDs Community Directed Distributors
CDTI Community Directed Treatment with Ivermectin
CDI Community Directed Interventions
CSA Committee of Sponsoring Agencies
CSA Community Self-Monitoring
EPI Expanded Programme of Immunisation
GAVI GAVI Alliance
GIS Geographical Information Systems
GSM Global Management Systems
HIV Human Immunodeficiency Virus
HSAM Health Education, Sensitisation and Advocacy
HLF High Level Forum
ITNs Insecticide-treated bed nets
IRSP Institut Regional de Santé Publique
JAF Joint Action Forum
LF Lymphatic Filariasis
MDA Mass Drug Administration
MDP Mectizan Donation Programme
ME Monitoring and Evaluation
MDGs Millennium Development Goals
NGDOs Non Government Development Organisation
NTDs Neglected Tropical Diseases
NOTF National Onchocerciasis Task Force
OCP Onchocerciasis Control Program
PAHO Pan American Health Organisation
PHC Primary Health Care
RAPLOA Rapid Assessment Procedure of Loa loa
REA Rapid Epidemiological Assessment
REMO Rapid Epidemiological Mapping of Onchocerciasis
SWAp Sector Wide Approach
TA Technical Advisers
TB Tuberculosis
TCC Technical Consultative Committee
TRC Technical Review Committee
TDR Tropical Disease Research
TZ Transmission Zone
UNICEF United Nations Children Fund
WHO World Health Organization
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Executive Summary

Background

1. In 1995, the African Programme for Onchocerciasis Control (APOC) was launched as a follow up to the highly successful Onchocerciasis Control Programme (OCP). APOC was created to develop a sustainable community managed distribution of Ivermectin for 90 million people annually, protecting an at risk population of 120 million. In 2007, APOC mandate was renewed leading to the development of a Phase II and Phasing out period and Addendum for the Plan of Action and Budget 2008-2015. The APOC phasing out strategy was clear on the need to work with African governments to help develop country-led feasible, realistic end-game strategies for maintaining the important gains that have been achieved against onchocerciasis in Africa. Early this year the 127th Meeting of the APOC Committee of Sponsoring Agencies (CSA) and the Joint Action Forum (JAF) decided that a mid-term evaluation of APOC should take place and the report submitted to JAF 16, in December 2010.

2. The objectives of the evaluation were provided as:
   • To review progress made by APOC towards establishing country-led systems through community empowerment for controlling onchocerciasis as a public health problem in endemic Africa (2005-2010) and beyond.
   • To review progress/contributions made by APOC towards strengthening of health systems, in particular at the community level.
   • To assess the capacity of APOC to co-implement its mandate for the control of onchocerciasis with the control of Neglected Tropical Disease (NTDs) and other health interventions,
   • To facilitate (guidance to countries) a paradigm shift from control to elimination of onchocerciasis infection and its transmission in specific areas.

3. This report is a result of the evaluation that took place between July and September 2010 and conducted by a team of six experts. Based on extensive literature review, country visits, interviews with a wide range of stakeholders, this report reviews progress made by the African Programme for Onchocerciasis Control (APOC) against its revised 2007 goal “to have established, by 2015, a country led system capable of eliminating onchocerciasis as a public health problem in all African countries endemic with onchocerciasis, both those within the geographical area covered by APOC’s mandate and those in the ex-OCP area that are causing concern”.

4. The TOR required the Evaluation Team to not only examine the progress of APOC but also to be futuristic and comment on how it sees APOC beyond 2015.

Achievements

5. The evaluation team agrees that the African Programme for Onchocerciasis Control (APOC), an outstanding private-public partnership for disease control, remains one of the leading health intervention success stories in Africa. The APOC Secretariat has performed creditably over the evaluation period. After 15 years, APOC has helped the disease-endemic countries to successfully extend CDTI coverage to a total population of approximately 68.4 million people from approximately 1.5 million in 1997, as Ivermectin (Mectizan®) reaches 133,000 communities in 15 countries across sub-Saharan Africa in 2009.

6. APOC has treated approximately 71% of the eligible population. This includes several countries affected by security issues and translates into a total of 133,000 out of a targeted 146,000 communities. The number of projects with therapeutic coverage under 65% in 2009 declined in one year from 6 to 2 projects in stable countries and from
29 to 15 projects in post-conflict countries. The progress so far means that control of onchocerciasis as a public health problem has been attained in a majority of APOC communities and with accelerated efforts to scale up should move almost all countries towards control targets by 2015.

7. The continuing commitment of Merck to provide Mectizan® for as long as it is needed is particularly pertinent given recent evidence to suggest that elimination of onchocerciasis is possible through effective application of ivermectin based treatment alone within localized geographical project areas. Research results from foci in Mali, Senegal and Kaduna State in Nigeria show that after 16-19 years of ivermectin treatment the prevalence of microfilaria has reduced to zero. Although the data is based on clearly defined small areas of high transmission and not the broader geographical transmission zones, the signal that elimination of onchocerciasis infection is possible adds a new dimension to the work of APOC.

8. Onchocerciasis elimination presents a paradigm shift towards a positive new reality. Elimination is defined as “the effective application of control activities leading to a sustained interruption in transmission of onchocerciasis to levels that allows treatment to be stopped within a defined transmission zone”. A transmission zone is defined as ‘a geographical area, where transmission of O. volvulus occurs by locally breeding vectors’. The APOC Secretariat has been proactive in using the Krigging method to simulate elimination from project areas to transmission zones and has been able to demonstrate a surprising level of congruence (97%) between areas where Community Directed Treatment with Ivermectin (CDTI) is implemented and the predictive Krigging maps.

9. Information that over time continued control activities will ultimately lead to localized ‘elimination’ has already been communicated to countries. It is however important that the operational definitions are understood and that their implications are clearly communicated to countries and all stakeholders. For clarifying exactly what needs to take place in practice for moving from control to localized elimination and stopping treatment, a series of steps has now been established. Each step has specific manageable activities to be undertaken within a specified period. These are presented in Figure 1 below.

10. The well tested Community Directed Treatment with Ivermectin (CDTI) approach, implemented by community-directed distributors (CDDs) is the core community empowerment model adopted by APOC. The CDTI strategy has a demonstrated track record of success in reaching rural

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Table 1: Geographic and therapeutic coverage breakdown by status of countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Geographic coverage (%)</th>
<th>Therapeutic coverage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td>Post-conflict countries</td>
<td>63</td>
<td>82</td>
</tr>
<tr>
<td>Stable countries</td>
<td>97</td>
<td>98</td>
</tr>
</tbody>
</table>

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Figure 1: Steps towards certifying and maintaining elimination status

- **Delineation and validation of a transmission zone**
  - Krigging REMO map with nodule prevalence
  - National Consultative meetings (tentative delineation of TZ)
  - Assessment and validation in surveys

- **Satisfying the criteria for stopping CDTI in the transmission zone**
  - History of CDTI (number of years, coverage)
  - Surveys (are entomological and epidemiological criteria satisfied?)

- **Confirmation of low infection and transmission in a post-stopping setting**
  - Entomological and epidemiological survey, 3 years after stopping CDTI
  - Elimination certification when results of survey satisfy criteria
  - Resume treatment when results indicate recrudescence

- **Routine surveillance after elimination certification**
  - Resume treatment when results indicate recrudescence

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**Routine surveillance after elimination certification**

- Resume treatment when results indicate recrudescence
populations and ensures that a high proportion of the population at risk receives the drug.

11. Because CDTI is easily adaptable and replicable, it has proved effective as a platform for Community Directed Interventions (CDI) and has been used in co-implementation of onchocerciasis control with other health interventions such as the distribution of bednets for malaria control, lymphatic filariasis treatment, Vitamin A supplementation, control of soil transmitted helminths, primary eye care and immunization. In 2008, more than 11,531,128 persons benefitted from interventions related to malaria control (home-based treatment of malaria and insecticide treated mosquito nets); in total, 268,718 CDDs were able to reach 104,974 communities and more than 37,507,494 million people were covered with additional health interventions. There is clear potential for countries to increase their levels of co-implementation of onchocerciasis control with that of other NTDs, especially where the CDTI approach is already being implemented.

12. Through CDTI, APOC has been supporting countries with community health systems strengthening. APOC has recently taken this a step further with the development of curriculum and training module for Community Directed Interventions which is being introduced to Universities and schools of nursing in 18 countries. In addition to the provision of systematic supply of transport (vehicles, motobikes and bicycles), computers and generators to programme countries, APOC has recruited Technical Assistants for five post-conflict countries with weakened health systems in order to assist them with improving their coverage rates

13. Viewed from a systems perspective, CDI is a commendable example of how a focused disease intervention can contribute to Primary Health Care systems strengthening for integrated service delivery within the context of the Ouagadougou declaration. The results achieved are contributing significantly to attaining the Millennium Development Goals.

Challenges

14. On a risk benefit scale, neither the at-risk populations, their national governments, nor any of the development partners can afford to allow onchocerciasis to recrudesce, roll back the impressive improvements in health, and reverse the spectacular developmental and agricultural returns on the nearly $1.1 billion investment that has been made over the past four decades.

15. The move towards ‘elimination’ means that Onchocerciasis control is still an unfinished agenda. There is a lot of preparatory work still needed before many of the elimination-related surveying, surveillance and certification activities can take place. The processes involved in stopping treatment will require different surveillance and diagnostic interventions to those used for onchocerciasis control; this includes different tools for epidemiological and entomological surveillance. For instance, skin snip tests and human baits for catching flies are unlikely to be appropriate or attractive surveillance methods when the physical disease manifestations are minimal after cessation of treatment. The science for acceptable alternatives is only just emerging.

16. Both post OCP and APOC countries need to continue surveillance and MDA for some years (OCP countries in limited foci; APOC countries in larger areas) to maintain the considerable investments and achievements of those programs. There is hard reality that must now be faced: to control onchocerciasis in Africa and to attain the potential for localized elimination of infection and stopping treatment, continuing dedicated external assistance is required. In proportion to what has already been invested, this is unlikely to be a substantial amount. As external resources are decreasing rapidly and there is increasing competition with multiple global disease needs, a more focused approach is needed to secure the investments needed.

17. The evaluation team noted significant health systems weaknesses in post-conflict countries and limited capacity in stable countries.
The Country Exit Plans submitted to APOC by nine countries did not take ‘elimination’ into account and are now below necessary standards for ensuring sustainability. The cost per treatment is slowly creeping up and current health expenditure levels in most countries are too low to take up, match or sustain the continued investment required. The full cost implications for both control and the move to elimination are yet to be properly ascertained by any country. In the Evaluation Team’s opinion, country health systems in the short to medium term remain weak for devolution of all functions to governments at country level.

18. With countries already adopting the higher coverage targets recommended for interrupting transmission and seeking guidance on when treatment can be stopped on the one hand, and acceptable epidemiological and entomological tools not yet ready for mass usage, there are clear challenges now facing APOC Management. These are in addition to the future challenge that will be presented at community level. Communities are used to being told that it is necessary to take ivermectin even when there are no symptoms and changing this message to one explaining that in some areas treatment can be stopped will require great care and skill.

19. At national level, countries are increasingly moving towards integrated NTD policies and planning and are gradually putting in place adjusted implementation structures. CDDs are being called on at district and community level to assist with other health programs and different intervention models. The reality of this is that CDI is coming under siege from those seeking rapid results and preferring to pay incentives for community participation in the short-term, rather than investing in the more lengthy process of community systems strengthening associated with the APOC model. APOC has to increase interaction with the other NTD programmes at international, regional and national levels, to promote and facilitate their adoption of CDI and to advocate for consistent practices at community level. It is a challenge that will need to be resolved if countries are to attain their vision of Primary Health Care articulated in the Ouagadougou Declaration.

20. Limited country capacity for moving to ‘elimination’ has been alluded to earlier and this is also true of the APOC Secretariat’s capacity. It surprised the Evaluation Team how much has been achieved with the low number of technical staff and current skills mix. Going forward, the current staff strength will be hard pressed to deliver on all the objectives of the Phase II and Phasing out period and the Addendum for the Plan of Action and Budget 2008-2015.

**Recommendations**

A. Control and elimination programme

21. APOC should continue the mapping of the state of each transmission zone. This will allow the Programme and partners to be precise on when and where to stop ivermectin distribution for each of the countries in this category. This should include entomological and additional epidemiological studies to identify all infection sources and verify level of infection outside the core hyper-endemic areas around a focus to back up the findings in human populations. The work should take place ideally within the current phase of APOC financing ending 2012. The results should be disseminated to the scientific community and shared at the WHO Regional Committee for Africa.

22. Activities targeting elimination should be limited to localized project areas that qualify under long lasting ivermectin treatment with high coverage. All other project areas should be supported to continue control activities through country led approaches. While the technical tasks continue, it is important APOC manages the expectations of countries and communities regarding the stopping treatment process, elimination and co-implementation. Regular updates of progress and explanations of what that means for CDTI in practice will be essential. This must be given due importance and set within a comprehensive communications strategy for 2015 and beyond.
23. Given our sense of work to be done, APOC will need a minimum of one additional Entomologist and two additional Epidemiologists to undertake the work. Armed with knowledge from the mapping a multi-disciplinary team of experts should be put together to develop a comprehensive strategic plan with costs for the development of capacity and resource needs for (i) surveys for delineating transmission zones and stopping treatment, (ii) monitoring and entomological and epidemiological surveys once CDTI stops, (iii) define activities for the 3-year ‘treatment follow-up period’ and (iv) verification, certification and status maintenance process. The national, regional and international responsibility areas on how to implement these and technical assistance needs should be clearly defined in the strategic plan. These would make a significant contribution, not only to onchocerciasis but also to the ‘science of elimination’ for diseases of poverty.

24. There is no quick fix as control to elimination under current scientific knowledge is linked to a fairly predictable time lapse between initiation of therapeutic treatment and consideration for elimination. Merck has set the example with its commitment; other APOC partners also need to join in and commit to attaining this goal in the potential oncho elimination countries.

25. New memorandum of understanding needs to be developed and signed between countries with the potential towards elimination and funding partners to determine how resources may be mobilized and dispersed in support of eligible programmes in countries. This should ameliorate donor dependency and encourage country ownership and commitment.

26. APOC should undertake comprehensive research to explore the dynamics of existing CDIs with special focus on incentive and sustainability issues and options; this will enable CDI to be better standardized and replicated as a platform for Community Health Systems Strengthening and for supporting co-implementation.

27. Based on the research findings, guidelines for Community Health Systems strengthening within the framework of of the Ouagadougou declaration should be tabled at the next WHO Regional Committee for Africa to be adopted by all countries for implementation. This will provide a firm support for the introduction process of the CDI curricula developed with support of APOC and for the adjustment and dissemination of the CDI range of tools.

28. A funding window should be considered under the current Trust Fund to encourage countries wanting to establish community systems based on the guidelines for co-implementation to have access.

C. Support transition to countries

29. Health policy and systems analysts are urgently required to support countries in developing Program Plans, Budget and Exit Strategies. In our opinion, a cost effective approach will be for APOC to recruit personnel with expertise in Health Policy and Systems and Health Economics to work with a network of experts to assist countries.

30. Countries should be encouraged to take the lead in developing a comprehensive framework for NTDs drawing on their experience with onchocerciasis control and similar programmes and to situate or integrate onchocerciasis control within this. A conscious effort should be made to ensure that comprehensiveness does not undermine the variability in achievements and goals to be reached by individual programmes. WHO-AFRO should be supported to provide Technical Assistance to countries.

31. It is suggested that APOC organizes a consultative meeting with selected APOC countries to engage other disease control entities in the wider debate on health systems development, and to focus on policy development, donor coordination, funding
and resource allocation and addressing human resource challenges. Other control programs can be invited to share and discuss experiences with the aim of mainstreaming onchocerciasis control program experiences in country health policy developments.

D. Enhancing APOC Secretariat

32. Looking beyond 2015 a “transformed-APOC” that is lean and efficient is advocated for. This needs thorough consideration in the context of the paradigm shift towards elimination, the emerging NTD agenda and the potential for transition to countries. There are many evolving variables that will need to be taken into account and the scope of this evaluation was too limited for giving a clear indication of its exact form or function. A consultant(s) should be recruited to assist.

33. Elimination and transformation are both concepts that can be interpreted in a variety of ways and create different expectations arising from the way they have been interpreted. It is important that APOC avoids any miscommunication and, above all that communities understand the targets set and any changes that are made to these. A communications strategy should be developed and implemented to convey the right messages and to manage raised expectations.

34. APOC has succeeded because of the partnerships it has developed at all levels. The APOC partnership is likely to be put under severe strain with the emerging NTD agenda and the scramble for new funding. APOC needs to be able to engage with partners and support them in mobilizing and accessing some of the additional resources coming into the NTD area for onchocerciasis. APOC will need to be proactive and to provide leadership to ensure that the partnership does not unravel and that it has the necessary capacity for participating in strategic planning and resource mobilization processes for NTDs in general. This should be taken into consideration when the organizational consultant is recruited.

Conclusion

In conclusion, the Evaluation Team shares the view that:

“What is so significant (about APOC) is that, by means of a partnership with over 70 partners, we’ve (communities, countries and development partners) been able to join together to achieve a programme which has the prospect of eliminating this disease completely on the continent of Africa.” — James Wolfensohn, former President of the World Bank

35. APOC is well managed with a clear and ambitious objective. It has performed successfully in treatment and prevention of onchocerciasis, has learned from external evaluations, works towards integration, generates and utilizes scientific evidence, and demonstrates commitment to sustainability. One observation made is that APOC is an evidence-based success story that very few are aware of. The organization needs to be more proactive in publicizing information about its achievements while nevertheless carefully managing the dissemination of information around elimination. APOC has a core competency in onchocerciasis control but this does not adequately position it to become the lead agency for NTDs. It is however unparalleled in establishing CDI systems that can be used to assist countries strengthen their Primary Health Care systems and to support other health interventions through co-implementation.

36. Ongoing support by partners and strengthening of resources at the Secretariat will enable APOC to complete most of the activities outlined in the new strategy and addendum, and to work towards a strategy that ensures long-term sustainability of APOC’s achievements in countries. The onchocerciasis environment after years of APOC programme management has changed and new strategies are now required for collaboration in the emerging NTD environment. The APOC partnership needs to provide leadership and to contribute its experiences to the development of NTDs interventions and the management of challenges emerging in the NTD environment.

37. APOC will continue to face challenges on the journey towards elimination and transition to country leadership. The two objectives though initiated are far from attaining reasonable levels of preparation and implementation. It is contradictory to expect APOC to exit the scene by 2015 and yet to expect to protect investments and attain the anticipated results. There will be a continuing need for regional and technical oversight and coordination.

This evaluation supports the need for a ‘transformed-APOC’ for the future beyond 2015. Ultimately, this is a decision that lies within the WHO management system and the governing body of APOC but early dialogue with the contracting partners and a sense of what the direction may be will be important for helping shape partner financing strategies and for maintaining the focus and commitment of staff during the period of transformation.
1. Introduction

1.1 Background

1. In West Africa, the highly successful 30-year-old Onchocerciasis Control Program (OCP), which was first based on aerial spraying in savannah areas of 11 disease-endemic countries and later added mass drug administration (MDA) in savannah and forest areas, ended in December 2002. Launched in 1974, the OCP has broken transmission in most of its target area and prevented more than 200,000 cases of blindness. The African Program for Onchocerciasis Control (APOC) was launched in 1995 to help develop sustainable annual MDA with Mectizan®, and health education in the remaining 19 affected countries in Africa, using a “community-directed treatment with ivermectin” (CDTI) approach.

2. The APOC partnership expects to spend approximately U.S. $184 million by the time it ends in 2015. After 15 years, APOC has helped these disease-endemic countries to successfully extend CDTI coverage to a total population of approximately 68.4 million people from approximately 1.5 million in 1997, as ivermectin reaches 133,000 communities in 15 countries across sub-Saharan Africa in 2009. It has treated approximately 71% of the eligible population including several countries affected by security issues. A number of countries are on the way to elimination while others are securely on the control chart.

3. Neither the at-risk populations, their national governments, nor any of the development partners can afford to allow onchocerciasis to recrudescence, roll back the impressive improvements in health, and reverse the spectacular developmental and agricultural returns on the nearly US $1.1 billion investment that has been made over the past four decades. Both post OCP and APOC countries need to continue surveillance and MDA for some years (OCP countries in limited foci; APOC countries in larger areas) to maintain the considerable investments and achievements of those programs. The hard reality that must now be faced is that to control onchocerciasis in Africa, particularly, those in post-conflict countries is still largely dependent on external assistance, and yet the external resources are now decreasing rapidly and competing with multiple global disease needs.

4. In 2007 the Technical Consultative Committee of APOC (TCC) recognized “the opportunity that exists to expand the use of the Community-Directed Intervention developed by APOC for onchocerciasis and the existing CDTI structures in participating countries to support the prevention and control of other neglected tropical diseases”. The kind of collaboration anticipated would provide opportunities to jointly address technical issues, such as the

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Onchocerciasis: Microscopic infectious larvae of the filarial worm Onchocerca volvulus enter humans with the bite of tiny Simulium black flies, which breed in fast-flowing rivers. Onchocerciasis (river blindness) is manifest as the larvae mature to adults, gather in nodules, mate, and produce millions of microfilariae that migrate to the skin, where they cause intense itching and are available to be picked up by subsequent black flies and continue the cycle, and to the eye, where they may cause blindness after several years of repeated infections. The itching may prevent victims from working, or concentrating in school, and causes some to disfigure their skin by repeated scratching. Onchocerciasis can be controlled by annual MDA with ivermectin (Mectizan; Merck, Rahway, NJ) at a dose of 150 µg/kg, estimated by height.

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4 Report of the twenty-third session of the Technical Consultative Committee (TCC) 11 – 12 September 2006, Ouagadougou
safety of co-administration of drugs, and the use of existing tools and competencies within APOC to complete the mapping of the various tropical diseases in individual countries.

5. In response to the recommendation from TCC23, endorsed by JAF12, and given its growing recognition as a ‘best practice’ APOC was required to encourage countries integrate the CDTI approach to support national health system strengthening and encourage its use to support co-implementation of onchocerciasis control with Neglected Tropical Diseases and Malaria.

1.2 The changing environment for disease and health development

6. There is a changing global health architecture going forward with the recognition that scaling-up in health requires a far more coherent approach. This recognition takes many forms: a growing awareness that health outcome related targets (focusing on the Millennium Development Goals, MDGs5) cannot be achieved without adequate investment in the health systems that underpin health service delivery. Countries and their development partners are seeking to make significant increases in the level of investment and activity in health with a focus on revitalized Primary Health Care. They recognize that unless they scale-up current efforts they are unlikely to achieve national or international health related outcome goals.

7. The MDGs led to several important initiatives. This includes the GAVI Alliance, the Global Fund for Malaria, TB and HIV AIDS and the Global Network for NTDs an Alliance of international organizations working to control and eliminate NTDs by 2020, the International Trachoma Initiative, founded by Pfizer and the Edna McConnell Foundation; the Schistosomiasis Control Initiative, started by the Gates Foundation and Imperial College of London; Liverpool Associates in Tropical Health, which provides technical research on NTDs; and the WHO Global Plan to Combat Neglected Tropical Diseases 2008-2015.

6 The health related MDGs encompass MDG1 (hunger/ malnutrition), MDG4 (child mortality), MDG5 (maternal health) and MDG6 (Communicable diseases).

8. Over the period the environment for addressing health priorities has changed. The world has witnessed several global health initiatives including safe motherhood programs and Bamako Initiative. Since the mid 1990s several countries have undertaken health sector reforms with Sector Wide Approach as the basis of these reforms. New and major players on the funding scene have included Foundations like Bill and Melinda Gates Foundation. Currently there is a global movement toward NTDs and funds are being mobilized for this.

1.3 Phase II and phasing out APOC

9. In 2007, the decision was made to phase out APOC in 2015 as the institution for onchocerciasis control in Africa without jeopardizing the health of the affected population. APOC was requested to develop a “Phase II and Phasing-Out Period” plan and budget4. Four basic principles underlie APOC’s proposed strategy for the period beginning in 2008 and ending with closure of the program in 2015.

a. Community ownership and empowerment, as embodied in the CDTI process
b. Sustainability, as embodied in the programme’s drive to ensure that its onchocerciasis control activities will be progressively integrated into national health systems and, by closure of the Programme in 2015, implemented under the full financial and administrative responsibility of the countries concerned
c. Evidence-based decision making, as reflected in APOC’s use of scientific research – epidemiological, entomological, parasitical, operational and sociological – to support its decisions
d. Partnership, as witnessed in the Programme’s harnessing of the strengths and expertise of countries, NGDOs, donors, and other international organizations.

10. The APOC phasing out strategy was clear on the need to work with African governments to help develop country-led feasible, realistic end-game strategies for maintaining the important gains that have been achieved against onchocerciasis in Africa. Though it may never be possible to eradicate onchocerciasis from Africa, it is possible to eliminate the infection and interrupt transmission in most of the foci. Therefore, through these strategies, the countries with support of partners should continue to pursue all reasonable avenues to discover potential ways to break transmission of *O. volvulus* and eliminate onchocerciasis among their affected populations.

11. The Technical Consultative Committee, CSA and JAF all agree that “the opportunity exists to expand the use of the Community-Directed Intervention developed by APOC for onchocerciasis [can be used] ... to support the prevention and control of other neglected tropical diseases”7. APOC has since been mandated to explore the use of the CDTI model a vehicle for the concomitant implementation of multiple health interventions8 particularly the Neglected Tropical Diseases that use CDI approaches. In addition, the Joint Action Forum (JAF) mandated APOC “to have established, by 2015, a country-led system capable of eliminating onchocerciasis as a public health problem in all African countries endemic for onchocerciasis, both those within the geographical area covered by APOC’s mandate and those in the ex-OCP area that are causing concern

1.4 Objectives and terms of reference for the evaluation

12. The 15th Joint Action Forum (JAF) decided that a mid-term external evaluation of APOC should take place and the report submitted to JAF 16, in December 2010. The objectives of the evaluation were provided as:

- To review progress made by APOC towards establishing country-led systems through community empowerment for controlling onchocerciasis as a public health problem in endemic Africa (2008-2015) and beyond.
- To review progress/contributions made by APOC towards strengthening of health systems, in particular at the community level.
- To assess the capacity of APOC to co-implement its mandate for the control of onchocerciasis with the control of Neglected Tropical Disease (NTDs) and other health interventions,
- To facilitate (guidance to countries) a paradigm shift from control to elimination of onchocerciasis infection and its transmission in specific areas.

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1 Report of the twenty-third session of the Technical Consultative Committee (TCC) 11 – 12 September 2006, Ouagadougou
The guidance note from the CSA suggested that the scope section should include findings, lessons learned and recommendations in the following areas:

a. To what extent APOC’s organizational structure, managerial support and coordination mechanism supports national and local CDI implementation; APOC’s potential to contribute to the control of other NTDs; if the strategy of APOC will be beneficial to scaling up country-led NTD programs

b. So far, how has the establishment of country-led systems been capable of controlling oncho through the CDI strategy has been achieved so far and likelihood that the planned oncho result will be achieved, and if not, what progress towards their achievement can be expected.

1.5 Methodology

All members of the evaluation team met in Accra from 8th to 9th July 2010. The purpose of the meeting was four fold:

a. To discuss with APOC Management the APOC program since its inception till now and to receive any relevant documents that will be needed for the evaluation.

b. To discuss amongst the evaluation team, the terms of reference and guidance notes prepared by CSA so as to reach a common understanding of the work before the team and seek any clarification from the APOC Secretariat on this.

c. To agree amongst the team, allocation of work and time lines

d. To undertake field visit to projects in Ghana

At the end of the meeting a format for collecting and drafting sections to be used for each section of the report was developed and a guide to the content of the sections was agreed on by the team. In addition to two face to face meetings in Accra and Ouagadougou, the team had four teleconferences and exchanged several emails. A special Google group was set up to facilitate the exchange of information amongst the evaluation team.

Several documents on the work of APOC were made available by the APOC Secretariat for our review. These documents cover reports, published materials in peer review journals and grey materials available generally. Four countries were selected in consultation with APOC Secretariat with certain characteristics to support analysis namely:

a. Ghana – ex OCP country, designated as a Special Intervention Zone with recent CDTI

b. Tanzania – has sustainability plan and well-established decentralization system and APOC support for co-implementation

c. Cameroon – where co-endemicity with loiasis is occurring.

d. DRC – francophone, post conflict and larger burden of disease

In each country extensive consultation took place at all levels of the health system with program staff, CDDs and policy makers as well as NGDOs and donors. We used the report format and question matrix drafted at the team briefing as guides for question areas. The time schedule did not permit systematic coverage of all topics in each location, so priority issues were selected that responds to the objectives. Interviews were conducted with a cross section of persons from government institutions, donors, pharmaceutical agencies, NGDOs and APOC staff. APOC Secretariat generated the initial list and a snow-balling sampling technique was used to get to others mainly on a recommendation basis.

Each member of the evaluation team was given a subsection to develop towards a synthesis report. A special section of a subgroup of the team met separately in the UK to review and synthesis all materials that have been produced by individual members paying attention to evidence, gaps and signaling to each member further work that is needed to support the synthesis. A new format was developed for the synthesis in readiness for the final report to be developed by all team members after a zero draft was submitted to all. When the penultimate version was produced, a debriefing session was held with senior APOC staff to discuss the report and to validate information and different sources that has been used in writing the report.
2. Progress in coverage and elimination

2.1 Progress in therapeutic and geographic coverage

18. At the end of 2009, APOC projects approximate therapeutic coverage was 71% of the total population (table 1). This is well above the threshold of 65% defining adequate therapeutic coverage needed for controlling onchocerciasis as a public health problem. Between 2008 and 2009 there has been an impressive improvement in therapeutic coverage from 46% to 64% in countries in or emerging from conflict. The only countries below the recommended threshold were Equatorial Guinea (47%) and Liberia (36%). In all 133 000 out of 146 000 communities have been served.

19. APOC developed the (REMO) tool for identifying communities likely to be at high risk of infection. REMO uses geographical information — particularly the presence of river basins — to identify likely foci of infection and then assesses a small sample adults for the presence of onchocerciasis induced nodules. The delineation of APOC projects has been based on the results of REMO. In total, Rapid Epidemiological Mapping of Onchocerciasis (REMO) has been done in over 11,600 communities in 19 countries.

20. In Ghana, a survey was conducted in 2008/2009. The highest focus of infection was observed in the Daka river basin where Ekumdiepe had a prevalence of 21.9% with a CMFL of 0.65ml/skin snip. The survey team observed worrying prevalence rates found in

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Box 2: Contribution of APOC to MDGs

MDG 1: Reduced morbidity has resulted in healthy lives gained. APOC has contributed significantly to maintain the productivity of artisanal and rural farming families; kept crop production from falling yet further; improved nutrition through de-worming effects of ivermectin and thereby improved overall living standards.

MDG 2: Distribution of ivermectin has led to better eye and skin health allowing children more time in school among the risk population.

MDG 4: The distribution of ivermectin de-worms and helps improve nutrition with benefits for reduced anaemia and a boost to the immune system. Through co-implementation, the CDTI platform has enabled Vitamin A supplementation, bednets and other child interventions to reach millions of children.

MDG 5: Approximately 48% of persons receiving ivermectin by end of 2008 were women. Reduced skin disease and severe itching improves overall maternal health and promotes the duration of breastfeeding.

MDG 6: As a disease goal onchocerciasis control is probably one of Africa’s leading success stories least told. It is the disease with one of the best systems including HMIS contributing to health systems strengthening.

MDG 8: APOC is a successful community-private-public partnership that has successfully transcended frontiers. It holds the credit for an excellent community directed programme partnering with the world’s largest and longest running operational drug (Mectizan®) donation programme provided by Merck & Co.

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Table 1: Geographic and therapeutic coverage breakdown by status of countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Geographic coverage (%)</th>
<th>Therapeutic coverage (%)</th>
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<tbody>
<tr>
<td></td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td>Post-conflict</td>
<td>63</td>
<td>82</td>
</tr>
<tr>
<td>Stable countries</td>
<td>97</td>
<td>98</td>
</tr>
</tbody>
</table>

* Ref. APOC Progress report, draft 22 sept. 2010, WHO/APOC
the Pru river basin particularly at Dumanafo 14.4%, Damongo 9.3%, Jerusalem 12.4%, Bita Akura 11.2%, and Akrakuku 3.2%. One of the findings of the Ghana Onchocerciasis mapping is the discovery of new Oncho foci that have no access to Ivermectin. These are the Afram Plains district of the Eastern region, Ho municipal in the Volta region, and Amanse Central district in the Ashanti region. These districts have never been known to be endemic for onchocerciasis, and so, were not exposed to Ivermectin tablets.

21. Recently, the REMO data have been re-analysed, using a spatial statistical Krigging analysis, which interpolates REMO results over the whole sampled area of Africa. This is one of the many achievements of APOC in its preparation towards assisting countries to take responsibility for the programme. The resulting Krigging maps were used for identifying additional areas which require treatment, or the need for further REMO surveys. The maps were also used as a first step in delineating transmission zones, the recently identified geographical unit for assessing onchocerciasis elimination.

22. The spatial statistical Krigging analysis results produced predictive onchocerciasis transmission zones. When the predictive map was overlaid with project activities and CDTI coverage area maps, it was found that congruence between the krigging maps and the CDTI coverage area map was approximately 97% for the areas for which the modeling has been done. The explanation for this was that projects through community initiatives extend their coverage to areas beyond the precise project boundaries.

23. The serious adverse events which can occur in loa-loa infected persons has led to APOC undertaking rapid assessment procedure of Loa loa (RAPLOA) in areas where community-directed treatment with Ivermectin is indicated. RAPLOA has been conducted in 7 APOC participating countries. A total of 3429 villages were surveyed in Angola (261 villages), Cameroon (600), Congo (43), DRC (2166), Equatorial Guinea (87), Nigeria (113) and Sudan (159).

2.2 Facilitating guidance to countries for elimination

24. At a conference on eradicating onchocerciasis in Atlanta in 2002, it was concluded that onchocerciasis is not eradicable worldwide using current tools due to the major barriers in Africa (Dadzie et al. 2003). However, evidence that it is possible to eliminate the disease in some settings in Africa with Ivermectin treatment alone has recently emerged from Senegal and Mali (Diawara et al. 2009) and is supported by promising findings from Guinea Bissau and Kaduna State in Nigeria. The growing evidence led APOCs governing body, the Joint Action Forum, to approve an additional objective for the programme, namely to develop the evidence base on when and where Ivermectin treatment can be stopped, and provide guidance to countries on how to prepare for and evaluate cessation of treatment where feasible (APOC 2008).

25. As one of the first steps, a categorization of APOC projects was made based on the duration and coverage of CDTI treatment in each project. In theory, stopping treatment can be considered where projects have had a minimum of 10 years of annual treatment, and at least 72% weighted therapeutic coverage for the period. Control as a public health problem may have by then already been reached a number of years before. Using these criteria, it is predicted in the report that the projects are likely to eliminate infection and interrupt transmission as follows. Out of the 107 projects, 6 are predicted possible to declare elimination of infection and interruption of transmission before end of 2012, 29 by the end of 2012, 33 by the end of 2015 and 39 beyond 2015.

12. APOC 2008 Addendum for the plan of action and budget 2008-2015; Ouagadougou, APOC/WHO
13. APOC 2010 ‘moving from control to elimination where feasible, forecasting and categorization of APOC projects, Ouagadougou; APOC, June0
evidence on lead up to elimination is provided in Annex III. Since then, conceptualization of the elimination process has been evolving. It was realized that the APOC-project is not necessarily the appropriate geographical unit for implementation of the elimination process. The appropriate geographical unit of elimination has been coined ‘transmission zone’ (TZ) and is defined as ‘a geographical area, where transmission of *O. volvulus* occurs by locally breeding vectors’. This zone can be regarded as a natural ecological and epidemiological unit for the elimination process. Cessation of treatment after 2015 may have to be decided by countries on results of entomological studies.

26. Information on the possibility of stopping transmission and of APOC’s support for the move from control to focussing on elimination has already been communicated to Government partners. Exit plans have however been put on hold as they cannot be realistically developed until after elimination plans have been undertaken. It is also understood that the need to understand the practical implications of elimination has delayed the final withdrawal of APOC support from a number of projects.

27. On field visits, the evaluation team found that health personnel at district level were well aware of the news and most were familiar with the revised targets of 80% minimum for therapeutic coverage and 100% for geographic coverage. Some health teams were clearly working towards these targets and working towards stopping transmission and, ultimately, treatment. Health personnel met during the field visits expressed their need for guidance on treatment issues: such as the implications for duration of coverage in areas where 2-3 year old children have multiple nodules but are not yet eligible to start treatment.

28. The key challenge is that while there is evidence that transmission can be interrupted, the science for predicting this, and for mass surveillance which avoids painful skin snips, has not yet been defined. APOC is still learning by doing and will not be in a position to answer many country-level questions until after 2012. Thinking in transmission zones is a major paradigm shift compared to the previous thinking in administrative APOC-projects, as they do not bear any kind of relationship to project areas. There may be several TZ in one project, TZ may cover parts of several projects, or may even be part of different countries, in particular when rivers form the boundary between countries. This conflicts with earlier recommendations regarding the need to realign projects with administrative boundaries for greater integration.

2.3 Issues for further consideration towards elimination

29. When evaluation team members asked project staff if the revised coverage targets would be difficult to achieve and maintain, there were very similar responses. It was widely agreed that a lot more HSAM activities, specific IEC materials and training would be required; in some districts with very remote communities, additional resources for transport. There are thus implications for additional funding requirements.

30. A series of steps have now been identified which will need to be undertaken for determining when treatment can be stopped. Some of these are reliant on technical advances which have not yet been finalised or proven, such as the DEC patch as an alternative to skin snips for surveillance and the possibility of replacing human baits for fly capture with pheromone laced fly traps. The science is just emerging around the paradigm shift and this brings with it the need to redefine time lines. Admittedly this is a non-predictive exercise.

31. There are broad concerns that stopping ivermectin in formerly meso/hyperendemic or high risk areas that border low risk areas which have not had CDTI; recrudescence could occur and risk jeopardizing the substantial gains already made. Given that current literature suggests that the duration of treatment may need to be continued to up to 14 years and at a high level of coverage, the alarm bells are justifiably ringing. Recent studies in Ghana have raised other concerns relating to the possible

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development of resistance of the parasite to ivermectin; these have yet to be confirmed.

32. In view of all the steps to be taken, the road from starting to define transmission zones to confirming that there is no early recrudescence after cessation with treatment will probably take at least 4 to 5 years. This means that the transmission map of oncho cannot shrink much beyond current levels before 2015, and many of the elimination activities will take place after 2015. Whereas the disease has been controlled as a public health problem in many communities in countries, there is no expectation in the evaluation team’s view that the levels of coverage of the total population in relation to transmission intensity, prevalence and community micro-filarial load will be sufficient to stop transmission within the next five years in all countries. In some countries, this will happen, as mentioned above, the evidence from Mali, Senegal and Kaduna in Nigeria show that interruption of transmission of infection may have happened before those studies.

33. Following the path to ‘elimination’, there will need to be an increasing shift in onchocerciasis activities from CDTI to epidemiological and entomological surveys. The expertise and training required for conducting epidemiological and entomological and surveys are quite different. Many countries will only have limited survey expertise by 2015, and this will be mainly restricted to the first phases of the elimination process. During the period 2001-2009, only 3% of capacity building of nationals and NGDO country staff concerned epidemiological surveillance\(^\text{15}\).\(^\text{15}\)

34. Where co-implementation involves other drugs, there will be a continued role for health staff using current training approaches in addition to the need for new survey-related skills. Guidance is also required where ivermectin treatment for onchocerciasis is co-implemented with lymphatic filariasis, which is also treated with ivermectin. Distribution will need to continue until neither disease requires ivermectin treatment.

35. It is the view of the evaluation team, that there is a potential communications challenge to be resolved. This has three dimensions. Firstly, there is general talk of ‘elimination’ rather than stopping treatment following the ending of transmission in local areas – i.e. localise elimination. This needs clarifying and careful communication in order to manage expectations and avoid confusion. Secondly, the road to elimination is not one for which countries have the necessary knowledge and expertise and are clearly expecting continued APOC support. With APOC’s original funding period having already been extended, there are expectations that APOC will now continue to exist and to support elimination activities. Third, communities, project and health service personnel need to realise that the science of oncho elimination has not yet caught up with the news that it may be possible. Clear guidance on the implications of this will be essential to avoid coverage levels falling or projects stopping treatment based on unproved assumptions. If effective control can be achieved then communities would be ready to stop treatment as soon as this can be scientifically confirmed.

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15 Update of APOC PAB 2008-2015 Indicators, WHO/APOC, version 21Sep2010
3. CDTI effectiveness and co-implementation

3.1 CDTI and system effectiveness

36. The APOC ‘Phase II and phasing out period” plan and budget defines sustainability and funding support beyond 2015 as “…100% of oncho control (will be) borne by government and NGDOs … (and) implies that in most CDTI areas, treatment will reach at least 65% of the population at risk … (and treatment) will become an integral part of the national or local health care services of all endemic countries”. A directive had since gone out to countries to present exit strategies and sustainability plans. CDTI is a community directed approach in which the distribution and administration of Ivermectin to the community is undertaken by the community itself. The community understands the nature and importance of the intervention, and determines the appropriate time and mode of distribution that will ensure accessibility and maximum coverage.

37. The CDTI approach responds to one of the central tenets of primary health care; the need for participation and ownership by communities in their health and health care. It has been argued that this model is essential for the empowerment of communities; a critical foundation for sustainable public health interventions. Empowerment is regarded as having been achieved when communities can sustain implementation of existing interventions, and also expand into other areas of perceived need. “Empowered communities” therefore means not only taking charge of existing interventions but also taking initiative on new interventions. There are seven main features of the APOC model of CDTI as shown in box 3.

38. With about 603,000 CDDs delivering Ivermectin to communities with a total 68.4 million people in 2009, the CDTI approach has effectively demonstrated the potential of empowering communities in their health. The ultimate test is to improve and sustain the coverage of the target populations with the interventions. The evaluation team analysis is presented in table 2.

Box 3: Main features of APOC Community Directed Treatment with Ivermectin (CDTI)

- Community choice of Community Directed Distributors (CDD) is essential.
- Community has control of timing of the intervention
- CDD is accountable primarily to the community. This provides a good indication of ownership and sustainability. If coverage fall short of the desired therapeutic and geographic levels, the community and their leaders are able to address it appropriately
- CDD works to community determined incentives
- Communities are able to self monitor based not only on targets determined by health systems but also through self identified targets and indicators. Targets include recognition of best performing individual CDDs in terms of coverage, record keeping etc; as well as best performing communities compared to neighbouring villages.
- CDDs maintain a comprehensive census of the population of the community
- CDDs are trained and responsible for ongoing record keeping for monitoring of intervention
Table 2: Progress in integrating CDTI into country led systems

<table>
<thead>
<tr>
<th>Elements of CDTI</th>
<th>What is working well</th>
<th>What is not working well</th>
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| Community choice of Community Directed Distributors (CDD) is essential. | The CDDs chosen by the community have the imprimatur of the community leaders and are therefore respected, are willing to work on terms determined by the community and have a higher level of retention.  
It has been possible through this mechanism to introduce gender issues both at the level of compliance to treatment and in human resources in providing women with opportunities to become CDDs. | CDDs selected by the community for CDTI are approached directly by front-line health staff for other interventions without consulting the community. 
Remuneration offered through by other programmes becomes the main motivating factor for the CDDs and present problems for commitment to less well paid programs and overall sustainability of health interventions that are not well funded. |
| Community has control of timing of the intervention | Communities decide on optimal times to enhance coverage taking into consideration issues such as weather, religious and cultural events. 
There are now (2007) 117,000 communities that have taken responsibility for Ivermectin distribution. APOC has improved on the system for funds release by linking in 2008 fund release to the WHO Global Management System. This has improved the timing of release of logistics and provision of new equipment and replacement of old one to facilitate CDI activities under normally running programs. | Community is usually informed about the intervention but timing and logistics are now increasingly being based on the effectiveness of the supply chain management and availability of funds. 
This is an issue particularly in countries whose funds have been withheld or reduced as a result of failure to submit budgets or reports, fund availability by government and development partners in post-OCP countries and strength of the health system where service provision has been integrated or conflict has resulted in coordinated systems failure. 
In many settings, communities are receiving interventions that are actually funded by external donors and the districts are under pressure by programme managers to implement what they are asked for. |
| CDD is accountable primarily to the community. This provides a good indication of ownership and sustainability. If coverage falls short of the desired therapeutic and geographic levels, the community and their leaders are able to address it appropriately. | Communities have been responsible for obtaining drug supplies, mobilizing members of the community 
All APOC and country reports show that there is a good coverage for therapeutic and geographic levels. 
Communities have been known to provide feedback as part of community-self monitoring, in which coverage rates are presented to peers and formal health sector representatives. | At the sub national level, the “project management” of Oncho control activities has led to a poor sense of ownership amongst some health professionals viewing it as a “community program”. 
In many projects, CDI-related activities compete with other “well-resourced” vertical programs with consequences as highlighted in point 2 above. 
In some settings, community stakeholders such as community based organizations and NGOs are consulted by health professionals solely for planning and in kind or financial support. 
Lack of communication and transparency has fuelled suspicion around incentives reserved by Government for CDDs. In 2008 and 2009, less than 10% of communities conducted CSM and fewer have hold SHM. 
Community participation is sometimes tokenistic particularly when the extent of “community involvement” is for social mobilization CDDs are also asked by district officials to implement other public health activities without consulting the community. 
“The chief of the health centre is our boss” (quote from a CDD). |

1 The term community volunteer is often used in the literature to highlight the fact that this is an unpaid workforce. However is has been highlighted (Pers Comm: Akogun, Sept 3 2010) that ‘volunteerism’ implies self nomination and personal altruism. The CDDs in this context are nominated by their communities and the recognition is an honour.
2 Katabarwa et al., “Community-directed interventions strategy enhances efficient and effective integration of health care delivery and development activities in rural disadvantaged communities of Uganda.”
3 “Community-directed interventions for priority health problems in Africa.”
4 Katabarwa et al., “Involvement of women in community-directed treatment with ivermectin for the control of onchocerciasis in Rukungiri district, Uganda”, Katabarwa, Habomugisha, and Agunyo. “Involvement and performance of women in community-directed treatment with ivermectin for onchocerciasis control in Rukungiri District, Uganda.”
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<th>Elements of CDI</th>
<th>What is working well</th>
<th>What is not working well</th>
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<tr>
<td>CDD works to community determined incentives</td>
<td>The CDI model is cost effective, financially sustainable and at “a cost the community and country can afford” Multi country studies have shown that intrinsic incentives are important to CDDs and although they do express a desire for remuneration, this does not significantly affect their willingness to serve their communities</td>
<td>A trend towards globally determined incentives is emerging. Recently funds have been obtained for providing bicycles to CDDs through a donation from Global Network for Neglected Tropical diseases. It has been decided that the bicycles will be given to both male and female CDDs particularly those involved in integrated mass-drug administration of NTD control. It is not clear how this decision came about and its impact on existing community determined incentive systems and choices. In Cameroon, the government pays CDDs a small incentive for each person treated.</td>
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<td>CDDs are trained and responsible for ongoing record keeping for monitoring of intervention</td>
<td>Communities have taken responsibility for conducting community census. APOC is currently in the process of developing a system to digitize the paper based records of CDDs as a valuable health data source at the community level. An outstanding feature of CDI has been the annual training of large numbers of community distributors (CDDs) for enumerating the population, distributing ivermectin, HSAM and record-keeping. The strategy for 2008-2015 aimed to train an additional 550,000 CDDs and to ensure a ratio of 1 CDD trained to every 100 people in the 117,000 communities receiving treatment. The number of CDDs trained and retrained over the last three projects years were 2006/7 (271,113); 2007/8 (345,765) and 2008/9 (420,327).</td>
<td>In many of the countries, health information systems are weak and record keeping is ad hoc and erratic. This is because of the low levels of literacy level of many of the CDDs. There are concerns that the CDI model has led to a requirement for vertical reporting and not benefiting from any existing health system information strengths no matter how minimal. The target is for 1:100 head of population. Only two countries have attained this ratio. Nigeria has a 1:210 and 1:771 in Equatorial Guinea.</td>
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<td>Communities are able to self monitor based not only on targets determined by health systems but also through self identified targets and indicators. Targets include recognition of best performing individual CDDs in terms of coverage, record keeping etc; as well as best performing communities compared to neighbouring villages.</td>
<td>APOC with assistance of country experts built capacity of CDI implementers in disease mapping; CDI strategy, disease surveillance, report writing, data collection and administration and financing. APOC has developed a tool for community self monitoring to empower communities monitor progress against their own indicators and targets.</td>
<td>Monitoring is increasingly being based on indicators and targets set by the health services or by funding agencies with no involvement of the communities</td>
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<td>’Opportunity cost’ involved in stakeholder consultations to develop relationships with and support empowerment of both affected communities and across the different levels of the health system, community engagement in the design and implementation, commitment to regular and timely supply of materials and support.</td>
<td>The opportunity cost is the commitment to establishing sustainable CDI systems as part of a process of community empowerment and community health systems strengthening as against paying for short term health workers to deliver time-spaced single disease intervention. The model is based on a form of social contract and an implicit social capital where community members are assumed to have a hierarchy of needs which puts long term sustainability over short term incentives.</td>
<td>Other programs in co-implementation have expressed concern about the tradeoff between expenditure and meeting funding targets and this less tangible process of engaging community when there is not commitment beyond the short term delivery of an intervention. Communities are therefore being disempowered by the advent of interventions wanting quick results and partners are unwilling to invest the time needed for establishing the CDI model. Direct financial incentives are being provided by partner programmes to CDDs and community members. This can affect trust and generate suspicions between CDI/CDDs and their front line mainstream health worker.</td>
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5 “declaration_almaata.pdf.”
3.2 Gender in Program operations

39. The non-participation of women as CDDs was identified as a concern by APOC partners early in the inception of the program and KAP studies were undertaken to identify obstacles to their involvement. Since then the importance of gender has been highlighted in APOC operations and targets set to achieve gender balance in the appointment of CDDs at the community level. In 2008 the TCC called for disaggregation of CDD data by sex and information on gender related attrition of CDDs. There was also a recommendation to investigate whether increasing female CDDs has an impact on therapeutic coverage; a field study is to be funded by APOC.

40. APOC has recently appointed a gender expert to undertake a number of activities to address the gender issues within communities. A gender mainstreaming policy is being developed that takes gender into account through project planning, management and capacity building both at the level of APOC head quarters, in APOC countries and in affected communities.

41. It was suggested to the Evaluation Team that an analysis of the gender issues has been undertaken for Cameroon, Nigeria, DRC, Tanzania and Uganda for data collected between 2008 and 2010. Women currently represent 24.2% of CDDs. Data from 2009 however show that a significant proportion of people treated (approximately 61%) in 14 APOC countries were women although only 18% of CDDs were women. The Central African Republic reports 0-1.5% of women CDDs. Reasons for the disparity are mixed but relate largely to cultural and religious barriers. There remain areas where CDDs are still predominantly male where for instance the community leaders have taken on the responsibility themselves or where

it is culturally inappropriate and unsafe for women to take on a role that takes them unescorted, door to door to other people’s homes. It has also been suggested that insistence on gender balance runs counter to a community directed intervention; so while APOC can encourage communities through highlighting the importance of the gender issues, it is ultimately up to the communities to appoint those who they deem most appropriate for the roles.

42. While achieving gender balance may have its inherent advantages, these have not been well researched and identified and therefore the treatment of gender has been somewhat uncritical and tokenistic. There are a plethora of gender issues in disease control both from the perspective of those experiencing the conditions and from the perspective of service and care providers. There might for instance be a different dynamic involved in the non-monetary incentives that apply to female CDDs that may differ from their male counterparts. It has been reported from some sites that CDDs are more likely to be women where the opportunity costs are very high and the position therefore carries less status. However, these issues need to be systematically investigated.

43. The improvement in the empowerment of communities as a whole would have advantages for individuals. The impact of empowerment on the performance of and opportunities for CDDs is an important question. Within this, a gender based analysis could inform the contribution of the gender balance strategy. Furthermore, there are opportunities, with co-implementation, to assess the effects of gender on uptake and compliance with single and combinations of various interventions both from the perspective of community members

16 Katabarwa, Habomugisha, and Agunyo, “Involvement and performance of women in community-directed treatment with ivermectin for onchocerciasis control in Rukungiri District, Uganda”, Katabarwa et al., “Involvement of women in community-directed treatment with ivermectin for the control of onchocerciasis in Rukungiri district, Uganda.”
17 Preliminary data from Dr Diep (gender expert)
18 This was reported in communities in Tanga District in Tanzania.
19 In the conservative religious areas in Northern Nigeria, women going out as distributors would be unsafe for them (Akogun, Sept 4 2010 – Pers Comm)
20 Katabarwa et al., “Involvement of women in community-directed treatment with ivermectin for the control of onchocerciasis in Rukungiri district, Uganda.”
22 Bump, Akogun
and CDDs. Data on these issues could provide an important contribution to the progress of MDG3.

### 3.3 CDI and co-Implementation

In 2008, governments and international organizations significantly scaled-up efforts to address NTDs. For the first time, G8 leaders put NTDs on the global health agenda and called for sustained action over the next 3 to 5 years to address NTDs. In addition to new U.S. commitments, the UK announced a commitment of $80 million over 5 years toward NTD control and elimination. Canada and Japan have also provided some funding for NTD control. The private sector has also made significant investments. The pharmaceutical industry provides deeply discounted and donated drugs (estimated $1 billion since 2006) to countries to treat NTDs. The Gates Foundation has provided new resources to the field, including a 2009 grant of $34 million to the Global Network for NTDs to establish regional strategies and funding mechanisms and leverage new investments to eliminate some NTDs and reduce disease burden by 2020. Building on the USAID program, President Bush launched the Neglected Tropical Diseases Initiative, a 5-year, $350 million initiative to provide treatment to more than 300 million people in Africa, Asia, and Latin America, and increase the number of focus countries to 30 by 2013. USAID initially targeted 5 focus countries in 2006 (Burkina Faso, Ghana, Mali, Niger, and Uganda), and has since expanded to include 7 more (Haiti, Sierra Leone, the southern part of Sudan, Nepal, Bangladesh, Tanzania, and the Democratic Republic of Congo).

There is growing evidence that synergistic gains can be made from linking the control programs for onchocerciasis, lymphatic filariasis, Schistosomiasis, Soil transmitted helminthes, Trachoma and other diseases in a framework that allows for co-implementation. Indeed, combining other disease control solutions offers economies of scale, efficiency and cost saving, along with maximising benefits for recipients especially among poor, poly-parasitized populations enduring multiple disease threats. The World Health Organisation in 2006 provided a guide on a possible integrated control approach. In 2007 the Technical Consultative Committee of APOC TCC recognized “the opportunity that exists to expand the use of the Community-Directed Intervention (CDI) developed by APOC for onchocerciasis and the existing CDI structures in participating countries to support the prevention and control of other neglected tropical diseases.” The kind of collaboration anticipated would provide opportunities to jointly address technical issues, such as the safety of co-administration of drugs, and the use of existing tools and competencies within APOC to complete the mapping of the various tropical diseases in individual countries.

### 3.3.1 The CDI framework

As noted by the multi-country study, implementation of CDI across diseases using preventive chemotherapy involved addressing six major processes. The elements of APOC CDI have already been outlined in the section on CDTI and community empowerment. From our understanding of the other diseases and CDI methods we conclude that a generic CDI system is indeed feasible to engage with and adapt to deliver community directed services or to achieve Preventive Integrated Chemotherapy through co-implementation. The Evaluation Team have organized the elements identified in the multi-country study and the APOC CDTI framework in figure 2.
47. The APOC document, “Phase II and Phasing-Out Period” notes that “…the proven effectiveness of CDTI has made the strategy not only a model for the delivery of other health interventions, but also increasingly, a vehicle for the concomitant distribution of multiple health interventions”.

3.3.2 Progress in co-implementation

48. There is significant evidence that countries on their own or with APOC support are already using the CDI model for co-implementation. The number of CDI projects co-implementing other health interventions along with ivermectin treatment has increased from 22 in 2005 to 73 in 2009. It is envisaged that all projects will be co-implementing by 2015. For seven countries for which data was made available, additional interventions were: distribution of Insecticide-treated bed nets (ITNs), treatments for lymphatic filariasis, eradication of Guinea Worm, and schistosomiasis, vitamin A supplementation, deworming, immunization, and health education on HIV/AIDS.

49. More than 11.5 million persons benefitted from interventions related to control malaria (Home-based treatment of malaria and insecticide treated mosquito nets). About 269,000 CDDs were able to reach 105,000 communities and more than 37.5 million people covered with additional health commodities. This is 66.1% of the treated population for CDI in 2008 (36.7 million persons). Distribution for seven countries available is presented in figure 3.

50. In Nigeria, the CDTI structure has provided an entry point for other health interventions such as Vitamin A supplementation, elimination of Lymphatic Filariasis, control of Schistosomiasis and distribution of Insecticide Treated Nets (ITNs) for Malaria and LF Control. Co-implementation with VAS using the CDTI structure was done in Benue, Taraba, Cross River, Kogi, Kwara, Akwa Ibom, Adamawa, Plateau, Nassarawa, and Borno, over 2 million children and women being reached. In Plateau and Nassarawa States LF elimination, schistosomiasis control, VAS,
In Kaduna and Taraba States, community rehabilitation of blind persons in few communities is being undertaken using the CDTI structure. In most Sightsavers’ and some CBM–assisted States, efforts are on-going to integrate simple primary eye care (e.g. screening for cataracts) into CDTI. Funds accessed for LF and VAS have been used to boost CDTI. Where these have been done, coverage with Ivermectin has been boosted or sustained and individual compliance levels are increasing.

51. In Cameroon, the National Onchocerciasis Control Program has formally piloted co-implementation of ivermectin and Albendazole in two projects in the North and far North regions for oncho and lymphatic filariasis. In many districts, CDDS are invited to participate in public health programs such as malaria, EPI, polio immunization, distribution of mebendazole and vitamin A during Child Health and Nutrition Days. This involvement is usually organized by the District Health Management Team sometimes without referring back to the community. Community supervisors are usually recruited to work for other programs such as HIV/AIDS, community based case surveillance of disease prone to epidemics or the four diseases targeted for elimination by EPI.

52. In the Democratic Republic of Congo, a National Policy for Neglected Diseases 2008 has been developed which adopted an integrated approach for the five NTDs. This approach has been further adopted in the draft Strategic Plan 2011 – 2015 for integrated fight against Neglected Tropical Diseases. A coordination unit was created in 2009 but not yet fully operational. When discussing co-implementation, it became obvious to the Evaluation Team that the term is used in a variety of ways.

53. In February 2008 APOC conducted epidemiological integrated mapping of the NTDs, including training of surveyors and health technicians in Equatorial Guinea. REMO/REA, RAPLOA, ICT, urine filtration and Kato techniques were used for onchocerciasis, loiasis, lymphatic filariasis, schistosomiasis and STH detection, respectively. Cross-sectional surveys were conducted in 90 villages/communities/schools, selected all over the country (10 in the Island and 80 in the Mainland). The work was cofinanced by APOC, the Sabin Institute, Exxon Mobil and Liverpool Centre for NTDs.

54. Ghana has a national Neglected Tropical Disease Unit. Interestingly, it is only responsible for Lymphatic Filariasis and Onchocerciasis. Schistosomiasis is under the Disease Control Division of the Ghana Health
Service. It currently has no national program officer in the health sector. It is however implemented under the Schools Health Program in the Ghana Education Service and co-implemented with Vitamin A distribution. Though not a perfect act, Ghana has attempted a number of co-implementation activities which has generally been judged as the ideal way for the future. Through initiatives by District Directors of Health Services, there have been joint programs around community-directed mass drug administration that have included lymphatic filariasis, schistosomiasis and vitamin A distribution.

55. These take-up figures clearly show that APOC has the capacity to support countries to develop the needed platform to co-implement health interventions. The APOC CDI training manual for CDDs has been undergoing revision to include materials on LF and schistosomiasis and should be available soon. APOC/WHO/AFRO have also developed an integrated disease mapping protocol.

3.3.3 What has not worked so well

56. From the country reports, a number of issues have hindered attempts at co-implementation. The most significant of these have been delayed fund release and late receipt of drugs, capacity to implement and concerns around service organization, control and elimination targets.

57. Malawi is another country in which APOC is supporting oncho control activities. This country was visited by the TCC Chair in August 2009. Onchocerciasis has been decentralized and integrated into existing health systems. However there are data management problems, delay of MDA due to co-implementation with LF and delay of arrival of albendazole. There are also issues with human capacity at national and district levels and CDD numbers. It was recommended to APOC to release capital equipment and support training in data management at all levels. At the MOH; APOC was called upon to support the inclusion of onchocerciasis in the new SWAp, retrain district officers on CSM and encourage its implementation.

58. Some countries have moved towards a SWAp arrangement to improve coordination of, multiplicity of vertical programmes including NTDs. Success is limited as the diversity of management procedures, delivery arrangements and incentive policies continue to fragment the system. This makes co-implementation of CDTI with other community health interventions a very challenging endeavour.

59. There were some notable concerns in the APOC approach during field visits by the Evaluation Team. A stakeholder in Tanzania noted some under performance of a recent APOC-supported NTD pilot program in 5 regions in the country (including some without onchocerciasis). The pilot which is a year old, in this particular individual’s opinion, has resulted in a new NTD initiative now being developed by the Ministry of Health with funding support coming from USAID that will be managed by an international non-governmental organization.

60. Beyond service delivery Baker and others (2010) using three interventions summarized guidance provided for mapping, monitoring and surveillance. They noted a number of similarities and differences in approach across the diseases. From the various elements constituting service intervention, the state of control and goal orientations such as elimination, it is clear that attempting to integrate NTDs into a single project implementation framework will create significant problems at the national level. However, coordinating resource mobilization and delivering interventions through a Community Health System based on the CDI model is feasible and brings significant synergistic benefits.

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3.3.4 A positive look forward

61. Different opinions have been expressed regarding the possibility of APOC taking on NTDs and its capacity to do so. These views bear more on global prevalence, targets for elimination, timeframe for delivery of services and established mechanisms for advocacy, resource mobilization and long standing systems for programme management. Most of these exist because of the historical development of each of the specific area disease portfolio. The Evaluation Team considers these as valid observations and suggests that APOC does not transform into an NTD Control organization. Given the emphasis on elimination, APOC’s disease core competency is in onchocerciasis. This is an unfinished business and requires a lot of work for which the science is just emerging. It is prudent that the organization focuses on this single disease.

62. The above notwithstanding, APOC has developed adequate competency in establishing community based health systems. This is a health system area that is core to Primary Health Care and requires dedicated activities that can be standardized, replicated and supported as a platform for co-implementation. The process is laborious and takes time to establish. Not all partners are prepared to wait. As one NGDO representative stated, “the establishment of the CDI model is not a quick fix, and USAID wants numbers30.” Consensus building and advocacy remain to be done to assure different partners of the significance of the approach. APOC, more than any other organisation has developed the technical competency for transferring this knowledge and the credibility to reassure any skeptics regarding sustainability. This is a golden opportunity to scale up community empowerment and community health systems strengthening that should not be missed.

63. Although the APOC CDI manual is being adjusted to take account of lymphatic filariasis, the vast array of other APOC tools and materials remain focused on onchocerciasis. Many of these should be adaptable for use by other programmes but work needs to be done to facilitate this. There does not seem to be a systematic process in place for doing this and it is important that the additional human resource needed for this is provided APOC.

30 Quotation from a representative of an APOC partner NGDO
4. APOC contribution to country led health systems and ensuring sustainability

4.1 Planning and budgeting

66. The exit plans put understandable emphasis on financial planning rather than focusing on governance issues. However, it is important to consider the integration of onchocerciasis control activities within national health systems. This is one of the PAB indicators and so far 44 of 111 CDTI projects are considered to be integrated.

67. Participation and inclusiveness in planning Oncho control/elimination activities is inadequate as these activities tend to be confined to technical staff within directorates in charge of disease control or preventive services without involving directorates of planning and finances. At the sub national level, the “project management” of Oncho control activities has led to a weak sense of ownership. Some health professionals view it as a “community program”. In many projects, CDTI-related activities are competing with other “well-resourced” vertical programs. The leadership and ownership that should lead to co-management of the CDTI is a significant challenge and usually dependent of individuals rather than on a stable system.

68. Many countries are moving towards SWAp approaches and basket funding. This facilitates efficient planning and management of resources at District and National levels but requires some flexibility on the part of donors. Currently, the only country where APOC has been able to adopt this approach is Ethiopia. This is understandable given the complexity involved in finding goals commensurability. For instance, a SWAp-like approach is not always congruent with an elimination goal.
without technically adjusting the framework. One published paper states that disease control programs “… would do well to adapt certain aspects of eradication programs…. (that carry with them) the unavoidable demand that eradication programs must operate with near-ruthless focus …(requiring) obsessive focus, attention to detail and accountability at all levels to a degree that is not true for a control program.” 31

69. A further move away from integration in country systems has developed with the APOC's move to the WHO GSM system for financial payments. With the aim of improving project efficiency, funds are now transferred directly to projects. This by-passes the usual in-country systems and sets APOC apart from other country-owned programmes. This can create frustration at the central level because this procedure is perceived as distorting hierarchy, accountability and answerability chains.

70. National Onchocerciasis Task Forces (NOTF) have been established in some countries and bring together international NGDOs and health officials. The current capacity of the NOTFs and their usefulness in an integrated system is not well articulated or understood. This is going to pose greater challenges if clarity is not established before full integration. This difficulty ties in with the complexities identified in SWAp settings.

71. Since its inception, APOC has aimed to train national teams to undertake all activities taking place in-country and ultimately to learn to train others. APOC’s commitment to capacity strengthening is evident both from the emphasis on formal training activities throughout the Plan of Action and Budget 2008-2015 and the Addendum and also from the participatory approach to implementing activities. The skills and experience of staff associated with oncho programmes are actively developed through opportunities to train and monitor the work of others.

72. In order for CDDs to deliver ivermectin at community-level, capacity-building has taken place from front-line health facility level staff, throughout districts and regions to national level and have covered a wide range of topics: in technical skill areas and in management and administration. APOC Secretariat has not aggregated the data for this but partial figures as in table 3 give an indication of people attending formal training since 2000.

73. A new programme of Masters Scholarships in public health, epidemiology, entomology and community health was introduced in 2009 with an allocation of $400,000; 15 candidates were put forward from 10 countries. The programme specifies gender balance and this was achieved with the first batch of awards made.

31 Global Health Magazine, Summer, 2009, Dr. Donald Hopkins, The Allure of Eradication, Page 17

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**Table 3: Capacity building in selected technical areas, 2000–2009 (partial data)**

<table>
<thead>
<tr>
<th>Areas of capacity building of nationals &amp; NGDOs country staff</th>
<th>Number of persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data management and analysis (statistical or spatial analysis)</td>
<td>277</td>
</tr>
<tr>
<td>Collection and management of Data</td>
<td>606</td>
</tr>
<tr>
<td>Collection of geographic coordinates and management of Data</td>
<td>201</td>
</tr>
<tr>
<td>Disease mapping (REMO/RAPLOA)</td>
<td>883</td>
</tr>
<tr>
<td>Integrated mapping of NTDs</td>
<td>33</td>
</tr>
<tr>
<td>Entomology</td>
<td>135</td>
</tr>
<tr>
<td>Epidemiological surveillance</td>
<td>102</td>
</tr>
<tr>
<td>Independent Participatory Monitoring</td>
<td>486</td>
</tr>
<tr>
<td>Evaluation of the sustainability of a project</td>
<td>468</td>
</tr>
<tr>
<td>Monitoring implementation of sustainability plans</td>
<td>168</td>
</tr>
<tr>
<td>Masters in Public health/Epidemiology</td>
<td>15</td>
</tr>
</tbody>
</table>

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4.2 Training and Capacity-building

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74. A curriculum for medical and nursing schools has been developed as a means of integrating the CDI strategy into health training; new health personnel will graduate with an understanding of the role of CDI and its role in health care delivery. The curriculum and training module were drafted by a small team of experts and presented at a meeting aimed at harmonizing the programmes of different institutions in the sub-region. A review and repackaging of the curriculum was completed in 2008 and in a high-level review meeting of vice chancellors, Deans and senior academics convened in Abuja from June 9-11, 2009. The curriculum and training module were finalized with valuable inputs from participating universities.

75. Eighteen (18) universities, from 11 countries across Africa, adopted the curriculum and training module and agreed on pretesting and its inclusion in their different university systems. The implementation plans for pretesting are to be submitted by universities before the end of February 2010. So far, plans of action and budgets have been received from the Institut Regional de Santé Publique (IRSP), Benin and the University of Medical Sciences & Technology, Khartoum, Sudan. Implementation of activities for these two universities will be starting in 2010 and APOC management has approved these plans.

76. Post-conflict countries capacity is augmented with the recruitment of technical advisers (TAs). These advisers live and work as on-the-ground experts in the countries and receive salaries from the APOC Trust Fund for a maximum of 3 years. A total of 5 TAs have been recruited for CAR, Chad, DRC, Liberia and southern part of Sudan with the intention that they will help to build national capacity to conduct disease control and surveillance and to apply criteria to phase out ivermectin treatment, when such criteria become available. In addition AAFs (finance assistants in WHO offices) cover 73% projects in 6 countries.

77. In DR Congo, the arrival of 2 TAs has resulted in very noticeable improvement in project performance but may not be developing the capacity of NOTF and NOCP in the way intended. There were challenges observed in the roles between the TA and the NOTF. The NOTF were concerned that their role of undertaking routine tasks was being undermined. It was suggested that the TA and accompanying office resources should be located in the NOCP and work alongside staff.

4.3 Capital equipment: an ongoing commitment

78. APOC continues to provide a range of capital equipment, including vehicles and office equipment. In 2008/9, APOC spent $1,827,344 giving support to 60 projects in 11 countries with vehicles, bicycles, generators, computers and accessories. This did not include funding for 2,500 bicycles provided to 5 countries with special funding from the Global Network for NTDs. The support is considered essential not only for ensuring the efficient running of projects but also for keeping health systems functioning in resource-poor countries. It was reported by the project visited in DR Congo that the district health system managed to keep operational during times of conflict due to the vehicle and equipment provided by APOC.

4.4 Drug Procurement and Supply System

79. The supply of ivermectin is handled by the Mectizan Donation Programme (MDP), a key partner in the programme and one of the members of APOC’s governing board. While the APOC Secretariat is kept informed of any major issues or delays, MDP handles the orders and there is little direct involvement of APOC Secretariat staff. The drug supply system established with MDP is simple and very effective. It works not only in stable countries but also in more difficult post-conflict conditions with the support of WHO offices where necessary.
80. Annual orders of the drug are placed by the NOCP or by projects in countries with less experience in ordering, with the Mectizan Donation Programme. After checking consistency with the previous year and any known population fluctuations, and after ensuring that tax exoneration has been obtained, orders are shipped in under month. Although tax exoneration systems can be complex, they generally do not present a problem for drug procurement unless national staff are unfamiliar with them. Drug collection usually does not necessitate additional funds since it is collected when health workers travel to the upper level of the health system for other purposes. This is one area that APOC has shown the way in facilitating country led systems for supply management and collaboration.

81. Indeed, though governments are increasingly clearing ivermectin shipments at the point of entry, WHO and UNICEF continue to provide support with clearance in some countries. In DRC, where the transport system is weak, WHO organizes transport to its sub-offices at regional level where it is collected by front line health workers. The projects visited during were receiving timely supplies of Mectizan in contrast with both national essential medicines and the drugs required for other vertical programmes, notably for malaria.

Table 4: APOC equipment support to countries 2000–2009

<table>
<thead>
<tr>
<th>Countries</th>
<th>Transport Vehicle</th>
<th>Motorcycle</th>
<th>Bicycle</th>
<th>Computer Desk-top</th>
<th>Lap-top</th>
<th>Generator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angolan</td>
<td>8</td>
<td>31</td>
<td>90</td>
<td>8</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Burundi</td>
<td>4</td>
<td>6</td>
<td>78</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Cameroon</td>
<td>27</td>
<td>218</td>
<td>208</td>
<td>33</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>CAR</td>
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<td>24</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Chad</td>
<td>5</td>
<td>48</td>
<td>48</td>
<td>15</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Congo</td>
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<td>21</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>DRC</td>
<td>29</td>
<td>164</td>
<td>1758</td>
<td>30</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Eq. Guinea</td>
<td>4</td>
<td>10</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Ethiopia</td>
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<td>80</td>
<td>0</td>
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<tr>
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<td>Liberia</td>
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<td>185</td>
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<tr>
<td>Nigeria</td>
<td>73</td>
<td>674</td>
<td>3447</td>
<td>68</td>
<td>31</td>
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<tr>
<td>Sudan</td>
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<td>41</td>
<td>516</td>
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<td>3</td>
<td>5</td>
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<tr>
<td>Tanzania</td>
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<tr>
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<td>50</td>
<td>732</td>
<td>19</td>
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</table>

<table>
<thead>
<tr>
<th>Special Intervention Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte D’Ivoire</td>
</tr>
<tr>
<td>Ghana</td>
</tr>
<tr>
<td>Sierra Leone</td>
</tr>
</tbody>
</table>

| Total | 218 | 1496 | 7563 | 247 | 120 | 99 |

Despite the simplicity of the system, delays in requesting Mectizan were documented in three of the countries visited; it was generally attributed to poor planning or communication skills at district level or to changes in personnel and lack of familiarity with the systems. This had resulted in delayed drug distribution, and increased absenteeism of persons expected to come for treatment. One area of note is the contrast with SIZ countries which gives an indication of what might happen in the event of total withdrawal by APOC. In Ghana where the health system is
considered fairly strong, there were persistent shortage of drugs at the points of delivery due entirely to weaknesses in the supply management system.

### 4.5 Primary Health Care and Community Systems Strengthening

83. Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. The WHO Africa Region ministers of health Ouagadougou Declaration on Primary Health Care identifies community health systems strengthening as one of the main pillars on which to deliver primary health care.

84. APOC's success highlights the continued relevance of one of the central tenets of primary health care; the need for participation and ownership by communities in their health and health care. It has been argued that this model is essential for the empowerment of communities; a critical foundation for sustainable public health interventions. The majority of the issues discussed under section 2 of this report relates directly to how APOC has contributed to community-based health systems strengthening and community empowerment. The CDI program is evidence based and this includes not only the community based infrastructure but the development of basic tools for determination (measurement sticks) of appropriate dosages that can be delivered by the CDDs, for enumerating the communities to be treated and registers for collecting data at the community level. The value of the community enumeration undertaken by CDDs prior to ivermectin distribution has proved to be a particular asset which is valued by frontline health staff for their work more widely.

85. APOC has supported the development of a comprehensive range tools and training materials for all aspects of CDI training and related project processes for use at community level, with frontline health staff and for project staff. Examples include Community Self-Monitoring and Independent Participatory Monitoring for Project Coordinators. CDTI was generally well established with frontline health facility staff, although in some countries where there are zones not undertaking CDTI, staff mobility means that there are continuing needs for health staff training and retraining.

86. Ethiopia and Nigeria provide examples of where management structures for CDI implementation are well placed and operate within the PHC system. Most health workers involved in the CDI process have other responsibilities in the primary health care system. Integration is much more visible at the lower levels where frontline health facility staff supervising CDI activities are also responsible for providing community care. In such instances supervisory visits are done in an integrated way. At higher levels integration is undertaken through joint use of transport, utilization of program’s training sections for training in other PHC activities, and planning for CDI which is done within the PHC annual estimates. Ivermectin delivery mechanisms are partly integrated, with evidence of shared transport for transport of supplies. Though delivery systems are not within a national system they work well and function within the government set up.

### 4.6 Financing of Onchocerciasis

87. The APOC partnership expects to spend approximately U.S. $184 million by the time it ends in 2015. If the paradigm for post 2015 points to significantly reduced funding support for the historical APOC program, then APOC needs to be in a very good position to now be actively seeking to leverage whatever funding support that may still be available from current donor partners and governments. Currently it...
is refreshing to note that APOC management is devoting significant time and energy to helping countries to put in place plans for the sustainability of CDTI activities and the exit of APOC trust fund.

Many of the projects have achieved reasonable coverage of eligible populations using the CDTI strategy, but adequate financial support by donors, national and local governments can be a major obstacle to achieving sustainability. To assess progress in countries increasing their responsibility for funding and ensuring sustainability after the phase out period, the level of country financial contributions has been compiled from self-declarations by countries during NOTF annual meetings. Establishing a clear idea of both government and NGDO contributions can be difficult as both can be reluctant to share financial information. The information therefore should be interpreted with caution.

Countries are showing good will towards budgeting and spending funds in support of onchocerciasis control. Data available suggests that the percentage of approved and disbursed funds has improved in recent years hitting 82% in 2009 (see table 5). In 2007, 12 countries disbursed about US$1 million for CDTI core activities while 9 countries disbursed $1.1 million in 2008. In 2008, the countries gave almost equal attention to the four CDTI core activities with disbursement of funds ranging from 22% to 30%. District, regional and national governments provided 36%, 15% and 49% respectively.

The compiled information indicate that many projects face difficulties in accessing funds, spending and accounting for the funds they receive both from APOC and from their own government budgets. Within APOC there are significant concerns that programmes are not submitting timely reports with some financial reports being six months overdue. This impedes the timely release of subsequent funds in line with the new GSM arrangements that establish performance based management of funds as a principle.

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The compiled information indicate that many projects face difficulties in accessing funds, spending and accounting for the funds they receive both from APOC and from their own government budgets. Within APOC there are significant concerns that programmes are not submitting timely reports with some financial reports being six months overdue. This impedes the timely release of subsequent funds in line with the new GSM arrangements that establish performance based management of funds as a principle.

88. Many of the projects have achieved reasonable coverage of eligible populations using the CDTI strategy, but adequate financial support by donors, national and local governments can be a major obstacle to achieving sustainability. To assess progress in countries increasing their responsibility for funding and ensuring sustainability after the phase out period, the level of country financial contributions has been compiled from self-declarations by countries during NOTF annual meetings. Establishing a clear idea of both government and NGDO contributions can be difficult as both can be reluctant to share financial information. The information therefore should be interpreted with caution.

89. Countries are showing good will towards budgeting and spending funds in support of onchocerciasis control. Data available suggests that the percentage of approved and disbursed funds has improved in recent years hitting 82% in 2009 (see table 5). In 2007, 12 countries disbursed about US$1 million for CDTI core activities while 9 countries disbursed $1.1 million in 2008. In 2008, the countries gave almost equal attention to the four CDTI core activities with disbursement of funds ranging from 22% to 30%. District, regional and national governments provided 36%, 15% and 49% respectively.

90. The compiled information indicate that many projects face difficulties in accessing funds, spending and accounting for the funds they receive both from APOC and from their own government budgets. Within APOC there are significant concerns that programmes are not submitting timely reports with some financial reports being six months overdue. This impedes the timely release of subsequent funds in line with the new GSM arrangements that establish performance based management of funds as a principle.

91. Conteh and others (2010) in their analytical work noted that the list of donated medicines is remarkable, and pharmaceutical companies providing these drugs are committed to their long-term donation. The evaluation team observed that the cost of donated drugs, extremely important, is not usually reported in the delivery of services and thus was unable to estimate total cost of projects. We note this enormous support and commitment by organizations such as Merck in the table 6 overleaf.

92. The international drug price estimates suggest that the market price used to treat more than 15 types of helminthic and parasitic infections is US$ 0.02 per
tablet (albendazole, diethylcarbamazine and mebendazole. These are generally the drugs donated. The market price of a 6mg ivermectin tablet is US$0.52. From this perspective, and for sustainability analysis, it is more important to evaluate the cost of the program from money spent on activities perspective rather than a drug perspective given that drugs are generally already donated anyway.

93. Some evidence already exists. In a study of the costs of the African Program for Onchocerciasis Control, the mean financial cost was US$0.58 per treatment with ivermectin, which was provided free by Merck, and volunteer time was excluded. The economic cost doubled to US$ 1.26 per treatment once the volunteer time and donated ivermectin cost was included. Under certain circumstances, cost per treatment is going up in some countries. For instance in Congo DR, cost per person treated has gone up to US $1.81 in 2008 compared with $0.02 in 2007.

94. In a cost evaluation of CDTI in Cameroon, Nigeria and Uganda, the breakdown of costs showed (excluding the cost of donated drugs) that endemic countries covered about half of the cost of the programme, and the donors and NGDOs cover the rest. The 2009 APOC progress report noted that in 2008, nine governments invested US$1.1 million to fund core CDTI activities, slightly more than have been invested in 2007 by 12 countries. While this is encouraging, it must also be noted that in Fiscal Year 2009, APOC invested US$15.5 million, pointing to a gap that still needs to be closed beyond 2015.

95. Given the fact that most neglected diseases are not on the minimum benefit package of countries with National Health Insurance Schemes such as Ghana, cost sharing based on out of pocket may be an option and a real challenge to be confronted in a phase out strategy.Willingness to pay for the prevention and treatment of neglected tropical diseases is probable options which in recent studies have shown mixed results. A study in Haiti showed that although most of the community placed positive value on both prevention and treatment of lymphatic filariasis, 7% and

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Table 6: Drug donor organizations and their commitments

<table>
<thead>
<tr>
<th>Treatment drugs</th>
<th>Donor and commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albendazole &amp; Ivermectin</td>
<td>GSK donates Albendazole to WHO directly for the global elimination of LF. Merck and Co donates through Mectizan Donation program which is housed in the Taskforce for Global Health in Atlanta for the elimination of LF in Africa</td>
</tr>
<tr>
<td>Ivermectin</td>
<td>Merck and Co donates through Mectizan Donation program which is housed in the Taskforce for Global Health in Atlanta for the elimination of LF in Africa</td>
</tr>
<tr>
<td>Praziquantel</td>
<td>Merck Serono SA currently donates 200 million to WHO ending 2017. It also recently made an offer to supply 100 million tablets per year at production cost. Talks are ongoing with German to finance this initiative. This could be channelled through WHO. GSK is considering donating 300 million tablets towards STH</td>
</tr>
<tr>
<td>Albendazole/ Mebendazole</td>
<td>Merck and Co donates through Mectizan Donation program which is housed in the Taskforce for Global Health in Atlanta for the elimination of LF in Africa. GSK committed donation of Albendazole and to continue. It is likely to be extended to STH (for a total of 600 million treatment a year) through WHO. Johnson and Johnson donate 50 million tablets of Mebendazole per year for treatment in children and committed to scale this donation up to 100 million tablets per year</td>
</tr>
<tr>
<td>Azythromycin</td>
<td>Pfizer donates 135 million tablets for trachoma treatment through Task Force for Global Health in Atlanta</td>
</tr>
</tbody>
</table>

Compiled by Authors

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38 The donated ivermectin tablets for onchocerciasis and lymphatic filariasis programs are 3mg tablets. Merck quotes US 1.5 cents per treatment


39% of households were not willing to pay for prevention and treatment respectively\(^{41}\). In lower economic quintiles, this result will show an almost 100% inability particularly because of the debilitating effect of particular neglected diseases under consideration. Any cost recovery policy would be likely to result in inadequate participation and limited sustainability.

### 4.7 Research, monitoring and evaluation

96. Progress on the core set of indicators based on what APOC set out to do as articulated in the APOC Phase II – phasing out period Plan of Action and Budget 2008-2015 is attached as Annex 1.

97. In the 15 years of its existence, the APOC Programme has developed a pan-African network that has developed a very significant core competency to encourage and support a massive amount of evidence-based research. The foot-notes to this report provide one “snap shot” of the valuable “library” of research projects that the Programme has generated, some by staff, some managed by the WHO TDR office and some managed through a broad network of scientists and research institutions linked to partners. Information contained in the most recent report from the TCC and the WHO/APOC “2009 Progress Report” provides another “snap shot” of the kind of research that has been facilitated by the Programme, such as:

- “Assessment of interruption of Onchocerca volvulus transmission in Community-Directed Treatment with Ivermectin…” [in three countries]
- “Epidemiological and REMO/RAPLOA risk assessment…” [carried out in 225 villages]
- “Epidemiological Evaluations of Progress toward Elimination Endpoints ….”
- Various reports related to the ongoing for the development of ‘Moxidectin’ as a possible macrofilaricide for the control of onchocerciasis
- “Assessment of the Social Benefits of CDTI…” [in four countries]

98. Epidemiological research was recently concluded in Ghana. Mention has also been made in the earlier section of this report on the innovative approaches towards establishing predictive transmission zones. There are proposals being developed towards the testing of innovations for diagnostics and black fly sample collection.

99. The APOC Secretariat recognizes that far too often, it does not adequately “market” the accomplishments that it is facilitating. Certainly, as noted earlier in this report, the vastness and richness of the “research library” may be one of the most overlooked accomplishments by the APOC Programme to-date.

100. National Technical Review Committees have been established with financial support from APOC in Cameroon, Ethiopia, Nigeria and Uganda; they now review project technical reports and advise the NOTF on operational research proposals. There are early indications that this is working well. This is an important step forward given the major role played by the APOC Technical Consultative Committee, both formally and informally, in project oversight and the provision of technical advice.

101. Though fully appreciated and APOC should duly be recognised for being the lead agency in Onchocerciasis research, NGDOs in oncho research feel their research findings, though published in peer review journals are not given the full recognition they deserve.

5. APOC Management Arrangement

“What is so significant (about APOC) is that, by means of a partnership with over 70 partners, we’ve been able to join together to achieve a programme which has the prospect of eliminating this disease completely on the continent of Africa.”

JAMES WOLFSOHN, FORMER PRESIDENT OF THE WORLD BANK

102. The APOC governance and dialogue structure is the strength of the onchocerciasis control partnership. Though different agencies these work as components of a single framework. The participation is representative and the entire programme is reasonably country-led. Figure 4 and table 7 provides the management partnership and functions.

103. The various management bodies have clearly articulated roles and responsibilities which are pertinent to the smooth running of APOC. Particularly during this period of transition, these agencies will need to consult regularly. There were concerns during interviews that too many meetings are being held and that probably the number of the bodies should be reduced. Having examined the various functions carefully; the Evaluation Team is of the opinion that the various bodies are still needed.

104. What may be adjusted are functions and internal agreements to review the number of meetings. This cannot be legislated and is best left to their discretion. However, we offer some suggestions. The CSA for instance may focus more on resource mobilization and accountability issues. Other functions may be reorganized and delegated to a TCC sub-committee that has representatives of all the parties working in collaboration with the APOC Secretariat. This may meet once a year. Decisions between TCC meetings may be delegated to the TCC chair.

105. The National Onchocerciasis Task Forces (NOTF) bring together international NGDOs and health officials. The current capacities of NOTFs are not well understood. This is because the National Onchocerciasis Coordinator (NOC) is the Executive Secretary of the NOTF and it is only when there are evident weaknesses or issues with the NOC that the strengths or weaknesses of the NOTF will be really apparent.

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Figure 4: Working management partnership

Representatives of UNDP, WHO and WB
A representative of NGDO Coordination Group
A representative of the Mectizan Donation Program (MDP)
One representative of donor of ivermectin
A representative of the African Development Bank

Representatives of 15 NGDOs with a focus on Onchocerciasis control activities

A representative of each Contributing Party i.e. donors, Ministers of 159 APOC countries; Ministers of 11 ex-OCP countries; Co-sponsoring agencies; 11 representatives of NGDOs private sector donor(s) of ivermectin
11 experts appointed by the Executing agency (WHO), upon recommendation of the CSA (3 of which are proposed by the NGDO Coordination Group)
1 representative of a non-profit ivermectin donation organisation (who is not eligible to become Chairperson)
The roles and responsibilities of each body are clearly defined in the Memorandum of Understanding that is signed by each of the multi and bilateral governments and foundations that contribute to the APOC Trust Fund and governments of African countries with endemic onchocerciasis. A notable feature is the clear allocation of country-level programme governance to Ministries of Health and of the supporting roles of collaborating partners (Merck and NGDOs). This framework, which ensures that all partners understand their allocated responsibilities, was identified by Secretariat senior management as a key reason for the smooth and productive functioning of the APOC partnership. The other two key contributing factors identified by the evaluation team are the shared goal of combating onchocerciasis and the availability of the necessary funding for the both the programmes and the functioning of the partnership.

107. Led by a strong Programme Director, the APOC Secretariat serves as the nexus for operating the APOC partnership and has performed creditably. APOC Secretariat core programme competencies are in CDTI, mapping, training and capacity-building from CDD to technical experts, evidence-based research and maintaining the institutional framework for onchocerciasis. It has developed remarkable skills in coordinating and supporting the bi-annual meetings of all the different APOC structures. These meetings have been key to the development of the

### Table 7: Functions of management bodies and meetings

<table>
<thead>
<tr>
<th>Management Body</th>
<th>Functions</th>
<th>No of Annual Meetings</th>
</tr>
</thead>
</table>
| Joint Action Forum               | • Reviews and approves proposed APOC Action Plans and budgets  
• Assesses financial requirements  
• Decides on countries included (on recommendation of CSA)  
• Considers and decides changes in APOC’s geographic scope and other matters relating to the programme that are raised by any member | Once or twice as determined by JAF. Participants cover all expenses                  |
| Committee of sponsoring Agencies | • Reviews Action Plans and budgets  
• Examines reports submitted to it by any of the statutory bodies and transmits them, together with observations, to JAF, in timely fashion  
• Approves amendments to Action Plans and Budgets, upon the recommendation of the Programme Director and according to available funds  
• Acts on behalf of JAF when JAF is not in section (all decisions subject to JAF’s ratification) | Twice and once by video conferencing. Participants cover all expenses                 |
| Technical Consultative Committee| • Advise the Programme Director on:  
• Criteria for eligibility and phasing of implementation of CDTI projects, as well as components of such projects involving other disease control  
• Parameters which applications for funding by APOC should address;  
• Acceptability of new project proposals for funding by APOC;  
• Technical and operational research matters related to APOC;  
• Review applications for funds for new CDTI projects, based on technical justification and financial feasibility, and make recommendations to the Programme Director on their acceptability for APOC funding; review overall progress towards sustainability and integration of CDTI into the health system and make recommendations on any appropriate action; and review new national plans. | Twice (March and September) on convocation of Programme Director. APOC Trust Fund Covers all expenses |
| NGDO Coordination Group          | Members, working with the Ministries of Health, are involved in the management, financing and training aspects of ivermectin distribution projects. They assist Ministries of Health of the Participating Countries in the establishment of National Onchocerciasis Task Forces (NOTFs). | Meets Twice. Participants cover all expenses                                          |
close-knit network of APOC implementers and technical experts.

108. The staff numbers and the current organisational structure (see organisational chart in annex 2) represent, however, a major constraint for shifting the paradigm to elimination. With only nine professional staff members including the Director, it takes a stretch of imagination to comprehend the enormous amount of work done so far. During this evaluation and time spent with the Secretariat, we noted an unending around the clock work schedule that needs to be corrected. Additional staff numbers are required even if this sounds counter to an organizational downsizing strategy. It is however important that the aspirations of a lean operation are not confused with the enormous amount of work that needs done.

109. There is an observable reduction of APOC funding and increasing funding for NTDs. Ministries of Health are free to respond to new disease control opportunities outside APOC and both Ministries and NGDOs are seeking new sources of funding beyond APOC. Generally, this is encouraging but will also introduce competitive bidding among the different disease components. A focused agency like the APOC Secretariat and NGDOs will be essential for leveraging financing for onchocerciasis control and elimination to protect the large investments made.

110. The APOC Secretariat has worked well. However like any good work there is always room for improvement and added benefits if the concerns identified can be addressed. In this regard some NGDO partners have expressed a sense of being increasingly isolated from the APOC Secretariat. This is attributed to a mix of the Responsible Officer for NGDO Coordination in Geneva not being adequately informed on country level activities to NGDOs not being valued for their research work at community level. TDR appears to be more visible in research because of its pioneering work in onchocerciasis in Africa. It is important that the APOC Secretariat provides the needed leadership to address these issues by actively encouraging others to engage.
6. Conclusions and recommendations

Conclusion 1: Contribution of APOC towards systems strengthening and co-implementation

111. Since its introduction in 1997, the CDTI approach has been extended to more than 67 million Africans and the success of onchocerciasis control as a public health problem can be attributed to its effective implementation. Currently the CDTI program reaches approximately one sixth of the population of sub-Saharan Africa. Barring logistic difficulties, it has enabled communities to take control for planning and implementing interventions relating to onchocerciasis.

112. Within the general framework of the Ouagadougou Declaration on Primary Health Care and Health Systems Strengthening, it appears that a template for community health systems management has emerged based on the CDTI and its modified versions approach. The framework is well researched and the systems are beginning to be standardized for formal, informal and practical knowledge transfer. A curriculum for medical and nursing schools has been developed as a means of integrating the CDI strategy into health training; new health personnel will graduate with an understanding of the role of CDI and its role in health care delivery. This aspect of APOC work and the core competency developed has been poorly disseminated. Though curriculum and manual has been developed and introduced to schools, the CDI framework has not been formally adopted for use in Community Health Systems Strengthening by countries.

113. The success of the CDTI framework has naturally attracted the attention of other disease control programs, stimulating various attempts to adapt and duplicate its principles particularly for interventions that involve preventive chemotherapy. Due to similarities in the fundamental design of different CDI approaches, a fair number of CDDs are already involved in other health and development activities as a result of their involvement with the CDTI system. The recently-published, three-year, multi-country study has demonstrated that in remote African communities, community delivery of underutilized health interventions in an integrated manner can dramatically improve access to vital drugs and preventive treatments. The interventions include malaria prevention and treatment, and vitamin A supplementation. As a fore runner with consistent implementation of the CDI framework, APOC has built the platform for service delivery but will be hard pressed to take on the additional responsibility of actually delivering on the other NTDs as a primary responsibility without transforming into a full-fledged disease control organization.

Recommendations

114. Undertake comprehensive research to explore the dynamics of existing CDIs including incentive and sustainability options so it may be better standardized and replicated for Community Health Systems Strengthening in countries to support co-implementation.

115. Based on the research findings, guidelines for Community Health Systems strengthening within the framework of as part of the implementation of the Ouagadougou declaration should be tabled at the next WHO Regional Committee for Africa to be adopted by all countries for implementation. This will provide a firm support for the introduction of curricula developed with support of APOC already going on in countries.
116. A funding window should be considered under the current Trust Fund to encourage countries wanting to establish community systems based on the guidelines for co-implementation to have access.

Conclusion 2: APOC activities and capacity to facilitate guidance to countries for elimination

117. There is now evidence from foci in Senegal, Mali and Guinea Bissau that elimination is possible within defined geographical areas. There is also promising data from six foci in Kaduna and Ebonyi States in Nigeria and Bebidja and Danamadji in Chad after 14-19 years of ivermectin treatment the prevalence of mf has reduced to zero. The evaluation team found that the APOC management had already been proactive in the move from control to elimination and are grasping what needs to be done to secure that paradigm shift in countries. It is however our opinion that ‘elimination’ needs to be precisely defined and better communicated because the term in its generic form even within WHO is not entirely applicable in the onchocerciasis elimination language.

118. For our purpose and taking a cue from the work done so far by APOC and PAHO; ‘elimination of infection and interruption of transmission is feasible’ means: ‘Onchocerciasis can be eliminated in project areas that have sustained consistent application of CDTI of above 65% population and therapeutic coverage for at least 10 years excepting any political and economic uncertainties’. It is increasingly evident that elimination is better seen as a ‘continuum in sustainable results’ rather than a new phase. The 97% congruence found between the modeled predictive transmission zones and the CDTI coverage areas partly attests to this and is a highly commendable and positive outcome. The actual elimination management science – DEC-patch, GIS, fly trap technology, scale-up, end-point strategies and alternative intervention strategy etc- is only now emerging. Current capacity with the APOC Secretariat is thin [short of saying the current staff working at breakpoint limit]. With the help of consultants preparatory work has started but the bulk of the verification, certification and management work is likely to take place after 2015. Both internal capacity strengthening and external technical assistance is required to get the work done.

Recommendations

119. In view of the evidence available and the stated objective, we recommend that for the years leading to 2015:

- APOC should continue the mapping of the state of each transmission zone. This will allow the Programme and partners to be precise on when and where to stop ivermectin distribution for each of the countries in this category. This should include entomological and additional epidemiological studies to identify all infection sources and verify level of infection outside the core hyper-endemic areas around a focus to back up the findings in human populations. The work should take place ideally within the current phase of APOC financing ending 2012. The results should be disseminated to the scientific community and shared at the WHO Regional Committee for Africa.

- Activities targeting elimination should be limited to localized project areas that qualify under long lasting Ivermectin treatment with high coverage. All other project areas should be supported to continue control activities through country led approaches. While the technical tasks continue, it is important APOC manages the expectations of countries and communities regarding the stopping treatment process, elimination and co-implementation. Regular updates of progress and explanations of what that means for CDTI in practice will be essential. Given the 2015 horizon, this must be given due importance and set within a comprehensive communications strategy for 2015 and beyond.

- Armed with knowledge from the mapping pointing to potential elimination areas, a multi-disciplinary team of experts should be put together to develop a comprehensive strategic plan with full normal costing and a risk scenario for the development of
resource needs for (i) surveys for delineating transmission zones and stopping treatment, (ii) monitoring and entomological and epidemiological surveys once CDTI ceases and for (iii) verification, certification and status maintenance process. The national, regional and international responsibility areas and technical assistance needs should be clearly defined in the strategic plan.

122. There is no quick fix as control to elimination under current scientific knowledge is linked to a fairly predictable time lapse between initiation of therapeutic treatment and consideration for elimination. The Mectizan Donation Programme has set the example with its commitment. APOC partners need to join in and commit to attaining this goal in the potential oncho elimination countries.

123. Given our sense of work to be done, APOC will need a minimum of one additional Entomologist and two additional Epidemiologists to undertake the work. Armed with knowledge from the mapping a multi-disciplinary team of experts should be put together to develop a comprehensive strategic plan with costs for the development of capacity and resource needs for (i) surveys for delineating transmission zones and stopping treatment, (ii) monitoring and entomological and epidemiological surveys once CDTI stops, (iii) define activities for the 3-year ‘treatment follow-up period’ and (iv) verification, certification and status maintenance process. The national, regional and international responsibility areas on how to implement these and technical assistance needs should be clearly defined in the strategic plan. These would make a significant contribution, not only to onchocerciasis but also to the ‘science of elimination’ of infectious diseases of poverty.

124. New memoranda of understanding needs to be developed and signed between countries with the potential for moving towards elimination and funding partners to determine how resources may be mobilized and dispersed in support of eligible programmes in countries. This should ameliorate donor dependency and encourage country ownership and commitment.

Conclusion 3: Progress made with transition to countries

125. The APOC Secretariat is engaging with countries in a manner that minimize its direct role and presence in country level implementation. The role of APOC in the procurement and distribution of ivermectin is now less prominent; this is a good sign for sustainability. In some countries, although governments are increasingly clearing ivermectin shipments at the point of entry WHO and UNICEF continue to provide support with clearance in some countries. In DRC there is a continuing systems failure but this is ameliorated by WHO’s ability to organize transport to its sub-offices where drugs and logistics are collected by frontline health workers.

126. Further down the supply chain, ivermectin delivery to rural communities is generally good, even where APOC funding has been terminated in countries. Drug collection usually does not necessitate additional funds since it is collected when health workers travel to the upper level of the health system for other purposes. It is not all smooth sailing as delays in requesting Mectizan were documented in three of the four countries visited during this evaluation. This was generally attributed to poor planning or communication at district level. A major achievement is the curriculum development for nursing training schools on CDI. There is a positive scale up in the number of CDDs trained but the anticipated CDD to population ratio of 1:100 has not yet been attained except for two countries. Though Technical Assistants have been posted, there is mixed reaction over purpose and clarity of roles.

127. Countries have been requested to submit exit strategies but the contents are far below minimum expectation to make them meaningful. This attests to poor capacity to analyze the situation, articulate scenarios, plan and budget to implement the programme either as a standalone or integrated intervention. This situation is simply a reflection of existing weaknesses in country health systems. Though traditionally classified
by the programme in the past as stable
countries and countries in or emerging from
conflict, there is now clear evidence that APOC
will need to take account of complications of
internal systems in relation to organization of
services and management systems. The donor
coordination mechanisms are also complex
depending on the goal orientation and funding
mechanisms available. Even within generalized
concepts such as Sector-Wide Approaches
and decentralization, there are sub-system
frameworks that need to be understood
and traditional partnerships that need to be
reconstructed.

128. Existing cost evaluations of CDTI point to
endemic countries covering about half of
the cost of the programme, and the donors
and NGDOs cover the rest and the nominal
value has increased. Particular mention is
made of Merck & Co. Inc. who have shown
an unprecedented example of commitment
to disease control and elimination under
the onchocerciasis program. While this is
encouraging, we noted that in Fiscal Year
2009, APOC invested US$ 15.5 million,
pointing to a gap that should not exist beyond
2015. The evaluation team also observed with
concern that when personnel time (including
volunteers) is fully costed in addition to
 treatment, the economic cost doubles and by
trend, the cost per person treated has gone up
in countries such as Congo DR from US$ 0.02

Recommendations

129. After years of doing the same thing, there is
need for a consultant to be recruited to do
a proper interventions analysis and costing
scenarios organization of services and in view
of the acceleration towards elimination

130. Health policy and systems analysts are urgently
required to support countries in developing
Program Plans, Budget and Exist Strategies. In
our opinion, a cost effective approach will be
to recruit personnel with expertise in Health
Policy and Systems and Health Economics
to work with a network of experts.

131. Countries should be encouraged to take
the lead in developing a comprehensive
framework for NTDs drawing on their
experience with onchocerciasis control
and similar programmes and to situate or
integrate onchocerciasis control within this.
A conscious effort should be made to ensure
that comprehensiveness does not undermine
the variability in achievements and goals
to be reached by individual programmes.
WHO-AFRO should be supported to provide
Technical Assistance to countries.

132. It is suggested that APOC organizes a
consultative meeting with selected APOC
countries to engage other disease control
entities in the wider debate on health
systems development, and to focus on
policy development, donor coordination,
funding and resource allocation and
addressing human resource challenges.
Other control programs can be invited to
share and discuss experiences with the aim
of mainstreaming onchocerciasis control
program experiences in country health
policy developments.

Transforming APOC Governance
arrangement including APOC Secretariat:
now and beyond 2015

133. APOC is a well managed organisation
with a clear and ambitious objective. It
has performed successfully in treatment
and prevention of onchocerciasis, learned
from external evaluations, works towards
integration, generates and utilises scientific
evidence, and demonstrates commitment
to sustainability. It has encountered
difficulties in achieving its objectives due
to co-endemicity and civil unrest, and
adjusted its strategy accordingly. It is going
to be challenged on the journey towards
elimination. Ongoing support by partners will
enable them complete most of the activities
outlined in the new strategy and addendum,
and to work towards an exit strategy that
ensures long-term sustainability of APOC's
achievements in countries.
Looking beyond 2015 was like gazing into a crystal ball. From the evidence and context, the evaluation team looked at the probable chance of transforming APOC as a whole. A “transformed and focused APOC” that is lean and efficient is advocated for. This would need thorough thinking in the context of the paradigm shift towards elimination and the consolidation and knowledge transfer around community health systems strengthening in the context of Primary Health Care and the emerging co-implementation agenda of NTDs as well as its funding arrangements.

The Evaluation Team acknowledged that there are complexities and opinions vary as to how this may be addressed. Ultimately, this is a decision that naturally lies within the WHO management system and the governing board of APOC. An early engagement in dialogue with the contracting partners and a sense of what the direction may be will help shape partner financing strategies and build commitment of staff during these transformation years.

Recommendation

The governing body of APOC should consider engaging the expertise of a consultant (or a health systems management consulting firm) with experience in organizational restructuring to study this closely and make recommendation for its consideration taking into account the functions stated earlier.

APOC has succeeded because of the partnerships it has developed at all levels. This partnership is likely to be put under severe strain under the emerging NTD agenda and the scramble for new funding. There should be nothing barring APOC from engaging partners and mobilizing some of this additional resources coming into the NTD area for onchocerciasis. APOC however has to provide leadership to ensure that the partnership does not unravel and that the resource mobilization capacity is available. This should be taken into consideration when the organizational consultant is recruited.
## Annex 1: Progress in APOC PAB 2008-2015’s Core Set of Indicators

### Objective 1

<table>
<thead>
<tr>
<th>Target</th>
<th>2005</th>
<th>2008</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>Geographical ivermectin coverage rate of total APOC area</td>
<td>58%</td>
<td>82%</td>
<td>91%</td>
</tr>
<tr>
<td>Target 2</td>
<td>Therapeutic ivermectin coverage rate of total population at high risk of onchocerciasis in the APOC area</td>
<td>43%</td>
<td>&gt; 70%</td>
<td>71%</td>
</tr>
<tr>
<td>Target 3</td>
<td>No. of conflict-affected APOC countries with areas in which RAPLOA surveys have been completed in order to confirm suspected onchocerciasis-loasis co-endemicity</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Target 4</td>
<td>No. of APOC countries with a national onchocerciasis integration policy</td>
<td>0</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Target 5</td>
<td>No. of CDTI projects integrated into national health systems</td>
<td>NA</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Target 6</td>
<td>No. of sustainability-evaluated CDTI projects that have developed sustainability plans enabling them to secure long-term government funding</td>
<td>39</td>
<td>64</td>
<td>70</td>
</tr>
<tr>
<td>Target 7</td>
<td>No. of APOC countries in which capacity building has ensured that monitoring and evaluation of CDTI projects are under the responsibility of governments</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Target 8</td>
<td>No. of onchocerciasis-endemic communities in the APOC operational zone that are included in the community information database</td>
<td>0</td>
<td>49,000</td>
<td>50,374</td>
</tr>
</tbody>
</table>

*See Table A on p.48 for geographic and therapeutic coverage detailed breakdown.

‡RAPLOA has also been expanded to 5 stable countries.

### Objective 2

<table>
<thead>
<tr>
<th>Target</th>
<th>2005</th>
<th>2008</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>No. of APOC countries that have national co-implementation policies and that have allocated regular budget funds for co-implementation</td>
<td>NA</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Target 2</td>
<td>No. of CDTI projects co-implementing other health interventions along with ivermectin treatment</td>
<td>22</td>
<td>61</td>
<td>73</td>
</tr>
</tbody>
</table>

NA = Not applicable.

### Objective 3

<table>
<thead>
<tr>
<th>Target</th>
<th>2005</th>
<th>2008</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>Onchocerciasis-endemic areas for which epidemiological criteria for stopping ivermectin treatment are available</td>
<td>NA</td>
<td>Only savannah areas</td>
<td>9 foci in 4 countries</td>
</tr>
<tr>
<td>Target 2</td>
<td>No. of countries with at least 2 epidemiologists trained in the application of criteria for deciding where and when to stop ivermectin treatment</td>
<td>NA</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Target 3</td>
<td>No. of APOC countries that have applied criteria for stopping ivermectin treatment</td>
<td>NA</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*(i) Criteria have been reviewed by country representatives and TCC. (ii) Criteria to be finalized at a consultative meeting in Cameroon in October 2010 and made available to countries.
### Objective 4

<table>
<thead>
<tr>
<th>Target</th>
<th>2005</th>
<th>2008</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>No. of high-risk ex-OCP countries in which CDTI has been re-launched</td>
<td>NA</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Target 2</td>
<td>Geographical ivermectin coverage rate in the area covered by high risk ex-OCP countries</td>
<td>NA</td>
<td>80</td>
<td>88</td>
</tr>
<tr>
<td>Target 3</td>
<td>Therapeutic ivermectin coverage rate of the total population at high risk of onchocerciasis infection in ex-OCP countries</td>
<td>NA</td>
<td>78</td>
<td>66*</td>
</tr>
</tbody>
</table>

NA = Not applicable.
* In 2009, Côte d’Ivoire that has re-launched CDTI in 2008 was in the process of up scaling gradually and did not cover the whole country.

### Objective 5

<table>
<thead>
<tr>
<th>Target</th>
<th>2005</th>
<th>2008</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>No. of APOC countries that have submitted to APOC an action agenda setting out how they aim to prepare for APOC’s cessation of all financial, technical and operational support for onchocerciasis control</td>
<td>NA</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Target 2</td>
<td>Proportion of APOC expenditure on onchocerciasis control activities defrayed by government and NGDO contributions</td>
<td></td>
<td>- Stable countries &gt;25%</td>
<td>&gt;= 25%</td>
</tr>
<tr>
<td>Target 3</td>
<td>No. of APOC countries using regular budget funds to finance onchocerciasis control activities</td>
<td>6</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Target 4</td>
<td>No. of countries receiving financial, technical, and operational support from APOC</td>
<td>15</td>
<td>19</td>
<td>15 APOC countries + 4 ex-OCP countries</td>
</tr>
</tbody>
</table>

### Objective 6

<table>
<thead>
<tr>
<th>Target</th>
<th>2005</th>
<th>2008</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>No. of countries fully responsible for the financing and management of all CDTI projects in their respective territories</td>
<td>NA</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Target 2</td>
<td>Regional entities supporting African countries’ onchocerciasis control activities</td>
<td>WHO/AFRO</td>
<td>WHO/AFRO</td>
<td>2 (AFRO + WHO country offices)</td>
</tr>
<tr>
<td>Target 3</td>
<td>No. of APOC countries with surveillance systems covering onchocerciasis and integrated into the national health system</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Table A: Geographic and therapeutic coverage breakdown by status of countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Geographic coverage (%)</th>
<th>Therapeutic coverage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td>Post-conflict</td>
<td>62.6</td>
<td>81.5</td>
</tr>
<tr>
<td>Stable</td>
<td>97.1</td>
<td>98.2</td>
</tr>
</tbody>
</table>

Table B: Monitoring and evaluation of CDTI projects

| Number of projects evaluated for sustainability | 78 |
| Number of sustainability plans received        | 70 |
| Number of projects monitored for implementation of their sustainability plans | 28 |
| Number of projects monitored in an independent participatory manner | 81 |

Table C: Capacity building in selected technical areas, 2001 – 2009 (partial data)

<table>
<thead>
<tr>
<th>Areas of capacity building of nationals &amp; NGDOs country staff</th>
<th>Number of persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data management and analysis (statistical or spatial analysis)</td>
<td>277</td>
</tr>
<tr>
<td>Collection and management of Data</td>
<td>606</td>
</tr>
<tr>
<td>Collection of geographic coordinates and management of Data</td>
<td>201</td>
</tr>
<tr>
<td>Disease mapping (REMO/RAPOA)</td>
<td>883</td>
</tr>
<tr>
<td>Integrated mapping of NTDs</td>
<td>33</td>
</tr>
<tr>
<td>Entomology</td>
<td>135</td>
</tr>
<tr>
<td>Epidemiological surveillance</td>
<td>102</td>
</tr>
<tr>
<td>Independent Participatory Monitoring</td>
<td>486</td>
</tr>
<tr>
<td>Evaluation of the sustainability of a project</td>
<td>468</td>
</tr>
<tr>
<td>Monitoring implementation of sustainability plans</td>
<td>168</td>
</tr>
<tr>
<td>Masters in Public health/Epidemiology</td>
<td>15</td>
</tr>
</tbody>
</table>

TOTAL 3374

NB: These are partial figures. A more comprehensive database that includes names of individuals trained is being developed.

Table D: Population per CDD ratio, 2009

<table>
<thead>
<tr>
<th>Country</th>
<th>Total population</th>
<th>Number of CDDs</th>
<th>Population /CDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>843,375</td>
<td>3,980</td>
<td>212</td>
</tr>
<tr>
<td>Burundi</td>
<td>1,406,983</td>
<td>8,828</td>
<td>159</td>
</tr>
<tr>
<td>Cameroon</td>
<td>6,373,612</td>
<td>40,437</td>
<td>158</td>
</tr>
<tr>
<td>CAR</td>
<td>1,399,294</td>
<td>4,398</td>
<td>318</td>
</tr>
<tr>
<td>Chad</td>
<td>1,871,174</td>
<td>13,602</td>
<td>138</td>
</tr>
<tr>
<td>Congo</td>
<td>760,793</td>
<td>1,682</td>
<td>452</td>
</tr>
<tr>
<td>DRC</td>
<td>27,036,661</td>
<td>115,059</td>
<td>235</td>
</tr>
<tr>
<td>Eq. Guinea</td>
<td>80,206</td>
<td>104</td>
<td>771</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>5,756,141</td>
<td>66,681</td>
<td>86</td>
</tr>
<tr>
<td>Liberia</td>
<td>2,176,273</td>
<td>7,721</td>
<td>282</td>
</tr>
<tr>
<td>Malawi</td>
<td>1,978,306</td>
<td>14,147</td>
<td>140</td>
</tr>
<tr>
<td>Nigeria</td>
<td>33,352,380</td>
<td>193,408</td>
<td>172</td>
</tr>
<tr>
<td>Sudan</td>
<td>5,605,726</td>
<td>11,790</td>
<td>475</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2,207,132</td>
<td>12,579</td>
<td>175</td>
</tr>
<tr>
<td>Uganda</td>
<td>2,947,581</td>
<td>101,505</td>
<td>29</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100,347,007</td>
<td>602,959</td>
<td>166</td>
</tr>
</tbody>
</table>

NB: Data to be validated during NOTFs meeting 27-29 September 2010 in Ouagadougou, Burkina Faso.
Annex 3: List of persons interviewed

**DONORS**

1. Prof. Donald Bundy, World Bank
2. Ms Brenda Colatrella, Merck & Co
3. Dr John Gibb, Policy and Programme Manager, Polio and Neglected Tropical Diseases, Human Development Department, DFID
4. Mr Ken Gustavsen, Merck & Co

**TECHNICAL AGENCIES**

5. Dr. Anarfi Asamoah-Bah, WHO HQ, Geneva, Switzerland
6. Dr. D Engels, WHO HQ, Geneva, Switzerland
7. Dr. Tony Ukety, NGO Group Coordinator, WHO HQ

**ACADEMIC INSTITUTIONS**

8. Prof Oladele Akogun, Yola University of Technology, Nigeria
9. Dr. M Boussinesq, Institut de Recherche pour le Développement (IDR), Montpellier, France
10. Dr Jesse Bump, Takemi Fellow in International Health, Harvard School of Public Health; and Consultant, 26385 Consulting
11. Dr. Pat Lammie, CDC
12. Prof D Molyneux, Liverpool School of Tropical Medicine, UK
13. Dr. Frank Richards, Emory University
14. Dr. W Stolk, Dept. of Public Health, Erasmus University, Rotterdam, The Netherlands
15. Prof. G Weil, Washington University, St. Louis, USA
16. Prof. Mamadou Sounçalo Traoré, TCC Member

**NGDOs**

17. Mr Peter Ackland, CEO of IAPB
18. Dr. Sarla Chand IMA World Health
19. Mr Dominic Haslam, Head of Government Relations & Policy, Sightsavers
20. Dr. Adrian Hopkins, MDP Director
21. Ms Mary Linehan, RTI International
22. Mr Chad MacArthur, Helen Keller International
23. Dr Kisito Ogoussan, Associate Director MDP

**CONSULTANTS**

24. Dr Boukaye Boatin, Former Director APOC, WHO/TDR retired
25. J H F Remme, consultant, France
26. Prof. Soungalo Traoré, TCC Member
27. Dr André Yebakima, TCC Member

**COUNTRY LEVEL ACTORS**

**Cameroon**

28. HE Dr. André Mama Fouda, Minister of Health
29. Prof. Fru III Angwalo, Secretary General, MoH
30. Mrs C. Balanos, Coordinator NGDOs Coalition, LCIE, Sight First
31. Mrs J Essama, Lymphatic Filariasis focal person at NOP
32. Dr Eyamba, Carter Centre, Country Director
33. Dr C. Faty-Ndiaye, WHO, Country Representative
34. Mr Georges Mbenda Beyalal, Director, Perspective
35. Mr J Ndjoh, Programme Officer, Perspective
36. Dr M Ntep, National Onchocerciasis Coordinator
37. Prof. G. Ondovo Andze, Director, Directorate for Disease Control, Chair of the NOTF, Focal point for NTDs;
38. Drs J. Oye, Country Director, Sightsavers with colleagues Cyrille Evini, Andrew Atabe,
39. Mrs Mary Tanya, Finance/Administration Manager, Perspective
40. Prof. L.A. Tchuem Tchuente, National Coordinator Schisto and STH Control Program, member of APOC TCC
41. Dr Kingsley Shu, Regional Oncho Coordinator North West Region and staff members
42. Regional Oncho Coordinator,
43. Mr E.L. Florent, District Medical Officer and staff, Ngambe District, Littoral II Region
44. DMO and staff, Littoral I Region, Melong

**Democratic Republic of Congo**

45. HE Victor Makwenge, Minister of Health
46. Dr Pierre Lokadi Secretary General, Ministry of Health
47. Dr Issiaka Compaore, WHO Country Representative
48. Dr Alexandre Tiendrebeogo, Central Africa Advisor, WHO
49. Dr Notouh K Diallo, Technical Advisor, APOC
50. Dr Serge Akongo, Technical Advisor, APOC
51. Ms Aimerance Kabena, Country Representative HKI
52. Mr Augustin Kamenda Bishimini, Head of Micronutrients division at National Nutrition Programme
Dr. Koffi Tsogbe, WHO Focal Point for EPI/Polio

In one/two meetings:

Dr. Lomanga Nsaga, NOTF Member

Dr. Tshitoka F Ntumba, NOCP

Dr. Marcel Bakajika, President of NGDO Coalition

Dr. Kalimba Buhendwa, NOCP Supervisor

Dr. Watinga Mukunda, National Coordinator for NTDs

Dr. Joseph Linguba, Director, National Programme for LF

Dr. Encendor

Dr. Mukiar Temor, Assistant Coordinator NTDs

Dr. Jean Tankwey, NOCP

Mr. Kinswara Nalo, Accountant, NOCP

Mrs I Manzila, Supervisor, NOCP

Mr. Mbaya Kamuranya, supervisor, NOCP

Ms E Agwatukalusu, CDAF, NTDs

Dr. Kalongo Mutebe, SAE Manager, NOCP

Mr. T Luntadila, AAF, APOC

Dr. Jean Njamba, Directorate of Disease Control

Dr. Adrian Loka, Sankuru Project Coordinator and 19 zonal staff: doctors and supervisors

Territorial Administrator, Lodja

Dr. Gabriel Osango, Vangakete Zone and health team staff

Dr. Marten Kombo Koaba, Ototo Zone and health team staff

Dr. Marcel Okito, Tshudi District and and health team staff

Dr. A Luthongo Paluku, WHO Lodja

Tanzania

Dr. Deo Mtasiwa, Chief Medical Officer

Dr. Neema Rusibamayila, Ag. Director Preventive Services (position at MOHSW Assistant Director Reproductive and Child Health)

Dr. Bernadette Shilio, Ag. National Coordinator for Onchocerciasis

Dr. Edward Kirumbi, Programme Officer Onchocerciasis and Eye Care

Mr. Oscar Kaitaba, Programme Officer Eye Care

Dr. Upendo Mwingira, National Coordinator NTD

Dr. Theodore Tigahwa Focal person from Health Education and Health promotion

Medical Stores Department

Mr. Beatus Msoma, Programme Manager Vertical Programme

Dr. Ibrahim Kabole, Country Director Sight Saver International Chair NGDO

Dr. Margaret Kasiko, Regional Quality Manager SSI (Nairobi) Kenya

Dr. Martins, Ag. WR Tanzania

Dr. Grace Saguti, WHO Officer

Dr. Alphoncina Nanai, National Programme Officer NTD

Dr. Mtatifikolo, Ag. Regional Medical Officer NTD

Dr. Tom Kimweri Mtoi, District Medical Officer

Mr. Abdul Amir Daffa, District NTD Coordinator

Ghana

Dr. Robert Mettle Nunoo, Deputy Minister for Health

Dr. George Amofa, Deputy Director General, Ghana Health Service

Dr. Sylvester Anemena, Chief Director, Ministry of Health

Dr. Frank Nyonator, Director, Ghana Health Service

Dr. Nana Biritwum, Program Manager, NTDs

Dr. Edmund Kaitoo, District Director of Health Services, East Akim District

Dr. Erasmus Agongo, Regional Director of Health Services, Eastern Region

Prof. Dr. Johnny Gyapong; Director, Health Research Unit, GHS

All members of the East Akim DHMT (12 persons)

All members of the Regional Directorate, Eastern Region (15 persons)
Case Study: Onchocerciasis control and health systems strengthening in Tanzania

Overview

1. Tanzania has one of the longest running, community directed Ivermectin programs for Onchocerciasis control in Africa. The APOC program was officially launched in 1998 and currently funds 9 projects covering 17 districts and just under 2 million people. Tanzania, like most African countries, faces many of the challenges highlighted in the report with regard to resource mobilization, capacity, fragmentation, logistics and persistent poverty. Nonetheless, an examination, particularly of the CDI, health system and human resources infrastructure and strategies highlights some important lessons that can be considered in APOC’s support for country led systems for disease control. Site visits were made to the regional health offices in Tanga and to communities in Luandai Soni and Korogwe Lushoto as well as to the relevant government departments and WHO country office in Dar es Salaam.

Burden of disease

2. Onchocerciasis is present in 5 regions and 19 districts of Tanzania (Rapid Epidemiological Mapping of Onchocerciasis (REMO) 2006) with approximately 4 million people at risk. Current data are based on the REMO conducted in 2008 (see figure A). Prevalence of up to 63.9% has been recorded in some focal endemic areas and pathologies reported are dermatologic, lymphatic, ophthalmologic and systemic.

3. All five preventive chemotherapy targeted neglected tropical diseases (schistosomiasis, soil transmitted helminths, lymphatic filariasis, onchocerciasis and trachoma) are endemic in Tanzania reflecting the low socio-economic status, particularly of rural populations. Other endemic diseases include HAT, rabies, echinococcosis, cysticercosis, brucellosis and plague. Most of the population is at risk of co-infection with two or more of these diseases. A baseline survey conducted in 2004-6 in 50 districts found that active trachoma is endemic in 43 districts, (prevalence > 10% among 1-9 year olds) many of which were also onchocerciasis focal areas. There is also LF overlap in all the Onchocerciasis-endemic regions.

Figure A: REMO map with CDTI areas

<table>
<thead>
<tr>
<th>Communities and population at high risk, 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of communities in meso/hyper endemic (red) areas</td>
</tr>
<tr>
<td>Total population living in meso/hyper endemic (red) areas</td>
</tr>
</tbody>
</table>

Notes:
1. Tanzania Country Profile. APOC 2009
Health system

4. There is a strong rural basis to health care delivery in Tanzania. It is important to note however that although the distribution of facilities was planned to take account of population coverage, over time, the ratio has been overtaken by high population growth rates\(^3\). The general model conforms to a primary health care approach, with two trained health workers chosen by the community to operate at the level village health services. Dispensaries provide secondary care catering for up to 10,000 head of population followed by health centres at the ward level to accommodate approximately 50,000 people. The district level supports a Council Health Management Team which has the authority to determine priorities and plan and implement programs for the district. District hospitals also provide tertiary level hospitals with periodic specialist services from hospitals at the regional level. There are a limited number of consultant hospitals across the country (4 government and 4 private)).

5. There remain problems with access to services; approximately two thirds of the total population are not able to raise the costs for treatment or to travel the distance to receive treatment. Geographical accessibility is reported at about 90% of the population living within 5km of a health service, however where this is not the case, distances may be up to 10km. Furthermore, the quality of existing even where proximity is not an issue is variable, compromising equity. Recent human resource figures suggest a ratio of 2 doctors to 100,000 population with the total workforce running at less than 32% of requirements\(^4\). Given this problem with human resources for health, the CDTI approach has been critical to the achievement of current levels of coverage of the onchocerciasis control program.

The onchocerciasis control program and CDI

6. There is very strong commitment by the political leadership for NTD control in general and Onchocerciasis control in particular. Political commitment is demonstrated for instance by the involvement of politicians in mass drug administration campaigns and the public taking of tablets to allay fears of and rumors about surreptitious administration of mass sterilization. The risk however is that commitment is only as strong as the particular elected government.

7. At the national level, the National Onchocerciasis Control Program (NOCP) is coordinated by National Eye Care Program of the Ministry of Health and Social Welfare. The NOCP was supported by Non-governmental Development Organization (NGDO) partners Helen Keller International (HKI), IMA World Health, Sightsavers International and Rotary International.

8. CDTI projects in several of the districts in Tanzania are supported by a strong partnership model between the Ministry of Health, NGDOs, regional authorities and district councils. The ministry provides technical support for the implementation of several activities, some funding, supervises and monitors CDTI activities implemented in the project. The region supports supervision and fuel for vehicles during advocacy and mobilization activities. The NGDO partner provides funds for training of front line health staff especially in eye care, logistics (transport) and technical advice on how to execute integration of CDTI activities with other programme. District councils provide salaries to front line health staff and support HSAM, supervision, planning and training of CDTIs. Planning and implementation of interventions is coordinated through the districts with some supervision from the regional programme. Staffs at both district and the regional levels are actively involved in both implementation and supervision. Formal resources have been developed and translated into Swahili for the support and supervision of CDTIs. Community mobilization is undertaken as a joint activity with the districts. In Tanga,
local radio stations donate airtime to providing communities with appropriate information. This information is combined with the use of megaphones across the communities. The Community mobilization and sensitization process also includes education.

9. The community is responsible for the collection of Mectizan from the nearest Health Post and the distribution to community members on an annual basis with the understanding of a 15 year commitment.

10. Therapeutic coverage with Ivermectin (donated by Merck) reached 80% in 2002 and has remained consistent. Ivermectin distribution is done once a year, covering ages 5 years and above in all communities with disease prevalence of 20%. The prevalence is ascertained through nodule rate surveys.

11. CDI has served as a distribution model for other PC NTD programs. In addition, three of the CDI projects are successfully co-implementing the control of Lymphatic Filariasis in endemic communities by providing Albendazole (donated by GSK) and bed nets. CDDs also deliver interventions such as eye care, schistosomiasis control and soil transmitted helminthes (STH). Where the coordination had fallen short, the challenges included resource mobilization, problems in harmonization across NTD interventions, lack of predictability over the procurement of drugs and the potential for fragmentation by different models of incentives to CDDs and different levels of engaging with communities.

12. At the district level, the problems with coordination are being addressed through an integrated team approach to NTD control. The team is represented by staff from a range of divisions including MCH, HIV/AIDS, Cold Chain, Malaria, IMCI, TB and Leprosy as well as School Health and Onchocerciasis control. Operational research to explore the experience of this coordinated approach would provide valuable information about how to overcome these problems. A similar approach has been adopted at the national level with a recommendation to include representation from the procurement and medical stores departments so that there is a better understanding of the need for coordination of drug supplies as well.

13. The Primary Health Care Plan recognizes the need for genuine participation of communities and has proposed community participation in the management of health facilities at the Council level through Council Health Services Boards, Hospital Governing Committees and Health Facility Committees of the Health Centres and Dispensaries.

14. Resource mobilization is an important issue to overcome, particularly to ensure sustainability of the programs. There has been some advocacy to obtain greater support from local councils but this is an ongoing effort. Their engagement would present alternative forms of funding and governance once there is no longer formal support from programs such as APOC. Some communities expressed the importance of at least having their contributions acknowledged by their local politicians even if they were not remunerated.

15. Community incentives to CDDs include exemption from community labour activities and other community members volunteer to cover their daily responsibilities such as farming, which would not otherwise be covered while they undertake drug distribution activities. CDD quote:

“We are not asking to be paid for this job. When we accepted this job we knew that there is no payment, we are happy to help our brothers, sisters, and neighbors who otherwise would not have had the opportunity to have this drug. But if there is any kind of incentive that the program can give us we shall be very grateful. Raincoats for instance would be very good to prevent the record books and drug packets from getting wet. Boots will help to get through the mud in the rain. It would also be good to have T-shirts or badges to identify us as CDDs. We are going to continue to do this job for as long as it takes.” CDD

Others were keen on the opportunity for training across a range of health issues. A number expressed their disappointment in the restrictions they faced in being involved with some of the interventions as a result of limited literacy. Their commitment notwithstanding, there was a recognition that some interventions were associated with remuneration while others were not. Their suggestions were for these resources to be pooled across programs as a fairer way of working.

16. At the national level the issue of coordination would also need to involve advocacy and lobbying of external donors to support integration with other programs determined at the national and regional levels. This would require donors to be more flexible in their reporting requirements recognizing the need for streamlining of vertical programs.

Capacity building

17. Staff from the MOHSW acknowledged the support and training at various levels received through the APOC secretariat, WHO AFRO and the WHO country office. Capacity in this context covered a range of areas including disease control, CDI, resource mobilization, advocacy, community sensitization, health education, monitoring and evaluation, accountability and financial reporting. Similar capacity has been developed over the duration of the programme at the regional, district and provincial levels.

18. The CDI strategy fits well with Tanzanian broader plans for health workforce development. Interviews with staff at the national ministry level highlighted discussions of a range of proposed training programs for community based workers. The general approach would be establishment of more training facilities to cover a diversity of levels of training. Community workers (at the equivalent level of CDDs) will be recruited and trained over a 6 month period. This training will be open to those with basic literacy skills, able to keep some records. The strategy is to build a ‘reserve’ workforce who can be called upon on an ad hoc basis rather than on permanent ‘retainer’. They would have the added advantage of being selected by the community and therefore with a high level of community acceptance for population wide interventions and increased access and coverage. Workers at this level could be recruited for a wide range of projects including community development, social welfare, agriculture and health. It could offer a pathway to certificate and diploma and would improve options for employment and education. This recognizes the evidence of how much CDDs at this level have contributed to the public health effort. The quality of the records for instance for the population census and monitoring drug distribution was high. One of the CDDs interviewed said:

“Now that we are doing other health work we would like to be trained so that we can continue to help our community. There are other diseases that disturb our community like diarrhoeal diseases, leprosy, TB. It would also be very good to visit other towns and districts to exchange ideas with CDDs”.

19. Community health workers would be the next level with a more formalized training program that would be a potential career pathway into the health sector. Workers at this level would supervise CDDs and have a more structured role within community health services.

20. Other levels of training will focus on in-service training and continuing professional development for existing staff. These all present opportunities for the resources developed by APOC for health systems strengthening at the community and other levels to be trialed further developed and adapted and used to support the promotion of primary health care. The need for an increased voice of community in training is acknowledged within the primary health care development plan.

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Conclude and ongoing challenge

21. The APOC programme has made a significant contribution to the health system in Tanzania through the CDI approach and the integration of CDDs in many of the public health program plans. This has been facilitated in part by an approach that has been strongly country led. The approach has supported strong advocacy for inclusion of CDTI and co-implementation into comprehensive health plans at the regional and district levels.

22. There is a risk that in integration, the rigour that has to date been applied to onchocerciasis control will be compromised. It is therefore critical for ongoing implementation research be undertaken to develop evidence for best practice and to monitor the progress of onchocerciasis control within a larger integrated NTDs program.

Case Study: Onchocerciasis control in the Democratic Republic of Congo, a post-conflict country in transition

Overview

23. The Democratic Republic of Congo (DRC) has a population of 64 million living in an area of 2,345,000 km² and sharing 9,165 km of frontiers with nine neighbouring countries. Ten years of conflict during the 1990s, combined with poor governance and the withdrawal of most foreign aid, inflicted severe damage on the population and on the country’s social and economic infrastructure. Transport and communications infrastructure are very poor and an estimated 71% of the population is living below the poverty line. DRC is ranked by UN Human Development Index in 176th position out of 182 countries in 2009. DRC reached the Heavily Indebted Poor Countries Initiative Completion Point in June 2010 and will now benefit from $12.3 billion support in debt relief; this has generated optimism for future funding at the Ministry of Health level. Although there are still some areas of instability, especially in the East of the country, the GENERAL situation is now considered one of transition to a development phase.

24. CDTI was launched in DRC in 2000 but the programme has suffered from disruptions, notably due to episodes of conflict and the effects of co-endemicity with loa-loa causing a number of severe adverse events and deaths in 2005. Onchocerciasis is present in all 11 provinces and there are now 20 projects covering 230 districts; four projects only became operational in the last 3 years. The projects reflect previous provincial and district boundaries and often straddle several districts and more than one province; some were reported to be difficult to manage because of these administrative complexities and the vast areas covered.

Burden of disease

25. It is estimated that 26 million Congolese in all the 11 provinces are living in Oncho meso/hyper-endemic areas, while 14 million are infected.
26. There are zones with Loasis co-endemicity in 14 out of 20 projects. The occurrence of Severe Adverse Events (SAEs) and associated deaths when these zones were first treated, led to a halt in ivermectin distribution in 2005 while the prevalence of Loasis was mapped. A national unit for managing SAEs was established and is closely involved in supervising the gradual inclusion of these zones although it has not prevented the occurrence of some SAEs.

27. Most of the 13 Neglected Tropical Diseases (NTDs) are present in DRC, including lymphatic filariasis (LF), schistosomiasis (Schisto), and soil transmitted helminths (STH); some mapping has been undertaken, but it has not yet been completed.

**Health system**

28. During the conflict period, the stewardship role of the Ministry of Health was greatly diminished and many other well-resourced actors entered the sector, from both the humanitarian and private sectors. As a result, health system structures, such as those for procurement, health information management, have become fragmented with multiple-decision making centres at national and provincial level. There are 52 vertical programmes and the districts and zones are coping with a variety of uncoordinated approaches.

29. The focus of the health system is currently on preventive care. Patients pay for consultations at the primary level, this practice began in 1990s when the health centres had no other source of revenue. Fees still support essential running costs and contribute 70% of zonal operating costs11 but are not controlled or managed. There are little or no essential medicines available due to supply chain failures, even with externally funded projects. “The drugs we ordered in September 2009 from AXxes Project are still awaited” a District Medical Officer (August 2010). Even for these projects, patients have to take prescriptions to the burgeoning but unregulated private “pharmacies”.

30. There are continuing frustrations with salaries, which are low and often paid in arrears, at all levels of the system. District health staffs were not receiving their salaries regularly and there were reports that some staff lacked professional competency owing to irregular peer-recruitment procedures. It was also reported that the routine functioning of the health dialogue structures, from the village to district levels, relies heavily on external support received for holding monitoring and evaluation meetings. Without this support, the committees are said to stop functioning.

31. With the recent adoption of the National Plan for Health Development 2011-2015 which operationalises the National Health Policy of 2001, the Ministry of Health now has a framework that promotes decentralisation and integration for reforming the health structure. An institutional audit has been conducted and corrective measures that clearly delineate responsibilities and reporting

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11 WHO Cooperation Strategy

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**Figure B: REMO map with CDTI areas**

**Communities and population at high risk, 2009 (partial data)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of communities in meso/hyper endemic (red) areas</td>
<td>40,529</td>
</tr>
<tr>
<td>Total population living in meso/hyper endemic (red) areas</td>
<td>26,562,354</td>
</tr>
</tbody>
</table>
lines from district to the provincial and the national levels are expected. The new structure allows the central levels to concentrate on strategic thinking and regulation and delegates regulatory powers to the provincial level; this was said to be a source of frustration for some individuals at national level. With the transfer of the support and supervision roles to the provinces, the provincial steering committees have been specifically identified for strengthening but not the health district and zone dialogue structures.

**The onchocerciasis control program and CDI**

32. Leadership and coordination at national level has been weak within the National Onchocerciasis Control Programme for several years and this has recently been the subject of APOC advocacy at the highest levels. There are problems with the structure, management capacity, levels of understanding and communications. There was also evidence of internal dissent and lack of motivation owing to poor central level resourcing and to APOC funding now going directly to projects. There are no clear strategies for resource mobilisation and advocacy to support oncho control activities but rather a poor sense of accountability at different levels, poor communications and suspicion. Recognising the failures of the current structure and management capacity, the Ministry of Health is said to be reviewing the NOCP structure.

33. The weakness of the NOCP and the poor progress in achieving the coverage rates needed to control onchocerciasis led to APOC’s decision to support two Technical Advisor posts in DRC. Since their arrival there has been a very marked improvement in coverage rates but the relationship between the APOC Technical Advisor based at WHO country office and the secretariat of the NOCP is difficult and is characterised by poor communications and distrust. The WHO Representative commented that there is lack of understanding of the range of WHO resources that support such posts. Other Ministry personnel were said to be supportive of the posts and NOTF recognised the progress achieved since these posts were filled.

34. National therapeutic coverage rates have increased markedly in the last couple of years: from 40% in 200812 to 65% in 2009, while the geographic coverage rate improved from 60% to 87% during the same period. Nevertheless, this average masks variable project performance; the therapeutic coverage target of 65% was only attained by 5 projects in 2008 and by 7 projects in 200913 with a few well-performing projects having increased the overall averages. It is reported that in many projects, treatment does not continuously cover the same communities: different areas or zones may be covered in different years. The 35% eligible population not covered was attributed to absences – particularly people away in mines – and to refusals due to fear of secondary effects or illness/alcohol consumption or some religious beliefs.

35. Co-endemicity with loaasis continues to slow progress in covering all districts. In 2008 there were 105 SAEs and 6 deaths and 137 SAEs and 12 deaths in 2009. Training in the management of SAEs has been conducted but treatment has still not yet begun in some zones with co-endemicity.

36. While the coverage figures are encouraging, general concerns were expressed about levels of monitoring, evaluation, data-collection and supervision. Members of the National Onchocerchiasis Task Force (NOTF) only visited 3 projects in 2008 and recognise the need to increase supervision levels. Likewise they expressed concern that APOC has only organised sustainability evaluations for 6 of the 20 projects. Although it was subsequently explained that these were prevented by safety reasons 2003-2007, security has since greatly improved in many areas. The situation of of projects with delayed sustainability evaluations should now be reviewed and the evaluations undertaken where feasible. Data collection at the community level is a worrying issue with large numbers of missing reports (14,361 villages) and some villages in one project were considering refusing to send data. Project reports are routinely criticised by the APOC Technical Consultative Committee for gaps in data, internal inconsistencies and inadequate explanations.

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12. NHDP
13. APOC Summary Data
37. Communications about budgeting and financial matters have been problematic between APOC and many projects; on one hand the projects are convinced their submitted budgets are realistic, if not conservative, on the other hand APOC is reducing the proposed budgets without explanations thus obliging projects to cut activities and re-plan. The effects of reduced budget allocations should be accurately assessed so that budgets sent are easier to defend.

38. Logistics The logistics of Ivermectin procurement and supply to frontline health facilities present several challenges, including complex customs clearance and tax exoneration procedures. The WHO network of sub-bureaus is used for delivering Ivermectin supplies to the provincial level because of the poorly performing local clearance and transport systems; it is expensive as Ivermectin supplies have to travel by air to the provinces. Many shortages in supply were reported in 2009, but the reasons were unclear as no one actually analyses these supply chain difficulties; it is likely that poor planning skills will have played a role.

39. The lack of reliable banks in some project areas has led to APOC funds being sent directly to projects via the WHO sub-bureaus in line with the requirements of the GSM mechanism and the necessity for accountability. This presents a challenge for future project integration as this routing is not aligned with current national processes nor with the new decentralised structure whereby funding will flow to the Provincial Ministries for disbursement to projects.

Sankuru Project succeeding despite the challenges

40. The evaluation team visited the Sankuru Project in Kasai oriental province. Despite the issues experienced in other projects in DRC, this project shows that a high level of performance can be achieved despite the challenges of a broken health system. This is largely attributed to the skills and motivation of the personnel involved. The Coordinator originates from the region and has a Masters in Public Health (funded by APOC); his leadership, the commitment of the health staff in the project area and the engagement of communities has all led to this success.

41. Sankuru Project is one of only two to have consistently achieved coverage targets for the last three years and to have reached the 80% therapeutic coverage rate and 100% geographic coverage required for moving to elimination. Two health zones have foci of co-endemicity with a very low prevalence of Loasis; there were concerns with SAEs when treatment first started but none have occurred recently as they are proceeding carefully; some remote communities (difficult to reach without a boat) have not yet reached targeted coverage rates.

42. The CDTI approach is generally working well in Sankuru although there is scope for further improvement. The communities are aware of Ivermectin and recognise the benefits of taking it for their skin and eyesight. However, persistent fear of “minor” secondary effects such as swelling and aches is still leading to repeat refusals of Ivermectin treatment. The CDDs encountered by the evaluation team had clearly not got the knowledge or confidence needed for counteracting these fears. The communities visited requested medicines for counteracting the secondary effects; these were provided when distribution first started and it was not clear if they are still meant to be provided. There is suspicion amongst the communities that drugs provided for the management of side effects are used for other purposes.

43. To address these issues, the project has developed some IEC materials but long awaited image books being developed by the NOCP have still not materialised and there was clearly a need for more. Increased training and awareness-raising are required but budgets and materials for current HSAM activities are already insufficient.

44. The gender ratio amongst CDDs is currently 3M : 1F. The project trains 2-3 times the number of CDDs that it requires because of the high dropout rate; many people are said to volunteer thinking that they will eventually receive incentives of some kind.
Other programmes calling on community volunteers (community relays and/or the CDDs) give varying levels of incentives to individuals and also give support for meetings of community structures for planning monitoring and evaluation. There were varying levels of community support for the CDDs, some were not getting anything as it had not been understood they were not receiving any external incentives.

45. Project staff recognised that Community Self-Monitoring is a useful tool that could be used independently and also by DMOs, it was not being used because it is found a cumbersome process and there are no resources for supporting the community meetings. It is worth noting that CSM was perceived more as a tool for health staff than a tool for community empowerment. The evaluation team question whether some difficulties stem from the need to form a group in the community whose role may involve criticising their peers and the health personnel they work with. The role of health personnel in this needs examining as it may be preferable for an existing group or CSO in the community to undertake this.

46. Project data was being collected and collated and the project has been praised by the TCC for the quality of its reports. Health data was being collated and publicly displayed at the offices visited by the evaluation team but it was not being analysed and utilised for decision-making purposes.

47. Problems experienced with organising Ivermectin supply, data-collection and reporting difficulties reported elsewhere were not affecting Sankuru Project. The Coordinator explained that if one understands the system and plans well in advance the system can be made to work.

48. The Project staff and health staff were aware of their coverage levels and of APOC’s refocusing on elimination but they were not actively integrating elimination in their objectives. They thought that elimination would be feasible but would require a doubling of investment in HSAM, with the provision of materials, further assistance with transport and some incentives for both CDDs and community-monitoring (as this is what other programmes do). Issues and queries were raised regarding elimination: how long will 80% therapeutic coverage rate be required if 65% has previously maintained for a while – when is the start point? What are the implications for elimination strategies of children aged 2 with lots of nodules who have not yet reached treatment age?

Co-implementation and Integration

49. The concept of co-implementation is already widely accepted as logical both by district health staff and by communities and has been happening for some time. In 2005, pilots were conducted combining Ivermectin distribution with Vitamin A and Mebendazole; these were supported by APOC and involved other government and NGDO partners. These have been followed by APOC agreement with NOCP to support co-implementation of Vitamin A + Mebendazole in three projects. According to the NOTF reports, this worked well the first year, but numbers of people treated have reduced owing to difficulty in coordinating supplies; Vitamin A distribution did not take place in 2008 due to lack of funding and difficulties were experienced in ordering Albendazole until LF mapping has been completed.

50. Co-implementation is already happening with other interventions such as vaccinations, distribution of Vitamin A, Mebendazole and bednets during national Mother and Child Health and Nutrition week. For health personnel, Vitamin A and de-worming were obvious interventions for co-implementation, while for the communities, malaria was the key priority. Health personnel at central and district levels are clearly aware of the Ministry of Health’s key policy of integration and are anticipating further changes in their ways of working.

51. The 2008 National Policy for Neglected Diseases and the draft Strategic Plan 2011-2015 for integrated control of NTDs have adopted the CDI as the strategy for tackling onchocerciasis, LF, schisto and STHs. A clear distinction is made between this group of
NTDs controlled by integrated preventive chemotherapy and the remainder which are controlled by appropriate case management. The draft plan aims to establish the endemcity of NTDs, reduce morbidity and mortality linked with NTDs and, by 2014, eliminate Leprosy in all health areas. The total budget for 5 years is estimated at US$ 9,205,630 with APOC as the largest funder and expected to contribute 46% of the total budget. In 2009, a Ministerial order created the NTDs control coordinating mechanism for organizing the integration of the control activities between the existing national programmes to combat NTDs such as Oncho, LF, Schisto and STHs. It is unclear how the new integrated structure will be achieved: the current range of vertical programmes, each with their own interests and ways of working, is hindering joined up working. It clearly has implications for the future roles of the NOTF and NOCP staff, but their views on this aspect of the plan were not clear.

52. The key challenge for progressing with co-implementation of NTDs is the completion of mapping the other NTDs. Stakeholders at national and district levels agreed that the quickest way to kick start the integrated NTD control program would be to train the Oncho teams to complete the NTD mapping (for LF + STHs + Schisto) drawing on APOC for support with the survey protocols; preventive chemotherapy could then be implemented building on the Oncho control infrastructure. Acknowledged challenges for successful co-implementation are the integration of planning, monitoring and evaluation processes at all levels, the coordination of drugs supply and the provision of training in all diseases to the supervisors and, motivation of health staff.

Capacity-building

53. The emphasis of APOC's capacity building support continues at community level; large numbers of new CDDs and existing CDDs and health assistants are trained and retrained each year. An extensive range of training has been provided for both project staff and NOTF secretariat in programme management, management of SAEs, CSM, data collection, analysis and report-writing, operational research, advocacy and M&E. Capacity development at the national level is critical for ensuring adequate availability of HSAM materials, appropriate advocacy to decision-makers and donors, and timely Ivermectin ordering. Despite this, the NOTF identified a continuing need for training in a wide range of topics at district, provincial and national levels, this included new areas such training in fulfilling their new mandates and advocacy. At district level, high staff turnover rates require the continuation of training in essential routine topics such as supply management, accountability and financial reporting.

54. In addition to the expressed needs, the health dialogue structures at all levels will need strengthening so that they understand not only their own role and responsibilities but those of associated structures; this will promote good governance, leadership and accountability. At all levels, there is a major need for improved internal communications and HSAM conveying clear and simple messages and to avoid misunderstandings and confusion.

55. The 2 APOC Technical Advisors (TAs) have clearly made a valuable contribution but the NOCP and NOTF expressed discontent that they are doing routine work rather than providing expert advice and evaluation skills; the TAs are thought to be undermining national leadership. It was suggested that they should be located in the NOCP office so that NOCP staff can benefit from more frequent interface and the resources attached to the post.

Conclusions and ongoing challenges

56. Levels of community ownership are variable: in some communities, members were more involved and playing a larger role, while in others, CDTI had more guidance and ownership from the health system. Low levels of community support were generally attributable to poor communication of the fact that CDDs do not receive external incentives and that these are for the community to provide. The incentives given by other programmes add to the impression that incentives may exist somewhere in the system and also lead to
57. There are clear resourcing implications for improving coverage rates, (especially for reducing fear of secondary effects) and for moving to elimination and co-implementation. In particular, HSAM will need considerable strengthening; if the budget requires doubling in a project such as Sankuru, the needs will be much greater in other projects. It will also be important to build capacity in analysis and the use of data for decision-making.

58. There is a clear commitment to integrated programming for NTDs but there are a number of key steps required: formal adoption of the NTDs strategic plan, restructuring at national level and the completion of mapping processes lor NTDs. It will be useful for APOC to support the mapping since, until this happens, it will be difficult for additional donor funding to be mobilised for NTDs - and this may leave the oncho programme bearing the weight of the other NTDs. The quickest way would be for NTDs to ‘piggy-back’ on CDTI, especially for the mapping; this could be quickly completed if training is given to project staff.

59. Despite reassurances to the contrary, the consistent absence of a high-level DRC representative at the JAF meeting and the continued vacancy of the position of NOCP coordinator, both point to a lack of engagement and ownership. With the current infrastructure and ongoing decentralisation process, the transition to national ownership in DRC is likely to take some time in order to clarify roles and responsibilities within the decentralised structures, to appoint competent and skilled personnel, to improve resource mobilisation, to reconstruct a reliable drugs supply and management chain and to rebuild a trustworthy financial infrastructure.

Case study: Brief on onchocerciasis control in Ghana

Background

60. The Onchocerciasis Control Program (OCP) was created in 1974 with a mandate to eliminate onchocerciasis in 7 countries in the Volta River Basin – Benin, Burkina Faso, Cote d’Ivoire, Ghana, Mali, Niger and Togo. The main intervention then was aerial larviciding. The program was extended to southern Ghana in 1988 when O. Volvulus was discovered in those areas. By 1995, ivermectin was considered efficacious and was made freely available to countries. OCP started transferring the responsibility of residual control and surveillance to national authorities. Coordination of the control program was then placed within the Ministry of Finance with technical implementation provided by the Ministry of Health.

61. The Onchocerciasis Control Programme (OCP) effectively controlled the disease in Ghana for 26 years. The activity of OCP completely ceased by the end of the year 2002 and was later replaced by the Special Intervention Zones (SIZ) Programme which ran from 2002 to 2007.

62. Ghana did not fall within the APOC program framework and had government take over the program. However, there were four countries classified as Special Intervention Zones (SIZ) where the entomo-epidemiological situation has on the whole remained unsatisfactory. Ghana’s Special Interventions Zone areas included the Pru river basin covering a population of 85000 population, a prevalence of 7.8% and CMFL of almost 0mf/skin snip in 2001. However, the Oti river basin, and its
tributaries in Togo covering a population of 185,000, a prevalence of 21.7% and CMFL of 0.90 ml/skin snip in 2001, and other known onchocerciasis endemic areas, continued to receive annual treatments under the program. Since the devolution of the former Onchocerciasis Control Program (OCP) and the inception of the SIZ Program, the country has focused its package of interventions in areas identified as Ochocerciasis transmission hot zones. These are mainly in the Pra, Pru, Black Volta, the Oti and Asukawkaw river basins.

**Burden of disease**

63. Current standard prevalence rate for *O. volvulus* in the 93 sentinel sites is above 5%. Crude prevalence rate ranged between 0 – 55%. So far, *O. volvulus* is the only parasite found in Ghana. The highest focus of infection is observed in the Bui-Black Volta basin where 66.7% of communities surveyed in 2008 had prevalence of over 5% with indication of an increasing trend since 1997 while that of areas such as the Pru river basin are showing a declining trend. The trends in microfilarial infectivity rates from the Bui-Black Volta river basins and the Pru river basins are shown in figure C below.

64. Results from on-site black fly dissection from the Bui-Black Volta, Tain and Densu river basins in 2007 show a monthly biting rate of 27. In all 29 L3 larval forms were found thereby confirming infectivity of black flies in the river basins. The focus of activities in the Tain district was as result of the decision to make the entomological study part of the government’s desire to construct a hydroelectric dam on the Black Volta River.

**Package of interventions**

65. **Surveillance:** Surveillance activities are based on annual longitudinal tracking of control activities both to monitor recrudescence in the black fly and the impact of Ivermectin administration within human populations. Fly capture for DNA pool screening at the MSDC and on-site blackfly dissection are part of the program.

66. Recent trends show a downward trend in communities participating in skin snipping processes with an overall participatory rate of 56.5% compared to above 70% in year leading to 2006. The reasons have been attributed to repeat sampling of subjects in same communities, the discomfort associated with repeated snips and reversed benefits of high awareness of HIV infection control measures. It has also been observed that macrofilaricide field trials by research institutions without coordination and synchronization with existing programs have increased oncho related activities resulting in community fatigue in involvement with the program.

**Figure C: Trends of Oncho prevalence in Bui-Black Volta and Pru river basins**

![Graph showing trends of Oncho prevalence in Bui-Black Volta and Pru river basins](Source: Ghana Health Service Annual report of the Ghana Onchocerciasis Control Program 2008)
67. **Treatment:** Ivermectin remains the principal drug of use under the oncho control program in Ghana. The delivery approach remains Community Directed Treatment with Ivermectin (CDTI). Treatment coverage averaged 72% nationally though there are variations in coverage from one district to the other. Observations of CDDs’ registers showed some gaps in treatment data which suggested a declining treatment uptake. However, overall there has been a marked improvement both geographic and therapeutic coverage for the Ghana National Onchocerciasis Control Program since 2006 to date (Table F).

68. **Community mobilization:** Intensive community mobilization and education sessions are part of the intervention strategy in endemic communities. It includes census-taking as part of updating community registers and public sensitization. The focus of activities was on community meetings and durbars where the cooperation and participation of individuals for a successful treatment campaign were solicited. The regions also conducted media briefings and radio discussion, especially in areas endowed with radio facilities. Traditional communication channels such as gong-gong beating, roof-top announcements, and church and mosque announcements were also employed. Although there were periods of political activities that affected community focus, these sensitization activities continued.

69. **Other community based interventions include:** (i) conducting extensive mapping of all satellite communities, farm huts and fishing village; (ii) establishment of systems to capture migrant farmers, nomads, sand winners, traders, etc during the period of Ivermectin treatment; and (iii) encouraging communities to nominate their own representative for training as CDDs.

70. **Human resource:** The Oncho control program can be said to have developed a network of health practitioners without compromising the health system in Ghana. There are 548 staff trained on the CDTI Strategy who are part of the Ghana Health Service. These include District Directors of Health Services, Public Health Nurses and Disease Control Officers. In addition, there are several other community based volunteers.

71. **Program management:** The Onchocerciasis program in Ghana is currently managed by a Program manager in charge of Neglected Tropical Diseases in Ghana. He is assisted by three technical officers housed in a single office.

### Co-implementation with other programs in Ghana

72. Though not a perfect act for several reasons, the National Onchocerciasis Control Program has attempted a number of co-implementation activities; this has generally been judged to be the ideal way for the future. There have been joint programs around community-directed mass drug administration that have included lymphatic filariasis, schistosomiasis and vitamin A distribution. In 2007, the Neglected Tropical Diseases Control Program took delivery of over 25.5 million Ivermectin tablets and over 8 million tablets of Albendazole for distribution to endemic regions of the country. These drugs were targeted at treating at risk populations for both Lymphatic Filariasis and Onchocerciasis including areas that are co-endemic for both diseases. It has been found that using this approach has brought about synergies in supporting resource constrained programs. A preliminary assessment indicates that community drug distributors who were trained under the Oncho program can be

<table>
<thead>
<tr>
<th>Year</th>
<th>Treatments Persons</th>
<th>Communities</th>
<th>Coverage (%) Therapeutic</th>
<th>Geographic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1,269,341</td>
<td>1,963</td>
<td>65.4</td>
<td>88.9</td>
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<tr>
<td>2007</td>
<td>1,544,155</td>
<td>1,851</td>
<td>72.8</td>
<td>82.8</td>
</tr>
<tr>
<td>2008</td>
<td>1,835,162</td>
<td>3,244</td>
<td>71.8</td>
<td>97.9</td>
</tr>
<tr>
<td>2009 (1st round)</td>
<td>544,959</td>
<td>1,280</td>
<td>75.8</td>
<td>93.7</td>
</tr>
</tbody>
</table>

Table F: CDTI data for Ghana National Onchocerciasis Control Program since 2006
and are already involved in other health and development activities (distribution of vitamin A, malaria treatment, polio immunization, guinea worm eradication, nutrition, and water protection), and serving as community health workers.

**What has worked well?**

73. In the project areas disease surveillance was undertaken through a multiple layer approach: (i) recruiting staff with recognized public health qualifications as team leaders for the district; (ii) sensitizing community leaders across the social profile of the community and the geographical target area to identify the disease and the vectors and report these; (iii) train community volunteers on basic case observation and recording based on a standard format that is easily memorized.

74. The Onchocerciasis control program clearly blazed the trail for community directed treatment and CDD. Inter-sector collaboration with Agricultural Extension Officers, Educationists (teachers) and the District Assemblies generated partnerships that assisted in providing opportunities for mapping; breaking group specific socio-economic barriers requiring social sensitive strategies; providing population specific information and developing adequately “gendered” approaches to meet special needs of the community. There is a clear demonstration that with the appropriate incentives, it is possible to maintain CDD for long periods of time (see box A). Admittedly, there has been attrition albeit not significant in CDDs on the program currently.

75. The regular consultations with representatives from the communities allowed the program to benefit from cultural compatibility, ensure social mobilization and cooperation, local involvement and awareness generation, information collection in coordination with health system staff and community based monitoring and evaluation. Rumor registers were maintained as part of a legitimate source of possible disease up-break or escalation.

76. A study initiative with APOC found that awareness of Oncho and the ‘white tablets’ was very high; there was integration of CDTI with other programmes such as vitamin A, guinea worm, NID/EPI, malaria and TB and a general willingness of many communities to continue with Ivermectin treatment.

**Box A: CDD as Oncho worker**

Mr Ansah is a farmer and catechist and currently the only CDD in the community after the transfer of another CDD who was a teacher. He is clearly committed to the community and has been working as a health volunteer for 18 years and CDD for 10 years. The community leaders find him very devoted and cooperative and use him for all such initiatives. Oncho was the first program he has been involved with for drug distribution. He has since added on the distribution of drugs for Lymphatic Filariasis, polio and bed nets. Mr Ansah notes that the community is happy with the treatment and would report any adverse reactions to him. He says he has a good relationship with the local health personnel and he works with Traditional Birth Attendants and child welfare clinics. He is not paid an allowance but is excused from communal labour duties because of his contribution as a CDD.

**What has not worked well?**

77. Surveillance activities were temporarily halted in 2008 mainly because the Multi-Disease Surveillance Centre stopped collecting black flies for analysis for almost two years. Specialist skills such as epidemiologists were not readily available. As a result, the amount of data generated from the 93 sentinel sites in 2007 was not being adequately analyzed to inform strategic planning. Antecedent to this were the frustrations that while new Oncho foci were being discovered, it was unlikely that the program will extend its reach to address the situation creating a level of disillusion among project officers.

78. Sporadic resource availability has become a major issue. Under the then OCP program, the Black Volta basin was adequately resourced until the program was passed on to the Ghana government in December 2002.
Between 2002 and 2005 the Bui-Black Volta Basin had experienced gaps in Ivermectin distribution. When treatment resumed in 2005 supply remained sporadic with persisting drug shortage and poor supervision. Across the endemic areas, the preparation of measuring poles over the period is no longer standardized across the endemic region. As funds become limited, District Managers willing to continue the programs have attempted to replace or introduce new poles without the proper guidance and standardization information.

81. There was enough evidence from the field visit to suggest that community drug distributors were willing to continue with the service the inadequate and late arrival of drugs, short duration of treatment and inadequate social support as key challenges confronting them.

82. The evaluation team also noted the following challenges that militate against the Ghana Oncho control programme: (i) bad roads linking communities to hamlets; (ii) need for improved incentives for CDDs; (iii) migration of settler farmers to more fertile and oncho free areas; (iv) difficulty in planning treatment periods as these are dictated by availability of funds and logistics; (v) inadequate integration of Oncho program in main health sector planning and budgetary framework (vi) biting nuisance of the black flies in certain river basins especially within the Black Volta Basin.

Some systemic observations causing neglect of disease

Program management

83. The Onchocerciasis program because of its historical development as a vertical program, though transferred to government has still not been integrated in the true sense into main stream health sector management. Responsibilities have not been fully transferred to Regional and District Directors. Though a National Onchocerciasis Control Program office exists, there is no program emphasis for control leading to elimination in the priority activities.

84. Political and health sector leadership commitment towards the disease appears to have waned considerably. None of the aide memoires signed between the government

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**Box B: Hypothetical evidence on resistance**

The persistent significant microfiladerma (PSM) could be attributable to the non-response of the adult female worms to ivermectin with the possibility of resistance emerging naturally in these adult female worms (Awadzi and others 2004; Osei-Atweneboana and others 2007). The observations of resistance could be related to the issues of geographical treatment coverage, therapeutic coverage and compliance to the treatment (Hotez 2007).

79. Osei and others published an article in the Lancet that suggested the possibility of resistance emerging in the adult *Onchocerca volvulus* female worms as a result of rapid population of microfilaria in some subjects in 20 study communities in Ghana. Their publication suggested that the repopulation was the failure of Ivermectin to suppress release of intra-uterine microfilaria by the adult worm. Fortunately, the publication concluded the Ivermectin is still effective against the microfilaria. This evidence and other hypotheses as espoused in box B have precursor triggers for probable cause and consequence emanating from the systemic failures.

80. Community members absent during ivermectin distribution days do not appear to have opportunities to receive the drug on other days. Concerns have been raised about requirements for unused drugs during the distribution window period to be returned rather than retained for those who missed coverage. Planning for distribution has not taken into consideration issues of students going away to boarding schools leading to several missed treatments for consecutive years.
and health development partners since 1997 mentioned Onchocerciasis as a program of public health significance. The disease was mentioned only once in the annual review program and this was in 2000. It however did not feature in the subsequent programs of work developed. Another disease that suffers a similar fate is schistosomiasis.

It should come as no surprise to find that the only program the oncho program has had continuing tagging to is Lymphatic Filariasis. In Ghana, the Lymphatic Filariasis Elimination Programme was merged with the Onchocerciasis Control Program in 2004. An observation made is that Lymphatic Filariasis and Guinea worm have suffered similar levels of neglect and only gain import under project approaches. Each of these have different program managers and the level of resource mobilized is entirely dependent on the individual program manager's ability to attract particular donor interest. Co-implementation even among these programs has remained difficult because the varying levels of availability of inputs.

Program financing

Financing of the program is inadequate and cannot sustain the level of interventions required to control the diseases. The table below shows the amount of money available to the program in 2007.

Table G: Financing of Onchocerciasis 2007

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Districts (Oncho/LF)</th>
<th>Amount Allocated by GoG (Gh¢)</th>
<th>Contribution by Partners (Gh¢)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SSI APOC LFSC USAID</td>
<td></td>
</tr>
<tr>
<td>Eastern</td>
<td>10 (3)</td>
<td>51,220</td>
<td>34,420 - 16,800</td>
<td></td>
</tr>
<tr>
<td>Western</td>
<td>7 (10)</td>
<td>210,109</td>
<td>16,560 - 193,549</td>
<td></td>
</tr>
<tr>
<td>Ashanti</td>
<td>20</td>
<td>33,987</td>
<td>17,200 - 16,787</td>
<td></td>
</tr>
<tr>
<td>Brong Ahafo</td>
<td>11 (2)</td>
<td>53,100</td>
<td>- 39,900 13,200</td>
<td></td>
</tr>
<tr>
<td>Volta</td>
<td>8</td>
<td>16,020</td>
<td>16,020 -</td>
<td></td>
</tr>
<tr>
<td>National</td>
<td>-</td>
<td>24,027</td>
<td>2,495 8,400 - 13,132</td>
<td>For country-wide monitoring and surveillance activities</td>
</tr>
<tr>
<td>Total</td>
<td>56 (15)</td>
<td>388,463</td>
<td>86,695 48,300 46,787 206,681</td>
<td></td>
</tr>
</tbody>
</table>

*Tullow oil, sent funds directly through SSI to Western Region, and so, were not part of the Gh¢70,135 transferred to the national level.

†Liverpool LF Support Centre Donated Gh¢90,000 for MDA implementation in Ghana

Compared to total government allocation to the affected regions, the level of financing may be considered significant in proportion to total government non-wage recurrent expenditure for a single disease. Approximately 97% of all government resources in 2007 was spent on personnel emoluments. The sector is therefore heavily reliant on external aid for non-wage recurrent expenditure.

Country-based donor financing of onchocerciasis has not fared any better after the OCP years for two reasons. First, the sector-wide approach provided a platform for negotiating priorities that could be funded through the main 'common basket' financing arrangement. For a program to count as priority, it must have strong advocates or Program Managers with Directors of Public Health that see it as priority. This level of top level champions was observed to be generally weak over the years. Recent reviews show that with the advent of Sector Budget Support (SBS) and Multi-donor Budget Support (MDBS) Ghana now has health sector financing arrangement that may now be termed a ‘fragmented sector-wide approach’. The actual dialogue has moved out of the sector lead by the Ministry of Health while the oncho control program sits in the Ghana Health Service. Within SBS, the funds are already earmarked to the contributing partner preferences whiles the MDBS has encouraged the choosing of less difficult or low hanging
fruits as triggers, causing policy responsible persons to shy away from programs requiring sustained efforts. Onchocerciasis control not featuring ‘loudly’ invariably falls through the cracks.

89. Experience from the above points to the probability that for programs to receive adequate attention and be taken to scale, it may be necessary to isolate them from the comprehensive and general integrated approach. Programs such as HIV, TB, Malaria, maternal and child health after the collapse of the ‘common basket’ have now got resources because there are direct international and national advocacy to ensure that there is financial, human and logistic resources available to scale up these interventions. This comes against the backdrop that the benefit package covered under recently introduced National Health Insurance Scheme in 2004 is unlikely to address public health conditions whose onset lie in factors that depend heavily on socio-economic determinants of health.

90. District level program implementers have raised concerns that the withdrawal of targeted funding of the oncho program will be challenging as this will mean requesting the District Assemblies to fund the program which will be impossible. They note that though CDDs are not paid, they manage to keep part of the oncho targeted funds allocated for training and give them allowances for food when they come for their annual refresher training.

Drug supply and information management

91. Whereas it may be possible to tag aspects of NTD programs on well resourced programs such as insecticide treated nets, TB drug distribution and social mobilization programs associated with these and HIV, the fundamentals of drug availability and program specific interventions need to be strong in the first place to ensure predictable co-implementation. Given the current level of inconsistent flow of program funds and drug availability, co-implementation is unlikely to be an effective strategy.

92. There is a high level of Ivermectin refusal rate in some communities (New Longoro, Kyingakrom and Begbemdo) due to previous experience with adverse drug reactions. As noted earlier, drug supply chain management had suffered from inefficiency and this has translated into erratic Ivermectin distribution and ineffective management at the community and district level. Hamlets linked to main communities are often partially or not treated.

93. Health information management capacity is noted as weak at all levels of the system. Treatment records are incomplete at regional, district, sub-district and community levels. Records are poorly managed; most of them are stored manually thereby making calculating coverage for most communities a problem. This problem is generally systemic because onchocerciasis is not part of routinely collected health sector information and does not feature in the core health sector indicator set and managed data.

Communities visited: Potrase, Amanfrom, Odumase
Onchocerciasis control in Cameroon: illustrating the complexities and challenges of health sector reform processes

Background

94. Cameroon, often referred to as “Africa in miniature”, is located in Central Africa bordering the Gulf of Guinea and offering a very diverse landscape covering 475,650 sq km from the Northern savannas to the Southern Equatorial rain forests. Home to almost 19 million inhabitants (2005 census) with a growth rate of 2.87%, the average age of its population is 22 years with almost 46% aged <15 years, while senior citizens above 65 years account for an estimated 3.2%. The urban population reached 51% in 2003 and life expectancy at birth was 50 years in 2006. There are more than 230 tribes living in Cameroon, clustered in five ethnic groups: Sudanese, Hamits, Semits, Bantu and Pygmies, and more than 200 national languages; French and English are the official languages. Administratively, Cameroon is divided in 10 regions each under the authority of a Governor, with 58 divisions and 355 urban and rural councils.

95. Legislation to establish decentralization was voted in 2004 with the aim of enhancing local government authorities in matters related to health, education, sanitation, and environment. The decentralization process is being implemented progressively with Health and Education as the pilot sectors. The health sector organization in the post structural adjustment era (2001 to the present) is in line with the reorientation of primary health care framework and the district health system approach. The prevailing philosophy is the Bamako Initiative grounded on community participation and health financing through user fees for care (predominantly out-of-pocket expenses), promotion of the use of affordable essential health technologies, community-based management of health services through local health boards, and strong partnership between the state and other stakeholders. Health services are organized in three levels: central: in charge of design, coordination, supervision and regulation; regional: for support and peripheral: the operational level.

96. A revised health sector strategy has been adopted within a conceptual framework of primary healthcare. A new 2001-2015 strategy will be implemented under a SWAp framework with district development being the main pillar: the objective is to enable health districts to provide sustainable, affordable high quality healthcare and health services. A viable district is one that is technically, administratively and financially autonomous. In practice, technical autonomy means that the district is able to produce and deliver high quality health care that is responsive to staff and population needs and expectations. Financial autonomy means that the district is able to cover costs generated through local incomes or external support, while institutional autonomy concerns the ability of stakeholders to manage the district with everyone playing his/her own role fully. Equity and social justice are the grounding values of the district development.


process and particular attention should be paid to the most vulnerable populations. Community participation and the building of sound partnerships are considered the key components in reducing costs.

97. The implementation of this revised strategy is guided by the values of the Paris Declaration on the effectiveness of development aid: the Cameroon Government has invited its technical and financial partners to join its efforts in a common program under a SWAp framework led by the Ministry of Health. Planning and coordination mechanisms are being progressively strengthened: districts were asked to conduct a situation analysis using the Systemic Quality Improvement tool developed by GTZ during the year 2007-8 and to conduct participative development planning for the period 2009-2012. These development plans have now been revised, consolidated and validated by the Technical Secretariat of the Steering committee in charge of the follow-up of the Implementation of the Health Sector Strategy. A Medium Term Expenditure Framework (MTEF) has been elaborated. It is planned that the decentralization process will be based on Regional Special Funds made available to secure drugs and supplies.

98. The principle of contracting with district health management teams based on their performance has been agreed. Resources will be provided directly to districts in line with their validated plans of action and non-profit private providers will also receive funds through contracts. As part of developing sustainable demand, community based health insurance schemes will be promoted in all districts, while the Government and its partners will pay for some categories of users and maternal and infant care and services. The sector is suffering from a chronic shortage of skilled human resources particularly in remote rural areas and it is planned to develop a range of relevant strategies for addressing this.

99. The National Onchocerciasis Control Programme (NOCP), established in Cameroon since 1987, is one of a dozen vertical public health programs operating nationwide, including a Schisto and STH control programme. There are 16 projects: a support project for the NOTF Secretariat and 15 projects in almost all the 10 regions and many of their districts. The NGDO coalition includes the following partners: Sight Savers International, International Eye Foundation, Carter Centre, Helen Keller International, Sight First and Lions Club International Foundation and Perspective.

**Burden of disease**

100. More than 10 million people are at risk, 6 million are infected, approximately 90,000 are blind and more than 1,500,000 suffer from skin lesions. There are **10,253 communities** with a total population of 6,321,398 inhabitants in areas that are classified as meso and hyper-endemic for Onchocerciasis. There are loci of Loaisis co-endemicity in 13 out of the 15 projects.

**Package of interventions**

101. **CDTI**: Ivermectin remains the principal drug of use by the Oncho control program although some research testing Community Directed Doxycyclin Treatment has been undertaken in 260 co-endemic communities in the littoral I project. Treatment coverage has been constantly improving and reached a national average of 75.9% [63.3 – 84.6%] in 2009, while the geographic coverage reached 98.8% nationally. District and Regional Health Personnel are aware of their coverage levels and the refocus on elimination - 80% TCR target- and have clearly incorporated this into their thinking. In many projects, CDTI is being used in hypo endemic areas to satisfy insistent community demands for CDTI made through their health committees; coverage therefore extends beyond transmission areas.

102. The CDDs use different delivery strategies to suit local needs; these include door-to-door delivery, at schools and in gatherings at the compounds of the traditional rulers. The Government has committed itself to providing financial incentives to the CDDs: 25FCFA

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16 OECD (2003) Paris Declaration on Aid Effectiveness. http://www.oecd.org/document/18/0,3343,en_2649_3236308_35401554_1_1_1_1_1,00.html
($5 cents) per patient treated to be paid the year after the actual campaign; in practice the payments are often delayed and this was observed to be causing some discontent and suspicion. This suspicion was in turn affecting collaboration: in some districts, CDDs have refused to render their registers for data analysis to the health facility because they were convinced their incentives had been siphoned off.

103. Ivermectin distribution is integrated in annual district implementation plans but the ability of districts to actually implement these plans is negatively affected by central demands of other programs for their activities such as vaccination campaigns and/or by delays in supplies.

104. According to REMO and RAPLOA, co-endemicity with Loa loa is present in 13 out of 15 projects and had contributed to several SAEs in the earlier years of the program; this led to treatment being halted in co-endemic districts while the situation was researched and SAE management systems established. A progressive approach to rolling out CDTI in these districts is now being undertaken and, in a few of them it has only begun in last 1-2 years. Rumours of SAE are clearly affect levels of community acceptance but with awareness-raising activities the effects can be overcome. In 2008, 25 SAEs including one death were registered and in 2009, 12 SAEs including 2 deaths were registered.

105. In specific foci, vector control activities have been conducted by industries (hydroelectric dam authorities and sugar plants) under the leadership of the Yaoundé Initiative Foundation. Recently, a national task force was created to advise the Ministry of Health on vector control as the country is planning to build new dams and some stakeholders such as the Carter Center are pushing for additional interventions to accelerate elimination.

106. Community mobilization takes place during sensitization meetings before the drug distribution campaigns and often involves the elected members of the health dialogue structures (health committees and management boards). The targeted groups are administrative authorities, traditional and religious leaders, some local political authorities and elites. Once the date is agreed for distribution, community supervisors and CDDs then start updating their population data using the community registers. Sensitization is happening in churches, mosques, markets, and family or village meetings. In some districts where community radios exist, they are requested to broadcast sensitization and information messages. In other areas, community mobilization also includes resource mobilization for logistics support to CDDs. Depending on the region, CDDs are elected by community members or designated by traditional leaders.

107. Human resources: in 2009, approximately 41.6% of health personnel working in the districts implementing CDTI were involved in the process. At the district health services level, the district medical officer and the head of the health bureau are coordinating the CDTI activities, while heads of health centres are interacting directly with the communities to ensure the smooth organization of distribution campaigns. In 2009, 40,001 CDDs were trained or retrained and the mean CDD: population ratio was 1:123 (1:86 – 1:300). The NOTF Secretariat gives a briefing on the CDTI strategy to newly graduated doctors prior to their postings and also to medical students in year 4 before their community posting. Transfers of medical personnel from non-Oncho areas to Oncho areas mean that new staff may lack basic training in CDTI; refresher training is provided every year but it is not always sufficient for staff who have not had the basic training in CDTI.

108. The CDDs are trained annually; the attrition rate is said to be low by the health authorities (1-6%) although meetings with CDDs gave the impression of a higher drop-out rate especially over time. Incentives were perceived to be the key reason for drop-out although at each site a motivated core was continuing. Key training needs perceived at district and community level are HASM and CSM. Health dialogue structures – COSA, COSADI etc – do not seem to be recognised.
as specific targets for capacity-building/training as members are frequently recruited as CDDs. The sex ratio amongst CDDs was usually c. 3 or 2 male: 1 female.

109. **Program management**: the NOCP is managed at the central level by the Secretariat of the NOTF; the 15 projects are under the Regional Delegate for Public Health who is assisted by a Regional Onchocerciasis Coordinator (ROC). The national secretariat comprises a team of seven people including the LF focal person. They operate under the Directorate of Disease Control in the Ministry of Health. The Director of Disease Control is the Chair of the NOTF and the focal point for NTD control. Control of NTDs in Cameroon is managed by four vertical programs: Oncho and LF, Schisto and STH, Trachoma under Blindness control program, Buruli Ulcer, HAT and Leprosy.

**Co-implementation with other programmes in Cameroon**

110. The NOCP has formally piloted co-implementation of Ivermectin + Albendazole in two projects in the North and far North regions for LF. Meanwhile, in many districts, CDDs are involved in other public health interventions such as ITN distribution, social mobilization for the EPI campaigns, Polio vaccination, distribution of Mebendazole and Vitamin A during Mother and Child Health and Nutrition Days, Home Management of Malaria, distribution of condoms, HIV prevention etc. Community supervisors are most frequently recruited to work for other programs such as HIV/Aids, community-based case surveillance of disease prone to epidemics or the four diseases targeted for elimination by the EPI.

111. Co-implementation is already happening at community level at initiative of the district health managers and is going beyond NTDs, with CDDs involved in malaria, vaccination and MCH&N programmes. There is no sense that the Oncho programme should be undertaking/managing co-implementation as the other programmes want to maintain their own roles. Co implementation is accepted by CDDs as well as communities but creates sense of competition when different levels of incentives are provided. TDR research on co-implementation involved 2 sites in Cameroon in Littoral and West projects and the main challenges were relative to procurement of commodities (ITN, Antimalarials, Condoms).

112. A national consultation was organized in September 2010 by the Directorate of Disease Control, with the financial support from APOC, to harmonize approaches towards community health workers and to look for potential synergies for co implementation and sharing responsibilities with municipalities in delivering by public health interventions. The diversity of community health actors and their motivation schemes are jeopardizing efforts to foster community participation as the monetary incentives have generated competition between programs.

113. With respect to NTD mapping, REMO has been done almost everywhere but there is a clear need for updating. A national mapping exercise is ongoing for LF; STH have been mapped nationwide but Schisto has only been partially mapped. In 2009-2010, RTI funded an updating of the Schisto map in three of the seven regions needed and a trachoma mapping is underway in the Far North region. Buruli Ulcer, Leprosy, HAT have also been mapped. There is no integrated mapping at either the national or sub national levels; the existing maps are not used at District/Regional levels for guiding decision-making.

**Strengthening Health Systems**

114. The health system in Cameroon is structured in line with the health district framework promoted in the African Region to implement the primary healthcare framework. With the 1996 Constitution, municipalities are responsible for Public Health; the State decentralization law was adopted in 2004 and has started being implemented in this fiscal year. However, in the health sector decentralization began to be operationalised much earlier in the1990s as it is one of the...
two pilot sectors. Health districts are allowed to determine and collect user fees and budget their locally generated incomes for their running costs.

115. A health SWAp was signed in July 2010 after c. 5 years preparation and the Government hopes to add further donor signatures. Districts want basket-funding so that they can manage their resources more efficiently; they are currently combining resources informally where this is possible. The timely implementation of district-level plans is difficult because national level demands of districts and responses to district needs do not take district planning into account.

116. Different dialogue structures are established as governing bodies and operate at district and community levels; the health committee (COSADI) and the district management board (COGEDI) oversee health district activities whereas the district hospital is under a management board (COGEH) and health centres are under a local area health committee (COSA).

117. The CDDs are coordinated by front-line / district health personnel and provide data to them. The attitudes of District and FLHF staff towards CDDs were observed by the evaluation team to be paternalistic and also utilitarian. Health staff talked of ‘using’ CDDs for implementation and were going directly to them for help with other initiatives rather than via community leaders as with oncho. The CDDs met in turn reporting to health staff rather than the community: “the head of the health office is our boss”. In one community, however, the CDDs had formed a formal association (a CBO) that was actively participating in discussion and planning of community health activities with health staff. See box C.

118. The CDDs visited were not analysing their data or aware of results at community level but responded to the evaluation team’s questions with their impressions. Community Self-Monitoring is new and weak as although training has been conducted, there are no funds for rolling out. APOC thought communities should be doing this without support; although it has now been agreed to provide some support, this is still considered inefficient. Health system staff are also doing own validating and checking and have ownership of the data.

119. Poor communications between health staff and CDDs were observed to be leading to friction; there was no evidence of a communications strategy or of much in the way of IEC materials. HSAM and CSM are seen as Oncho activities with little sense of relevance to other programmes.

**What has been working well**

120. Community acceptance is high and there are demands for “our Mectizan” even beyond the meso and hyper endemic communities.

121. The great majority of health personnel are committed to the Oncho program although

**Box C: CDDs in Ngambe**

The CDDs in Ngambe urban health area, which is beside the District Hospital in Ngambe District but has no frontline health facility, have formed themselves into a formally registered community-based association. Members are actively participating in discussion and planning of community-based and directed health activities with health staff but also hold their own meetings where they have solidarity and equity savings known as “Nangui”. When a community health activity is planned that requires community actors, the association provides the names and receives the associated financial incentives; these funds go to the “Nangui”. This approach is proving a successful mechanism for managing the varying levels of incentives received and for avoiding issues of competition, distrust and suspicion amongst community health actors. The health staff are keen to support the idea and to promote it in other communities but none have yet taken up the idea; likewise the association has done some limited sharing of the idea but it does not have the resources for being proactive in this.

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some do postpone CDTI when a well-resourced program plans its activity at the same time. District and Regional Health Personnel are aware of their coverage levels and the focus on elimination - 80% TCR target- and have clearly incorporated into their thinking. SAEs are properly managed in almost all the districts.

122. Many communities have developed ways of motivating CDDs irrespectively from the State funds for CDDs incentives.

What has been working less well

123. Mobilizing State resources for CDDs’ incentives has been a yearly challenge and is a threat for CDTI with CDDs in some areas suspecting health professionals of siphoning off their incentives. These suspicions were leading to distrust and affecting collaboration. Political commitment expressed for oncho control and elimination does not usually translate into resource allocation for CDDs.

124. Although an extraordinary meeting of the General Assembly recently took place, the annual review meetings involving other stakeholders are no longer taking place regularly. Without this forum for sharing experiences and discussing challenges, there is a lack of communication and coordination between the projects. Possibly because of this, advocacy beyond the traditional partners has not been organised for involving new national NGDOs or CSOs able to support Oncho Control activities.

125. Health information management capacity was ranked as very weak and fragmented at all levels of the system during the midterm evaluation of the health sector strategy in 2006/2007. Community data bases at the national, regional, district, sub-district and community levels are inexisten. Records by CDDs are poorly managed by already isolated and overloaded health professionals in first line health facilities. Research results and mapping data are not consolidated at the central level and are rarely shared amongst stakeholders notably those fighting against NTDs.

Conclusions and recommendations

126. The evaluation team noted the following challenges facing oncho elimination in Cameroon: (i) devolution, elimination and co-implementation are not well understood in a context where vertical programmes are competing to attract health personnel and community actors; (ii) the rampant poverty exacerbated the search for extra incomes by almost all the implementers including health professionals and CDDs; (iii) the tensions around the need for additional tools while moving towards elimination such as vector control, biannual distribution of Ivermectin, more frequent impact assessment studies; (iv) competing interests between NTD control programs; and (v) inadequate involvement of national civil society organizations and associations in the fight against Oncho and (vi) the pervasive commercialisation of the health sector.

127. At project level, the key practical challenges are: (i) absence of improvement in levels of absentees and Ivermectin refusal rate due to alcohol consumption, rumours and fears of SAE and, human mobility; (ii) Poor road infrastructure; (iii) late arrival of drugs, short duration of drug distribution and (iii) inappropriate community support.

128. The evaluation team observations of an apparent lack of accountability of CDDs to the community and of utilitarian approaches by the health system staff should be explored further as they run counter to the philosophy of community ownership and empowerment.

129. Because co-implementation is already happening in uncoordinated and unregulated way, there is a need to consider a formal Community Health Actor cadre for eliminating the current sense of competition and creating room for municipalities to take over preventive health interventions such as sanitation and mass drug administration.

130. Implementation should be more district-centered with greater central flexibility and responsiveness to district planning processes as the district constitutes the machinery for health interventions; currently there were reports that
central processes hinder the implementation of their plans. This would facilitate SWAp implementation and the districts would be more able to determine their targets, their interventions and the timing of activities. For this to happen, capacity-building in the use of mapping and community data-bases will be needed to enable districts to take full advantage of these in their planning and monitoring activities. They will need to understand the “Oncho map” as it changes – transmission, parasitology and entomology – and have access to an integrated and consolidated NTD map.

131. There is still a need to align the NOCP structure and governance with the decentralised system. Because of its historical development as a vertical program, the national secretariat and the regional Oncho coordinator are still too powerful for health districts to take over their responsibilities. Ways of increasing integration at district level need identifying, particularly for facilitating a smooth transfer of responsibilities to the local municipal administration.

132. Capacity-building activities seem to be motivated more by programme performance and targets than health system-strengthening. There is a need to change focus of training from programme of disease control/elimination to system focus whereby health professionals and community actors are trained in a way that fosters partnership – where each understands their own role and responsibilities and those of others.

133. The overall financing of the program is inadequate for sustaining the activities needed for oncho elimination and for co-implementation for NTDs. Since moving towards elimination will require additional resources, this was perceived to be in contradiction with APOC’s phasing out dynamics. As some projects are over ten years old, the support needs identified for achieving elimination included resources for training (basic and refresher), enhancing HSAM, implementing CSM, supervision and surveillance; organizing vector control and impact assessments.
Brief biographies of the Evaluation Team

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