ENHANCING COMMUNITY-DIRECTED TREATMENT WITH IVERMECTIN FOR SUSTAINABLE CONTROL OF ONCHOCERCIASIS IN AFRICA

YEAR THREE

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ACRONYMS

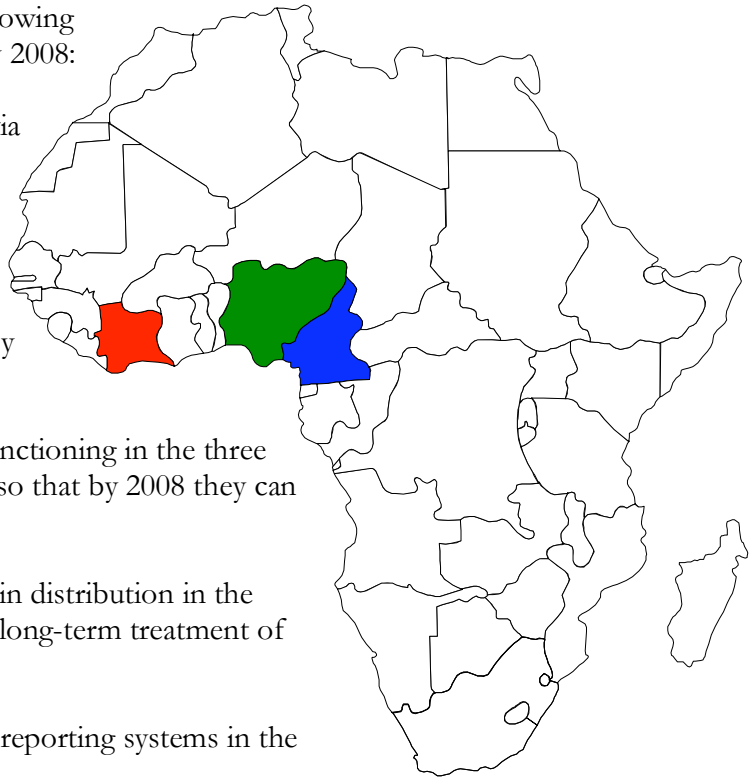
APOC	African Program for Onchocerciasis Control
CDDs	Community-Directed Distributors of Ivermectin
CDTI	Community-Directed Treatment with Ivermectin
HKI	Helen Keller International
IEC	Information, Education and Communication
IFA	Iron + Folic Acid
LF	Lymphatic Filariasis
Mectizan®	Ivermectin
MOH	Ministry of Health or Ministry of Public Health
NGDO	Non-Governmental Development Organization
NOCP	National Onchocerciasis Control Program
NOTF	National Onchocerciasis Task Force
OCP	Onchocerciasis Control Program
PGR	Population Growth Rate
SAEs	Serious Adverse Events
SIZs	Special Intervention Zones
TCC	Technical Consultative Committee of APOC
UTG	Ultimate Treatment Goal
VACs	Vitamin A Capsules
VAS	Vitamin A Supplementation
WHO	World Health Organization

SECTION 1: INTRODUCTION

The proposal presented here by Helen Keller International (HKI) seeks funding from the Nippon Foundation for the third year of a three year project entitled, *Enhancing Community-Directed Treatment with Ivermectin for Sustainable Control of Onchocerciasis in Africa.* The 3-year project was approved by the Nippon Foundation in March 2005, with $550,000 given for the first year of project implementation and $450,000 for the second year.

This current year's submission seeks US$350,000 for onchocerciasis control and prevention activities in three core African countries in order to build sustainable programs and models that can contribute toward the elimination of onchocerciasis as a public health problem throughout Africa. The activities will continue to focus on improving implementation of Community-Directed Treatment with Ivermectin (CDTI), reinforcing information, education, communication (IEC) and advocacy strategies and strengthening monitoring and evaluation systems for CDTI. The requested funds will also support Regional and Global activities in order to advocate for effective program implementation and to present HKI's best practices to a wide audience. The continued support from the Nippon Foundation requested here will ensure our core competencies and will enable us to meet this challenge.

Overall, the project is designed to achieve the following five objectives between March 2005 and February 2008:



1. Support ivermectin (Mectizan®) distribution via CDTI in two countries (Cameroon and Nigeria) of the African Program for Onchocerciasis Control (APOC) and in one country (Côte d'Ivoire) of the former Onchocerciasis Control Program (OCP) in order to treat over 4 million people in onchocerciasis endemic areas per year by the end of the project.

2. Ensure that sustainable CDTI programs are functioning in the three countries (Cameroon, Côte d'Ivoire and Nigeria) so that by 2008 they can continue with minimal outside resources.

3. Improve IEC strategies in support of ivermectin distribution in the three countries in order to create demand for the long-term treatment of onchocerciasis.

4. Establish effective monitoring, evaluation and reporting systems in the three countries for CDTI activities and outputs.

5. Document and disseminate best practices and lessons learned consistently and in a timely fashion to other stakeholders involved in CDTI implementation throughout Africa.

In 2007, the project will build on the accomplishments made in the first two years of the project in order to achieve the overall objectives by the end of the project. Key accomplishments of the second year are noted in section 3, after a background section. The specific objectives for this year, the activities to be undertaken and the expected outputs are found under each country in section 4. Support and advocacy activities by the region for this year are found in section 5, followed by a timeline of proposed activities (section 6), HKI's institutional capacity (section 7) and the requested budget amount and budget justification in section 8. Due to a reduced budget from the original proposal, the objectives have been revised slightly downward and some activities have been removed to reflect what is possible. The support of the Nippon Foundation, nevertheless, remains absolutely essential to the success of HKI's onchocerciasis efforts in Africa.

SECTION 2: BACKGROUND

Onchocerciasis, or River Blindness, is a disease that causes great physical and social anguish in communities and if not controlled leads to blindness in a large number of people[1]. 35 countries are or have been endemic for the disease; 28 are found in tropical Africa, 6 are in Latin America and Yemen is also endemic. In Africa, onchocerciasis represents the second leading infectious cause of blindness (after Trachoma), and in some countries, it remains the leading cause. In addition, the serious eye and skin manifestations of the disease make onchocerciasis an important obstacle to development of some of the most agriculturally productive areas of the continent. The disease has been shown to reduce productivity by 15% among infected people, causes early death by 10 years among those blinded, leads to increased morbidity and mortality among the children of blind women, reduces school performance of infected school aged children, and increases the health costs of families and communities.[2,3,4]

- ⇒ 90 million people are at risk of the disease in Africa.
- ⇒ 37 million people are infected, 99% are in Africa.
- ⇒ 270,000 people are blind from onchocerciasis in Africa.

Fortunately, there are proven tools for fighting this disease. During the Onchocerciasis Control Program (OCP), black flies (the vector) were eliminated with larvacides in much of West Africa, where onchocerciasis was the most blinding. With the discovery that Mectizan® (ivermectin) could be safely and effectively used among humans to kill the microfilaria and Merck's willingness to donate the drug for as long as needed, mass distribution of ivermectin was begun. It is now thought that an annual dose given to at least 65% of the population living in the remaining endemic areas of Africa for 15-20 years can arrest transmission of the disease and eliminate onchocerciasis as a public health problem; significantly and definitively diminishing its negative health and development consequences.

The primary strategy used to deliver the drug to people living in the endemic areas is Community-Directed Treatment with Ivermectin. This strategy empowers communities and trains Community-Directed Distributors (CDDs) to work within the health infra-structure of the country to provide an annual dose of ivermectin to the eligible members of their community. Non-Governmental Development Organizations (NGDO), such as HKI, provide assistance to strengthen health systems and build capacity of government health personnel and community members so that the CDTI program can function effectively after external assistance is reduced and finally withdrawn. More recently, CDTI has been tested and shown to be effective as a delivery mechanism for other health interventions, specifically to deliver vitamin A supplements[5], to screen and refer for cataract and to deliver albendazole along with ivermectin for elimination of lymphatic filariasis.

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[1] The filaria, *Onchocerca volvulus,* that causes the disease, is transmitted to humans by the bite of an infected black fly. Black flies breed in fast-flowing aerated rivers or streams, thus the name River Blindness.

[2] Prost A, Vaugelade J. [Excess mortality among blind persons in the West African savannah zone]. *Bull.World Health Organ* 1981;59(5):773.

[3] World Bank. *World Bank Development Report: Investing in Health.* New York; Oxford University Press. 1993

[4] B. Benton. *Economic impact of onchocerciasis control through APOC: an overview.* Annals of Tropical Medicine & Parasitology, Vol 92, Supplement No. 1, S33-S39. 1998.

[5] *How to Integrate Vitamin A Supplementation into Community Directed Treatment with Ivermectin: A Practical Guide for Africa.* HKI. Cameroon. Sept 1994.

The African Program for Onchocerciasis Control (APOC), in order to determine where to distribute the ivermectin, performed epidemiological studies in all the 19 countries included in the program. This mapping of the disease has been completed in 2005 and the true extend of the disease has now become clear. It is now estimated that 37 million people are infected with onchocerciasis in Africa and 90 million people at risk of infection, three times as much as was anticipated in 1995, at the beginning of the program. By 2010, it is estimated that about 90 million people in 30 countries (both former OCP and APOC) will be treated annually via CDTI to protect the 102 million people at risk.

Onchocerciasis Control Program and the Special Intervention Zones (SIZ)

After almost 30 years of intensive effort, OCP officially ended in December 2002. 30 million people have been protected from the disease because the vector control program was successful in eliminating onchocerciasis as a public health problem throughout much, but not all, of West Africa.[6] Because pockets of the disease still exist in Benin, Ghana, Guinea, Sierra Leone and Togo, it was recognized that additional assistance should be provided to these five countries using some of the remaining OCP funds. The Special Intervention Zone Program was established and will operate through 2007, however the funds will not be adequate and NGDO support is being sought.

NGDO Group for Onchocerciasis Control

From 1989 to 1994, NGDOs pioneered mass distribution of ivermectin known as the Ivermectin Distribution Program, which led to the creation of the CDTI strategy. In order to ensure better coverage of endemic areas, share lessons learned and better coordinate programs, the NGDO Coordination Group for Onchocerciasis Control was created in 1991 at the WHO headquarters. The NGDO Group currently has ten international NGDOs and two national NGDOs as members[7]. The Group meets twice a year to coordinate activities and address issues of mutual concern. Representatives from APOC, the World Bank and Merck and Co, Inc (an associate member) also participate during these meetings.

African Program for Onchocerciasis Control (APOC)

APOC (established in 1995) includes 19 participating countries[8] with active involvement of the Ministries of Health and affected communities, international NGDOs, the private sector (Merck & Co., Inc), donor countries and UN agencies.[9] The World Bank is the fiscal agent of the program and WHO is the executing agency of the program. During the partners meeting held in September 2006, the Ministers for Health of the endemic countries confirmed their commitment to the control of onchocerciasis by signing the Yaounde declaration.[10] APOC was originally scheduled to end in 2007, with a phasing out period till 2010, but at the Joint Action Forum in Dar es Salaam in December 2006 it was decided to extend the program till 2015 to ensure that countries where delays were encountered in starting the CDTI projects, would be able to receive adequate support to establish sustainable CDTI programs. Over 47 million people received ivermectin treatment through CDTI in 2005.

[6] 11 countries were assisted under OCP: Benin, Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Guinea Bissau, Mali, Niger, Senegal, Sierra Leone, Togo

[7] See section 5 for the list of members.

[8] Countries included in APOC are: Angola, Burundi, Cameroon, CAR, Chad, DRC, Congo-Brazzaville, Ethiopia, Equatorial Guinea, Gabon, *Kenya,* Liberia, Malawi, *Mozambique,* Nigeria, Rwanda, Sudan, Tanzania, Uganda

[9] Hopkins AD. Ivermectin and onchocerciasis: is it all solved? *Eye* 2005;19(10):1057-66.

[10] Amazigo U, Boatin B. The future of onchocerciasis control in Africa. *Lancet* 2006;368:1946-1947.

SECTION 3: ACCOMPLISHMENTS MADE POSSIBLE THROUGH THE SUPPORT OF THE NIPPON FOUNDATION TO HKI IN YEAR TWO (2006)

The geographic flexibility of the Nippon Foundation has been critical to the development and success of our onchocerciasis programs in Africa as we often intervene in very poor countries with a limited donor base[11]. In addition, because of the long involvement of many bilateral donors with OCP and APOC, most of these donors will not support NGDO onchocerciasis control activities, yet it is the NGDOs who are responsible for providing technical assistance and financial support to OCP and APOC countries during and after completion of those programs. With the support of the Nippon Foundation, HKI has achieved some key accomplishments in the past year (2006) in the three core countries of the current program.

In Cameroon:

- 735,140 people were treated for onchocerciasis via CDTI in the three HKI-supported Provinces.
- HKI and partners trained 4,762 CDDs to sensitize communities and to distribute ivermectin, and trained 478 health professionals as trainers and supervisors to support the activities of the CDDs.
- HKI and its partners developed an advocacy kit to be used at the Provincial and District level for resource mobilization to sustain the program in the future.
- HKI and its partners have improved the tools used in supervision, monitoring and evaluation of CDTI interventions and have strengthened the ability of front-line and district health workers to carry out these important activities throughout the project area.
- HKI assisted the Center Pasteur and MOH to conduct operations research on risk factors for severe adverse events (SAEs) in loaisis and onchocerciasis co-endemic areas.

In Côte d'Ivoire:

- CDTI was successfully restarted in the government controlled area of the Southern Extension Zone and in half of the rebel controlled area of the Southern Extension Zone. 670,759 people were treated for a therapeutic treatment coverage of 25%.
- HKI and its partners trained about 616 CDDs, 60 health workers and 8 medical doctors on CDTI.
- HKI and the National Onchocerciasis Control Program (NOCP) undertook supervision visits to prepare 18 out of the 28 districts to re-start CDTI.
- HKI and the National Onchocerciasis Control Program (NOCP) gave special support to 18 Districts and 80 Health Workers by giving them technical and financial support to allow them to supervise the community distributors.
- As the only NGDO partner, HKI supported the NOCP with supplies and some equipment to maintain its core capacity.

In Nigeria:

- 1,814,235 people were treated for onchocerciasis via CDTI in the three HKI-supported States.
- HKI and partners trained 4,830 CDDs to sensitize communities and to distribute ivermectin.
- During several innovative and important pilot tests that can enhance the sustainability of CDTI, CDDs were trained to supplement women post-partum with vitamin A throughout the year and to screen and refer cataract cases.
- HKI and partners provided refresher training or initial training to 1,671 health professionals, with a focus on strengthening supervision and advocacy skills.
- HKI and its partners conducted workshops at various levels to review and revise the monitoring tools based on recommendations from a project evaluation conducted in 2004.

[11] In Africa, HKI has implemented onchocerciasis control programs in Burkina Faso, Cameroon, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria, Sierra Leone, and Tanzania. HKI also implements other eye health and nutrition programs in these countries and in the Democratic Republic of the Congo, Morocco, Mozambique, Senegal, South Africa and Zimbabwe.

Treatment summary in the three Nippon Foundation-supported countries during 2006

	No. of Communities Treated / Total No.	Total Population in Endemic Area	No. Treated with Ivermectin	Therapeutic Coverage
Cameroon*	1,723 / 1,723	1,031,316	758,970	74%
Côte d'Ivoire	1,718 / 4,228	2,039,000	670,759	33%
Nigeria*	4,225 / 4,225	2,153,891	1,814,235	84%
TOTAL	**7,027 / 10,176**	**5,224,207**	**3,243,964**	**62%**

* In 2006, geographic coverage at 100%

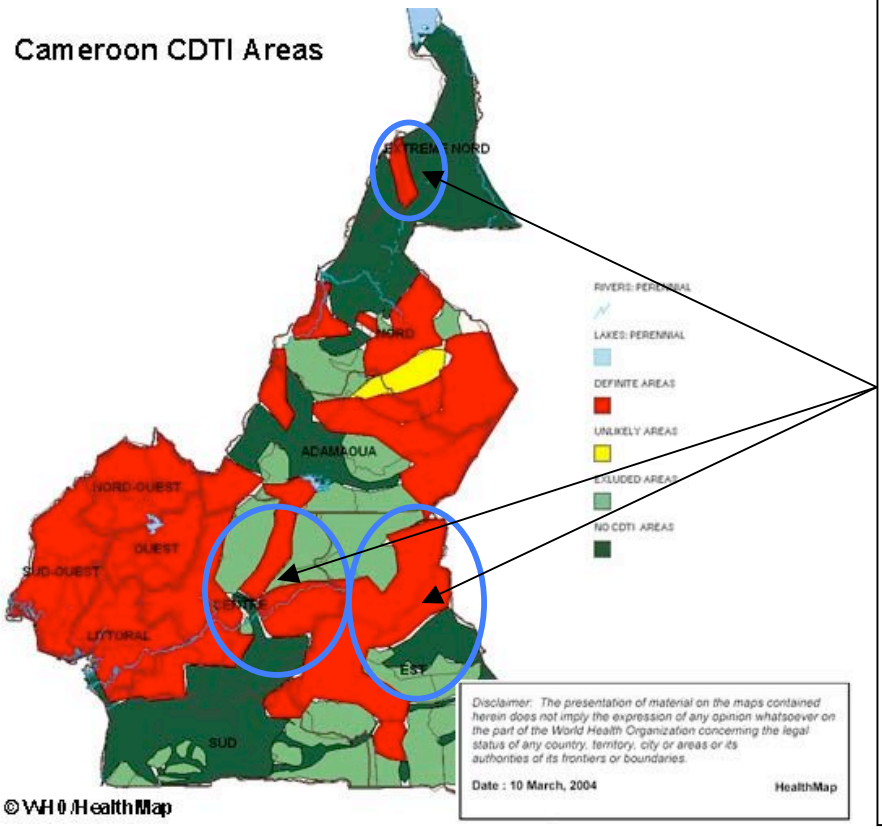
Throughout Africa:

In addition to the support provided by the Nippon Foundation to the three core countries mentioned above, this generous support has also ensured HKI's core competency in onchocerciasis control. Consequently, we have been able to make substantive contributions toward the development of sustainable and effective programs throughout Africa.

- During 2006, HKI enabled over 3.4 million additional treatments via CDTI by training about 1,000 health workers to train over 14,000 CDDs in the onchocerciasis-endemic communities of Burkina Faso, Guinea, Mali, Sierra Leone and Tanzania. In addition to these countries HKI is preparing to take over the Bas Congo CDTI project in the Democratic Republic of Congo from Interchurch Medical Assistance (IMA) in 2007.
- HKI continued to work in close collaboration with the National Onchocerciasis Task Forces (NOTF) of all the countries mentioned above, to coordinate, plan and implement national and/or sub-national onchocerciasis control programs. Building the capacity of the NOTFs to manage surveillance and CDTI activities has been a focus of our work.
- The onchocerciasis website (www.onchohki.org) has been maintained and is available as a resource to all those implementing onchocerciasis programs or interested to learn more about the disease.
- HKI continued to play a leadership role in integrating other health interventions into CDTI by conducting operations research and pilot testing strategies to train CDDs to screen and refer cataract cases in both Nigeria and Tanzania and by assisting other countries, such as Tanzania, the Democratic Republic of the Congo and Sudan to incorporate the lessons we learned integrating vitamin A supplementation into their CDTI Programs.
- HKI has provided extensive input to the implementation of onchocerciasis control throughout Africa and disseminated results and lessons learned from our own program experience via very active participation in the following international meetings: the Technical Consultative Committee of APOC in March and September, vice-chair and chair-designate of the NGDO Coordination Group for Onchocerciasis Control in March, September and December, West African Health Organization (WAHO) Vision 2020 NGDO Group in September, the Planning meeting for the Special Intervention Zones of the former OCP in November, the Joint Action Forum of APOC in December, the Committee of Sponsoring Agency for APOC in October and December,
- In addition, HKI has provided key technical and financial support to ensure the functioning of the World Health Organization NGDO Onchocerciasis Group Coordinator and the West African Health Organization Vision 2020 Coordinator positions.
- HKI has worked to mobilize additional resources for onchocerciasis control in the countries where we work and also for onchocerciasis control throughout Africa.
- HKI provided targeted assistance to countries where we do not implement CDTI or surveillance Projects, namely, we provided technical assistance to Angola on CDTI and management of SAEs, to Burundi for monitoring the program, to DRC on integration of VAS into CDTI and management of SAEs, to Sierra Leone for training in CDTI, and to Sudan on integration strategies.

SECTION 4: CORE COUNTY PLANS

Cameroon



Country Profile:

Total population:	16.1 million
GNI per capita:	US$570
Life expectancy at birth:	50 years
U5 mortality rate:	51/1000
Infant mortality rate:	92/1000
Adult illiteracy rate:	75%
Prevalence of VAD:	38.8%

Onchocerciasis Program Summary:

Total population in project area in year 2006: 1,031,316 people
Ultimate Treatment Goal: 847,330 people treated per year by 2008*
Activities in 2006: Scaling up CDTI to all remaining villages; Improving the IEC strategy; Strengthening management of SAEs; Training; Integrating VACs and IFA into CDTI; Monitoring and Evaluation; Operational research.

Current HKI Programs:

Onchocerciasis; Nutrition

* assumes a 2.7% PGR and UTG of 80%

Background: Onchocerciasis is endemic in all ten provinces of Cameroon. HKI is currently working with the Ministry of Health (MOH) in three of the ten Provinces and providing assistance to the NOCP. In 1992, HKI began efforts to treat onchocerciasis via health workers in a highly endemic district of Center Province. CDTI was first implemented in 1998 with funding from APOC and the Lions Club International Foundation. By 2005, the program provided treatment to 694,093 people throughout 15 health districts of Center Province and HKI expanded its technical assistance to seven endemic health districts in two additional provinces (the East and Far North) with the support of the Nippon Foundation. Despite numerous challenges caused by co-endemicity with loiasis in the Center and East Provinces, HKI and partners put in place an effective system to sensitize communities and train health workers and CDDs to monitor the delivery of ivermectin in these areas so as to minimize the risk of SAEs caused by high *Loa loa* filarial loads. In 2003 and 2004, a pilot project was designed, tested and scaled up in Center Province to provide vitamin A supplements to at-risk children via CDTI. After the National Immunization Days (NIDs) ended in Cameroon in 2006, this model was expanded throughout the country. With the retreat of APOC in Center Province in 2004 and in the Far North and East Provinces shortly thereafter, The Nippon Foundation is providing critical support to ensure that capacity is strengthened and delivery systems are sustainable.

Key Project Accomplishments in 2006 with the support of the Nippon Foundation:
HKI and its partners trained 279 doctors and nurses at the provincial, district and front-line health facility levels to train 4,762 CDDs to implement CDTI in 1,723 endemic communities of the Center, East and Far North Provinces. This represents 100% of the geographic coverage in the Center, East and Far North Provinces. The total population of the project area was counted (by trained CDDs) at 1,031,316 people.

Planning, mid-term and final evaluation meetings were held in each province with key district and provincial health staff and community representatives. Supervision was undertaken in all three provinces, but was very intense in the East Province in order to ensure all SAEs were managed properly, which they

were. In the Center and Far North Provinces, self-monitoring by the community was piloted and results were shared for improvement and implementation of the strategy next year throughout all three provinces. A total of 758,970 people were treated for an overall therapeutic treatment coverage of 74%.

Treatment in the three Nippon Foundation-supported Provinces during 2006

	No. of Communities Treated / Total No.	Total Population in Endemic Area	No. Treated with Ivermectin	Therapeutic Coverage
Center	1,282 / 1,282	735,140	551,355	75%
East	282 / 282	96,782	58,069	60%
Far North	159 / 159	199,394	149,546	75%
TOTAL	**1,723 / 1,723**	**1,031,316**	**758,970**	**74%**

In addition, HKI worked with district and provincial staff of the Center Province to develop an advocacy kit to aid in resource mobilization at the local level. HKI also worked with the districts to finalize the sustainability plans in all of the 15 health districts of Center Province. In the Far North, because of the cultural difference there, HKI worked with key health and community staff to revise the IEC materials based on an assessment of the materials and messages among community members during the campaign. Through additional funding that was leveraged, HKI was able to distribute Vitamin A capsules to children under 5, which was performed using the CDD and the CDTI infrastructure. A coverage of 80% of children under 5 was reached. The HKI Cameroon onchocerciasis staff provided technical assistance to other countries, such as Angola, Burundi, Democratic Republic of Congo and Sierra Leone.

Overall Goal: To eliminate onchocerciasis as a public health problem in Center Province, East Province and the Far North Province specifically and in Cameroon in general by 2020.

General Project Objective: To set up a sustainable delivery mechanism using CDTI in Center Province, East Province and the Far North Province by the end of the project.

Specific Project Objectives for 2007:

- To treat at least 75% of the total population with ivermectin in 100% of endemic communities in the Far North Province.
- To treat at least 75% of the total population in 100% of endemic communities in Center Province.
- To treat at least 65% of the total population in 100% of endemic communities in East Province.
- To enhance the capacity of MOH staff and communities to manage and sustain the program.

Key Project Activities for 2007:

- Coordinating program planning in each province.
- Training of health professionals at the provincial, district and health area level as trainers, planners, managers and supervisors.
- Training of community distributors and other community leaders to implement and monitor the integrated CDTI Program.
- Improvement of educational, training and advocacy materials, particularly related to implementing CDTI in onchocerciasis-loiasis co-endemic areas and in culturally diverse areas.
- Operational research on factors affecting sustainability of the CDTI strategy in loiasis and non-loiasis endemic areas, particularly on the rate of and reasons for CDD recidivism including the time required by CDDs to implement CDTI and their demand for incentives.
- Monitoring and evaluation for improvement of the overall program to ensure sustainability.
- Technical input to the National Onchocerciasis Control Program.

Expected outputs for 2007:

- 784,431 people treated in 2007, with an overall therapeutic coverage of 74%.

Province	Estimated total population in 2007*	Estimated No. people treated in 2007	Estimated coverage
Center	754,989	566,242	75%
East	99,395	64,606	65%
Far North	204,778	153,583	75%
Total	**1,059,162**	**784,431**	**74%**

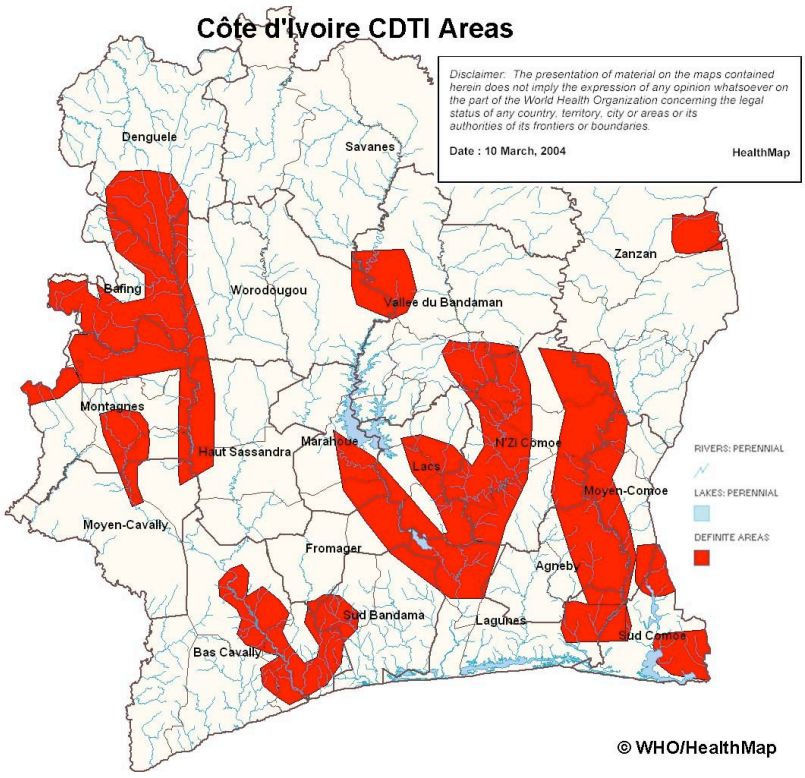
*Based on an annual population growth rate of 2.7%

- 1,723 or 100% of communities treated with ivermectin via CDTI.
- Approximately 400 health workers and 4,500 community distributors trained.
- IEC strategy strengthened for CDTI in onchocerciasis-loiasis co-endemic areas.
- IEC materials produced for use in all Provinces.
- Community self monitoring strategy expanded to cover 25% of communities in the project area.
- Through additional funding from other donors, integration of VAS into CDTI, including a model monitoring and evaluation system established for CDTI Projects delivering multiple health-related interventions.
- Best practices and lessons learned packaged and disseminated within and outside of Cameroon.

Key Project indicators:

- Number and type of health or community agents trained at each level
- Number of CDDs completing campaign versus number trained (CDD recidivism / year)
- Number of communities implementing CDTI per province
- Number of communities implementing community self monitoring
- Number of people treated with ivermectin per year at village, district and provincial level
- % treated per total population at village, health area, health district and provincial level
- Number of ivermectin tablets distributed / number people treated = average number tablets

Côte d'Ivoire



Country Profile:

Total population:	16.4 million
GNI per capita:	US$610
Life expectancy at birth:	41 years
U5 mortality rate:	176/1000
Infant mortality rate:	102/1000
Adult literacy rate:	49%
Prevalence of VAD:	30%

Onchocerciasis Program Summary:

Total estimated population in endemic zone in 2006: 2,039,000 people
Ultimate Treatment Goal: 1,713,780 people treated by 2008*
Activities in 2006: Consolidating and expanding CDTI; Improving the IEC strategy; Training; Integrating LF, Schistosomiasis and VACs into CDTI; Monitoring and Evaluation; Supporting and assisting the NOCP.

HKI Programs:

Onchocerciasis; Nutrition; Food Fortification

* assumes a 2.5% PGR and UTG of 80%

Background: An armed rebellion began in Côte d'Ivoire in 2002 resulting in the loss of some gains made under the OCP during the 1990s. The country has been cut in two parts; the South under government control and the North controlled by the armed rebels. Population displacements of nearly 1.5 million people have occurred forcing the transfer of almost 1,500 health agents from the areas under occupation to the areas under government control. The NOCP head office in the north was relocated to Abidjan after it was looted. Nevertheless, the NOCP, with The Nippon Foundation's support and HKI's technical assistance, has been able to maintain the core capacity of the program over the past three years. Although no ivermectin treatment was carried out in 2003 or 2004 due to the war, all necessary preparatory activities were undertaken to restart CDTI in 2005.

Onchocerciasis is or was prevalent throughout the country. There are three main treatment areas:

- The initial savannah zone, in the north of the country, was treated under OCP through 2001. Until 2002 when the rebellion began, epidemiological monitoring activities were carried out to detect and treat any cases and to stop recrudescence. The prevalence rate is thought to be between 0 and 5%.
- In the part of the southern extension zone under rebel control, disease prevalence is thought to be between 5% and 30%. Ivermectin was distributed to the population in more than 1,600 villages and encampments since 1990, but stopped from 2002 to present. In the southern extension zone under government control, an epidemiological survey conducted in January 2005, found the mean disease prevalence to be 7.71% with a range between 0-23%. Ivermectin was also distributed there, stopping from 2002-2004, and then restarted in 2005.
- In the forest zone, a non-blinding form of onchocerciasis is found at a mean prevalence rate of 14.86% with a range of 1.35 to 41.46% based on the epidemiological survey of January 2005. Ivermectin was distributed there, stopping from 2002-2004, and then restarted in some districts in 2005.

The total population in the endemic zones where CDTI is supposed to be implemented was calculated at 2,039,000 people in 2006, with 80% eligible for treatment with ivermectin or 1,631,200 people. HKI, the only NGDO working on onchocerciasis control in Côte d'Ivoire, intervenes primarily in the southern extension zone and also the forest zone where CDTI is practiced. At a recent meeting of the Special Intervention Zones, the NOCP Coordinator stated that without the support of HKI, onchocerciasis control efforts would have completely stalled throughout Côte d'Ivoire. Although additional resources are needed to fully cover all endemic areas, it is only with the support of The Nippon Foundation that HKI is able to assist the NOCP to ensure that CDTI restarts quickly so all the gains made under OCP are not lost. In 2006 the accessibility has improved to the rebel held areas in the original OCP area and in the Southern extension area, allowing for continuation of the CDTI activities in the Southern extension area and for surveillance activities in the Original OCP zone.

Key Project Accomplishments in 2006 with the support of the Nippon Foundation:

- June-November: Ivermectin was distributed via CDTI in 19 districts of the government-controlled area of the southern extension zone. In 2006 there was only a single treatment, instead of twice a year treatment in 2005 following APOC recommendations.
- June-November: In 2 regions (8 districts) a pilot CDTI campaign took place in a part of the rebel-controlled area.
- CDTI was not implemented in the government controlled area of the forest zone nor in the rebel controlled area of the southern extension zone in 2005, but some people were treated at health clinics.

In 2006, CDTI was performed in 1,718 of the 4,228 endemic communities: in 19 health districts of the southern extension zone and 8 health districts in the rebel controlled area. This represents 44% of the geographic coverage. However, HKI and its partners are preparing to train over 200 health workers in 2007 to be prepared to implement CDTI in all 4,228 endemic communities in both the southern extension and forest zones. Planning and evaluation meetings were held with key district health staff and community representatives. Supervision was undertaken in 27 districts. Preliminary data that has been received so far show that a total of 670,759 people were treated for an overall therapeutic treatment coverage of 33%.

Treatment in the three Nippon Foundation-supported areas during 2006

	No. of Communities Treated / Total No.	Total Population in Endemic Area	No. Treated with Ivermectin	Therapeutic Coverage
Southern Ext - Government	1,151 / 1,203	690,017	503,713	73%
Southern Ext - Rebel controlled	465 / 883	338,552	117,802	35%
Forest area – Government	0 / 2,014	938,534	No treatment	0%
Forest area - Rebel controlled	102 / 128	71,897	49,244	68%
Total	**1,1,718 / 4,228 (41%)**	**2,039,000**	**670,759**	**33%**

Overall Goal: To maintain and consolidate the achievements made by the OCP in order to eliminate onchocerciasis as a public health problem throughout Côte d'Ivoire by 2020.

General Project Objective: To set up a sustainable, integrated delivery mechanism using CDTI in the forest and southern extension zones by the end of the project.

Specific Project Objectives for 2007:

Based on the accomplishments of 2006, the current obstacles faced in the country, and the available funding, the specific objectives have been adjusted downwards to be more realistic. The focus in 2007 will be to consolidate the CDTI strategy in those areas where it has already been restarted with Nippon Project. The specific objectives for year three are as follows:

- To integrate the CDTI in the minimum package of health activities at the districts and villages level.
- To undertake intensified IEC and social mobilisation campaign in 5 already CDTI covered districts.
- To undertake advocacy for additional partners and donors.
- To undertake advocacy for onchocerciasis program evaluation in Côte d'Ivoire.
- To continue consolidating CDTI in the districts and villages already covered.
- Approximately 29 doctors, 190 health workers and 4,850 community distributors trained.
- To reach a geographical treatment coverage rate of 100% and achieve therapeutic treatment coverage of 65% of endemic villages in government controlled areas in the southern extension zone.
- To reach a geographical treatment coverage rate of 100% and achieve therapeutic treatment coverage of 65% of endemic villages in rebel-controlled areas of the forest zone.
- Through additional funding, to integrate vitamin A supplementation to children 6-59 month of age through CDTI in 2007.

In addition, through complementary funding, the CDTI infrastructure will be strengthened by integration of other Neglected Tropical Diseases.

Key Project Activities for 2007:

- Consolidating and reinvigorating CDTI in the forest and southern extension areas where CDTI has already begun, with an emphasis on improving planning, sensitization, training, and supervision activities.
- Undertaking advocacy to find additional NGDO partners and donors to restart CDTI in all endemic areas.
- Conducting IEC campaigns for community compliance during CDTI.
- Training of health workers and community distributors to implement CDTI.
- Careful planning and coordination at the national, zonal and district levels, including devising strategies to enhance the efficiency of the program and reduce the need for outside support.

- Supervision, monitoring and evaluation of CDTI activities, including introducing community-self monitoring into some communities.
- Operational research on integration lymphatic filariasis and schistosomiasis control into CDTI (through additional funding).
- Technical input and support to the National Onchocerciasis Control Program.

Expected Outputs for 2007:

- 742,886 people treated in 2007.

Zone	Estimated total population in 2007*	Estimated No. people treated in 2007	Estimated therapeutic coverage
Southern Ext - Government	716,238	465,555	65%
Southern Ext - Rebel controlled	351,417	228,421	65%
Forest area – Government	974,199	0	0%
Forest area - Rebel controlled	74,630	48,510	65%
Total	**2,116,484**	**742,486 people treated**	**35%**

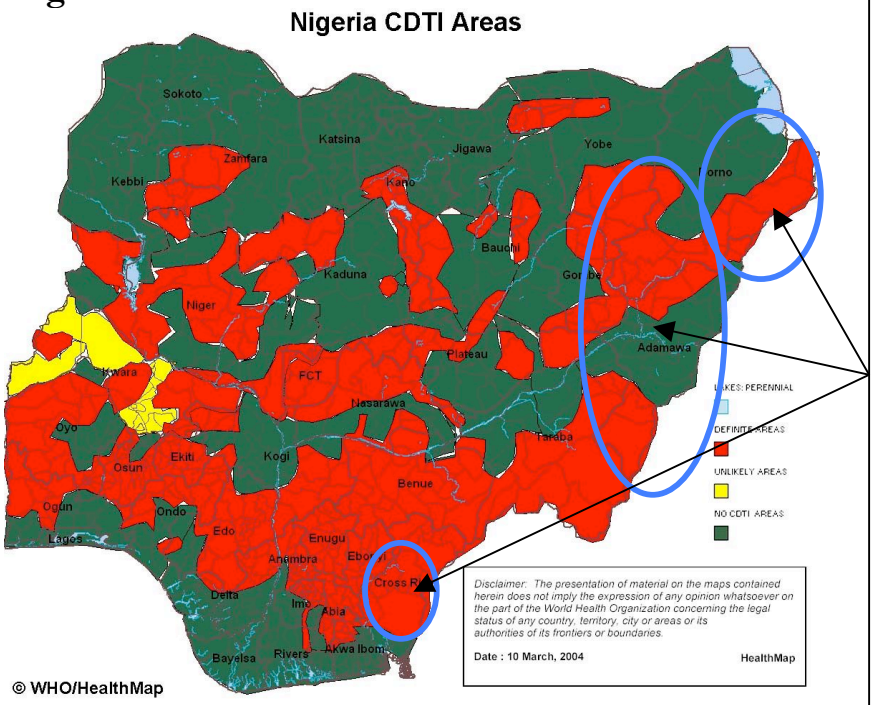
*Based on an annual population growth rate of 3,8%

- A model monitoring and evaluation system established for CDTI Projects, integrated into the health system.
- The community-self monitoring approach tested in selected communities for possible scale-up.
- Advocacy visits, meetings and calls undertaken to find additional NGDO partners and donors to restart CDTI in all endemic areas.
- Planning and coordination workshops held at the national, zonal and district levels, with practical suggestions to enhance the efficiency of the program, transfer more responsibility to the NOCP and reduce the need for outside support.
- A pilot strategy to integrate Lymphatic filariasis and schistosomiasis control activities into CDTI is devised and tested in 2 districts for possible scale-up.
- Technical input and support to the National Onchocerciasis Control Program.
- Best practices and lessons learned packaged and disseminated to a wider audience.
- Due to insufficient finances, no treatment in the Government controlled Forest zone is planned. We will search for additional resources to be able to start treatment in this zone as well.

Key Project indicators:

- Number and type of health or community agents trained at each level.
- Number of CDDs completing campaign versus number trained (CDD recidivism / year)
- Number of communities implementing CDTI per zone.
- Number of IEC key activities achieved in the community.
- Number of meeting and advocacy activities achieved in the community.
- Number of people treated with ivermectin per year at the village, health district and zonal level.
- % treated per total population at village, health district and zonal level.
- Number of ivermectin tablets distributed / number people treated = average number tablets.
- Number of children that received Vitamin A supplementation in the community through CDTI.
- Number of Vitamin A capsules distributed in children of 0-59 month.

Nigeria



Country Profile:

Total population:	121 million
GNI per capita:	US$290
Life expectancy at birth:	52 years
U5 mortality rate:	183/1000
Infant mortality rate:	110/1000
Adult literacy rate:	64%
Prevalence VAD:	25%

Onchocerciasis Program Summary:

Total population in endemic zone in 2006: 2,153,891 people
Ultimate Treatment Goal: 1,938,533 people treated by 2008*
Activities in 2006: Implementing CDTI in three states; Improving IEC strategy; Training; Integrating other health interventions into CDTI; Monitoring and Evaluation

HKI Programs:

Onchocerciasis; Trachoma; Nutrition; Childhood Cataract.

* assumes a 2.9% PGR and UTG of 85%

Background: Onchocerciasis is endemic throughout most of Nigeria. With the support of The Nippon Foundation, HKI began working to deliver ivermectin through CDTI in two States (Adamawa and Borno) in 1999 and in another State (Akwa-Ibom) in 2004. In these three States of Nigeria, CDTI is a partnership approach with the involvement of the government at all levels, endemic communities, APOC and HKI. Adamawa and Borno CDTI projects are in their eight-year of implementation and Akwa-Ibom is in its fourth year.

Since HKI began its support, there has been a steady annual increase in the number of people treated - from 1 million in the first year (doubling the previous year's treatments figures) to over 1.8 million people treated in 2006. In order to strengthen the CDTI structure further and with additionally leveraged funding, the three projects (Adamawa, Borno and Akwa-Ibom) have integrated vitamin A capsule distributions into the CDTI structure, thereby enabling over 90% of young children to receive vitamin A in 2004 (about 550,000 children 6-59 months of age and over 61,000 women post partum). The approach has been replicated by three other NGDO partners in four other states of the country. The approach may also be adopted to address iron deficiency anemia among expectant mothers who ordinarily would have little or no access to iron supplements. HKI/Nigeria has pilot tested the screening and referral of cataract cases by the CDDs in certain Local Government Areas (LGAs) in Adamawa and Borno States and given the very positive results of this integration into CDTI, is now expanding this strategy to more LGAs in the program in Adamawa State.

Ensuring the long-term sustainability of CDTI in Nigeria is a concern, given the reluctance of some community members to comply with repeated annual ivermectin treatments after clinical symptoms subside. Revised sensitization strategies are needed to promote compliance for 15 to 20 years. In addition, APOC's financial assistance to Adamawa and Borno States ended in 2004 and other partners like the government, the endemic communities, and HKI are expected to continue sustaining the key project activities for the remaining years until the disease is no longer a public health problem.

Key Project Accomplishments in 2006 with the support of the Nippon Foundation:
As noted above, HKI-assisted states achieved positive treatment results in 2006 with over 1.6 million people treated for onchocerciasis in 4,225 communities. This represents an overall therapeutic coverage of 84% and a 100% geographic coverage.

State	# communities treated / total #	Total population	# of people treated	Therapeutic coverage	# of tablets distributed
Adamawa	2,784 /2,784	1,237,434	1,058,074	86%	2,791,810
Akwa Ibom	12/ 12	25,067	15,554	62%	43,667
Borno	1,429/ 1,429	891,390	740,607	83%	1,904,055
Total	**4,225/ 4,225**	**2,153,891**	**1,814,235**	**84%**	**4,739,532**

1,671 health workers were taught to train, supervise and support 4,830 CDDs in the three HKI-assisted states. Although VAS was not provided to children via CDTI in 2006 due to an ongoing NID campaign, CDDs were trained to provide VAS to women post-partum throughout the year. Workshops were organized at various levels to review the monitoring tools and the resulting integrated checklists were used during the monitoring and supervisory visits carried out by the district supervisors and front line health facility staff.

State	Health Workers			Community Distributors		
	ATrO	Trained	Coverage	ATrO	Trained	Coverage
Adamawa	990	1,259	127%	2,949	2,949	100%
Akwa Ibom	84	39	46%	921	64	7%
Borno	281	373	132%	1,775	1,817	102%
Total	**1,355**	**1,671**	**123%**	**5,645**	**4,830**	**86%**

ATrO = Annual Training Objective

Overall Goal: To eliminate Onchocerciasis as a public health problem in Adamawa, Borno and Akwa-Ibom States specifically and in Nigeria in general by 2020.

General Project Objective: To ensure that a sustainable delivery mechanism using CDTI is set up in Adamawa, Borno and Akwa-Ibom States by the end of the project.

Specific Project Objectives for 2007:

- To treat at least 70% of the total population with ivermectin in 100% of endemic communities in Akwa Ibom State.
- To treat at least 84% of the total population in 100% of endemic communities in Adamawa State.
- To treat 85% of the total population in 100% of endemic communities in Borno State.
- To reinforce the capacities of the main actors (primarily front-line health workers and CDDs) in implementation of CDTI and data management.
- To build ownership of CDTI among MOH staff and communities so that they will manage and sustain the program.

In addition, through complementary funding, the CDTI structure will be strengthened and leveraged by integrating additional health interventions, including:

- Supplementation of children 6-59 months of age with VACs.
- Training CDDs in screening and referring of congenital and adult cataract cases in Adamawa State, while supporting the infrastructure already developed in Borno State.

Key Project Activities for 2007:

- Coordinating program planning in each state and in each LGA.
- Training of frontline health facility level staff to enhance participation in and responsibility for CDTI. Due to the frequent transfer of trained health workers, yearly training is necessary to maintain high quality and timeliness of program monitoring and supervision.
- Training of CDDs to address the issue of attrition and accommodate those communities desiring more CDDs, but also to sustain the capacity of the CDDs to perform their tasks efficiently.
- Improvement of educational, training and advocacy materials in order to ensure community compliance for the long-term.
- Continued operational research on using CDTI as a vehicle for screening and referral of cataract cases and VAS to women post-partum; and/or reasons for high CDD attrition rates.
- Supervision, monitoring and evaluation for improvement of the program to ensure sustainability.
- Technical input to the National Onchocerciasis Control Program.
- Review meetings with partners and stakeholders at the state and LGAs levels.
- Data collection, analysis and dissemination of program results.

Expected Outputs for 2007:

- 1,865,034 people treated in 2007, with an overall therapeutic coverage of 84%.

State	Estimated total population in 2007*	Estimated No. people treated in 2007	Estimated coverage
Adamawa	1,272,082	1,087,700	85%
Akwa Ibom	25,769	15,989	62%
Borno	916,349	761,343	83%
Total	2,214,110	1,865,034	84%

*Based on an annual population growth rate of 2.9%

- 4,225 or 100% of communities treated with ivermectin via CDTI.
- Approximately 1,579 health workers and 4,488 community distributors trained.
- IEC strategy adjusted to ensure treatment compliance in mature project areas and to distribute 4,225 copies of IEC materials to communities prior to ivermectin distribution.
- Model strategy developed further, retested and documented for integrating screening and referral of cataract into CDTI.
- Screening and referral of children with congenital cataract.
- Targeting 200,000 children 6-59 months through CDTI for vitamin A supplementation.
- Supplementing women post-partum with VA through the CDDs.
- Model monitoring and evaluation system established for CDTI Projects delivering multiple health-related interventions.
- To train 30 communities on Self-monitoring in the three HKI assisted states, and serve as a model for replication in other communities.
- Best practices and lessons learned packaged and disseminated within and outside of Nigeria.

Key Project indicators:

- Number and type of health or community agents trained at each level
- Number of CDDs completing campaign versus number trained (CDD recidivism/year)
- Number of people treated with ivermectin per year at village, local government area and state level
- % treated per total population at village, health area, local government unit and state level
- Number of ivermectin tablets distributed/number people treated = average number tablets
- Number of people screened and referred for cataract; specificity of screening approach
- Number of women post partum supplemented with VA by CDDs throughout the year

SECTION 5: REGIONAL AND GLOBAL ACTIVITIES IN SUPPORT OF ONCHOCERCIASIS CONTROL

In 2007, the HKI Regional and Headquarters team will continue to undertake activities to coordinate and monitor country program efforts and to provide technical guidance for program improvement. An effort will be made to document and share lessons learned across HKI country programs but also with our partners in countries where we work and elsewhere. In addition, the HKI Regional team will continue to advocate for onchocerciasis control throughout Africa and to provide technical guidance to all countries needing assistance to improve CDTI implementation, as time and financial resources allow.

Coordination, monitoring and technical assistance to HKI country activities

Supervisory and technical assistance visits

The Regional Technical Advisor for Onchocerciasis or the Regional Director for Africa (or another HKI staff member with a particular expertise) will undertake supervisory and/or technical assistant missions to each of the three core countries each year to participate in program planning, assess progress, assist with operational research design and data analysis or participate in program evaluations. These trips will be combined with other activities as much as possible to save time and money. However, in order to ensure implementation of high quality programs, these trips are deemed necessary. On-going assistance will be provided via regular e-mail correspondence and by phone as needed.

Regional Onchocerciasis Workshops

Due to limited resources, a Regional Onchocerciasis Workshop will not be convened as in the past. However, onchocerciasis issues and lessons learned will be shared at all other meetings or gatherings of country staff involved in onchocerciasis control.

Dissemination of Results

Onchocerciasis News for Africa

At least four times per year, the Regional Office (Regional Technical Advisor for Onchocerciasis) will summarize key findings from interesting reports or articles written by HKI or by other groups or individuals for dissemination via an e-mail list. The summary will be written in English and French, and possibly Portuguese, pending available resources. In 2007, each issue of *Onchocerciasis News for Africa* will be sent to an e-mail list of about 500 recipients. Outstanding topics will include: Cataract screening and referral via CDTI, experiences from Nigeria and Tanzania; management of SAEs, expert advice from Cameroon; integration of albendazol distribution for LF into CDTI in Burkina Faso; how to integrate VAS into CDTI; and attrition of CDDs, a summary of findings.

Presentation at Technical Meetings and Publication of Results in Peer Review Journals

A continued focus and renewed effort of the Regional Office will be to assist countries to analyze data and write articles for publication and/or presentation related to implementation of CDTI. Several international meetings, such as IAPB and ISGEO are important venues to present our work.

Onchocerciasis Web site

In order to facilitate dissemination of lessons learned and best practices by HKI, a Web site has been developed and can be accessed via www.onchohki.org. This site is a resource for those implementing onchocerciasis programs or interested to learn more about the disease. The site provides technical and clinical information on onchocerciasis and provides maps of onchocerciasis endemicity so viewers can quickly see the extent of the problem. Each of HKI Country Programs has a specific page that provides background information, and an overview of program activities and accomplishments and future needs and directions. The site provides a list of and access to HKI-produced IEC materials. Links are made to interesting related articles, sites and organizations involved in onchocerciasis control. In 2007, the site will be revised and updated more regularly. HKI's Information Technology Advisor for Africa and the Regional Technical Advisor for Onchocerciasis are responsible for completing, updating, and maintaining

the site with ongoing assistance from the HKI Headquarter IT Specialist, the Regional Africa team and Country Directors.

Representation at International Meetings

It is important that HKI participate in several important international forums during the year to provide technical input and to advocate for effective implementation of programs based on sound monitoring and evaluation practices. Advocacy at these meetings also helps ensure that adequate resources will be available to carry out the key activities to sustain CDTI after the end of APOC support, which has already occurred for projects reaching their 5th year. Active participation in the following annual meetings is critical:

- NGDO Coordination Group for Onchocerciasis Control meets three times per year. HKI (Regional Technical Advisor for Onchocerciasis) is the Vice-Chair at present and will become the Chairperson in March 2007;
- As the Chair of the NGDO Group, the Regional Technical Advisor for Onchocerciasis becomes the NGDO representative to the Committee of Sponsoring Agencies (CSA) of APOC, the governing body that meets at least four times per year;
- Joint Action Forum of APOC meets once per year;

In addition, special meetings are called where HKI representation is important, such as meetings related to the SIZs of former OCP Countries; annual review meetings of partner NGDOs where HKI is requested to share our experience and can learn from theirs; and selected meetings related to Vision 2020, the International Agency for the Prevention of Blindness (IAPB) and the West African Health Organization (WAHO), which include onchocerciasis control activities.

Support to the NGDO Onchocerciasis Group and the West African Health Organization

HKI seconded a staff member, Dr. Tony Ukety, an ophthalmologist from the Democratic Republic of the Congo to the World Health Organization (WHO) in Geneva to serve as the Coordinator for the NGDO Onchocerciasis Group for another two years. The position is funded jointly by all group members.

The NGDO Group was formed by non-governmental organizations working in Onchocerciasis Control in order to ensure that our efforts would not be duplicated and that all endemic areas would be covered with technical support. WHO houses the Coordinator who also serves as liaison to APOC Management and the WHO Blindness Prevention Unit. The official Group Members, besides HKI are, Christian Blind Mission, Interchurch Medical Assistance, Light for the World, Lions Club International Foundation (SightFirst Program), the Mectizan® Donation Program, Mission to Save the Helpless (a Nigerian NGO), Organisation pour la Prévention de la Cécité, Sight Savers International, The Carter Center, United Front Against River Blindness and the US Fund for UNICEF. Merck & Co, Inc. is an Associate Member.

HKI also actively participates with and has supported the activities of WAHO, and the Vision 2020 Coordinator at WAHO, which plays a coordination and technical assistance role for health care and eye care throughout West Africa. Through a grant from USAID, HKI is collaborating with WAHO to build capacity at the national levels by providing the National Coordinators for Prevention of Blindness prevention to national coordinators and some National Onchocerciasis Coordinators training in Information Technology (IT) techniques and ways of sharing of Best Practices through the internet.

Technical Assistance to other CDTI countries

HKI is often asked to provide targeted assistance to countries implementing CDTI Projects. HKI has a particular expertise to share in IEC strategy and material development - in prevention and management of serious adverse events in areas co-endemic for onchocerciasis and loiasis, and in integration of nutrition and eye health interventions into CDTI. HKI would like to be able to respond to at least one of these exceptional requests per year.

SECTION 6: TIMELINE OF MAJOR ACTIVITIES – *March 2005 through February 2008*

	Year 1				Year 2				Year 3			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Cameroon												
Planning Meetings	X				X				X			
Training Sessions	X				X				X			
IEC Campaigns		X				X				X		
Distribution via CDTI		X				X				X		
Evaluations			X				X				X	
Operations Research				X	X	X	X	X	X	X	X	X
Cote d'Ivoire												
Planning Meetings	X					X			X			
Training Sessions		X	X			X				X		
IEC Campaigns		X					X				X	
Distribution via CDTI			X	X			X	X			X	X
Evaluations				X								X
Nigeria												
Planning Meetings	X				X				X			
Training/retraining Sessions	X	X			X	X			X	X		
IEC Campaigns		X	X			X	X			X	X	
Distribution via CDTI		X	X			X	X			X	X	
Support to NOCP	X				X				X			
Evaluations			X	X			X	X			X	X
Operations Research			X	X	X	X	X	X	X	X	X	X
Regional and Global												
Field Supervision	X	X	X	X		X	X	X	X	X	X	
Regional Oncho Workshops												X
Dissemination of Results	X	X	X	X	X	X	X	X	X	X	X	X
NGDO Support Group/TCC	X		X		X		X		X		X	
Technical Assistance to others		X				X				X		
Project Reviews/Evaluations				X				X				X
Reports to Nippon Found.					X				X			X
Monitoring and Evaluations	X	X	X	X	X	X	X	X	X	X	X	X

SECTION 7: HKI INSTITUTIONAL CAPABILITIES AND PROFILE

HKI Institutional capability in Onchocerciasis Control

HKI is an acknowledged leader in onchocerciasis control, a leadership position that has been made possible by the continued support of The Nippon Foundation. HKI was one of the first initiators of community-based strategies for ivermectin distribution which led to the development of CDTI and is one of the six NGDOs that leveraged the World Bank resulting in creation of APOC. Our expertise in IEC and training methodologies is recognized by all onchocerciasis control partners. As one of the few onchocerciasis NGDOs with a mandate broader than just blindness prevention, we have been uniquely positioned to advance effective integration of other public health interventions into CDTI; the most

successful example being integration of vitamin A supplementation. Our expertise in managing SAEs is recognized throughout the onchocerciasis control community. In addition, we are pro-active in disseminating lessons learned and providing technical assistance. This leadership position is built on a strategy of ensuring well-qualified technical/program staff in the field.

The following key staff members of Helen Keller International will work together to ensure effective implementation, monitoring and evaluation of all activities included in this proposal.

Country Directors and Onchocerciasis Program Officers of Core Countries:

- Cameroon: Dr. Xavier Crespin, Country Director has over 15 years of work experience with HKI and with the MOH/Niger in managing public health projects. He will provide oversight and direction to the project. Ms. Julie Akame, Mr. Cyrille Evini and Mr. Serge Akongo, Program Officers for Onchocerciasis will provide day-to-day technical and management support to the project. Mr. Christian Zoa will provide administrative and financial management. All are experienced in their respective roles and have been working to implement onchocerciasis control activities for 10 years in Cameroon.
- Côte d'Ivoire: Dr. Marie Tanoh, Country Director has over 10 years of work experience with the MOH in program development and management and Mr. Adama Sangare, Onchocerciasis Project Coordinator has worked for HKI for the past 6 years on onchocerciasis control programs in Mali and Côte d'Ivoire. The Country Director will provide direction and technical input to the project and Mr. Sangare will provide day-to-day technical and managerial support.
- Nigeria: Dr. Musa Obadiah, Country Director was formerly a State Onchocerciasis Coordinator in Nigeria and has been providing technical assistance and directing HKI onchocerciasis activities in Nigeria for the past 6 years. Mr. Elisha Agagak, Program Officer has been working with HKI for 4 years. Dr. Obadiah will provide direction and technical input to the project and Mr. Agagak will provide day-to-day technical and managerial support.

Regional technical support:

- VP and Regional Director for Africa: Shawn Baker, M.P.H. will provide technical support and oversight for the project. He is responsible for the direction of all HKI projects in Africa. Shawn has over 20 years of public health experience in Africa and Asia.
- Regional Technical Advisor for Onchocerciasis: Danny Haddad, MD will be responsible for managing this project and meeting the project's objectives, providing direct technical assistance and routine management oversight of all Project staff. Danny has over 13 years of experience in eye health and public health / international development programs and has worked with HKI for 6 years (including director for onchocerciasis and country director for Tanzania). During the past 3 years he has worked at the Academic Medical Center (AMC) in Amsterdam at the Department of Medical Microbiology.
- Deputy Regional Directors: Caroline Amakobe Sande and Dora Panagides. The Deputy Regional Directors will provide direct supervision to the country offices and will give assistance to the Country teams on issues related to administration and financial management.
- Regional Information Technology Advisor: Cheick Sidibe has been working for over 6 years with HKI to harmonize our technology systems throughout Africa. He has been instrumental in development of the Onchocerciasis Web Site and will continue to manage it, along with facilitating dissemination of information via e-mail. He has a degree in Information Technology.

HKI Institutional Profile

Helen Keller International was founded in 1915 as the American Foundation for Overseas Blind to rehabilitate soldiers blinded during World War I. Helen Keller, the deaf-blind pioneer who became a world leader in rehabilitation and blindness prevention, was associated with the American Foundation for Overseas Blind until her death in 1968. In 1977, the organization was renamed Helen Keller International, in Ms. Keller's honor. HKI's headquarters are in New York, it is also incorporated in France, and currently has programs in 25 countries.

The mission of Helen Keller International is to save the sight and lives of the most vulnerable and disadvantaged. We combat the causes and consequences of blindness and malnutrition by establishing programs based on evidence and research in vision, health and nutrition. As an international technical assistance organization, HKI is dedicated to building local capacity to manage health interventions. The major program areas of HKI are nutrition, onchocerciasis, trachoma, cataract, and refractive error.

Overview of HKI's Onchocerciasis-control activities:
HKI currently provides assistance to Ministries of Health and communities to distribute ivermectin via CDTI in seven countries: Burkina Faso, Cameroon, Côte d'Ivoire, Mali, Nigeria, Sierra Leone and Tanzania. In the former OCP areas, HKI is working with three OCP countries (Burkina Faso, Côte d'Ivoire and Niger) to undertake surveillance and community sensitization to stem recrudescence in onchocerciasis-free areas. Due to limited resources, assistance to Burkina Faso, Mali and Niger is minimal and may end soon if additional funds can not be secured.

SECTION 8: BUDGET AND BUDGET JUSTIFICATION

Helen Keller International is requesting a total of US$350,000 for year three to enhance community-directed treatment with ivermectin to control onchocerciasis in 3 CORE countries, namely Cameroon, Côte d'Ivoire, and Nigeria. This year three budget also includes key activities, technical assistance and support for the Africa Regional Office and the Regional Technical Advisor for Onchocerciasis.

Cameroon	Cote d'Ivoire	Nigeria	Oncho Department	Regional Office	Sub-total Direct	Indirect Costs	Total Requested
$30,000	$65,000	$65,000	$89,235	$60,500	$309,735	$40,265	$350,000

As illustrated in the table on page 24, the direct amount requested represents 6.5% ($309,735/$4,711,453) of the total budget for the three core countries and for the regional office. A more detailed budget for year three is found below, followed by the budget justification.

Year 3: April 2007 - March 2008	
	Year 3
CAMEROON	
Personnel / Technical Assistance	$15,000
Capital equipment	$3,000
Targeted Training	$2,000
Materials development and production	$2,000
Program monitoring and evaluation	$5,000
Travel	$1,000
Communications	$2,000
Sub-Total	**$30,000**
COTE D'IVOIRE	
Personnel / Technical Assistance	$35,800
Program planning with PNLO and districts	$3,000
IEC campaign	$5,000
Training and targeted retraining	$5,000
Program monitoring and evaluation	$2,000
Operational research	$1,000
Institutional support to the PNLO	$1,000
Final evaluation and program close down meeting	$2,000
Communications	$2,000
Travel	$1,000

Office rent and utilities	$5,000
Supplies, maintenance and operations	$2,200
Sub-Total	**$65,000**
NIGERIA	
Personnel / Technical Assistance	$30,000
Program Planning Meetings	$2,500
Targeted Training	$5,500
IEC & Materials development/production	$4,000
Program monitoring and evaluation	$4,000
Final evaluation and program close down meeting	$3,500
Communications	$3,000
Office Rent and utilities	$2,000
Travel	$6,400
Supplies, insurance, maintenance and operations	$4,100
Sub-Total	**$65,000**
Technical Assistance and Management - Onchocerciasis Department (Dakar)	
Regional Technical Advisor for Onchocerciasis (70% LOE)	$67,735
Support to NGDO Coordinator	$7,500
International Travel	$12,500
Communication	$500
Equipment, supplies, materials	$1,000
Sub-Total	**$89,235**
Technical Management - Regional Office (Dakar)	
Regional Director (10% LOE)	$16,000
Deputy Regional Directors (5% and 5% LOE)	$12,500
Regional Administrator (10% LOE)	$5,000
Regional travel	$11,000
Management of onchocerciasis website	$10,000
Communication	$3,000
Rent and utilities	$3,000
Sub-Total	**$60,500**
Sub-Total Core Activities	**$309,735**
Shared Service Costs (13% out of 21.6%)	**$40,265**
TOTAL REQUESTED	**$350,000**

Budget justification for year three:

The key activities for each country and for the Regional Office and Regional Technical Advisor for Onchocerciasis are noted in the text of the proposal and the budget lines reflect those activities for each country.

- In all countries, planning, monitoring and evaluation meetings and field activities are extremely important to transfer management skills and undertake supervision visits for continuous improvement of program implementation. These lines generally include per diem, fuel and travel costs, venue rental and meeting materials in some cases.
- Likewise, training activities are included in all country plans and generally reflect partial cost for the activity, with the government supporting a part of the cost. These lines include trainer and participant per diem and travel, training materials and venue rental. Participants are primarily health professionals at all levels, community distributors and other community leaders.
- Materials development and sensitization activities are critical to ensure a correct understanding of the messages and compliance to the program. In some countries, materials development workshops will need to be held with all stakeholders; in other countries, funds are allocated for production of existing materials that have previously been tested for use in the program.

- Operations research activities have been planned in some countries as noted in the proposal. Costs may include materials, questionnaire reproduction and per diem/travel costs for data collection, data analysis costs and results dissemination costs.
- The line for funds to attend the Onchocerciasis Regional Meeting has been deleted from the country and the regional budget sections.
- Partial costs for Personnel, Capital Equipment, Communications, Office Rent and Supplies and operating expenses are included in each country section and vary by need of the country, other sources of available funding, the size of the onchocerciasis project and actual in-country costs. Operation expenses include maintenance of vehicles and equipment as well as funds for general office physical and administrative needs. Communication may include telephone, fax, postage and internet access costs depending on the need of the particular country. Personnel costs include salary, benefits and any allowances for staff which vary depending on the level of the position.

Cameroon:
Personnel costs will support partial salaries of the Country Director, and the Accountant. Capital equipment for year 3 is for purchase of a computer and printer. Program planning includes cost for pre-ivermectin distribution campaign activity planning in all three project areas. Technical input to the NOCP or other partners in terms of time or attendance at meetings and workshops is included under travel. Rent and utilities will support partial costs in the main office and in the Far North sub-office, which is at least a day's journey from Yaoundé.

Côte d'Ivoire:
Personnel costs have been increased to support a small portion of the Country Director, the Accountant and a Driver and the entire salary for the Onchocerciasis Project Coordinator. Program planning will be done with partners before the CDTI campaign in the two project areas. IEC campaigns are of particular importance in Côte d'Ivoire considering that the population has been displaced and will need strong sensitization. Training and retraining of health workers and CDDs is necessary to ensure understanding of the program in case of recidivism. Institutional support has been identified as a need for the NOTF and may include supplies, materials and communication costs for the functioning of that office.

Nigeria:
Personnel costs will support 25% of salaries of the Country Director, the Accountant, a secretary, 2 Drivers and security staff and the full salary for the Onchocerciasis Program Officer. Program planning includes the cost for activity planning prior to CDTI campaigns in all three project areas. Targeted training is necessary to train the new staff who have just joined the program or who lack some of the required skills necessary for program implementation. Materials development and production of IEC and training materials is needed to replenish stocks each year. The program evaluation meeting will re-assess the interventions in terms of coverage (both geographical and therapeutical) and community awareness to sustain the program. Due to the very large distance between and within the project areas, travel funds are included as a separate line item.

Technical Assistance and Management – Onchocerciasis Department:
We are requesting that The Nippon Foundation support the majority of the Regional Technical Advisor for Onchocerciasis' costs so that he can ensure the highest quality of program implementation among countries and wide dissemination of lessons learned. HKI does not currently have many other resources to support the Regional Technical Advisor for Onchocerciasis position. Money is also included here to help support the NGDO Onchocerciasis Group Coordinator, based at WHO Geneva. Travel costs will be used to make supervisory and technical assistance visits to participating countries, to provide some technical assistance exceptionally to non-participating countries and to attend international meetings to provide input and share lessons learned as noted in the proposal.

Technical Assistance and Management – Regional Office:
Some key Regional Office staff will provide managerial, administrative and technical inputs to the program. They are included at between 5 and 10% time and funding. Ongoing management of the onchocerciasis

web site is also under this section of the budget and is needed to maintain the site up-to-date and relevant. Travel costs will be used to make supervisory and technical assistance visits to participating countries and to attend international meetings as noted in the proposal. Rent will contribute to the Regional Office in Dakar, where all regional staff, including the Regional Technical Advisor for Onchocerciasis, will work.

Shared Service Costs

Although HKI's overhead rate is normally 21.6%, HKI is requesting that The Nippon Foundation contribute 13% for indirect costs associated with this project as in the past. Indirect costs include support to key HKI headquarters staff salaries and communications and operating costs of HKI's New York office.

Summary of Country Office/Regional Office Budgets for Current Fiscal Year, Others Sources of Funding and Calendar Year 2006 Request to the Nippon Foundation

	2005/2006 Fiscal Year Overall Budget	2006 Request to Nippon	Other Funding Sources
Cameroon	$841,274	$30,750	Lions Club International Foundation Canadian International Development Agency United States Agency for International Development (Child Survival Project) African Program for Onchocerciasis Control
Côte d'Ivoire	$1,431,505	$65,000	Canadian International Development Agency United States Agency for International Development (MOST Project) Global Alliance for Improved Nutrition (starting in 2005) Merck NGDO Grant
Nigeria	$620,864	$65,000	African Program for Onchocerciasis Control The Micronutrient Initiative United States International Development Agency The Conrad N. Hilton Foundation
Regional Office & Onchocerciasis Director	$1,817,810	$148,985	United States Agency for International Development (MOST Project) United States Agency for International Development (other projects) The Micronutrient Initiative The Conrad N. Hilton Foundation Canadian International Development Agency UNICEF The Bill and Melinda Gates Foundation

SECTION 9: WHAT IS LEFT TO DO IF WE ARE TO CONTROL ONCHOCERCIASIS AS A PUBLIC HEALTH PROBLEM IN AFRICA?

In partnership with The Nippon Foundation, Helen Keller International has played a leadership role in onchocerciasis control and has made steady progress and substantive contributions towards development of sustainable and effective programs. Nevertheless, there is still work to be done before onchocerciasis is no longer a serious public health problem throughout Africa.

As OCP funding has ended and as APOC funding becomes less and less forthcoming over time for program activities to the affected countries, governments and NGDOs are expected to continue financing activities until onchocerciasis is eliminated as a public health problem throughout Africa. Although HKI and other NGDOs are committed to this, securing resources has become more difficult. Nevertheless, in order achieve success, key activities and elements of onchocerciasis control that still must be addressed are:

1. CDTI has not yet fully expanded to cover all endemic areas within APOC and /or OCP. The Democratic Republic of the Congo (DRC), Angola, Sudan, Sierra Leone and Cote d'Ivoire still have large segments of their population living in endemic areas where treatment has not yet begun (or has not yet restarted in the case of Sierra Leone and Cote d'Ivoire). The governments have generally made plans to implement CDTI in all areas but lack NGDO partners or adequate funds. Because onchocerciasis in a regional disease, all areas and pockets must be brought under control if we are to eliminate the disease in Africa as a public health problem.

2. There is a need to enhance activities to ensure sustainability at the community level so the CDTI can continue for 20 years at high coverage. Unfortunately, the initial assessment by APOC that with up to 5 years of external support, CDTI would be sustained within communities was optimistic. Funds are becoming increasingly restrictive to mature CDTI projects (after 3 years), which is in almost all cases before the projects are sustainable. Funds for basic yet critical project activities, such as training, sensitization and IEC support, and supervision are inadequate to build sustainable programs.

3. CDTI is an innovative strategy that, with adequate inputs, we are hopeful will be sustained at the community level. Because trained health workers are now in many communities, additional interventions can be added that will contribute to the prevention of blindness and improved health and survival of the population. For example, supplementing children under five years with vitamin A capsules (VACs) via CDTI has the potential to reduce childhood mortality by an average of 23% (Beaton, et al). CDTI can also be a vehicle for cataract screening and referral, the number one cause of blindness in the world. This approach is cost effective, fills health needs that would otherwise not be filled, and has been seen to create additional demand for ivermectin. Integration of other health interventions into CDTI should be tested before promoting on a large scale (such as was the case for VAS, cataract screening and LF control).

4. OCP funding has ended yet there is still a risk of recurrence of the disease due to migration of human populations and because some pockets of the disease still exist. For instance, as infected people from war zones resettle in onchocerciasis free areas, they may re-infect the black flies (who are now repopulating the once black fly-free zones) so that the disease might be retransmitted to other community members. Ongoing surveillance is needed in <u>all</u> former OCP countries and will be needed in <u>all</u> APOC countries soon. In additional, CDTI is now being coupled with surveillance in some areas. Unfortunately, limited resources are available to assist former OCP countries with this considering that donors are now more concerned with delivery of ivermectin via CDTI to the APOC countries.

5. Considering that it is thought that onchocerciasis can be eliminated as a public health problem IF coverage is maintained at least 65% of the total population living in hyper and meso-endemic areas for 15-20 years, it is important to be relatively sure of the true coverage. Unfortunately, coverage data is not that good in many areas so it will likely take longer than expected to control onchocerciasis throughout Africa. A better monitoring and evaluation system in needed, along with periodic random coverage surveys. Funds are insufficient for this important aspect of onchocerciasis control.

6. Certain program elements of CDTI are still not fully understood such as the impact of severe adverse events in *Loa loa* endemic areas on coverage over time; factors that influence sustainability; and what will best motivate community distributors to continue working for many years after the investment of their training. Some research is on-going related to the above issues and some results will be available within a year or two, but again, funds for operational research are insufficient. In addition, an impact assessment of CDTI over the past 5-6 years to see if ivermectin has been successful to date in reducing disease prevalence is underway with preliminary results available later this year.

7. The current strategy (treatment with ivermectin) will not eradicate onchocerciasis completely but may control the disease (eliminate the symptoms of the disease) as a public health problem with repeated treatment at high coverage levels (65-84% of the total population in all hyper and meso endemic areas) over 15 to 20 years. There is a need to develop a new medication (macrofilaricide) that can eradicate the disease or eliminate the symptoms and control the disease in a shorter period of time so that populations do not become apathetic to treatment. This research is currently underway, but it is under-funded and has run up against delays.