Ministry of Education, Science and Technology

Ministry of Health

Kenya National School-Based Deworming Programme

Year 2 Report
(April 2013 - March 2014)

Message from the Ministry of Education, Science and Technology

We celebrate its success in treating the 6.4 Million children in over 15,000 schools in the 28 counties.

The Ministry of Education, Science and Technology supports the goal of universal access to basic education. To this extent, it is committed to the Dakar Framework for Action on Education for All (EFA) and the Millennium Development Goals. The government's free primary and secondary education initiative is in line with these international commitments. The Ministry of Education, Science and Technology supports all programmes that promote both access and quality of education in this country. The National School Based Deworming Programme (NSBDP) is one such important initiative. Through this Programme, millions of Kenya's children are dewormed yearly. The benefits of deworming have been proven through rigorous research that demonstrates that deworming increases participation of children in school by reducing absenteeism by up to 25% and improving their concentration in class. It is therefore complementary to the free primary education initiative.

The NSBDP has completed its second year of implementation and the report is being released today. We celebrate its success in treating the 6.4 million children in over 15,000 schools in the 28 counties. The Ministry is particularly pleased that the deworming programme expanded to cover more areas than the first year. That North Eastern, Eastern and Central regions were also treated is indeed a significant success this year. This is particularly so due to the Ministry commitment to the goal of equity in service provision. We advised the programme not to exclude any deserving children in areas where research has demonstrated prevalence and intensity of worms that meet treatment thresholds. This was made possible through the generous financial support that the programme received from CIFF and the END Fund. We are grateful for this support, and we salute the programme for covering these areas.

I want to thank the teachers in this country whose immense contribution to this programme ensured its success. As you may be aware, it is teachers who, after being trained, actually administer the medicines to the children. I also thank the other personnel from the two collaborating ministries, both from the national government and the counties. I acknowledge the efforts of the County Directors of Education and the staff of the School Health, Nutrition and Meals Unit have invested this programme, for which we are very grateful. May I also thank the Principal Secretary of the Ministry of Health and his staff for enabling close collaboration with the Ministry of Education, Science and Technology. The success we are celebrating today is testament to the effectiveness of the collaboration between the two ministries, the donor – Children's Investment Fund Foundation, and technical partner Evidence Action. As was highlighted at the Paris meeting where both ministries were represented, this programme is a model which is being admired and emulated by other countries.

The Ministry will maintain a high level of support for this programme. To ensure that this is achieved, this programme will be prioritized in our plans as provided for in the programme Implementation and Partnership Framework Agreement that all partners signed. In the next year, it will be on the Ministry's workplan and it will be one of our performance indicators. The Ministry is working to enhance the management of programme data within the Education Management Information System. We support these efforts fully. We will endeavor to provide the resources, both human and material to ensure that the programme not only attains its objective, but that it is institutionalized within the Ministry's structures and processes so as to be sustained for as long as children's well-being is threatened by the presence of worms. The programme model's flexibility and adaptability has seen it being applied to other programmes within government and in other countries.

I call upon all partners to work together as we have worked in the last two years to sustain this success. The Ministry will surely continue to collaborate with all partners, and together we will determine the best ways and means of sustaining this programme beyond the donor commitment period.

Mrs. Leah Rotich, Ag. Education Secretary, Ministry of Education, Science and Technology

Message from Ministry of Health

It is in our performance contract that we will effectively provide deworming treatment to our children in schools.

Health and education are the cornerstones of human capital and form the basis of an individual's economic potential. To a larger extent, both are valuable instruments in ensuring that there exists a healthy economy and building a literate society which enables and allows people to make functional choices and to contribute to their society. School-based deworming is a key pillar of the School Health Policy. We seek to ensure that school children, other than achieving academic support, also receive health interventions that that are critical at their tender ages in their schools.

The Ministry of Health is delighted today to celebrate with partners, the successful completion of the second annual round of treatment and to release the results of the same. This year, the programme treated over 6.4 million children in over 15,000 schools in 28 counties, surpassing its target of 5.7 million children. This is an increase over the 6 million children that were treated last year. We recognize the efforts all partners who contributed toward making this programme a success. We thank our counterparts from the Ministry of Education, Science and Technology for a successful collaboration.

The Ministry takes this programme very seriously and will continue to do so. For the last two years, deworming has remained one of the KPIs of the Ministry. It is in our performance contract that we will effectively provide deworming treatment to our children in schools. It will continue to be so. In Y2, the programme surpassed the Ministry's internal target of 6 million children by over 400,000. This is quite an incredible performance. We are proud of this programme for, it not only improves health of the children, but also educational outcomes. We know we are contributing to the development of human capital for our economic growth. If this is maintained, we are likely to have more productive and industrialized healthy nation. We know it is a cost-effective programme.

As a consequence of the programme model and the hard work put in by all, the Cabinet Secretary, Ministry of Health Hon. James Macharia was invited to deliver the keynote address at a high level meeting of the STH community in Paris earlier this year. The CS led a Kenyan delegation, including a representative of the Permanent Secretary Education, to this meeting convened by Bill and Melinda Gates and Children's Investment Fund Foundation, to share with the rest of the world on the programme's best practices and how other governments can model their work along the Kenyan intervention. This successful meeting led to the donors committing more resources to support deworming initiatives in other countries.

In the first and second years, the programme focused on launching and growing the programme to scale. In the third year, the partners will focus on institutionalizing the programme to sustain the gains made so far and ensure continued treatment for all at-risk children; in fact this work has already begun. The Ministry of Health will work with the Ministry of Education, Science and Technology to explore ways in which the government can meet this objective. To this end, currently, the Ministry is working with WHO to streamline the procurement and distribution of deworming medicines. We are also in the process of integrating the school-based deworming data into the Health Management Information System, with the goal of improving data access and transparency for strategic decision making and linking of services.

An important programme like this must be embedded in the structures of the Ministry in accordance with the School Health Policy. This year, with the support of the Programme we reinvigorated the School Health Technical Committee. We want all school health structures to be active, including the School Health Inter-agency Coordinating Committee. We will work to make them vibrant and engaged. We will also work with the Ministry of Education, Science and Technology and the counties to review and update the School Health Policy in line with the devolved governance. All the relevant units of the Ministry will ensure a collaborative approach with the programme and our sister Ministry of MoEST.

We appreciate our development partners with whom we have had and continue to forge harmonious relationships. The Children's Investment Fund Foundation and the END Fund for extending financial support to the programme. Innovations for Poverty Action (IPA) and Evidence Action who have contributed immensely to the Programme's success by offering technical support. Their contributions cannot go unnoticed. Equally, we are indebted to the pharmaceutical companies for their kind donations which have been the backbone of the Programme. Without medicines, this programme would not have achieved the current levels of success. In the next three months, the Steering Committee will work with WHO to streamline drug procurement, distribution and management. We will eliminate delays, uncertainty and wastage. This is our priority. We are glad to work with Merck Serono and GlaxoSmithKline for making the drugs available through WHO. May the Country Representative of WHO convey our appreciation to them for coordinating the drug procurement process.

On behalf of the Programme Steering Committee, may I congratulate the Management Team for these impressive results that we are celebrating today. We also thank the health personnel in the counties, whose contribution ensured this level of success. As we thank the parents who ensured their children received deworming treatment, we urge all the others who did not take advantage of this round to do so in the next round.

"Kwa Afya na Elimu Bora, Tuangamize Minyoo!"

Dr. William Maina, Head, Directorate of Preventive and Promotive Health Services, Ministry of Health

NSBDP Receives Global Recognition at International Conference on Parasitic Worms

The Honorable Cabinet Secretary for Health, Mr. James Macharia led a high-level Kenyan delegation to showcase the successes of the Kenya National School-Based Deworming Programme (NSBDP), during the Soil Transmitted Helminthes (STH) Community Day at the Institut Pasteur in Paris, France on 3rd April 2014. In this delegation were Mrs. Margaret Okemo from the Directorate of Basic Education, Ministry of Education, Science and Technology; Dr. William Maina, Head, Directorate of Preventive and Promotive Health Services, Ministry of Health; Dr. Charles Mwandawiro from Kenya Medical Research Institute (KEMRI), and Dr. Dorothy E. Onyango, National Programme Director of the Deworm the World Initiative at Evidence Action. The Cabinet Secretary delivered the keynote speech at this event.

"In Kenya, the problem of Soil-Transmitted Helminthes is neglected no more. The Kenya National School Based Deworming Programme is a shining example of the power of partnership – across ministries, the public and private sector, and the national and international community – working together to build a better future for our children. We are proud to share our experience and our achievements, and we are now beginning to look ahead and envision the opportunities that this platform provides. We are intrigued by the previously unthought-of possibility of attempting to eliminate worms completely, and are eager to use our experience to test that possibility."

Honorable Cabinet Secretary for Health, Mr. James Macharia (excerpt from speech)

Hon. James Macharia with Bill Gates and Jamie Cooper-Hohn during the STH Community Day.

"Following the success of our partnership with the Government of Kenya in reducing intestinal worm infestations in children from 35% to 10% in one year, CIFF is now committing an additional $50 million over the next five years to implement large-scale systematic approaches to deworming in a number of countries, with the hope that ultimately we can break the transmission of worms and achieve the vision of: every child, everywhere, free from worms forever."

Jamie Cooper-Hohn, Chair of Children's Investment Fund Foundation

This event, convened by the Bill and Melinda Gates Foundation and Children's Investment Fund Foundation (CIFF), came after global leaders joined forces to announce more than $120 million in new funding commitments as part of a new collaboration to tackle STH spearheaded by CIFF and the Bill and Melinda Gates Foundation. The collaboration is committed to scaling deworming efforts, catalyzing country demand for treatment, and the development of new tools and strategies for interrupting transmission and the possible elimination of STH.

Hon. James Macharia (with his Personal Assistant at his left) at Institut Pasteur. Counter-clockwise from right to left: Dr. William Maina, Dr. Dorothy E. Onyango, Dr. Charles Mwandawiro, and Mrs. Margaret Okemo.

Table of Contents

List of Abbreviations

AEO	Area Education Officer
CDE	County Director of Education
CDH	County Director of Health
CIFF	Children's Investment Fund Foundation
DEO	District Education Officer
DMOH	District Medical Officer of Health
DtWI	Deworm the World Initiative
ECD	Early Childhood Development
ESACIPAC	Eastern and Southern Africa Center of International Parasite Control
KEMRI	Kenya Medical Research Institute
GoK	Government of Kenya
HMIS	Health Management Information System
IPA	Innovations for Poverty Action
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supplies Agency
MoEST	Ministry of Education, Science, and Technology
MoH	Ministry of Health
NSBDP	National School-Based Deworming Programme
SDE	Sub-County Director of Education
SHTC	School Health Technical Committee
SMOH	Sub-County Medical Officer of Health
STH	Soil-Transmitted Helminthes
WHO	World Health Organization

Kwa Afya Na Elimu Bora, Tuangamize Minyoo!"

Overview of the National School-Based Deworming Programme

The Government of Kenya (GoK) recognizes that the health and education of Kenya's children drives the country's future. It is also committed to the country's Constitution that upholds quality health for all; its developmental blueprint, Vision 2030, which aims to provide high quality life to all citizens by year 2030; and Millennium Development Goal 2 on the achievement of universal primary education.

Over 5 million school-age children in Kenya are at risk of intestinal parasitic worms, including soil-transmitted helminthes (STH) and schistosomes. Due to the negative impact of these worms on children's health and education, the GoK launched the National School-Based Deworming Programme (NSBDP) in 2009, wherein 3.6 million children were dewormed.

The programme's goal is to eradicate parasitic worms as a public health problem in Kenya. It aims to treat at least 5 million Kenyan children each year for at least five years (2012-2016) in all primary schools in areas endemic for parasitic worms according to WHO criteria. Through the NSBDP, the GoK seeks to improve the health and education status of its children and secure Kenya's future. Regularly providing deworming tablets to children through schools is a proven cost-effective treatment strategy due to the readily available, extensive and sustained educational infrastructure. WHO has certified the safety of administering deworming tablets by teachers, with support from the local health system.

The NSBDP is implemented by the Ministry of Education, Science, and Technology (MoEST) in collaboration with the Ministry of Health (MoH) with technical assistance from Deworm the World Initiative (DtWI) at Evidence Action. Personnel from MoEST and MoH play a joint leadership role in ensuring that the programme is implemented in every public and private primary school within the targeted treatment areas with the aim of deworming every child aged 2-14 years, whether they are enrolled or not enrolled in school.

While initiated and managed at the national level, the NSBDP is implemented within counties and sub-counties (formerly districts). Personnel from the MoEST and the MoH at the county and sub-county level play a joint leadership role in ensuring that the programme is implemented in every public and private primary school within targeted areas in their respective areas locations. Sub-county government officers from both ministries implement the programme in their sub-counties with supervision from their county leadership. Sub-county and ward (formerly division) personnel are responsible for key elements of the programme's success, which include facilitating teacher trainings, distributing deworming tablets to schools, managing community sensitization activities and monitoring deworming activities.

Trained teachers, with support from their local health personnel, administer deworming tablets to all enrolled and non-enrolled primary school-age and ECD-aged children in their schools. They are supported by their local health personnel, with oversight from sub-county and ward health and education personnel. Together, these teams of government officials from the counties, sub-counties and wards, including teachers, play an important role in benefiting the overall health and educational outcomes of Kenya's children.

NSBDP targets at least 5 million primary school-age children who are at risk of parasitic worms

The Evidence Behind School-Based Deworming

The NSBDP is a national scale-up program based on rigorous evidence that has proven that deworming has a significant impact on children's health and education.

The Problem:

What are Worms?
Worms, or minyoo in Swahili, are parasites that live in the human intestines and bladder. There are two types of worms treated by the NSBDP: soil-transmitted helminths (STH or common worms) and schistosomes (which cause bilharzia). Worm infection is a chronic condition that threatens children's health and limits their access to education. Worms can cause anemia and malnutrition, impairing children's mental and physical development. Children infected with worms can become too sick or tired to concentrate at school, or to even attend school at all.

The Solution:

Why Deworming?
Deworming children helps them grow and stay healthy and also improves their educational attainment. The benefits of deworming are immediate and positively impacts the children who receive treatment as well as their siblings and other children who live nearby.

Why School-Based Deworming?
School-age children typically have the highest intensity of worm infestation of any age group. School-based deworming reaches children where they are – at school. Schools offer a readily available, extensive and sustained infrastructure that makes the programme cost-effective and operationally feasible. Additionally, schools are equipped with a skilled workforce that is in close contact with the community.

Evidence of Impact:

How Does School-Based Deworming Benefit Children?
Results from rigorous, long-term studies conducted in Kenya evaluating school- based deworming demonstrate the long-lasting benefits of deworming.
Deworming children reduces school absenteeism by 25% and increases literacy (children persistently infected with worms are 13% less likely to be literate when they are adults). Due to spillover effects, deworming also dramatically improves cognition in untreated younger siblings that is equivalent to half a year of schooling. Additionally, adults who are dewormed as children earn wages over 20% higher than their untreated counterparts.

NSBDP Policy Framework

The NSBDP is embedded in several existing policies of the Government of Kenya. These policies ensure the programme is aligned with GoK priorities and infrastructure that ensure its sustainability. Two main policy documents that guide the implementation of NSBDP are the National school health policy and the National multi-year strategic plan for the control of NTDs.

The National School Health Policy and its Guidelines, signed by the Ministry of Education, Science and Technology and the Ministry of Health in 2009 prioritizes deworming under the thematic area on disease prevention and control. It defines school-based mass deworming as an effective preventive and treatment measure against parasitic worms. The policy states, **"Treatment shall be administered to all school-age children, including those out of school, based on the prevalence and intensity of worms and bilharzia in the area."** (pg. 32)

The National-Multi-Year Strategic Plan for the Control of Neglected Tropical Diseases, 2011-2015 was launched in 2011. In this Strategic Plan, school-based deworming is identified as one of the treatment strategies for the control of worms and bilharzia.

The NSBDP is one of the initiatives under the National School Health Programme at the Ministries of Health and Ministry of Education, Science and Technology, which is an integrated set of planned, school-based strategies, activities, and services to promote the health and educational development of pupils and the health of the community.

AFYA BORA - ELIMU BORA
School Health

Implementing the National School-Based Deworming Programme

The National School-Based Deworming Programme uses a cascade implementation model that efficiently and cost-effectively delivers training materials, deworming tablets, monitoring forms, funds, trainings other programme materials and resources from the National level to schools.

At the National level, the Programme trains a team of MOEST and MOH officials as master trainers, requisitions deworming tablets through the MoH, and develops treatment and implementation strategies, training materials and monitoring tools. Thereafter, an initial planning meeting is held with county and sub-county leadership. This meeting is followed by two levels of trainings on how to successfully implement the Deworming Programme: Sub-county level training and Teacher Trainings. These trainings prepare sub-county and ward officials to plan other lower level programme activities within the cascade, distribution of materials, planning of deworming and community mobilization and sensitization. After these trainings and community mobilization, the critical day of implementation occurs – Deworming Day – where teachers administer deworming tablets to millions of children in over 11,000 schools across Kenya and fill in monitoring forms to capture treatment data. These forms and any unused deworming tablets are moved up through a "Reverse Cascade" as described below.

The cascade model helps to manage the national scale of the NSBDP, and therefore, builds capacity for successful implementation at various levels. Additionally, the cascade brings together MoEST and MoH personnel through collaborative leadership responsibilities for the planning, implementation and monitoring of programme activities at all levels. The cascade is outlined in the infographic below.

1 County Planning and Sensitization Meetings

Before implementation takes place within each county, the County Director of Education (CDE) and the County Director of Health (CDH) convene a County Meeting, facilitated by the National Programme team, where county and sub-county-level personnel are sensitized about the Programme and made aware of their managerial roles. This is a critical meeting, as the programme gains buy-in and builds partnerships by engaging with the newly created county-level structure in Kenya. County-level responsibilities include: providing planning & supportive supervision to sub-counties, monitoring Teacher Training Sessions and Deworming Day, performing county-level community sensitization, and responding to questions regarding the programme from other partners and the media. Key participants of this meeting include Sub-County Directors of Education (SDEs) and Sub-County Medical Officers of Health (SMOHs), who play critical leadership roles in implementing the Programme.

2 Sub-County Training

Master Trainers are deployed to train Sub-County and Ward personnel from both Ministries on managing and implementing the programme at that level including training of teachers on how to implement a successful Deworming Day. During the training, SMOHs and SDEs work together to finalize the list of schools to be dewormed and determine the quantity of deworming tablets needed for each school based on enrollment figures. Personnel also learn about their key responsibilities for programme management. Joint responsibilities include: managing individual budgets for Teacher Training and Deworming Day, coordinating Teacher Trainings, ensuring that all schools are participating and are adequately prepared for Deworming Day, and managing the return of monitoring forms and remaining deworming tablets through the Reverse Cascade. SDEs are also responsible for receiving and distributing all training materials and ensuring schools' attendance at Teacher Trainings, while SMOHs are responsible for picking up deworming tablets from the regional depot, managing their distribution to each school during Teacher Training sessions, overseeing community-level sensitization activities; managing any SAEs and ensuring that tablets remaining after Deworming Day are taken to health facilities.

3 Teacher Training

Trained ward-level personnel train primary school Head and Health teachers, with oversight from sub-county officials, on their key roles for implementing a successful Deworming Day (DD). These include: sensitizing the community and preparing for treatment before DD, administering deworming tablets, filling monitoring forms during DD, and returning forms through the reverse cascade, and returning remaining deworming tablets to MoH after DD. Immediately after Teacher Trainings, community-level health workers, alongside teachers, share the community sensitization messages with community members, including children, parents, village elders, and community-based organizations prior to treatment so as to encourage community members to participate, particularly non-enrolled children.

4 Deworming Day

On a designated County Deworming Day, teachers administer deworming tablets to children in schools within programme coverage areas and fill in monitoring forms to record the number of children dewormed. Tablets are given to all children aged 2-14; this includes children who are enrolled in primary schools, in nearby Early Childhood Development (ECD) Centres, those from the surrounding community who are not enrolled in school. MoH personnel visit schools to monitor treatment to ensure proper administration and manage any serious adverse events should they arise. MoEST personnel are responsible for ensuring that all children are being dewormed and monitoring forms are filled properly. Both MoEST and MoH personnel are available during Deworming Day to provide necessary support to teachers. After treatment, monitoring forms are returned to the National Office and unused tablets distributed to health facilities.

5 Reverse Cascade

After Deworming Day, schools send their filled in monitoring forms to their division/ward-level Area Education Officer (AEO), who then compiles division/ward-level data and sends it to their SDEs for sub-county-level summaries. The SDE is responsible for sharing the data with the SMOH and county personnel, and returning the forms, along with financial accountability documentation to the National Office for data analysis and financial management. Any remaining deworming tablets at the school are collected by the AEO and then given to the Ward-level Public Health Officer who then fills a form that calculates the number of unused tablets and distributes them to the local health facilities for use in community deworming. The form is then given to the SMOH who is responsible for sharing the data with the SDE and county personnel, and returning the form, along with financial accountability documentation, to the National Office for data analysis and financial management. The SMOH is also responsible for managing the deworming tablets redistribution to the health facilities. The Reverse Cascade process is critical for the calculation of the number of children treated and ultimately, the success of the programme.

After deworming, monitoring forms are returned to the National Office and unused drugs are distributed to health facilities within the County.

Reverse Cascade

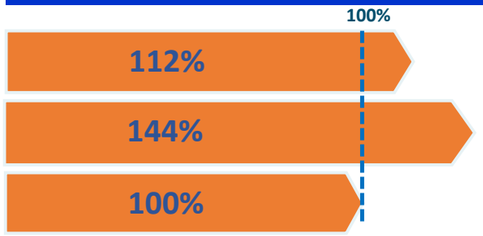
Year 2 National Programme Results

KENYA NATIONAL SCHOOL-BASED DEWORMING PROGRAMME

2013-2014 National Treatment Results

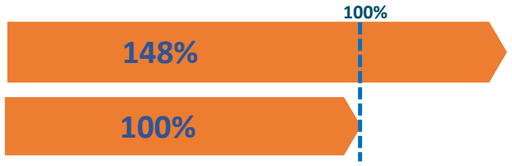
Annual coverage report for the treatment of soil-transmitted helminthiases (STH or common worms) with Albendazole and schistosomiasis (bilharzia) with Praziquantel at Kenyan primary schools between April 2013 and March 2014.

National Programme Coverage Summary for Soil-Transmitted Helminths (STH) Treatment



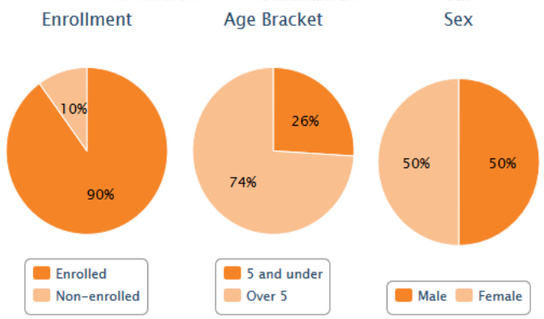
- **6,405,645 children dewormed,** significantly exceeding our goal of 5.7 million children.
- **15,864 schools reached,** far surpassing our goal of 11,000 schools.
- **143 sub-counties successfully completed deworming**, out of 143 planned sub-counties.

National Programme Coverage Summary for Schistosomiasis Treatment

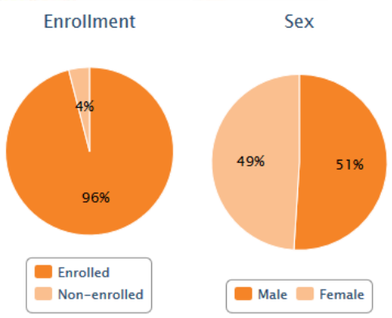


- **890,459 children were dewormed,** far surpassing our goal of 600,000 children.
- **63 sub-counties successfully completed deworming,** out of 63 planned sub-counties.

STH Treatment Analysis



Schistosomiasis Treatment Analysis



National Deworming Facts at-a-Glance

Statistic	STH	Schisto	Statistic	STH	Schisto
Sub-Counties planned	143	63	Children 5 and under dewormed	1,645,149	N/A
Schools reached	15,864	2,829	Children over 5 dewormed	4,760,496	890,459
All children dewormed	6,405,645	890,459	Master Trainers trained	67	67
Male children dewormed	3,228,500	454,439	Est. sub-county/ward MoEST personnel trained	1,769	665
Female children dewormed	3,177,145	436,020	Est. sub-county/ward MoH personnel trained	1,769	665
Enrolled children dewormed	5,767,131	855,013	Completed teacher training sessions	608	306
Non-enrolled children dewormed	638,514	35,446	Est. number of teachers trained	28,425	8,897

Kwa Afya na Elimu Bora, Tuangamize Minyoo!

In partnership with:

ipa · Evidence Action · CHILDREN'S INVESTMENT FUND FOUNDATION · THE END FUND

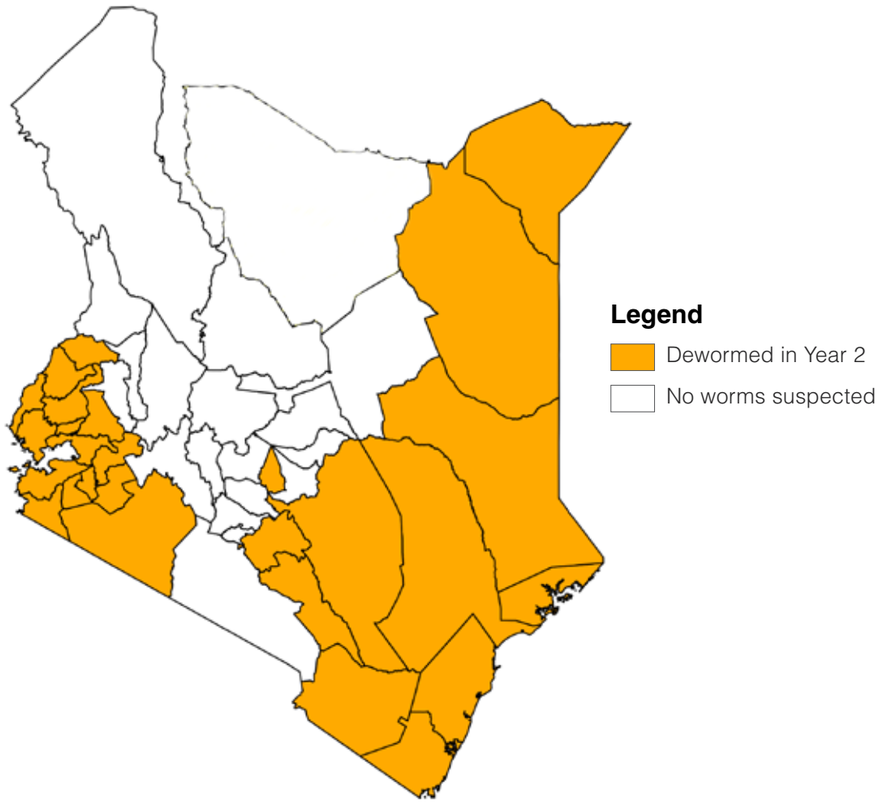
Year 2 National Programme Results: County Breakdown

NSBDP Year 2 County Breakdown of Soil-Transmitted Helminthiases (STH) and Schistosomiasis (SCH) Treatment: Number of Children Dewormed & Schools Reached

County	Sub-County	Children Dewormed (STH)	Children Dewormed (SCH)	Schools Reached
Bomet 292,936	Bomet	93,848		278
	Chepalungu	69,901		210
	Konoin	52,462		147
	Sotik	76,725		244
Bungoma 592,771	Bumula	74,395		121
	Bungoma Central	58,568		118
	Bungoma East	108,411		191
	Bungoma North	85,618		137
	Bungoma South	87,931		141
	Bungoma West	48,083		129
	Cheptais	49,891		142
	Kimilili Bungoma	44,937		71
	Mt Elgon	34,937		85
Busia 317,705	Bunyala	27,429	21,929	50
	Busia	48,058	9,740	66
	Butula	55,710		87
	Nambale	41,098		65
	Samia	40,081	10,555	72
	Teso North	49,799		123
	Teso South	55,530		104
Garissa 19,103	Balambala	2,548	2,079	7
	Dadaab	2,344	1,363	6
	Fafi	2,603	1,651	11
	Garissa	4,111	1,334	6
	Hulugho	722	498	4
	Ijara	5,868	4,394	15
	Lagdera	871	98	4
Homa Bay 393,454	Homa Bay	86,915	23,403	263
	Mbita	36,385	18,603	188
	Ndhiwa	73,780	7,540	243
	Rachuonyo North	62,024	40,044	226
	Rachuonyo South	90,902	2,884	281
	Suba	43,448	15,682	160
Kakamega 662,831	Butere	55,343		108
	Kakamega Central (Lurambi)	51,119		99
	Kakamega East (Shinyalu)	63,350		106
	Kakamega North (Malava)	88,064		185
	Kakamega South (Ikolomani)	40,123		89
	Khwisero	38,643		75
	Likuyani	51,530		109
	Lugari	44,539		87
	Matete	27,328		63
	Matungu	59,488		71
	Mumias	84,780		114
	Navakholo	58,524		91
Kericho 270,531	Belgut	74,583		207
	Buret	60,819		185
	Kericho	56,735		169
	Kipkelion	50,897		144
	Londiani	27,497		74
Kilifi 387,276	Ganze	58,764	9,641	130
	Kaloleni	60,268	18,581	94
	Kilifi	103,079	9,058	175
	Magarini	61,441	10,135	121
	Malindi	71,081	1,247	140
	Rabai	32,643	6,977	52
Kirinyaga 130,192	Kirinyaga Central	29,389	23,263	90
	Kirinyaga East	30,046	23,865	88
	Kirinyaga West	24,558	19,437	68
	Mwea East	23,089	18,884	54
	Mwea West	23,110	19,417	54
Kisii 448,239	Gucha	32,321		95
	Gucha South	65,803		196
	Kenyenya	52,712		147
	Kisii Central	95,003		287
	Kisii South	42,917		145
	Marani	40,609		153
	Masaba South	42,171		124
	Nyamache	53,902		144
	Sameta	22,801		57
Kisumu 316,014	Kisumu East	24,944	12,899	67
	Kisumu Municipality	76,053	43,649	133
	Kisumu North	27,451	15,568	68
	Kisumu West	54,547	31,869	158
	Muhoroni	44,889	44,889	127
	Nyakach	55,985	9,477	196
	Nyando	32,145	10,960	67
Kitui 31,756	Kitui Central	31,756	25,173	86
Kwale 209,964	Kinango	84,075	35,603	161
	Kwale	51,973	21,400	116
	Msambweni	73,916	30,690	174
Lamu 36,467	Lamu East	5,957		21
	Lamu West	30,510		104
Machakos 176,059	Kangundo	30,238	23,399	77
	Kathiani	36,293	28,854	82
	Machakos	33,694	27,049	103
	Matungulu	26,317	22,943	63
	Mwala	31,398	25,596	107
	Yatta	18,119	14,684	43
Makueni 82,612	Kibwezi	39,036	32,848	93
	Makueni	28,827	22,075	77
	Mukaa	14,749	12,453	43
Mandera 33,918	Banisa	3,408	2,398	8
	Mandera Central	4,104	3,523	10
	Mandera East	14,442	10,527	16
	Mandera North	4,400	3,204	13
	Mandera West	7,564	6,160	15
Migori 374,144	Awendo	46,092		137
	Kuria East	34,049		88
	Kuria West	68,959		149
	Migori	81,932		263
	Nyatike	55,578	19,903	197
	Rongo	41,958		125
	Uriri	45,576		122
Mombasa 189,225	Changamwe	52,708		171
	Kisauni	71,147		210
	Likoni	35,792		125
	Mvita	29,578		83
Nandi 140,861	Nandi East	46,138		120
	Nandi South	58,055		185
	Tinderet	36,668		125
Narok 106,365	Trans Mara East	43,222		89
	Trans Mara West	63,143		190
Nyamira 209,462	Borabu	27,347		88
	Manga	31,287		108
	Masaba North	36,670		110
	Nyamira North	60,032		170
	Nyamira South	54,126		161
Siaya 303,513	Bondo	55,067	18,131	146
	Gem	54,071		128
	Rarieda	48,241	21,814	129
	Siaya	68,195	6,075	142
	Ugenya	45,475		95
	Ugunja	32,464		86
Taita Taveta 84,470	Mwatate	19,355		63
	Taita	20,378		52
	Taveta	27,161	9,366	51
	Voi	26,091		79
Tana River 66,894	Tana Delta	27,161		61
	Tana North/Bura	19,355	6,425	56
	Tana River/Galole	20,378	4,237	72
Trans Nzoia 306,788	Kwanza	89,130		172
	Trans Nzoia East	74,917		165
	Trans Nzoia West	142,741		264
Vihiga 211,009	Emuhaya	63,342		121
	Hamisi	58,845		134
	Sabatia	56,516		112
	Vihiga	32,306		78
Wajir 11,086	Buna	775	507	4
	Eldas	2,149	1,624	6
	Wajir East	4,463	3,976	7
	Wajir South	2,473	1,997	9
	Wajir West	1,226	1,101	3
TOTAL	28 Counties & 143 Sub-Counties Reached	STH: 6,405,645 Children Dewormed SCH: 890,459 Children Dewormed 15,864 Schools Reached		

National Treatment Coverage Map

The programme coverage areas include 28 counties within 143 sub-counties in Nyanza, Western, Rift Valley, Coast, North Eastern, Eastern, and Central regions.



Programme Monitoring & Evaluation

The Kenya Medical Research Institute (KEMRI) is the national body responsible for carrying out health research in Kenya and is an extremely important and effective institutional partner of the NSBDP. With a number of renowned international experts in STH and Schistosomiasis mapping, and related parasitology work, the team at KEMRI provides both technical and operational support for the Programme.

In 2009, scientists from KEMRI determined that the prevalence and intensity of worm infection in sub-counties in Western, Nyanza, Coast and parts of Rift Valley Regions justified treating every child in identified areas through a mass treatment programme for children. This evidence informs the execution of the NSBDP. Additionally, KEMRI conducted mapping and related parasitological analyses in Eastern, Central and North Eastern regions to provide evidence for expansion of the programme to areas at risk of schistosomiasis. This has informed additional treatments in these regions in this second year of the programme.

In 2012, KEMRI conducted a baseline survey for monitoring and evaluation in the sub-counties in Western, Nyanza, Rift Valley and Coastal regions in order to capture specific data on worm infection prevalence before treatment. This data would be later used to analyze the effect of deworming after each round of treatmen. In the following years, KEMRI will continue to conduct annual pre- and post- treatment evaluations to analyze the impact of deworming over time. (Y1 and Y2 prevalence and intensity of worm infection trends from the pre-and post- treatment surveys are detailed on the next page).

In Year 3, KEMRI will expand its monitoring to include sub-counties in Eastern, Central and North Eastern regions. These are areas where programme coverage was expanded in Year 2, to include treatment in focal areas where schistosomiasis is present. Currently, there is no evidence that supports the inclusion of the unshaded areas above in mass treatment.

Programme Monitoring Report

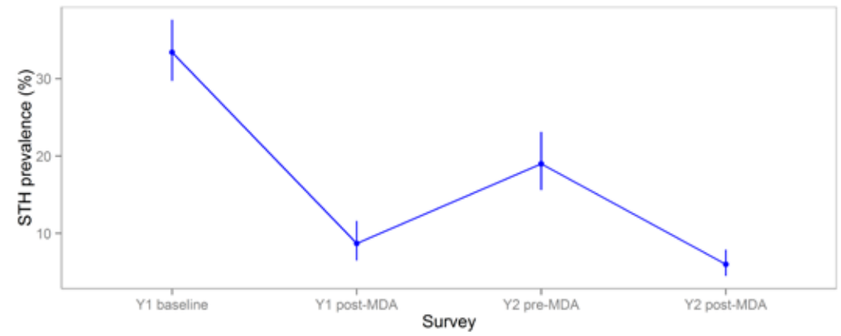
Worm Burden Throughout Current Programme Timeline

Starting in January 2012, the Ministry of Health, through the Eastern and Southern Africa Centre of International Parasite Control (ESACIPAC) of KEMRI have been conducting objective school-level surveys assessing the prevalence of two types of worms treated by the NSBDP: soil-transmitted helminths (STHs) and schistosomes (both *Schistosomia mansoni* and *Schistosomia haematobium*) in school-age children. These surveys take place before and after deworming in a randomized selection of 60 schools drawn from 20 Sub-Counties distributed across 16 Counties in Western, Nyanza, Rift Valley and Coast regions.

During the second year of NSBDP implementation, the KEMRI team analyzed samples of stool and urine from 6,364 children before deworming and 6,322 children after deworming in the 60 schools to determine their worm prevalence rates. As shown in the table below, prevalence of STH has reduced by 43.2% and prevalence of *S. haematobium* reduced by 41.7% while prevalence for *S. mansoni* recorded increase especially in Year 1 since treatment for schistosomiasis was not delivered in Year 1 in Western, Nyanza and Rift Valley regions.

Worm Prevalence in Kenya Before and After School-Based Deworming (Years 1 -2)						
Worm Type		Y1 Baseline	Y1 Post-Deworming	Y2 Pre Deworming	Y2 post-Deworming	Prevalence Reduction (Baseline to Y2 Pre-Deworming
STHs	STH combined[1]	33.4%	8.7%	19.0%	6.0%	43.2%
	Hookworm	16.9%	3.2%	4.5%	2.2%	73.6%
	Roundworm	19.2%	2.3%	12.5%	1.9%	34.9%
	Whipworm	5.4%	4.3%	5.1%	2.7%	5.8%
Schistosomiasis	S. mansoni	1.8%	2.4%	2.7%	0.6%	**
	S. haematobium	18.0%	8.3%	10.5%	7.6%	41.7%

*** Indicates increase in prevalence in Y1 since no schistosomiasis treatment was delivered in Y1 in Western, Nyanza and Rift valley regions. The increase in prevalence may be attributed to to increasing parasite infection for the period treatment was not delivered.*



The graph depicts the change in STH prevalence from baseline through Year 2.

Worm Burden Before and After Year 2 Treatment

Year 2 treatments resulted in a reduction in prevalence for STH and both types of schistosomes as depicted in the table below.

Worm Prevalence in Kenya Before and After School-Based Deworming (Year 2)				
Worm Type		Y2 Pre Deworming	Y2 Post-Deworming	Prevalence Reduction (Y2 Pre – Y2 Post-Deworming
STH_s	STH combined	19.0%	6.0%	68.4%
	Hookworm	4.5%	2.2%	51.1%
	Roundworm	12.5%	1.9%	84.8%
	Whipworm	5.1%	2.7%	47.1%
Schistosomiasis	S. mansoni	2.7%	0.6%	77.2%
	S. haematobium	10.5%	7.6%	27.5%

These results demonstrate that in overall, the prevalence of STH observed in Year 2 after deworming was lower than prevalence found in the Year 1 after deworming. Additionally, the second round of deworming conducted by the National School-Based Deworming Programme has achieved a significant reduction in prevalence for all three types of STHs and both types of schistosomiasis infection. The overall reduction in STHs and schistosomes prevalence depicts drug efficacy of Albendazole for STHs and Praziquantel for Schistosomiasis.

[1] *Combined refers to the prevalence of all three types of STHs (hookworm, whipworm, and roundworm) assessed together*

Comparing Year 1 and Year 2 Coverage Results

Indicator		Year 1	Year 2
National	Counties Reached	22	28
	Sub-Counties Reached	112	143
STH	All Children Dewormed	5,986,066	6,405,645
	Enrolled Children Dewormed	5,193,573	5,767,131
	Non-Enrolled Children Dewormed	764,943	638,514
	Schools Reached	13,414	15,864
Schistosomiasis	All Children Dewormed	191,318	890,459
	Enrolled Children Dewormed	176,578	855,013
	Non-Enrolled Children Dewormed	14,740	35,446
	Schools Reached	355	2,829

Programme Partners

The Kenya National School-Based Deworming Programme is implemented with the support and technical assistance of several partner organizations:

Evidence Action scales proven interventions that improve the lives of millions. We implement cost-effective interventions whose efficacy is backed by substantial rigorous evidence. Evidence Action identifies innovative, appropriate financing mechanisms and builds best practice operational models. We voraciously self-evaluate, learn, and improve our models for scaling with a commitment to transparency on progress, impact, and value for money.

One of Evidence Action's flagship programs, the Deworm the World Initiative, collaborates with governments to eliminate the public health problem of intestinal worms so that children can grow into healthy, productive adults.

School-based mass deworming of children is universally recognized as a safe, simple, and highly cost-effective solution against the intestinal worm infections that pose a serious threat to children's health, education, and long-term productivity. In the 2013-14 school year, the Deworm the World Initiative and government partners worked together to deworm over 35 million children globally through school-based deworming.

The Deworm the World Initiative is proud to support the Government of Kenya for the third year running to expand, strengthen, and sustain the National School-Based Deworming Programme (NSBDP). In the 2013-2014 school year, the Government of Kenya, with support from the Deworm the World Initiative, dewormed over 6.4 million Kenyan children, surpassing the national target of 5.7 million children by 12%. Learn more about our work at ***www.evidenceaction.org***.

Innovations for Poverty Action (IPA) is a non-profit organization dedicated to discovering and promoting effective solutions to global poverty problems. In close partnership with decision makers—the policy makers, practitioners, investors, and donors working with the poor around the world— IPA designs and evaluate potential solutions to poverty problems using randomized evaluations, the most rigorous evaluation method available. IPA also mobilizes and supports these decision makers to use these solutions to build better programs and policies at scale. Since our founding in 2002, the results of IPA's research have improved the lives of over 50 million people around the world.

In collaboration with over 250 leading academics and implementing organizations, IPA has results from over 175 completed studies with over 225 in progress around the world. IPA's studies cover solutions for effective agriculture, education, health, finance, governance, social protection, and post conflict recovery. IPA has over 1,000 colleagues in 11 permanent offices supporting 16 countries, where the organization conducts research and routinely consult with governments, foundations, NGOs, and others to present evidence that can inform their work. For more information, visit ***www.poverty-action.org***.

The Children's Investment Fund Foundation (CIFF) is an independent philanthropic organisation, headquartered in London. CIFF works to transform the lives of poor and vulnerable children in developing countries. CIFF has a child-focused portfolio of investments, targeting challenges that need urgent attention. That's why we invest in improving children's health and nutrition, ensuring quality education, and supporting actions to reduce climate change.

We place significant emphasis on quality data and evidence. Before making an investment and during implementation, we work with partners to measure and evaluate progress. We aim to achieve large-scale and sustainable impact. Every child deserves to survive and thrive. For more information, please visit ***www.CIFF.org*** and follow us on Twitter ***@CIFFchild***.

The END Fund was founded with a clear mission to control and eliminate the most prevalent neglected tropical diseases (NTDs) among the world's poorest and most vulnerable people. WND Fund does this by: 1) mobilizing and directing resources to where they can have maximum impact, 2) advocating for innovative, integrated, and cost-effective NTD programs; and 3) facilitating private sector engagement in the movement to address the devastating effects of NTDs.

In line with this strategy, one of the END Fund's core competencies and activities is the ongoing mapping and assessment of the NTD landscape of partners, projects, national plans, program implementing organizations, and Ministry of Health capacity across disease-endemic countries. END Fund proactively assesses where resource investment can most efficiently and effectively move forward the NTD control and elimination agenda. END Fund then make strategic investment recommendations to donors engaging in the cause. Where no existing qualified program implementing partner exists, the END Fund at times implements direct NTD programs in partnership with Ministries of Health. For more information, visit ***www.end.org***.

KENYA NATIONAL SCHOOL-BASED DEWORMING PROGRAMME

KWA AFYA NA ELIMU BORA

TUANGAMIZE MINYOO