




# Memorandum

Date April 10, 1997

From  WHO Collaborating Center for  
Research, Training, and Eradication of Dracunculiasis

Subject GUINEA WORM WRAP-UP #66

To Addressees

## Detect Every Case, Contain Every Worm!

### NATIONAL PROGRAM COORDINATORS MEET IN NIAMEY



GLOBAL 2000



More than 85 representatives of endemic countries and their partners attended the Fourth Meeting of National Program Coordinators of Guinea Worm Eradication Programs at the Palais des Congres in Niamey, Niger on March 24-26. Participants included representatives from all of the 18 endemic countries, as well as representatives from Central African Republic, Gambia, and Guinea, and staff from CDC, Global 2000, WHO, and UNICEF. Speakers at the Opening Ceremony, attended by more than 100 persons, included a representative, M. Andre Salifou, of the prime minister of Niger; Niger's minister of health, Mme



Sambo Abdoulaye Mariama; WHO country representative, Dr. P.M.M. Yankalbe; UNICEF representative, Mme Georgette Aithnard; Global 2000 senior consultant, Dr. Donald Hopkins; and Prof. Qurashi M. Ali, Undersecretary in the Federal Ministry of Health of Sudan. Most countries contributed to an impressive display of artifacts and health education materials from national Guinea Worm Eradication Programs exhibited in the lobby of the Palais des Congres during the meeting.

The meeting included reports and brief presentations by each national program manager, plenary presentations and discussions on certification of eradication, integration of surveillance and interventions for dracunculiasis, and on border issues and imported cases, as well as four work groups to review each country's 1997 plan of action and list of additional resources needed, if any. A brief Intergency Meeting was held among representatives of WHO, UNICEF, CDC, Global 2000, and the national program coordinators of Côte d'Ivoire and Yemen after the main meeting, to consider issues related to the 1997 Program Reviews, which are proposed to be held in Sana'a, Yemen on September 29-October 2 for English-speaking endemic countries and in Abidjan, Côte d'Ivoire on October 20-24 for French-speaking endemic countries.

During a break in the meeting on March 25, the Third Secretary of the Embassy of Japan (at Abidjan) accredited to Niger, Mr. Takanari Kakuda, presented a check for US\$100,000 to Mr. James Zingeser, Global 2000's resident advisor in Niger, to assist the Guinea Worm Eradication Program in Niger (see previous issue of Guinea Worm Wrap-Up).

The final data for 1996 that countries presented in Niamey are summarized in Tables 1 & 2, and in Figures 1 & 2.

Table 1

MONTHLY REPORTING OF CASES OF DRACUNCULIASIS IN 1996  
(COUNTRIES ARRANGED IN DESCENDING ORDER OF CASES IN 1995)

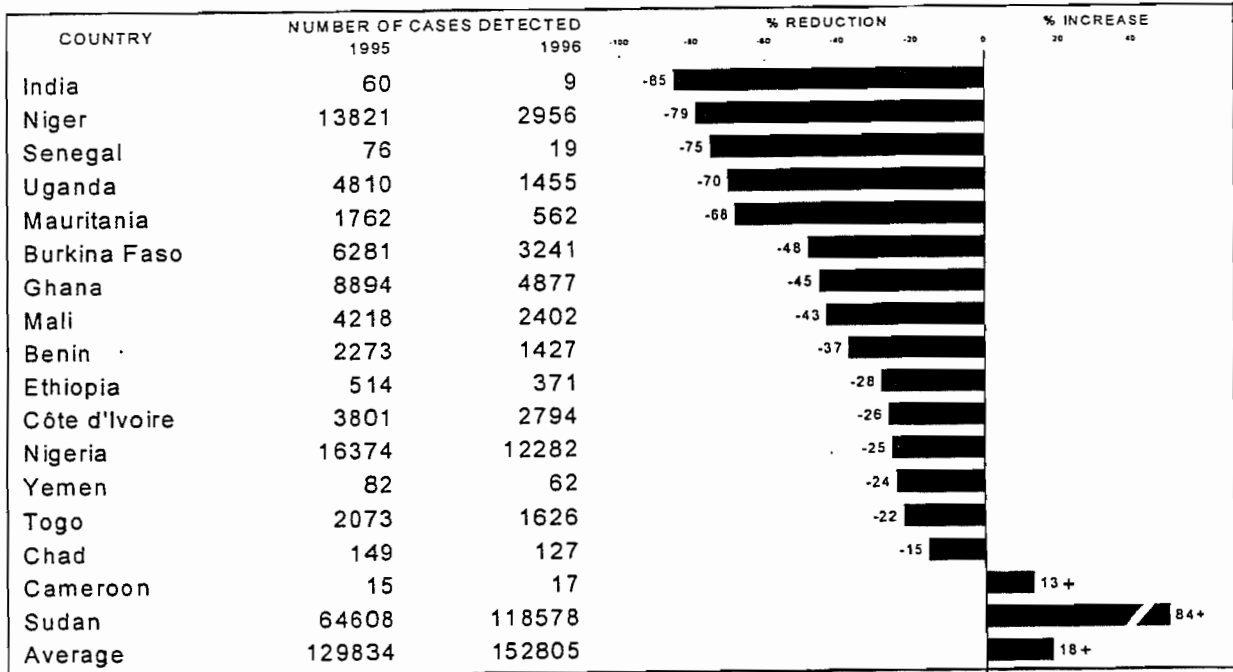
COUNTRY	NUMBER OF CASES IN 1995	NUMBER OF CASES REPORTED IN 1996												TOTAL
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	
SUDAN	64608	1535	1003	3632	10388	15718	13216	14719	16817	14919	10743	10014	5874	118578
NIGERIA	16374	1422	1271	912	703	1147	1972	1548	1078	675	383	453	718	12282
NIGER	13821	25	5	0	10	59	211	502	888	757	332	123	44	2956
GHANA	8894	611	863	728	535	502	386	235	100	87	68	263	499	4877
BURKINA FASO	6281	37	57	118	154	394	748	688	522	355	109	13	46	3241
UGANDA	4810	46	24	40	276	444	310	164	70	44	19	10	8	1455
MALI	4218	76	15	19	153	86	215	404	449	435	286	169	95	2402
COTE D'IVOIRE	3801	368	606	299	343	358	249	162	133	51	44	109	72	2794
BENIN	2273	255	94	24	53	81	22	56	55	132	195	255	205	1427
TOGO	2073	225	194	117	74	72	78	60	85	92	241	206	182	1626
MAURITANIA	1762	9	5	2	7	2	35	82	175	153	70	19	3	562
ETHIOPIA	514	1	4	2	29	64	110	106	24	15	4	7	5	371
CHAD	149	24	34	23	5	2	4	4	17	5	3	0	6	127
YEMEN	82	1	8	12	14	5	10	5	2	5	0	0	0	62
SENEGAL	76	0	0	0	0	0	1	1	2	3	3	9	0	19
INDIA	60	0	0	0	2	4	0	3	0	0	0	0	0	9
KENYA	23	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMEROON	15	0	0	0	0	1	0	1	2	5	4	3	1	17
PAKISTAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	129834	4635	4183	5928	12746	18939	17567	18740	20419	17733	12504	11653	7758	152805

Table 2

**DRACUNCULIASIS ERADICATION CAMPAIGN  
REPORTED IMPORTATIONS OF CASES OF DRACUNCULIASIS: 1996**

From	To	Month	Cases		
			Number	Contained	Cross notified
Benin	Nigeria	August	5	5	5
Burkina Faso	Côte d'Ivoire	June	1	1	1
		Niger	August	2	0
	Niger	October	1	1	1
		November	1	1	1
Côte d'Ivoire	Burkina Faso	February	1	?	0
		May	1	?	0
Ghana	Togo	January	9	9	9
		February	1	0	1
		July	3	1	3
		November	1	0	1
	Burkina Faso	March	1	?	0
		May	2	?	0
Nigeria	Benin	Jan. - Aug.	11	?	?
	Togo	February	1	?	1
	Niger	June	2	1	2
	Cameroon	May	1	1	1
		July	1	1	1
		August	1	1	1
		September	3	3	3
	October	4	4	4	
Niger	Burkina Faso	August	2	?	2
		October	1	1	1
		November	1	?	0
	Côte d'Ivoire	August	1	1	?
	Mali	September	1	1	1
	Nigeria	June	2	?	2
Mali	Burkina Faso	July	1	?	0
		September	1	?	0
	Senegal	September	1	1	pending
	Niger	September	1	1	1
	Côte d'Ivoire	February	1	1	?
Togo	Benin	Jan.- Aug.	5	5	5
	Côte d'Ivoire	September	1	1	?
	Ghana	June	3	?	?
		November	1	?	?
Senegal	Mali	June	3	3	3
		August	1	1	1
Sudan	Uganda	May	3	0	3
		July	1	0	1
Total			84	40	57

**Figure 1** PERCENTAGE CHANGE IN NUMBER OF CASES OF DRACUNCULIASIS REPORTED DURING 1995 AND 1996, BY COUNTRY



**Figure 2** GUINEA WORM ERADICATION PROGRAMS  
PERCENTAGE OF CASES CONTAINED BY COUNTRY: 1996

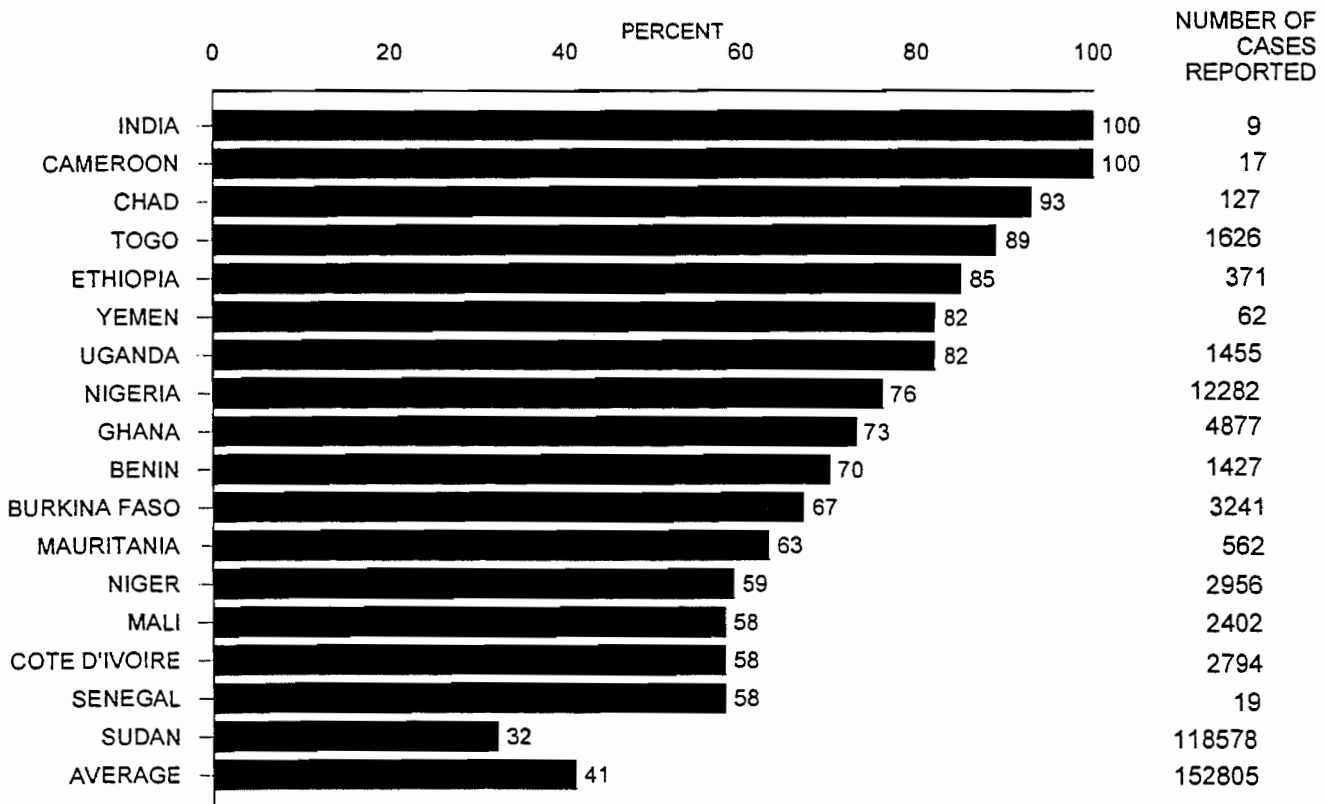


Table 3

NUMBER OF CASES CONTAINED AND NUMBER REPORTED BY MONTH, 1997  
(COUNTRIES ARRANGED IN DESCENDING ORDER OF CASES IN 1996)

COUNTRY	# OF ENDEMIC VILLAGES 1/1/97	# OF CASES IN 1996*	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED												% CONT.					
			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER		TOTAL*				
SUDAN	5466	118378	1775	/	/	/	/	/	/	/	/	/	/	/	/	/	1775	/	3167	56
NIGERIA	1357	12282	983	1294	/	/	/	/	/	/	/	/	/	/	/	/	2277	/	2480	92
GHANA	602	4877	1498	1182	/	/	/	/	/	/	/	/	/	/	/	/	2680	/	3310	81
BURKINA FASO	348	3241	0	11	/	/	/	/	/	/	/	/	/	/	/	/	3	/	7	43
NIGER	416	2956	3	0	/	/	/	/	/	/	/	/	/	/	/	/	314	/	333	94
COTE D'IVOIRE	216	2794	148	166	/	/	/	/	/	/	/	/	/	/	/	/	36	/	52	69
MALI	430	2402	25	11	/	/	/	/	/	/	/	/	/	/	/	/	39	/	11	-
TOGO	249	1626	/	39	/	/	/	/	/	/	/	/	/	/	/	/	6	/	7	54
UGANDA	327	1455	6	1	/	/	/	/	/	/	/	/	/	/	/	/	92	/	95	97
BENIN	186	1427	92	/	/	/	/	/	/	/	/	/	/	/	/	/	0	/	1	-
MAURITANIA	143	562	0	/	/	/	/	/	/	/	/	/	/	/	/	/	4	/	2	86
ETHIOPIA	57	371	4	2	/	/	/	/	/	/	/	/	/	/	/	/	2	/	3	67
CHAD	12	127	2	1	/	/	/	/	/	/	/	/	/	/	/	/	0	/	0	-
YEMEN	7	62	0	0	/	/	/	/	/	/	/	/	/	/	/	/	0	/	0	-
SENEGAL	7	19	0	0	/	/	/	/	/	/	/	/	/	/	/	/	0	/	0	-
CAMEROON	13	17	0	0	/	/	/	/	/	/	/	/	/	/	/	/	0	/	0	-
INDIA	3	9	0	0	/	/	/	/	/	/	/	/	/	/	/	/	0	/	0	-
TOTAL*	9839	152805	4536	2706	0	0	0	0	0	0	0	0	0	0	0	0	7242	/	9639	75
% CONTAINED			70	84	-	-	-	-	-	-	-	-	-	-	-	-	75			

\* Provisional

So far in 1997, Ghana (see Table 3) has reported the second highest number of cases of all endemic countries, being exceeded only by Sudan. Cameroon, India, and Senegal have reported no cases during the first two months of 1997, which is the same as in January and February 1996. Yemen, which reported 9 cases in the first two months of 1996, also reported no cases during the same period of this year, while Chad reported 68 cases in January-February 1996, and only 3 cases in the same two months this year (a reduction of 96% during its peak period of incidence). Kenya has now reported no indigenous cases for 34 months, since May 1994. Uganda, Niger, and Côte d'Ivoire have recorded reductions of 81%, 77% and 66%, respectively, in their incidence in January-February, which is also during Côte d'Ivoire's peak period of incidence.

### RECOMMENDATIONS (PROVISIONAL WORDING)

#### FOURTH MEETING OF NATIONAL COORDINATORS OF GUINEA WORM ERADICATION PROGRAMS NIAMEY, NIGER, MARCH 24-26, 1997

The meeting participants recommend:

1. That all remaining endemic countries and all partners remember that eradication of dracunculiasis is the first priority and primary responsibility of national Guinea Worm Eradication Programs. All necessary measures should be taken to complete eradication in every endemic country as quickly as possible.
2. That integration of Guinea worm activities into other health programs can be decided at national level, but should be done in such a way that Guinea Worm Eradication Programs are not put in jeopardy.
3. That National Guinea Worm Eradication Programs take advantage of all existing opportunities with other national village-based programs to include surveillance for Guinea worm disease within those other programs.
4. That as countries approach interruption of transmission of dracunculiasis in most endemic villages, they should cooperate with other national programs to ensure the adoption, the support, and use of village health workers (VHWs) for other priority health problems as appropriate.
5. That National Guinea Worm Eradication Programs strengthen village-based surveillance in all endemic villages and implement active surveillance in villages in "at risk" areas.
6. That National Guinea Worm Eradication Programs continue to intensify implementation of the case containment strategy, giving particular attention to supervision of village volunteers and to the confirmation of cases in "new" endemic villages.
7. That National Guinea Worm Eradication Programs ensure that all imported cases are fully investigated (including gathering complete information regarding the country, district and village of origin) and immediately notified to the country of origin, to the World Health Organization, and to collaborating organizations for appropriate action.
8. That partners be encouraged to make every possible effort to ensure additional supply of filter cloth and timely shipment of Abate.

9. That country coordinators contact all concerned ministries and partners to ensure that targeted efforts are directed to priority endemic villages to install or to repair safe water supply.
10. That National Guinea Worm Eradication Programs and their partners mobilize to search nationally and internationally for funding needed to ensure uninterrupted financial support during the final stages of eradication.
11. That in the context of Sahelian countries, a specific meeting about the problems with nomadic populations and Guinea worm eradication be organized (in conjunction with the October meeting in Abidjan, Côte d'Ivoire).
12. That endemic countries where nomadism is a concern in dracunculiasis transmission should develop and exchange specific plans to address this problem. Review of relevant literature should be undertaken. National Guinea Worm Eradication Programs should also collaborate with other programs to implement this recommendation.
13. That recognizing the fact that Sudan is the country with largest stronghold of Guinea worm disease in the world and considering the global nature of the eradication initiative, the meeting urges that special funding appeals be made which reflect the programmatic needs of the entire country.

## NIGERIA



NIGERIA

UNICEF/Nigeria is helping endemic states and Local Government Areas (LGAs) to provide safe water sources in as many of the highest endemic villages as possible before this year's peak transmission season begins in the northern part of the country in May. Already, a drilling rig has begun work in the two villages of Bauchi's Alkaleri LGA that reported 82% of all cases in the state in 1996, and similar action is expected in the Northwest Zone. Meanwhile, Borno State, in the Northeast Zone, continues to export cases to Cameroon. According to the report by Cameroon's Dr. Dama Mana at Niamey, 10 cases were imported into Cameroon from Nigeria in 1996, as compared to 6 cases imported from Nigeria in 1995, and 8 cases imported from Nigeria in 1994. The GWEPs of Cameroon and Nigeria only held a few sporadic border meetings during 1996. A total of 1,241 (50%) of 2,480 cases reported from Nigeria during January-February 1997 were reported from Ebonyi State (former Enugu State), compared with 1,353 (59%) of 2,287 cases during the same period in 1996. So far, 99% of the cases reported from Ebonyi in 1997 have been contained, compared with 77% contained during the same period in 1996.

## SUDAN: MINISTRY OF HEALTH ADDS LINE ITEM FOR GUINEA WORM



SUDAN

The Government of Sudan's budget for 1997 includes a line item in the amount of 400 million Sudanese pounds (about US\$276,000) for support of the national Guinea Worm Eradication Program. The funds, which are allocated to the Federal Ministry of Health, are a significant sign of the importance of the program to Sudanese authorities. Attendance by the Undersecretary of the Ministry of Health, Dr. Quarashi M. Ali, at the Program Coordinator's meeting in Niamey, is another sign. Dr. Quarashi, whose attendance was supported by UNICEF/Sudan, was accompanied to Niamey by Dr. Noto Abiprojo, chief of UNICEF/Sudan's Health and Nutrition Section. In March, the Sudanese program was also informed that WHO had allocated \$100,000 to the country's Guinea Worm Eradication Program for 1997. The

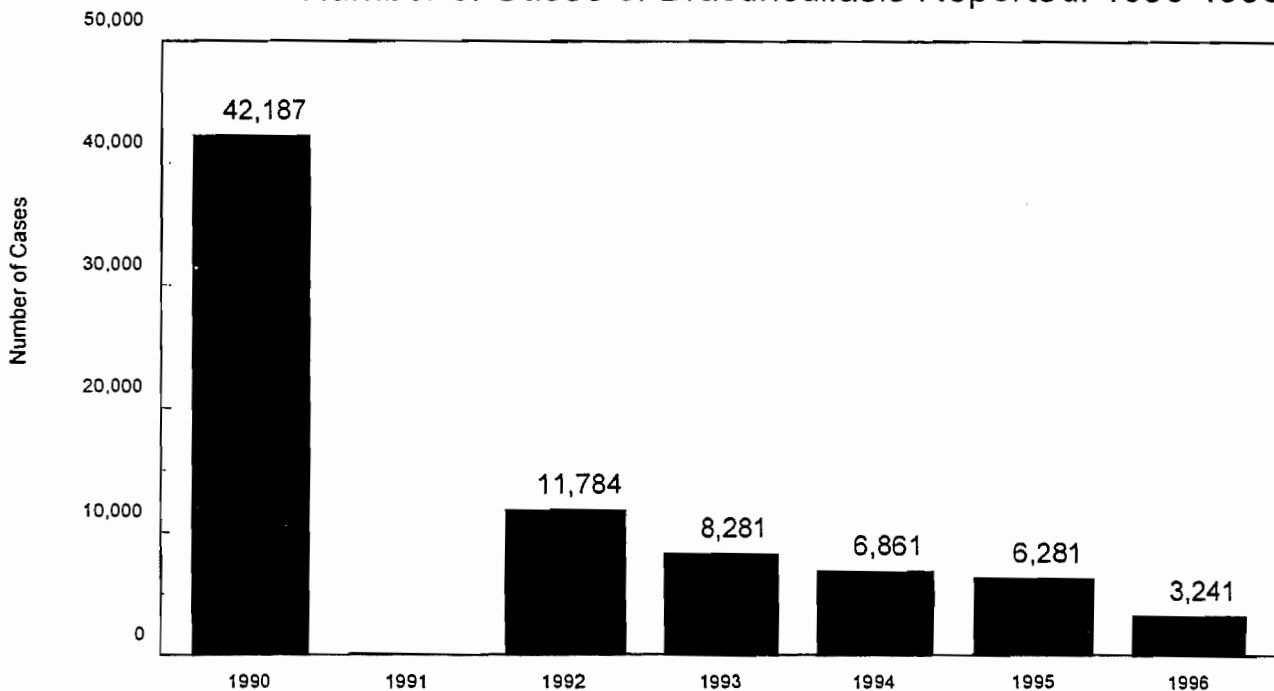
Government of the Netherlands continues to be a strong supporter of the Sudan program, through Global 2000.

Global 2000 consultant Mr. Mohammed Salissou Kane of Niger will arrive in Kenya on April 10 to conduct a "Training of Trainers" course on the use of Abate in Operation Lifeline Sudan's (OLS) Southern Sector. The program in OLS's Southern Sector intends to gain experience with this additional intervention during the 1997 transmission season (the program on the Government of Sudan side began using Abate on a limited scale two years ago). Unfortunately, many of the most highly endemic areas of southern Sudan (parts of Bahr Al Ghazal, Upper Nile, and Jongolei), which could benefit most from vector control to reduce the intensity of transmission of dracunculiasis, are not currently accessible because of the war. Dr. Jason Weisfeld has arrived in Khartoum for a one-month consultation supported by Global 2000, immediately following a one-month consultation with the Guinea Worm Eradication Program in the Southern Sector of OLS.

**BURKINA FASO**

Dr. Robert K. Yameogo, National Program Coordinator, reported that the Burkinabe GWEP will join with U.S. Peace Corps to form a "Coalition for the eradication of Guinea worm from Burkina Faso", intending to involve other Non-Governmental Organizations in the program. The GWEP has also invited the head of state to preside at this year's national Guinea Worm Day of social mobilization on April 29. These are welcome efforts to strengthen the program since the decline in reported cases in Burkina Faso has been gradual during the past five years (1992-1996) (see Figure 3).

**Figure 3** Burkina Faso Guinea Worm Eradication Program  
Number of Cases of Dracunculiasis Reported: 1990-1996





## GHANA DISCOVERS NEW FOCUS OF TRANSMISSION IN VOLTA REGION

During an investigation and followup of cases imported into other areas of Ghana from the Volta Region in February, the program discovered a large focus of transmission involving at least 47 villages in the Volta Region. Thus, Volta Region, which reported only 37 cases in January, has reported 382 indigenous cases of dracunculiasis for February. Reports from the newly-discovered focus in Volta, and the continued increase in reports from Northern Region (following introduction of the incentives for reporting of cases initiated last December), have pushed Ghana into the second-highest endemic position so far this year, exceeded only by Sudan. With full funding now assured by Britain's ODA (Overseas Development Agency), the program has moved vigorously to correct the deficiencies in the Volta Region.

Meanwhile, in the Northern Region, case containment rates have increased in January-February 1997 to about 92%, compared to about 74% one year earlier, as a result of the incentives for early reporting of cases. The program in the Northern Region has also documented the impact of Abate treatments, which began in January 1997, on the densities of copepod populations in three large dams (about 4,000 cubic meters each) that were the main foci of transmission in the district capitols of Gushegu, Karaga, and Savelugu. The copepod densities in the three dams were reduced from an average of about 3,500 per 10 liters of water sampled before treatment, to 9 per 10 liters on the first day after treatment, and 105 per 10 liters sampled three weeks after treatment. The reward system for early reporting of cases is being introduced nationwide.

## CONFERENCE ON DISEASE ERADICATION HELD IN BERLIN

Dr. Walter Dowdle of the Task Force for Child Survival and Development and Dr. Donald Hopkins of the Carter Center, both formerly deputy directors of CDC, co-chaired a workshop on The Eradication of Infectious Diseases in Berlin, Germany on March 16-22. Sponsored by the Free University of Berlin in the suburb of Dahlem, this 81st Dahlem Workshop brought together 40 scientists from around the world to consider biological, economic, sociological, and political criteria for disease eradication, as well as the question of when and how eradication programs should be implemented. A book summarizing the papers and deliberations of the workshop will be published early next year: "The Eradication of Infectious Diseases", eds: W.R. Dowdle & D.R. Hopkins, 1998. Dahlem Workshop Report. Chichester: John Wiley & Sons, in press.

## COST BENEFIT STUDY

Preliminary assessment of the economic benefits of the Global Dracunculiasis Eradication Campaign has been concluded by World Bank economist Ms. Aehyung Kim and Mr. Ajay Tandon, in collaboration with Dr. Ernesto Ruiz-Tiben, Global 2000 Program of the Carter Center. In this analysis, expenditures on the global campaign were compared with estimates of increased agricultural production resulting from the prevention of cases; i.e., prevention of morbidity as a result of the eradication campaign. Using a project horizon of 1987-1998 and conservative assumptions regarding the degree of incapacitation caused by dracunculiasis, the Economic Rate of Return (ERR) is 11%, 29%, or 44%, if the average period of incapacitation is 4, 5, or 6 weeks, respectively (although estimates from 12 published studies indicate that the degree of incapacitation caused by dracunculiasis averages 8.5 weeks, range 2-16 weeks). Institutions such as the World Bank consider ERRs in excess of 10% to represent sound economic investment. The study also concludes that eradication must be achieved in Sudan by the year 2001, at the very latest, in order for economic returns there to be consistent with those obtained in other endemic countries.

Figure 4

Dracunculiasis Eradication Campaign Interventions: December 1996



\* Villages with village-based health workers trained and supplied to do case containment

Figure 5

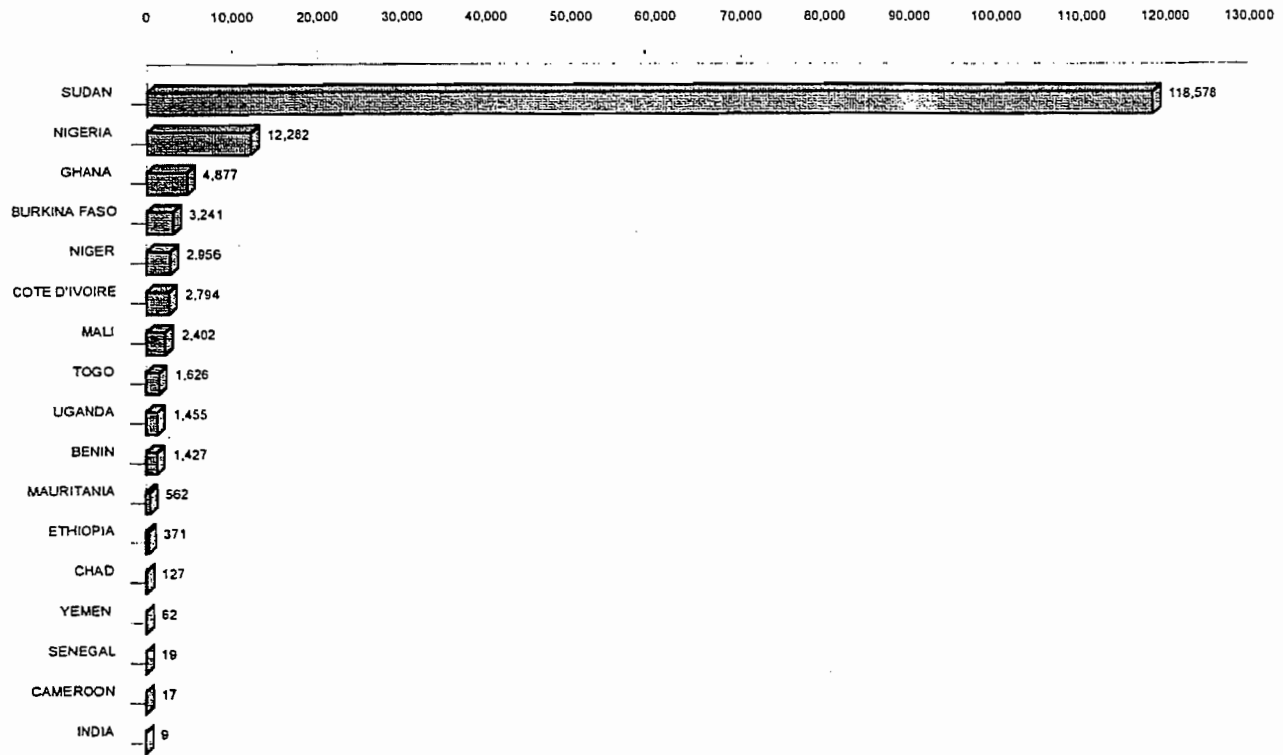
Dracunculiasis Eradication Campaign Interventions: December 1996



\* Villages with village-based health workers trained and supplied to do case containment

Figure 6

DISTRIBUTION BY COUNTRY OF 152,805 CASES OF  
DRACUNCULIASIS REPORTED DURING 1996  
NUMBER OF CASES



\* \* \* \* \*

*Inclusion of information in the Guinea Worm Wrap-Up does not  
constitute "publication" of that information.  
In memory of BOB KAISER.*

*For information about the GW Wrap-Up, contact Trenton K. Ruebush, MD, Director, WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, NCID, Centers for Disease Control and Prevention, F-22, 4770 Buford Highway, NE, Atlanta, GA 30341-3724, U.S.A. FAX: (770) 488-4532.*



CDC is the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis.