

PN-AR 5-312
73626

AGENCY FOR INTERNATIONAL DEVELOPMENT PPC/CDIE/DI REPORT PROCESSING FORM

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number 9365948	2. Contract/Grant Number DPE-5948-C-9030-00	3. Publication Date 1/91
---	--	-----------------------------

4. Document Title/Translated Title
Guinea Worm Eradication Program in Cameroon

5. Author(s)
1. George Greer, Ph.D.
2.
3.

6. Contributing Organization(s)
Vector Biology & Control Project
Medical Service Corporation International

7. Pagination 50+ Append.	8. Report Number 81133	9. Sponsoring A.I.D. Office S&T/H
------------------------------	---------------------------	--------------------------------------

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)

1.	4.
2.	5.
3.	6.

12. Supplementary Notes

13. Submitting Official Robert W. Lennox, Sc.D.	14. Telephone Number 703-527-6500	15. Today's Date 9/13/91
--	--------------------------------------	-----------------------------

..... DO NOT write below this line

16. DOCID	17. Document Disposition DOCRD [] INV [] DUPLICATE []
-----------	--



*Vector Biology
and Control Project*

**Guinea Worm Eradication Program
in Cameroon**

June 15 - September 21, 1990

by

George J. Greer, Ph.D.

VBC Report No. 81133

Author

Dr. George J. Greer is an Associate Research Professor in the Department of Tropical Medicine, Tulane University School of Public Health and Tropical Medicine, New Orleans, Louisiana.

Acknowledgements

The author wishes to express his gratitude to the following people in the Ministry of Public Health for their assistance in various administrative and technical aspects of this program: Dr. Owona Essomba Rene, Dr. Kamwa Mathieu, Dr. Sam-Abbenyi Amos and others in the Department of Preventive Medicine, Ministry of Public Health, Yaounde; Dr. Hamidou Issoufa, Provincial Delegate of Public Health for the Extreme-North; and Dr. Dama Mana, Departmental Chief of Service, Mayo-Sava Department. I also wish to thank Mohamed Bendriss Alami, UNICEF Program Director for Rural Water and Sanitation, for expediting the material assistance from UNICEF, and CARE/Cameroon for making available an all-terrain vehicle in Mora, without which a large portion of this work could not have been completed.

Preparation of this document was sponsored by the Vector Biology and Control Project under Contract No. DPE-5948-C-9030-00 to Medical Service Corporation International, Arlington, Virginia, USA, from the Agency for International Development, Office of Health, Bureau for Science and Technology.

Table of Contents

1. Executive Summary	1
2. Introduction	5
3. Scope of Work	7
4. Activities and Recommendations	8
Administrative implementation of POA	10
GWD field teams in Mayo-Sava Department	11
Abate treatment	17
Health education	18
Drinking water filters	19
Village registry and monitoring Guinea worm prevalence	22
GWD survey in non-endemic villages of Mayo- Sava	24
Final report to NTF	24
5. Participation By Non-Government Organizations	25
6. Itinerary and Summary of Activities	28
7. References	34

Annexes

Annex 1	
People Contacted	41
Annex 2	
Meeting Announcement for the National Task Force and the National Plan of Action	42
Annex 3	
Letters from the Ministry of Public Health to UNICEF Requesting Commodities and Operational Funds	43
Annex 4	
"Development of Education Materials for the National Programme for the Eradication of Guinea Worm"	44
Annex 5	
Outline for Training Programs	45
Annex 6	
Sample Page from Prototype Village Registry and Sample Form for Recording New Guinea Worm Cases	46
Annex 7	
Request for a Peace Corps Volunteer in Health for the Mayo-Sava Department	47
Annex 8	
Request to UNICEF for Support for a Department-wide Survey of the Known Endemic Region; Prepared by Drs. Dama and Greer	48

Annex 9

**Meeting Announcement for the National Task Force and a
Final Report on the Author's Activities in Cameroon 49**

Annex 10

List of References used in this Report 50

Tables

Table 1	
Prevalance of Guinea Worm Disease in Mayo-Sava Department in 1989 and at the end of August 1990	16
Table 2	
Summary of 1990 Effort in Various Components of the Eradication Program	26

Figures

Figure 1	
Map of Provinces in Cameroon	6
Figure 2	
Map of Villages Affected by Dracunculiasis in Mayo-Sava Department Cameroon	7
Figure 3	
Map of Approximate Location of Vame and Ndreme	19
Figure 4	
Photographs of Water Filter	23
Figure 5	
Photograph of Woman Using Filter	25

Abbreviations Used in this Report

CARE	Corporation for American Relief Everywhere
CDC	United States Centers for Disease Control
GWD	Guinea worm disease
HOT	Health outreach team
MOPH	Ministry of Public Health
NGO	Non-government organization
NTF	National Task Force for the Eradication of Guinea
Worm	
OCEAC	Organization de Coordination pour la Lutte Contra les Endemies en Afrique Centrale
PCV	Peace Corps Volunteer
POA	National Plan of Action for the Eradication of Guinea Worm
ROC	Republic of Cameroon
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
VHW	Village Health Workers

1. Executive Summary

At the request of USAID/Cameroon, VBC consultant Dr. George J. Greer was asked to assess and strengthen Cameroon's Guinea worm eradication program by 1) evaluating the existing eradication program, 2) assisting in drawing up a national plan of action acceptable to the Republic of Cameroon (ROC) and potential donor organizations and 3) beginning implementation of that new plan.

The Situation

Guinea worm disease (GWD) is limited in Cameroon to a relatively small area in and around the Mandara Mountains in the Extreme North Province. The transmission season corresponds closely to the rainy season, beginning in March or April and ending in October. All confirmed transmission is found in the Mayo-Sava Department, where 13 endemic villages with 859 cases were reported in 1989.

The 13 endemic villages fall under the jurisdiction of the five health outreach teams (HOTs). The prevalence of GWD at the end of August 1990 was down significantly from 1989 levels in three of these areas, covering eight endemic villages. Even though the 1990 results are not final, the addition of new cases is not likely to change the trend seen in these early results. Villages under the other two teams continue to have relatively high numbers of cases. The combined number of cases reported from the villages of Vame, Ndreme and Mbreme at the end of August 1990 had already exceeded 1989's year-end totals. Although the prevalence was down in the villages of Sanda Wadjiri and Ndaba, the number of cases remained relatively high in 1990.

This highly focal distribution makes Cameroon well suited for an all-out attempt at eradication, yet, aside from water development projects, Abate treatment of drinking water supplies has been the only widely used intervention. Part of the reason for this situation has been the lack of coordination between the official planners in the Ministry of Public Health (MOPH) and donor agencies interested in supporting an expanded program.

Activities

Plan of action

A national plan of action for the eradication of Guinea worm disease in Cameroon by 1993 was developed using elements taken from a draft document produced by the MOPH and another by workers at the United States Centers for Disease Control (CDC) and UNICEF/New York. This combined plan was accepted June 29, 1990, by the Cameroonian National Task Force for Guinea Worm Eradication (NTF). This was a major step toward officially finalizing the commitment of Cameroon and donor organization to a broad-based attack on GWD. Unfortunately, administrative difficulties also greatly hindered efforts to expand the eradication program quickly in the Mayo-Sava Department.

Abate coverage

Abate coverage in all villages appeared to be good in 1990 but was not begun until July because of the late arrival of Abate. Abate for 1991 has already been requested and should arrive in the endemic regions well before the start of the next transmission season.

Health education

Appropriate educational materials are badly needed in Cameroon. A review of materials available indicated a paucity of material targeted at the largely illiterate village population. The NTF recognized the need for developing the educational component and contacted Atelier de Matériel Audio Visuel (AMA), a professional group that has designed health education material for several major projects in Cameroon, for assistance. AMA recommended the production of a flip chart and study card series.

The NTF is committed to finding appropriate education materials outside the country or producing them locally. UNICEF has agreed to fund a training-of-trainers course for

village-level trainers, scheduled for April 1991, and CARE has indicated that it can provide several experienced trainers, fluent in the local languages, to work in the endemic villages in 1991.

Water filters

A locally produced water filter for villagers to use, both at home and in the field, was developed and tested. The filter was well received by villagers. About 500 were passed out in late August and early September in villages with the highest prevalence of disease. This program should be continued, and a large supply of filters should be produced and ready for distribution at the beginning of the 1991 transmission season.

Medical care

Basic medical care should be provided to as many infected individuals as possible. This will not only assist the individual patients, but will foster good will in the community that can lead to greater community cooperation with the less appealing components of the project, such as Abate treatment. Treating wounds also can have a very important effect on transmission. Occlusive bandages can greatly reduce the chances of direct exposure of female worms to sources of drinking water.

UNICEF purchased medical supplies for the project in late August 1990. Orders for more material will be delivered in a timely fashion to ensure a continuous supply. Village health workers (VHWs) and HOT personnel will be trained in Mora to use these materials properly.

Surveillance

A prototype registry for recording long-term vital statistics for the village and for Guinea worm cases on a year-to-year basis was developed and tested. Registries were completed for three villages that had relatively high GWD prevalence. Registries will be set up for all remaining endemic villages during the 1991 season. VHWs should keep these registries in

the village or, alternatively, at the nearest health unit. Before a registry is turned over to a VHW, all information should be entered into a personal computer at department headquarters.

HOTs must send records of new GWD cases to the department headquarters every two to four weeks during the transmission season. A system using a simple form was devised for this purpose but has not yet been field-tested. Using these data, department headquarters staff will monitor prevalence in each village throughout the season. This system will also allow for closer monitoring of individual cases, an essential element in the closing phases of the eradication program.

A search for other endemic villages in the Mayo-Sava Department was planned for October 1991. Results from that survey will help planners devise the overall strategy for the 1991 transmission season.

2. Introduction

The first published account of Guinea worm infection in Cameroon (Issoufa et al., 1979) thoroughly described the disease in a village near Mora in Mayo-Sava Department, Extreme North province. Dr. Frank Richards carried out a second important study for the USAID-funded Vector Biology and Control Project. Dr. Richards was invited to Cameroon to assess the extent of GWD nationwide and to develop a national plan of action for its elimination (1986 a and b). After determining that most passive case reports appearing in the official records in 1986 were spurious, Richards confirmed transmission of Guinea worm in only two regions: an isolated focus in the village of Pitoa near Garoua, North province, and in the Mayo-Sava Department, where transmission was evident in a number of villages.

Richards' general description of the problem of GWD in Cameroon (1986b) provides excellent background information on the biology, epidemiology, distribution and history of Guinea worm in Cameroon. He also detailed the government agencies responsible for primary health care and provision of safe drinking water. Readers are referred to that document for background information.

Between 1986 and 1990, the number of GWD cases seemed to decrease nationwide. The disease disappeared from Pitoa, and of more than 25 confirmed endemic villages reported from the Mayo-Sava Department in 1986 (Agbor-Tabi, 1987), only 13 had active transmission in 1990 (Figures 1 and 2). But this apparent overall decrease was not always reflected in the number of cases recorded. The totals for the Mayo-Sava went from only 59 cases in 1986 to 833 in 1987, 666 in 1988, and 859 in 1989 (Agbor-Tabi, 1989). Most, if not all, of the dramatic increase from 1986 to 1987 is thought to be due to better surveillance for GWD. Discrepancies in the surveillance coverage also may account for some of the changes seen in more recent years.

Figure 1

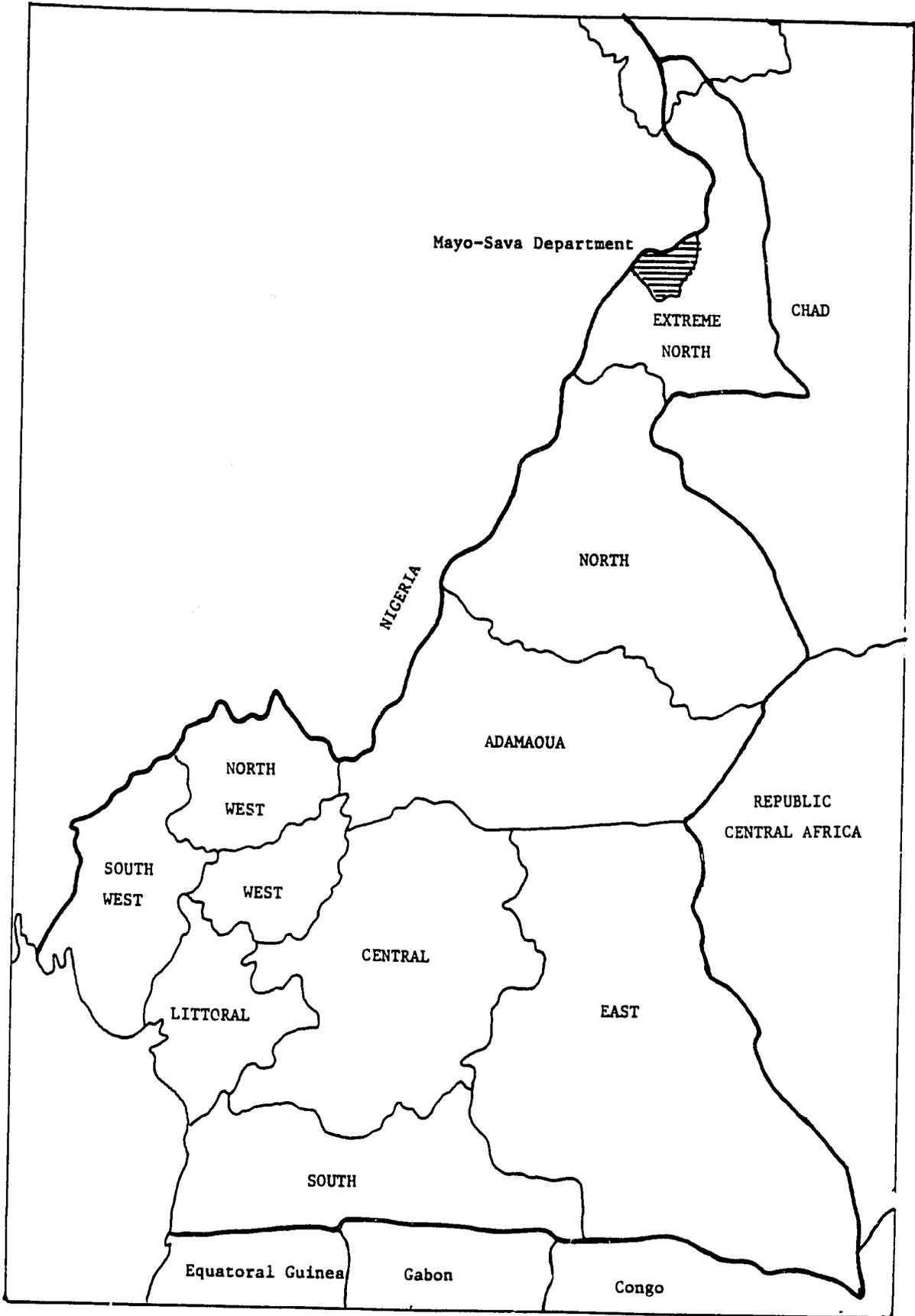
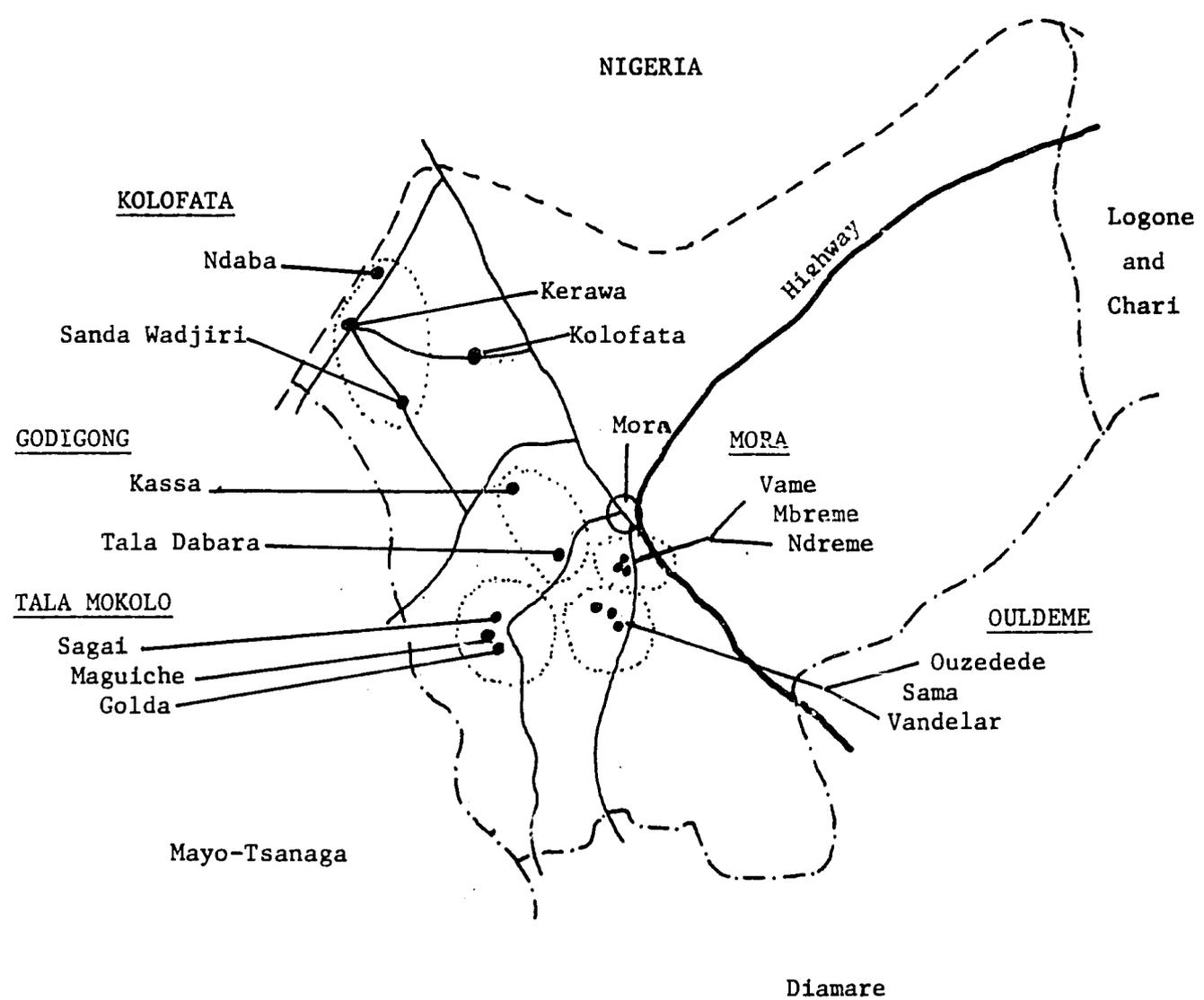


Figure 2

**Villages Affected by Dracunculiasis
in Mayo-Sava Department, Cameroon**

Villages covered by each Health Outreach Team appears below the underlined team name.



During the period 1986-1990, the only intervention strategy consistently used to combat GWD in Cameroon was Abate treatment of drinking water sources. This was begun in some villages in the Mayo-Sava as early as 1983 but was not used routinely in all endemic villages until 1987. Although the program seemed to have a positive effect, the increase in cases reported in 1989 cast doubt on the effectiveness of the eradication program. It was felt that if a more comprehensive program was not put in place quickly, eradication could not be achieved by the target date of 1993.

In the late 1980s, several international organizations, principally UNICEF, Global 2000 and CDC, showed an interest in helping Cameroon develop and implement a national plan of action similar to that outlined by Richards (1986a). In 1990, these organizations called on A.I.D. to support a request from the Cameroonian government for a technical advisor who would 1) evaluate the existing eradication program, 2) assist in drawing up a national plan of action acceptable to the Republic of Cameroon and potential donor organizations and 3) begin implementation of that new plan.

3. Scope of Work

- o Coordinate and develop a national plan of action for guinea worm eradication (POA) with the various participating organizations: Ministry of Public Health, UNICEF, CARE, OCEAC, Centre Pasteur and Peace Corps. Outline the major responsibilities for these organizations.
- o Develop and set in motion a logistic plan for obtaining and delivering commodities (Abate, filters, health education, medical supplies) to the villages.
- o Assess the status of existing programs: Abate treatment, surveillance, education, use of water filters and topical treatment of wounds.
- o Assist in setting up a means for channeling operational funds to authorities in the endemic region.
- o Develop a prototype registry for Guinea worm disease, to be used at the village level. The prototype should be suitable for recording other important health events.
- o Develop an inexpensive, easy-to-use and locally produced water filter.
- o Strengthen the educational component:
 - Help obtain the needed education material.
 - Help organize training courses for the health educators who will work at the village level.
- o Present findings and recommendations to the Cameroon National Task Force for Guinea Worm Eradication.

4. Activities and Recommendations

My three months in Cameroon were about equally divided between Yaounde, the capitol, and Mora, administrative capitol of the Mayo-Sava Department and center of the Guinea worm eradication effort. In Yaounde, I worked on finalizing a national plan of action and obtaining the materials and funds promised to the project by non-government organizations (NGOs), principally UNICEF. In the endemic region, I assessed the effectiveness of the current eradication program and worked to expand the effort by improving currently used interventions and introducing other components necessary for eradication. The underlying purpose of activities in both areas was to help develop a more comprehensive and effective eradication program for Cameroon. My activities and recommendations are summarized below.

First it should be pointed out that water development is not included among the strategies put forward by the plan of action discussed in this report. This is not because it has been overlooked as an intervention. Water development projects in the Guinea worm region are receiving a high priority, and there are plans to drill several new wells in selected endemic villages before the next transmission season.

Providing safe drinking water in all villages at risk of Guinea worm disease is expensive and, even under ideal conditions, might not be completed for several years. The strategies presented here complement the water development program but are pursued independently because they offer a less expensive approach that can reach remote villages quickly. The combined effort of an active water development program and the village-level interventions discussed here offer the best hope for eradicating GWD.

Work on the POA

One of the preliminary goals of my work was to develop a realistic plan for eradication of Guinea worm that was acceptable to the ROC and participating NGOs. Fortunately, this also had high

priority in the Ministry of Public Health. Soon after arriving in Cameroon, I had the opportunity to revise a draft plan of action prepared by Dr. Sam-Abbenyi, coordinator of the National Task Force for Guinea Worm Eradication (See Annex 1 for list of members of the NTF). Elements from that document and from another plan presented by the CDC and UNICEF, New York, were combined into a version that was accepted by the NTF at a meeting on June 29, 1990 (Annex 2).

Formal acceptance of this POA requires several steps beyond NTF approval. Ultimately, an agreement must be signed between the MOPH and participating NGOs. No such agreement was in place as of mid-September 1990. Fortunately, UNICEF, the main non-government contributor to the program, made materials and funds requested in the POA available immediately after the June 29 approval. In spite of this positive step, the procedure for obtaining commodities was long and complicated.

Responsibilities of the NTF members were discussed at the June 29 and subsequent meetings. Their responsibilities are as follows:

Dr. Sam-Abbenyi, Coordinator NTF, will, as his title suggests, administratively coordinate the program. All agreements for distributing of material and funds must pass through the coordinators office first. This administrative position is central to the program's overall success.

Dr. Issoufa, Provincial Delegate, MOPH, will manage the finances of the field project: accounting to UNICEF for expenditures and requesting reimbursements so that operational funds are available when needed. He also will work closely with Dr. Dama on designing and implementing the field program.

Dr. Dama, Department Chief of Services, MOPH, will continue to manage the field project. This is the key administrative position in the field and requires support and cooperation from all fronts.

Mr. Alami, UNICEF, will oversee the disbursement of material and funds from UNICEF to the project. He also has agreed to take the lead on obtaining appropriate educational materials.

Dr. Chippaux, Centre Pasteur, will be responsible for obtaining appropriate quantities of Abate from donors. He will also examine the possibility of resistance in copepod populations in the endemic region.

Dr. Desfontaine, OCEAC, will be in charge of a departmental survey that will more accurately define the distribution of GWD in the Mayo-Sava.

CARE personnel will help develop and implement the education component. Experienced village-level trainers will help field- test educational material and perhaps run the training of trainers course. Three or more CARE trainers will be assigned to cover Guinea worm villages during the 1991 season.

Dr. Greer, USAID/VBC, will help implement the POA at a central level in Yaounde and work with Dr. Dama to expand the field program to include interventions not included in previous years.

Recommendation

1. A formal agreement between the MOPH and donor organizations, based on the POA, is needed to ensure that the promised support is obtained in an orderly fashion.

Administrative implementation of POA

The mechanism for obtaining commodities and operational funds was very complicated, partly because no formal agreement had been signed between the ROC and UNICEF. To obtain materials, UNICEF required that specific items, or funds for particular activities, be requested as needed. Without a formal agreement in place, the Minister of Public Health could not designate a junior officer to sign requests for commodities on his behalf.

During my stay in Cameroon, I helped prepare three letters from the MOPH requesting commodities from UNICEF. These were signed by the Minister on July 11, 15 and 27, 1990 (Annex 3).

Unfortunately, overcoming the MOPH bureaucracy and presenting the request to UNICEF did not produce quick results as had been hoped. The material and funds requested were extremely slow in arriving. Of the items requested in the July 11 and 15 letters, only six motorbikes arrived in Mora before my departure from Cameroon September 18.

Operational and training funds requested in the third letter (Annex 3, p. #3) were delivered to the MOPH in the form of a check sent to Maroua on August 30, 1990 (Annex 3, p. 4). A bank account in the name of "Eradication de la Dracunculose" was opened in Maroua and will be managed by the Provincial Delegate of Public Health for the Extreme North and Departmental Chief of Service, MOPH, Mayo-Sava. The creation of an avenue for funds to reach workers in the endemic region was a major breakthrough. Funds should now be available to pay operational costs promptly.

Recommendation

2. A junior officer in the MOPH (e.g. Director of Preventive Medicine or his deputy) should be given authority to sign requests to UNICEF on the Minister's behalf. This would greatly ease the administrative process for procuring commodities.

GWD field teams in Mayo-Sava Department

Five field teams (HOTs) work in the Mayo-Sava Department under the direction of the Departmental Chief of Service, MOPH. These teams and their affiliations are as follows: Godigong, Protestant Mission; Mayo Ouldeme, Catholic Mission; Tala Mokolo, Protestant Mission; Mora, MOPH; Kolofata, MOPH. Figure 2 shows the approximate location of the endemic villages and the HOTs' regions of responsibility. The main function of these teams has been to treat drinking water sources with Abate and to determine the yearly prevalence of GWD on the basis of house-to-house interviews carried out soon after the transmission season has ended.

As will be discussed in more detail below, the Abate program has been increasingly effective, and there was good coverage during the 1990 transmission season. Year-end surveillance has provided valuable information for year-to-year comparisons but provides no means of following the prevalence during the year or for tracking individual cases. Although better surveillance, health education, provision of water filters and basic medical treatment have been suggested as improvements to the national eradication program (Kollo, 1989), as yet none of these activities has been used systematically.

GWD in Cameroon

To determine the approximate prevalence in villages during the 1990 season, we carried out house-to-house surveys in villages that appeared to have high prevalence. For other villages, we asked the HOTs to interview village chiefs and the heads of households known to have had past problems with GWD. Our results and those from 1989 are shown in Table 1. Because some of our data are based solely on interviews with selected individuals and because all surveys were carried out before the end of the transmission season, our 1990 results should be considered approximations. Nevertheless, I believe that the trend toward reduced prevalence seen in most villages will be confirmed by surveys at the end of the transmission season. This trend can be also seen in the reduction from more than 25 villages with confirmed cases in 1986 (Aghor-Tabi, 1987) to just 13 in 1990.

Few cases were found in villages covered by the Mayo Ouldeme, Godigong and Tala Mokolo teams and there is a good chance that some of these villages will report no cases for 1990. The only villages that will definitely report an increase in cases over 1989 are those in the Vame, Mbreme and Ndreme complex.

Ndaba and Sanda Wadjiri, under the Kolofata team, appeared to have reduced prevalence from last year, but the number of cases remains relatively high. We concentrated our efforts on these five villages. It is fortunate that these areas also have received some assistance with water development projects. Two pump wells were

installed in Sanda Wadjiri and one draw well in Vame. There are plans to drill more wells in Guinea worm endemic villages during the dry season and Ndaba is high on the priority list.

The contiguous village complex of Vame, Ndreme and Mbreme has presented previous problems in interpretation of data. A comparison of the 1989 and 1990 figures in Table 1 also reveal discrepancies in this data set. The large variation in the total populations for Vame and Ndreme indicate that village boundaries were defined differently in these surveys or that the village names are used differently by different workers.

To add to the confusion, in my final report to the NTF (Annex 9), I mistakenly left out the results for Ndreme and presented the data for Vame as though it was for all three villages. In a discussion below, I have attempted to review the confusion over these names and offer suggestions that may eliminate future confusion.

Table 1

Prevalence of Guinea Worm Disease in Mayo-Sava Department
in 1989 and at the end of August 1990.

Health Out- reach Team	Village	1989 Pop.* Surveyed	# Cases	1990 Pop.** Surveyed	# Cases
Mora	Vame	273	58	644	110
	Mbreme	539	65	?	?
	Ndreme	100	37	266	63
Kolofata	Ndaba	337	95	369	52
	Sanda Wadjiri	885	493	?	124***
Godigong	Tala Dabara	119	8	?	0
	Kassa	264	1	?	1
Mayo Ouldeme (Ouzedede)	Sama	192	3	?	0
	Wichdede	46	24	?	0
	Vandelar	376	29	?	0
Tala Mokolo	Sagai	152	30	?	10
	Maguiche	54	15	?	1
	Golda	434	18	?	1
		4011	876	?	362

* The number of cases in 1989 was taken from "Rapport de l'enquete domiciliaire effectuee dans le cadre de la surveillance active des cas de ver de Guinee dans le Mayo-Sava: du 23 Octobre au 9 Novembre 1989" by Dr. Dama Mana.

** Where the total population is given for 1990, the number of cases is based on house-to-house surveys. In other villages the number of cases is based on interviews with village chiefs and other responsible villagers.

*** The figure given for Sanda Wadjiri is an extrapolation from 31 cases found in about one-fourth of the households visited before the author left Cameroon.

**Comments on the Vame-Mbreme-Ndreme village complex
(or What's in a name?)**

Vame, Ndreme and Mbreme, three villages to the southwest of Mora (Figures 2 and 3), are difficult to define because they are contiguous and their inhabitants belong to the same tribe and speak the same language. I will try to define these population in a way that can be consistently followed in the future.

These villages overlap the Mora Massif and the adjacent plain to the east. Vame is most easily distinguishable of the three because it is located principally on the plain. But houses are found at various levels up the side of the adjacent mountain, making it impossible to find a clear geographical distinction between Vame and the other villages.

Mbreme and Ndreme are found side by side on the mountain. Ndreme is given the more northerly position. Little in the way of a physical feature or breaks in the population serves as a boundary between these two settlements. In fact, I have been told by locals on several occasions that the only difference between Mbreme and Ndreme is in the pronunciation. To confound the situation further, in recent years many families have moved from the mountain to the plain, carrying with them the name of their former village and allegiance to their chief.

The literature also has contributed to the confusion. Richards (1986a) describes the population and location of Mbreme and Ndreme. The population he gave for the two subdivisions of Ndreme was 261 and for Mbreme Plain was 61. In reports of prevalence data from these villages (Agbor-Tabi, 1989; Dama, 1989) the populations for Ndreme varied from 100 to 150 inhabitants between 1986 and 1989, while the population of Mbreme increased from 400 in 1987 to 539 in 1989. Vame's population was 438 in 1987 but dropped to 273 in 1989. Undoubtedly some of the differences reflect real changes in these populations, but it is also very likely that much of the discrepancy is due to villages being defined differently by different investigators.

Attempting to define these villages on the grounds of geographical, physical or cultural features seems hopeless. Defining them according to their chiefs at first appears to be a practical solution, but the greater mobility of these populations in recent years makes this approach unworkable as well. The best hope now seems to be an operational definition.

VAME: A house-to-house census of Vame in 1990 indicated that it had 136 homes and a population of 591 (Njock, personal communication). We surveyed 12 houses adjacent to Njock's study site, which were added to the Vame registry because of their close proximity and shared water supply. This addition brought the totals for Vame to 148 homes and 644 inhabitants. All houses have been numbered and the head of each household clearly identified in a village registry. Vame's general location is indicated in figure 3. With the registry and someone to speak the local language, all homes can be found with little effort. Most important, the HOTs can find all inhabitants.

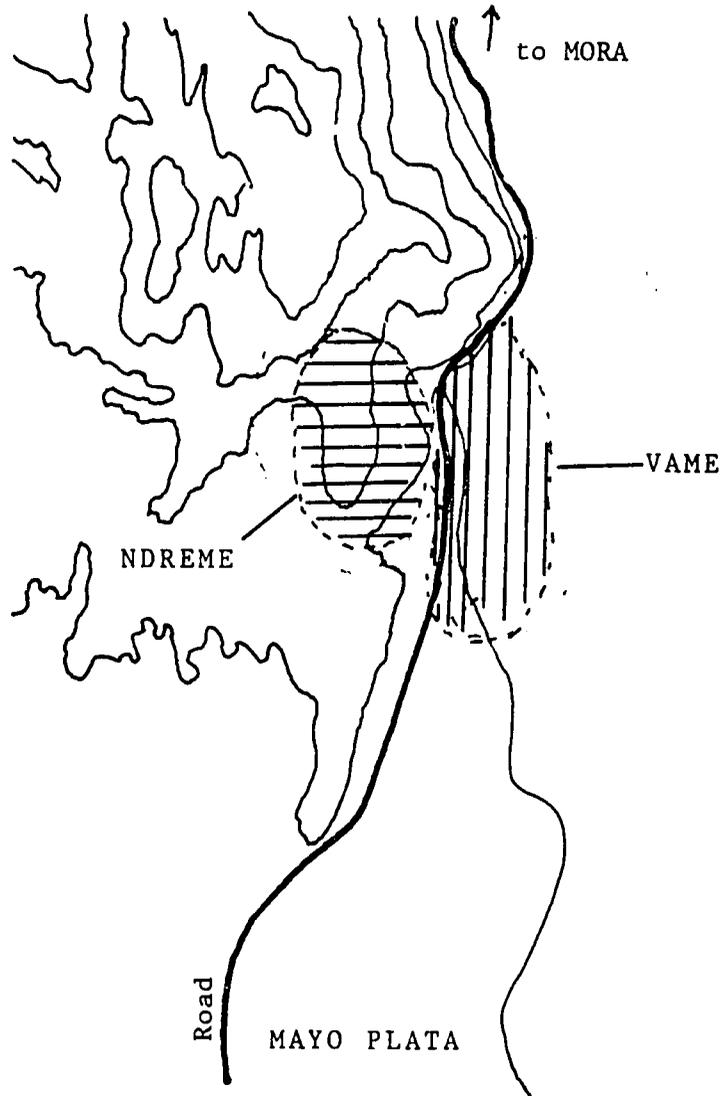
NDREME: Our house-to-house census of Ndreme covered an area Richards described as Ndreme Blama Vite and Ndreme (1986, Figure 3). We found a fit in the two sets of census data; Richards reported 261 and we found 266. We also found a chief, Blama Vite, used to define one of Richards' quarters, still in the region. All this indicates that we were working with the same population.

As with Vame, houses in Ndreme were numbered and the head of household clearly identified in the village registry. The best means of ensuring that future data are from the same village is to follow the village registry closely.

These operational definitions also have some disadvantages. One is that workers may consider them closed and visit only those houses listed in the registry even after new families have moved into the area. Efforts must be made to keep the registries current by adding families that have moved into the area and those that were overlooked in earlier surveys.

Figure 3

Approximate Location of Vame and Ndreme



Abate treatment

The treatment program began late in the 1990 transmission season, because the initial supply of Abate, sent by Dr. Ripert, University of Bordeaux, did not reach Mora until early July. Weeks later the Onchocerciasis Control Project donated 55 liters of Abate to the program through Dr. Chippaux.

In spite of the late start, coverage by the five teams was good. A schedule of the treatments completed before mid-September is presented in Table 2. Drinking water supplies in all villages, except Ndaba, had received two or three treatments by mid-September, and at least one more was planned before the end of the transmission season in October. Abate was not used in Ndaba because of the large size of the temporary ponds that are the main sources of drinking water during the rainy season.

A problem still encountered with Abate treatment in this region is the occasional discovery of previously untreated water sources. There are two reasons for these discoveries. Wells are intentionally not revealed to the HOTs because villagers are reluctant to have them treated. Second, some households shift to more convenient temporary water sources late in the rainy season, after the team has established its treatment routine.

This year we discovered two "new" drinking water sources in Vame and three in Ndreme. The new Vame sources were temporary pools that the villagers didn't use until late August or September. The new wells in Ndreme were revealed only after the team had gained the villager's confidence by giving out water filters.

These examples point up the importance of winning villagers' confidence and cooperation. Giving out water filters and providing medical treatment are two of several ways this may be done. And, because it may change as the rainy season progresses, it is also necessary to question villagers periodically about their sources of drinking water.

Recommendations

3. Abate must be sent to Mora before March, and treatment of wells should begin no later than early April 1991.
4. Treatment teams should periodically question villagers about their sources of drinking water.

Recent developments

UNICEF/Cameroon requested two hundred liters of Abate from UNICEF/New York in early September 1990. This request will be passed to Global 2000, and it is expected that the Abate will arrive in Cameroon early enough to reach the endemic region before the 1991 transmission season starts.

Health education

Education is perhaps the most important, but currently the weakest, component of the eradication program. No organized effort has been made to teach villagers what they can do to prevent GWD on an individual or community level. The illiteracy rate is high among the endemic population, and little educational material targeted at this population is available. Although an effort to develop material locally in Mora was begun in 1990, professional assistance will be required to produce suitable material and to train village-level trainers.

The NTF asked Atelier de Matériel Audio-Visuel (AMA), a professional group that has designed health education material for several major projects in Cameroon, to review the Guinea worm situation and prepare a report. AMA recommended the production of a flip chart and study card series and gave an estimated cost for producing these materials (Annex 4). These could be ready by March 1991, in time for the beginning of the next transmission season. The NTF reviewed the AMA report at a meeting in early September, but no decision was reached.

The other essential ingredient in an education program is educators. For 1991, CARE has offered to divide responsibility for Guinea worm endemic villages among three or four of their village-level trainers already stationed in Mora. The government office of community development in Mora is another potential source of trainers.

Trainers must receive instruction in the use of education material. A training of trainers course, to be funded by UNICEF, has been scheduled for April 1991 (Annex 5). Other health workers who visit endemic villages regularly, such as the HOTS, also will attend this course. These workers will be asked to emphasize the education messages at every opportunity while working in the villages.

Both CARE and AMA have the experience and capabilities to run this proposed training of trainers course.

Recommendations

5. Suitable education materials, whether locally produced or acquired from outside Cameroon, must be obtained before March 1991.
6. An organization should be chosen and a training of trainers course scheduled for April 1991.

Recent developments

UNICEF has indicated to the NTF that it will take a lead in obtaining appropriate education material for the 1991 transmission season.

Drinking water filters

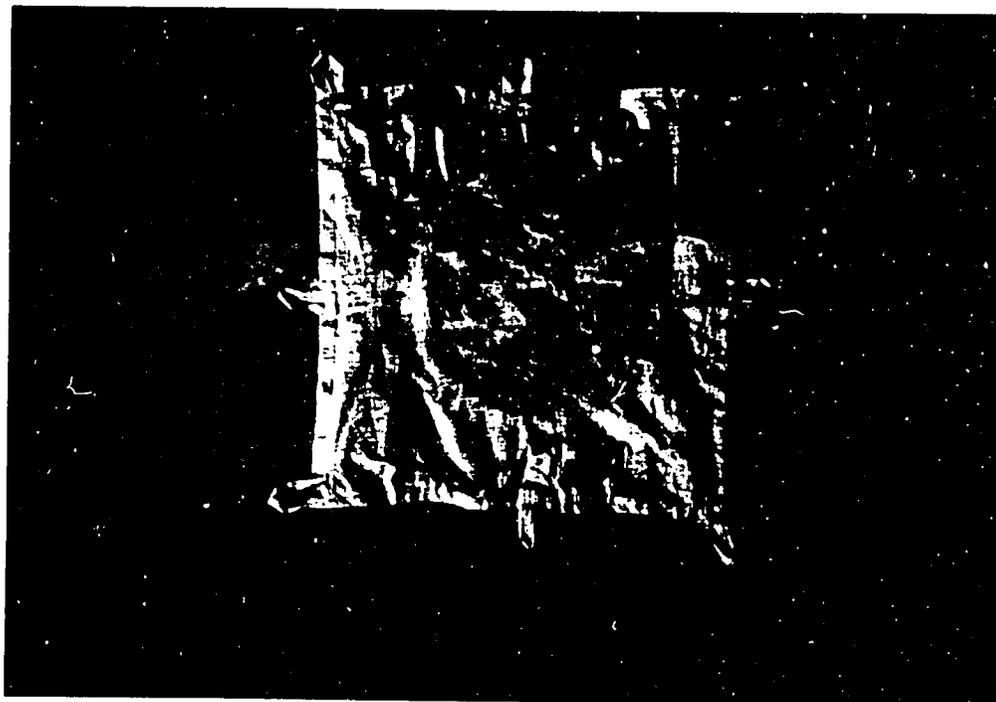
Prototype water filters, made from locally available materials, were produced in Maroua, about 90 km from Mora. After laboratory and field testing, a final design was chosen that met the criteria of being inexpensive (about \$0.80 each), durable and easy to use (Figure 4). The filter consists of cloth sewn onto a strong plastic

Figure 4

Photographs of Water Filter



A. Top side of water filter



B. Bottom side of water filter

50cm x 50cm backing that has a large hole cut in the middle. Loops of the same plastic material are sewn along the outer edge. A 1-meter-long rubber band, cut from discarded inner tubes, is threaded through the loops and tied in place. This band can be adjusted to fit all sizes of water receptacles and allows the filter to be easily placed and removed (Figure 5).

Between August 25 and September 11 about 500 filters were produced and distributed house to house (Table 2): about 130 filters to Vame, 90 to Ndreme, 120 to Ndaba and 160 to Sanda Wadjiri.

The response from the villagers was excellent, and all indication suggests that most families will use the filters regularly. Villagers were also encouraged to take filters to the field, which some families indicated they were already doing. Unfortunately, in the time available it was not possible to produce two filters per family, one for the home and another for the field.

One problem encountered was that some water sources were so muddy that the cloth filters clogged. This can be ameliorated by stirring the water as it accumulates in the filter or by allowing water to stand in the transporting container until the mud has settled. A more acceptable solution would be to use material that had openings large enough to allow fine silt to pass but small enough to trap copepods. No such material was available locally in Cameroon, but monofilament filter material could be imported for this purpose.

Recommendations

7. About 1,500 water filters should be made and ready for distribution at the beginning of the 1991 transmission season.
8. Monofilament filter material should be imported and used to make filters for villages such as Ndaba, where water from temporary ponds is extremely dirty and quickly clogs regular cloth filters.
9. Local production of other filter designs should be tried.

Figure 5

Photograph of Woman Using a Water Filter



Table 2

**Summary of 1990 Effort in Various Components of
the Eradication Program**

Village	# Cases	Water Filters	Hlth. Educ.	New Wells	Med. Treat	Abate 1st	Water 2nd	Treatment 3rd
Vame	110	130	---	1	---	7/12	8/9	8/30
Mbreme	?	---	---	0	---	7/7	8/5	8/27
Ndreme	63	90	---	0	---	" "	" "	" "
Ndaba	52	120	---	0	---	nd	nd	nd
Sanda	125	160	---	2	---	7/18	8/13	dry
Wadjiri								
Tala Dabara	0	---	---	0	---	7/27	9/2	?
Kassa	1	---	---	0	---	7/28	8/26	?
Sama	0	---	---	0	---	?	8/31-9/4	?
Wichdede	0	---	---	0	---	7/28-31	" "	?
Vandelar	0	---	---	0	---	" "	" "	?
Sagai	10	---	---	0	---	7/20-23	8/12-13	9/8-12
Maguiche	1	---	---	0	---	" "	" "	" "
Golda	1	---	---	0	---	" "	" "	" "

nd - not done

dry - sites treated earlier were dried out

? - treated, but date unknown

Recent developments

In early September, UNICEF/Cameroon sent a request to its home office for 50 meters of monofilament material.

Medical treatment

Although the requirements are simple -- gauze pads, bandages, antiseptic solution and antibiotic cream -- to date no village-level medical assistance has been provided. Even though in most cases it will be impossible to change dressings on an optimal schedule, the occasional provision of these basic materials would be a great improvement over the treatment generally received. In addition, aspirin can be offered for pain relief, and anti-inflammatory drugs should be available to treat more severe cases.

Simple medical treatment not only helps individuals recover but fosters good will in the community. Perhaps more than any other activity, treating the sick demonstrates that the eradication program is there to benefit the villagers. This result can lead to greater cooperation with the less appealing components of the project, such as Abate treatment.

Treating wounds also can have a very important effect on transmission. Occlusive bandages can greatly reduce the chances of direct exposure of female worms to drinking water sources.

Recommendations

10. Medical treatment should be an integral part of the eradication program. Treatment of wounds should be carried out at the village level by one of two systems: 1) medical supplies could be left with the village health worker or chief of the village or 2) HOTs could carry medical supplies with them and treat patients during visits to the villages.
11. Members of the HOTs and village health workers should be trained to dress wounds properly.

Recent developments

Medical supplies were ordered specifically for the eradication program in early September 1991.

Village registry and monitoring Guinea worm prevalence

A prototype village registry for recording vital statistics and Guinea worm cases on a year-to-year basis was developed and tested. An abundantly available school notebook (16.5cm X 22cm) was chosen for the village registry. Annex 6 shows the layout of a page from the prototype registry. Each full page (left and right sides) is used for one household, with the house number indicated in the upper left-hand corner. General information for the household, such as name of the *quartier* (neighborhood), name of the quartier chief, the well used for drinking water, and the date water filters were received, is recorded across the top of the page.

Family members are recorded down the page with the head of household first. Specific information taken for each family member includes family name, given name, sex, date of birth and history of Guinea worm beginning in 1990, with the number of worms for each year in parentheses. To record a positive case, the VHW or the HOT would place a + under the year column and keep tally of the number of worms for the patient with slashes. This prototype registry has been set up to record GWD through 1993. All of the above information fits neatly onto the left-hand page. The right-hand page is blank and could be used to record GWD beyond 1993 or reserved for other health information.

The registry is designed to serve as a record of long-term vital statistics for the village and therefore must be able to accommodate changes in the family. There is room to list 20 people on each full page of the notebook, which provides ample room for expansion of an average family. In the case of larger families (10 or more), the following full page should be reserved for that family.

If there is a literate, capable individual willing to keep the registry in the village, preferably a VHW, then it should be kept there. Alternatively, the registry should be kept by the HOT at the nearest health unit. Before a registry is turned over to a VHW, all information should be entered into a personal computer at the department headquarters.

HOTs should obtain records of new cases of GWD and send them to department headquarters every two to four weeks during the transmission season. Department headquarters staff will use these data to monitor prevalence in each village throughout season. Transferring information on new cases to the department headquarters will require the use of a simple form, such as the one shown in Annex 6, p. 2. The VHW can fill in this form when he or she records a case in the village registry. The HOT would retrieve this form and give a new blank form to the VHW regularly. If the registry is maintained by the HOT, the form must be filled in from the registry information.

Using VHWs for case detection offers two distinct advantages. First, the HOTs, already occupied with Abate treatment in several villages, may not have time to carry out house-to-house surveys searching for new cases every two to three weeks. Second, house-to-house surveys by the HOTs would usually be carried out during normal working hours, when most villagers, including infected individuals, are in the fields. The job of recording cases, whether done by VHWs or HOTs, can be made much easier by offering treatment to infected individuals. This approach offers incentive for the infected person to contact the VHW.

Recommendations

12. The present surveillance system provides reasonably good information on year-end prevalence. It is impossible, however, to follow the evolution of GWD in a community or in individuals during the transmission season. This type of information is essential during the final phases of eradication. A simple form to record cases has been designed and can be left with the VHW and retrieved every two to four

weeks, or filled in by the HOTs during routine visits to the village.

13. Using a VHW to record new cases would greatly improve coverage. In instances where no one in the community can write, HOTs will have to maintain the registry and record new cases. In these situations the HOTs should allow additional time for surveillance, perhaps making separate trips to the villages for this purpose alone. Offering treatment to patients and visiting villages at prearranged times can greatly increase coverage by the HOTs.
14. A computer-based system should be set up to manage this data.

Recent developments

A computer has been ordered for the project and should be in the department headquarters before the next transmission season.

GWD survey in non-endemic villages of Mayo-Sava

Funds for broadbased survey for GWD in the Mayo-Sava Department were requested from UNICEF (Annex 8) at a September 17, 1990, meeting of the NTF in Yaounde. Dr. Desfontaine and Dr. Dama will lead a training course of about 60 village health workers and 20 nurses in Mora scheduled for October 8-10. Immediately following the training course, the workers will survey assigned villages throughout the Mayo-Sava in an attempt to better define GWD distribution.

Final report to NTF

I presented a final report of my activities and recommendations (Annex 9) at an NTF meeting September 13, 1990, in Yaounde. The point-by-point discussion was very useful in eliciting commitments of action from various members of the NTF.

5. Participation By Non-Government Organizations

As indicated above, and in the POA, the principal contributor to this program will be UNICEF, but other NGOs must participate to the best of their ability to make this program fully successful.

UNICEF

UNICEF is now is moving quickly to meet the obligations outlined in the POA (Annex 2).

Peace Corps

The Peace Corps currently has one volunteer (PCV), Mr. Kaye, in Mora. His work as a community-development volunteer in the Mayo-Sava Department included projects useful to the Guinea worm eradication effort. Mr. Kaye's normal tour of service will end early in 1991, but he has request a one-year extension. If the extension is granted, all his efforts will be directed toward Guinea worm eradication.

In July 1990 Dr. Dama filed a request with Peace Corps Cameroon for another volunteer to begin work in 1991 (Annex 7). That volunteer would be in the health program and as such would work closely with Dr. Dama. The duties of the new PCV would fall into two major categories: 1) help manage the HOTs and monitor various aspects of the program and 2) keep records, on a personal computer, of the activities of the HOTs and of the prevalence of GWD throughout the transmission season. The first activity would involve a fair amount of field work; the second some experience with computers.

Recommendations

15. The Peace Corps should extend the current volunteer in Mora for one year.

16. Assign a new health volunteer to Mora, as requested by the Chief of Health Services of the Mayo-Sava Department.

CARE

CARE, as one of the principal NGOs working in the Extreme--North province, has already demonstrated interest in the Guinea worm eradication program through logistic and professional support for the development of appropriate educational material.

Recommendations

17. CARE should continue to participate in the development and use of educational material.
18. As many CARE trainers/educators as possible should be used for village-level education programs in the endemic region.
19. CARE would be a good choice to run the training-of-trainers course in April.

USAID

USAID offered technical assistance for a three-month period in 1990. Technical assistance will be needed in 1991 as well.

Recommendations

20. USAID should send a technical assistant to Cameroon before the 1991 transmission season begins. His or her principal duty should be to ensure that all the elements are in place to mount a full-scale eradication effort.

Global 2000

Global 2000 was designated as the source of Abate in the POA, which has been ordered for 1991.

Recommendation

22. Global 2000 should be asked to assist in obtaining monofilament filter material.

6. Itinerary and Summary of Activities

Week-by-week summary of activities

June 18-22, 1990: Yaounde-Maroua-Mora-Yaounde

I held separate meetings with some principal participants in eradication program: MOPH, UNICEF, CARE and Peace Corps. Dr. Sam Abbenyi, the coordinator of the National Task Force for Guinea Worm Eradication, had been given the task of developing a national plan of action. When I arrived his plan was nearly finished, but he allowed me to incorporate some of the ideas in the CDC/UNICEF plan to produce a new, combined plan of action.

To get direct input from the field teams I visited Mora late in the week. Discussions with Dr. Dama and members of the health outreach teams were very informative.

June 25-29, 1990: Yaounde

The revised plan of action was completed and presented at a NTF meeting held June 29 in Yaounde. All principal participants were present, and the plan was accepted with minor changes. A formal request for assistance from the minister of public health to the various NGO based on this plan was still needed, but UNICEF, the main non-government contributor to the program, was willing to begin funding the program based on acceptance by the National Task Force.

Earlier in the week I contacted Atelier de Matériel Audio Visual concerning the development of educational material targeted to an illiterate population.

July 2-6, 1990: Yaounde

Following acceptance of the national plan of action, UNICEF made commodities and operational funds outlined in the plan available on request from the MOPH. Much of this week was spent working closely with Dr. Kamwa, Deputy Director of Preventive

Medicine, preparing a request to UNICEF for urgently needed items. This week two letters requesting materials from UNICEF were sent to the minister and one was signed and delivered to UNICEF (Annex 3, p. 1).

July 9-13, 1990: Yaounde-Maroua

I held meetings with CARE and AMA about the development of educational material. It was decided that Ms. Jacqueline Bouwmans should have a first-hand look at the endemic region in order to develop a proposal for the production of educational materials by AMA. UNICEF would be asked to finance the trip.

After I met Mr. Alami, he agreed to have UNICEF fund preliminary study on production of educational materials. A July 19-22 trip by Ms. Bouwmans was planned.

I met with Ms. Agbor-Tabi and discussed the need for more Peace Corps volunteers in the endemic region.

A second request for commodities was signed by the Minister of Public Health and sent to UNICEF (Annex 3, p.2), but difficulties were encountered with another very important element of the program: setting up a system for getting operational funds to the authorities in the endemic region. UNICEF wanted funds to go directly to officials in the endemic region, but Preventive Medicine officials were uncertain of who was to manage these funds if they were not first placed in a local account in Yaounde.

July 16-20, 1990: Maroua-Mora-Yaounde

I discussed the problem of getting operational funds to the endemic region with Dr. Hamidou (Maroua) and Dr. Dama (Mora). They suggested that a bank account in Maroua be set up with the two of them as cosigners. Dr. Hamidou would manage the receipts.

Dr. Dama and I reviewed the progress for the year and prepared an application for a Peace Corps volunteer to work on Guinea worm disease under Dr. Dama's direction.

A prototype water filter was made.

Planned trip by Ms. Bouwmans/AMA (July 19-22) was canceled at the last minute.

July 23-27, 1990: Yaounde

A formal application for a PCV in health to serve in Mora 1991 - 1993 was submitted to Mrs. Agbor-Tabi (Annex 7).

A request to UNICEF for operational funds, to be managed through a bank account in Maroua, was prepared in collaboration with Dr. Kamwa. The account will be managed by Drs. Hamidou and Dama. This request was signed by the minister and delivered to UNICEF on July 27 (Annex 3, p. 3).

July 30 - August 3 1990: Yaounde-Maroua-Mora

Ms. Bouwmans made her site visit to endemic region July 29 - August 1. CARE provided transport around region. I helped pull together the first draft of the AMA report.

I worked with Dr. Dama and Dr. Hamidou to prepare a list and costs of supplies and materials needed by the project for August and September. UNICEF required that this list be sent to Yaounde before a check for operational funds could be issued. A telex was sent on August 4.

New prototype designs of the water filter were tested, and several were passed out to villagers.

I discussed the possibility of using MOPH or CARE vehicles for transport for the remainder of my stay. Arrangements were made with CARE to keep its vehicle until my departure.

August 6-10, 1990: Mora

The final design for filters was chosen and several new prototypes were made for testing.

I went with the Mora team for Abate treatment in Vame and Ndreme/Mbreme.

I worked with Drs. Hamidou and Dama on descriptions and budgets for training courses to be given during the coming year. UNICEF requires this to set block funds for the year.

August 13-17, 1990: Mora-Yaounde

I went with the Kolofata team for Abate treatment in Ndaba and Sanda Wadjiri. I also visited the Mayo Ouldeme, Godigong and Tala Mokolo teams to discuss their work and findings for this year.

Mr. Alami left Cameroon on July 20 and was due back August 20. Almost nothing was done at UNICEF for the GWD program during his absence. At this point the eradication program had received no commodities or operational funds. This week marked a low point in UNICEF's performance with regard to the GWD program.

I helped complete and distribute the AMA report (Annex 4).

August 20-24, 1990: Yaounde-Mora

I met with Mr. Alami and Dr. Hamidou. Many of the problems were discussed, and Mr. Alami promised quick action on the pressing issues.

I discussed AMA report with Mr. Larouche (CARE) to determine the role CARE might play in developing and implementing an education program.

I determined that the prototype of the final filter design had done well and so ordered 200 filters.

A house-to-house census of Ndreme was conducted using a prototype village registry that also serves as a year-to-year record of Guinea worm cases.

August 27-31, 1990: Mora

I checked for copepods in treated wells in Vame and Ndreme/-Mbreme.

I went house-to-house to pass out filters in Vame.

I accompanied the Mora team for Abate treatment in Vame and Ndreme/Mbreme.

I visited Godigong and Mayo Ouldeme to assess recent activities of the teams there.

September 3-7, 1990: Mora

Filters were passed out house-to-house in Ndreme.

A house-to-house census was conducted and filters passed out in Ndaba.

A house-to-house census was begun and filters passed out in Sanda Wadjiri.

I did the rounds for Abate treatment with the Tala Mokolo team to assess the prevalence of disease in the region and the performance of the team.

September 10-14, 1990: Mora-Yaounde

I closed up office in Mora.

I assisted in preparation of plan for GWD survey throughout Mayo-Sava (Annex 9).

I prepared and presented final report to the National Task Force (Annex 8). We were unable to cover several important topics, so another meeting was scheduled for the following week.

September 17-21, 1990: Yaounde-Washington

A second meeting of the National Task Force in Yaounde dealt principally with a departmentwide survey for GWD to be carried out in October.

I presented a summary of my activities to the VBC staff and other invited guests in Washington, D.C.

7. References

- Agbor-Tabi D. 1987. Report of a mission to Mayo Sava Division for investigation of dracunculiasis. Report to the Ministry of Public Health, Cameroon.
- Agbor-Tabi D. 1989. Progress of the programme for elimination of Guinea worm in Cameroon. Report to the Ministry of Public Health, Cameroon.
- Dama M. 1989. Rapport de l'enquête domiciliaire effectuée dans le cadre de la surveillance active des cas de Guinée dans le Mayo-Sava: du 23 Octobre au 9 Novembre 1989. Report to the Ministry of Public Health, Cameroon.
- Issoufa H, Monekosso G, Ripert C. 1979. Etude épidémiologique de la dracunculose chez les Podokwos des Mont Mandara (Nord-Cameroun). Bull. Soc. Pathol. Exot., 72: 135-144.
- Kollo B. 1989. Evolution du programme d'eradication de la dracunculose en République du Cameroun. Annual Report on Guinea Worm Activities for 1988 for the Ministry of Public Health, Cameroon.
- Richards F. 1986a. Dracunculiasis in the United Republic of Cameroon I: A proposal for a national plan of action for dracunculiasis control and elimination. Vector Biology and Control Project Report No. CE-010.
- Richards F. 1986b. Dracunculiasis in the United Republic of Cameroon II: Background/reference information. Vector Biology and Control Project Report No. CE-010.

Annex 1
People Contacted

Annex 1. People Contacted

- * Dr. Owona Essomba Reneh Director of Preventive Medicine, MOPH
- * Dr. Kamwa Mathieuh Deputy Director of Preventive Medicine, MOPH
- * Dr. Sam-Abbenyi Amos Subdirector of Epidemiology, Department of Preventive Medicine, MOPH & Coordinator of National Task Force for Guinea Worm Eradication
- * Dr. Hamidou Issoufa Provincial Delegate, MOPH, Extreme-North province
- * Dr. Dama Manah Departmental Chief of Service, MOPH, Mayo-Sava Department
- Dr. Bahebeck Jean P Chief of Hospital, Kolofata, Mayo-Sava Department
- Mr. James Washington P USAID Cameroon: Head EHRP
- * Mr. Richard Greeneh P USAID Cameroon: Health Officer
- Mr. Juan Fernando Aguirre P UNICEF/Cameroon: Country Representative
- * Mr. Mohamed Bendriss Alami UNICEF/Cameroon: Program Director Rural Water and Sanitation
- Ms. Judy Collins CARE/Cameroon: Director
- * Mr. Michel Larouche CARE/Cameroon: Deputy Director
- Dr. Seumo Fosso Eleonore CARE/Cameroon: Health Coordinator

4/B

- * Mrs. Deborah Agbor-Tabi Peace Corps/Cameroon: Associate Director for Health and Community Development
Mr. Larry Kaye Peace Corps Volunteer, Mora

- Mr. Noah Modestus Director de l'Atelier de Matériel Audio-Visuel (AMA)

- Ms. Jacqueline Bouwman Cadre Audio-Visuel d'AMA

- * Dr. Jean-Philippe Chippaux Centre Pasteur Yaounde (ORSTOM)

- * Dr. Desfontaine OCEAC Mr. Timothy Manchester Save the Children Director: Cameroon

- * Representative to the National Task Force for Guinea Worm Eradication

Annex 2

**Meeting Announcement for the National Task Force
and the National Plan of Action**

N° D31 /MP/MSP/SG/DMPR/DAMPR/SDE:-

 MESSAGE // ORTE

Les destinataires du présent message sont invités à assister personnellement à une réunion qui aura lieu le **Vendredi 29 Juin 1990 à 15H précises** au Bureau du Directeur de la Médecine Préventive et Rurale.

L'ordre du jour portera sur :

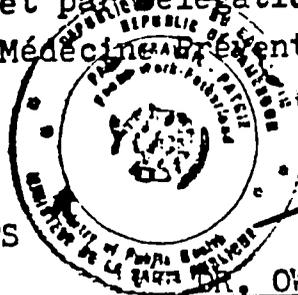
- (1) Le financement des activités de l'élimination de la dracunculose au Mayo Sava en 1990
- (2) La microplannification au Mayo Sava présentée par
Le Dr Dama Mana et
Le Dr George Greer
- (3) La gestion des ressources mobiles

DESTINATAIRES

- Dr OSSENI, UNICEF
- Mr ALAMI, UNICEF
- Mr MBOUZOKO, OMS
- Mr CHENDJOU, MINEER
- Dr KAMWA, MINSAP
- Dr SAM-ABBENYI, MINSAP
- Prof SAME-EKOBO, CUSS/CHU
- Dr DESFONTAINE, OCEAC
- Dr CHIPPAUX, CPC
- Mrs AGBOR-TABI, PEACE-CORPS
- Dr GREER, USAID/VBC
- Dr ISSOUFA, DSSP/ES
- Dr DAMA, CSDSP/MS
- ARCHIVES/CHRONO.-

YAOUNDE, le **27 JUIN 1990**

Pour le Ministre de la Santé Publique et par déléation, le Directeur de la Médecine Préventive et Rurale.



DR. OWONA ESSOMBA René

N.B. : UNICEF, Bien vouloir prendre en charge le transport et per diem du Dr Hamidou Issoufa et du Dr Dama Mana.

43

MINISTRY OF PUBLIC HEALTH

REPUBLIC OF CAMEROON
Peace-Work-Fatherland

REPUBLIC OF CAMEROON
NATIONAL PLAN OF ACTION FOR THE ERADICATION OF
DRACUNCULIASIS IN CAMEROON BY DECEMBER 1993

44

SUMMARY

The political and administrative will and the means for eradication of Guinea worm in Cameroon have now come together. With assistance from NGO's, such as UNICEF, WHO, CARE, Global 2000 and others, a multidisciplinary approach will be used to achieve eradication by December 1993. Abate and monofilament (nylon) filters are now available free of charge and will be distributed to African countries by UNICEF. Provision of safe drinking water in endemic GWD villages will be top priority for well projects.

The principal objectives of this plan are:

- to complete the epidemiologic map of Guinea worm disease in Cameroon by December 1990
 - to undertake community mobilization and animation in the eradication program
 - to provide a safe drinking water supply to all endemic villages by April 1991
 - to continue chemical treatment of water points with Abate
- Health education will be used to inform all individuals

in endemic area of:

- how the disease is acquired
- how they may avoid infection by drinking only parasite-free water, that is, water that has been filtered or taken from a covered well
- how the community can avoid risk by preventing infected individuals from entering drinking water sources

Standardize forms will be used to record all cases in each village and all team activities. This will insure that the program can be easily monitored at both the divisional and national level.

MINISTRY OF PUBLIC HEALTH
-----REPUBLIC OF CAMEROON
Peace-Work-Fatherland

REPUBLIC OF CAMEROON
NATIONAL PLAN OF ACTION FOR THE ERADICATION OF
DRACUNCULIASIS IN CAMEROON BY DECEMBER 1993

INTRODUCTION

It has been estimated that between 5 and 15 million people are affected by dracunculiasis (Guinea worm disease) annually, with at risk population of 120 million in Africa and 20 million in Asia (1,2,3). Cameroon, with a well defined endemic region in the Mayo Sava where about 800 cases are actively detected yearly (4,5), stands as one of the first African countries where dracunculiasis could relatively quickly eliminated.

In 1976 the first report of Guinea worm disease in Cameroon was made by Hamidou Issoufa. Dracunculiasis was officially made reportable in 1982 (6), but data collection did not start until 1984. However, the disease was known to exist in the Far North and North Provinces of the country. There were also unconfirmed reports in the Adamawa and South-West Provinces (Fig.1). Until 1986 the Ministry of Public Health was concentrating more in the elaboration of a surveillance system rather than developing a programme for the elimination of the disease.

The University of Bordeaux II sponsored a two-year control project in the Mandara Mountain area of the Mayo Sava Division beginning in 1984 (7). That programme, which began with the mapping of wells in the primary endemic region, was extended for two years and included temephos treatment of a large number of suspected sites of transmission between 1984 and 1988. Professor Ripert and others worked closely with health personnel and local authorities in this venture hence the consequent reduction in dracunculiasis prevalence (7). Although it was found that temephos significantly reduced the prevalence of dracunculiasis, it failed to eliminate the disease in a subsequent two-year trial (10).

In July and August 1986 the Vector Biology Project of the United States Agency for International Development became involved. Dr. Frank Richards of Centers for Disease Control (U.S.) worked with that project and scientists from Ministry of Public Health to develop a plan of action for eradication of Guinea worm by 1993 (3). The objectives of that plan were to:

- delimit the region to target for control efforts
- establish, evaluate and perfect the control programme
- systematically eliminate dracunculiasis from the country by 1993

Phase I of that action plan, scheduled for 1987-1990, concentrated on the first two objectives, through strengthening of the national surveillance and initiation of a pilot control programme in the Mayo Sava Division.

Work on the first objective began with a review of all passive case reports. After eliminating spurious reports from various regions of the country, passive case detection indicated that the disease was limited to the three northern provinces. The extent of the disease in that region was further defined, first through a questionnaire survey and then by an active case search in villages where the disease was reported. Active cases were ultimately found in two endemic areas. One around Mora, Mayo Sava Division, Extreme-North Province, which had a long history of GWD, and another near Pitoa in the North Province. The latter focus of infection was a recently developed as a result of relocation of infected individuals. Although the disease had established in Pitoa, recent improvements in the water supply indicated that GWD was dying out there.

Extensive active case searches were also carried out in 1989 and dracunculiasis cases were found in two new villages: Oudjeda and Ndaba (1,5). Ndaba and Kerewa are found at the border with the Federal Republic of Nigeria and wells are found in Nigeria

Objective two was partially satisfied by pilot control studies in the Mayo Sava Division. The health education component was first based on an initial knowledge, attitude and practices (KAP) study. GWD was recognized by 95% of those interviewed, 75% thought that GWD transmission was directly linked with water while 70% believed that the latter took place during the rainy season (9).

An attempt was made to estimate the financial requirement for safe water supply to endemic villages in Mayo Sava by the rural development officer of that division (9)

STATEMENT OF THE PROBLEM

Human dracunculiasis is an important preventable health problem in the northern provinces of Cameroon. The population residing in provinces with known or suspected dracunculiasis transmission is 3,554,306 inhabitants or 31% of the estimated population of Cameroon in 1990. The population of 16 endemic villages in Mayo Sava Division is about 10,000. In 1989, 871 GWD cases were identified, giving an approximate prevalence of 8.7%. However, the distribution was far from balanced and some villages had high prevalences, the highest being Sanda Wadjiri with 57%.

Guinea worm is a very painful, debilitating disease, which can immobilize an infected individual for up to three months. The wounds, left open during the worm extraction, often lead to secondary infection, which this has long been recognized as a major source of tetanus (11). In combination with various secondary infections GWD may permanently crippled or, in rare cases, kill infected individuals.

Families of subsistence farmers are most often afflicted

and, coming as it does during the planting and harvest seasons, GWD generally causes significant agriculture loss. This loss will have obvious effects at the family level and it can lead to malnutrition in families and communities that are marginally self-sustaining. Furthermore, when GWD occurs in highly productive agricultural regions it can have major economic consequences at a regional or even national level.

Another major consequence of GWD is increased absenteeism from school. This creates a vicious cycle of ignorance and disease that is difficult to break. Thus, immediate action is needed to eliminate this parasite from Cameroon.

GOAL

The goal of the Cameroon Guinea Worm Eradication Programme is to eliminate all cases from Cameroon by the end of 1993. Confirmation of eradication should be completed by 1996.

OBJECTIVES

The objective of this work are:

- to complete the epidemiological map of Guinea worm disease in Cameroon by December 1990
- to undertake community mobilization and animation in the eradication program
- to provide a safe drinking water supply to all endemic villages by April 1991
- to continue chemical treatment of water points with Abate

COMPONENTS OF THE STRATEGY

A. NATIONAL DRACUNCULIASIS DAY

National Dracunculiasis Day was held Monday June 4, 1990 under the patronage of the Hon. Minister of Public Health. Its goal was to inform, sensitize and mobilize the administrative, political and traditional authorities as well as health personnel, non-governmental organisation, etc. in order to acquire their support and active participation in the eradication programme. It also provided a forum to announce publicly the intention and determination of the government and people of Cameroon to eradicate GWD by 1993.

The objectives of the National Dracunculiasis Day were:

1. To inform Cameroon authorities that dracunculiasis is a public health problem in endemic regions.
2. To demonstrate the social and economic effects of GWD
3. To convene the mobilization of resources (human and financial) required for the eradication programme from local, national and potential international donors, such as UNICEF, Global 2000, etc.

4. To initiate community participation in the eradication effort.

Appendix 1 gives the programme of the National Dracunculiasis Day.

During the dracunculiasis day results of the previous active case searches in 1988 and 1989 in the Mayo Sava were discussed. The Government of Cameroon announced that the identified endemic villages will be given priority for any water supply projects. Furthermore, the intersectorial approach to GWD eradication was enhanced: Ministries of Public Health, Agriculture, Mines, Water Resources and Energy, Information, National Education, Social and Women's Affairs, the CPDM Party, the NGO's (CARE, UNICEF, WHO, Peace Corps), Missions, OCEAC, MIDIMA, Centre Pasteur and traditional rulers committed themselves to the eradication effort.

A Nation Dracunculiasis Day will be held each year until 1993 and review the progress of the previous year and cover pertinent topic for the coming transmission season.

B. SURVEILLANCE

Maintaining surveillance is essential to eradication of Guinea worm. An annual active search for cases will be conducted in all villages of the Mayo Sava Division. There now exist a cadre of trained and experienced investigators in Mayo Sava to conduct the search which, combined with knowledge of endemic areas, should result in more efficient subsequent searches over time.

The object of the dracunculiasis elimination program is to reduce prevalence of the disease in Cameroon to zero by the year 1993. Implicit in this goal is the need for locating all endemic villages and adequate documentation of the reduction of the cases of disease resulting from control efforts. Certification of elimination by the WHO will be possible only if an adequate surveillance system documents that no indigenous cases are detected during a period of three years after the last known case occurred.

Therefore critical to the proposed effort is the organization and maintenance of village-based active case detection system to permit precise monitoring of the prevalence of disease annually. Villages will be mapped and a house-to-house census carried out. (Due to time constraints this activity will be carried out after the end of the 1990 transmission season.)

In view of the current moderate overall prevalence of dracunculiasis (<20%), and the anticipated need for surveillance activities for three years after all transmission has halted, it is proposed that the active surveillance system also collect information regarding other health of vital events from those populations affected by dracunculiasis, e.g. births and deaths of children.

A registry of dracunculiasis cases, including information on other health or vital events, is to be maintained by a literate

resident in each affected village. A village health worker must visit all of the village households each month to determine if dracunculiasis cases have occurred, to record information pertaining to each and to report cases to their supervisor.

C. HEALTH EDUCATION AND CONTAINMENT OF CASES

Health education has two major objectives:

1. To promote community action regarding the filtration of all unsafe drinking water
2. To deter infected persons from entering sources of drinking water.

Health education will be directed at the village level with particular emphasis on women. In order for health education to be successful, it must be supported by divisional and local authorities. Provisions must be made for transport of eradication teams to villages in order to insure a continuous process. Basic health education and follow-up should also emphasize community self-help programmes.

Strategies and materials for educational presentations will be developed under contract with the Atelier de Matériel Audio-Visuel (AMA) located at the Catholic Mission-Mvolye, Yaounde. A basic presentation package will be prepared in July 1990 and field tested during the 1990 transmission season. It is of primary importance that the presentations be given in the local language. Secondly, when possible, local beliefs about Guinea worm disease will be taken into consideration and used to improve the presentation.

In 1991 the AMA will improve the presentation material based on the 1990 results. Knowledge, attitude and practices (KAP) studies may also be carried out on a limited basis during 1990 and those results will also be useful in further developing presentation suited to the local situations.

The initial educational presentations will be carried out at village meetings arranged by health outreach teams. Presentation will be done by animators from Community Development, Mora or CARE. Points covered in these presentations will be:

1. How Guinea Worm disease is contracted.

A series of displays will show stages in the life cycles and give an explanation of how the infection is acquired.

2. What an individual can do to avoid infection.

Drink only parasite free water, i.e. water that has been filtered or water from a pump well.

- (a) Demonstration of the removal of copepods by filtering water.
- (b) Demonstration of the use of the Ghana-type filter.
- (c) Demonstration of use of other filtering systems.

3. What the community can do to reduce infection.
 - Infected individuals must not be allowed near drinking water sources.
 - (a) An infected individual can prevent his own reinfection and infection of other family members by avoiding drinking water sources.
 - (b) Family members and the community must assist by assigning someone to fetch water in place of the infected individual.
 - (c) Wounds must be wrapped with an occlusive bandages at all times.
4. Use of temephos is essential to the eradication program and community acceptance is needed.
 - (a) Temephos application can stop once and for all only after Guinea worm disease has been eradicated. Thus, treatment of water sources will end as soon as the community works together to eliminate Guinea worm. This point may be used to gain community cooperation.
 - (b) It will be made clear to the community that although temephos may give a unpleasant taste to the water for some hours after application, it is completely harmless to man and animals. It will also be pointed out that temephos will be applied monthly during the transmission season or roughly 4 times per year. This inconvenience is a small price to pay for reduction in cases of Guinea worm disease.
 - (c) The community can assist in the effectiveness of the temephos, by clearing vegetation for the sources to be treated.
5. Villagers should be convinced of the importance of reporting cases to the appointed VHW or village chief.
 - (a) Proper treatment for the wound can be given only after reporting to the VHW or village chief.

Following the presentation, the eradication team and the senior village members will agree on a plan of action for each household/village that will establish a system for:

1. Prompt reporting of cases to the village health worker or other appointed individual.
2. Fetching of water by someone other than the infected individual.
3. Advising the case not to enter sources of drinking water.
4. Providing medical care of lesion (i.e. topical antibiotics and occlusive bandage to prevent secondary infection).

D. PROMOTION FILTER USE

The advantage of using filters is that each family can protect itself without depending on the goodwill of the entire community. The use of filters will be demonstrated during the first village

meeting as part of the education component. Following the that meeting, worker will go house-to-house and give out filters for general household use and the use of filters will be emphasized.

There are several options to providing filters to families at risk:

1. Purchase local adaptation of monofilament filters.
2. Use locally manufactured cloth.
3. Import monofilament filters.

All options will initially be pursued with the ultimate idea of producing locally manufactured filters.

To improve filter use it may be necessary to customize the use of filters for villages/households. Methods will be devised to improve compliance, for instance, it may be necessary to provide filters individually to persons who spend time working far from home and drink from various water sources. Improved compliance at the household level may involve the use of creative filtering systems, such as the Ghana-type filter.

If filtering adds work to the task of water gathering compliance will be low. Thus, the program should seek novel ways of integrating filtering into the villagers existing system of water gathering and use. This would not only save the villagers time and effort, but would allow filtering to become an automatic part of the process, not an added step. Observations on water collection, storage, and use, both in and away from the home, will be carried out in order to develop approaches that integrate filtering into the existing systems.

E. CHEMICAL CONTROL OF COPEPOD INTERMEDIATE HOSTS.

Because sources of drinking water are discrete, used by all villagers and small in volume, i.e. less than 100 cubic meters, treatment with temephos (Abate) to control the populations of the copepod intermediate hosts is an important component of the overall eradication strategy. Using our current knowledge of the sources of drinking water in the Mayo Sava, and of the occurrence of Guinea worm between the months of May and September, higher level personnel in the program will be trained to apply temephos monthly to all drinking water sources.

Villagers, particularly village leaders, must be convinced of the necessity of this program in spite of the effects of treatment, i.e. giving water an unpleasant taste for some hours after application. To minimize this, applications should be made after the majority of villagers have completed their daily water collection. Villagers should be recruited to assist this program by removing vegetation from the water source, which will enhance the effectiveness of the temephos application.

This activity will continue throughout the 1990 and 1991 seasons.

F. PROVISION OF SAFE DRINKING WATER SOURCES

The best solution to eradicate Guinea worm is to provide a safe drinking water source of all. Guinea worm is the only disease which can be totally eliminated by provision of safe drinking water. Safe water may consist of: piped water, catchment plans, hand dug wells, covered wells or boreholes.

Various government agencies and other organization working to provide safe water sources will give priority to villages with Guinea worm. The Ministry of Mines, Water Resources and Energy will work in close collaboration with the Ministry of Health, UNICEF, the World Bank, the Islamic Development Bank, CARE and MIDIMA to help ensure that villages with Guinea worm receive priority for adequate water supply.

G. EVALUATION

Evaluation will be carried out throughout the project life (1990-1994). Monthly reports of cases from villages will be collected and compiled at the Division Headquarters for immediate use in ascertaining trouble spots. Supervisors of the 5 teams formed to carry out village level work will make monthly house-to-house visits.

Supervisors will at that time attempt to assess the accuracy of the village maintained registry on a monthly or bimonthly basis. They will also, through observations and interviews with patients and household members, determine:

1. That wounds are regularly wrapped with occlusive bandages
2. That someone has been assigned to fetch water for the patient
3. That the patient has been to a drinking water source after the emergence of the worm.

All information will be recorded on forms and evaluated at the Division Headquarters. Summaries of this information will be passed on to the National Task Force on a regular basis.

The effectiveness of temephos applications will be assessed by sampling for copepods at randomly selected treated sites two weeks and one month after application.

An independent team appointed by the National Task will evaluate the overall efforts in March 1991 and March 1993.

H. SEARCH FOR OTHER CASES IN THE MAYO SAVA.

Following the transmission season in 1990 and 1991, nurses and health workers from throughout the Mayo Sava will participate in a training course on Guinea worm disease. Villages throughout the division will then be monitored during the following transmission seasons for Guinea worm disease. The overall coordination of this program will be carried out by the Chief of Service of Public Health, Mayo Sava.

I. NATIONWIDE SEARCH FOR CASES.

A nationwide search for cases will be undertaken beginning in November 1990. The overall coordination of this activity will fall to the National Coordinator of the Guinea Worm Eradication Programme. This effort may also require an input from international organizations such as UNICEF, Global 2000, USAID, etc.

GENERAL ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIESThe National Task Force

The National Task Force (NTF) will be responsible for the coordination, supervision and periodic evaluation of Guinea worm eradication activities in divisions where the disease is prevalent. There will be a report of activities at the end of each year. The national task force will also be responsible for eradication activities and monitoring of villages along the Nigerian border to guard against reintroduction of Guinea worm.

The National Task Force for the eradication of dracunculiasis will consist of:

- The National Coordinator of the Eradication Programme at the Ministry of Public Health
- The Chief of Service of Control of Epidemic Diseases
- The Divisional Chief of Service for Public Health of Mayo Sava.
- A representative of the Ministry of Mines, Water Resources and Energy.
- A representative of the Ministry of Social and Women's Affairs
- A representative of CUSS
- A representative of OCEAC
- A representative of Peace Corps
- A representative of CARE

The NTF will be advised by representatives of UNICEF and WHO.

The Divisional Task Force

The Division Task Force will consist of:

- The Divisional Chief of Services for Public Health.
- The Chiefs of Health Services at the sub-Division.
- The Divisional Primary Health Care Coordinator.
- The Division Delegate of Agriculture.

54

- The Divisional Chief of Service of Mines, Water Resource, and Energy.
- The Divisional Inspector of Primary Education.
- The Divisional Chief of Service of Information.
- The Divisional Chief of Service of Social and Women's Affairs
- The representative of missions of NGO's and traditional rulers
- UNICEF/USAID appointed counterpart to the Divisional Chief of Service for Public Health. Will assist Divisional Chief during transmission season.

The divisional task force will be charged with carrying out eradication activities within its division. The main interventions at the divisional level are surveillance, health education (to encourage use of safe water and use of filters), treatment of water with temephos to kill the copepod intermediate hosts, early case detection and case containment and provision of safe water supply on a priority bases to the affected villages which may mobilize themselves to take control measures.

Because GWD affects so many sectors of society (primary health, education, and agricultural production), and requires input of diverse organizations (FHC, rural water supply, education, agriculture, etc.) the programme must be an integrated, cooperative effort with broad representation and participation of involved parties.

The primary health care approach will use the same infrastructure and personnel, especially for health education and surveillance as that being used for ORT, EPI, etc.

Divisional Chief of Service of Public Health

This person will be responsible for the day-to-day implementation of the plan. Due to the numerous other responsibilities of the Chief of Service of Primary Health Care, a UNICEF/USAID consultant will be appointed as counterpart to the Chief of Service and assist in operational aspects of the eradication programme.

Health Outreach Teams for Guinea Worm Eradications (HOT)

Teams will be composed of one or two mid-level workers (e.g. Government of Cameroon Health nurses or other health workers, CARE coordinators, Peace Corps volunteers, missionary workers, etc.) and a guide/translator. These teams will be responsible for a set of villages where they will set up the standardized surveillance system, treat wells with temephos on a routine basis, and monitor closely the compliance of villagers with control measures, i.e. wrapping wounds with occlusive bandages, keeping infected individuals away from drinking water sources, reporting new cases promptly, etc.

55

Animators from the Service of Community Development (Mora), CARE and perhaps other organization will coordinate the health education programme. The HQTs will make logistical arrangements for these presentations and assist in the presentations.

The HQTs will be trained by the Divisional Chief of Service and the UNICEF/USAID consultant to carry out these activities.

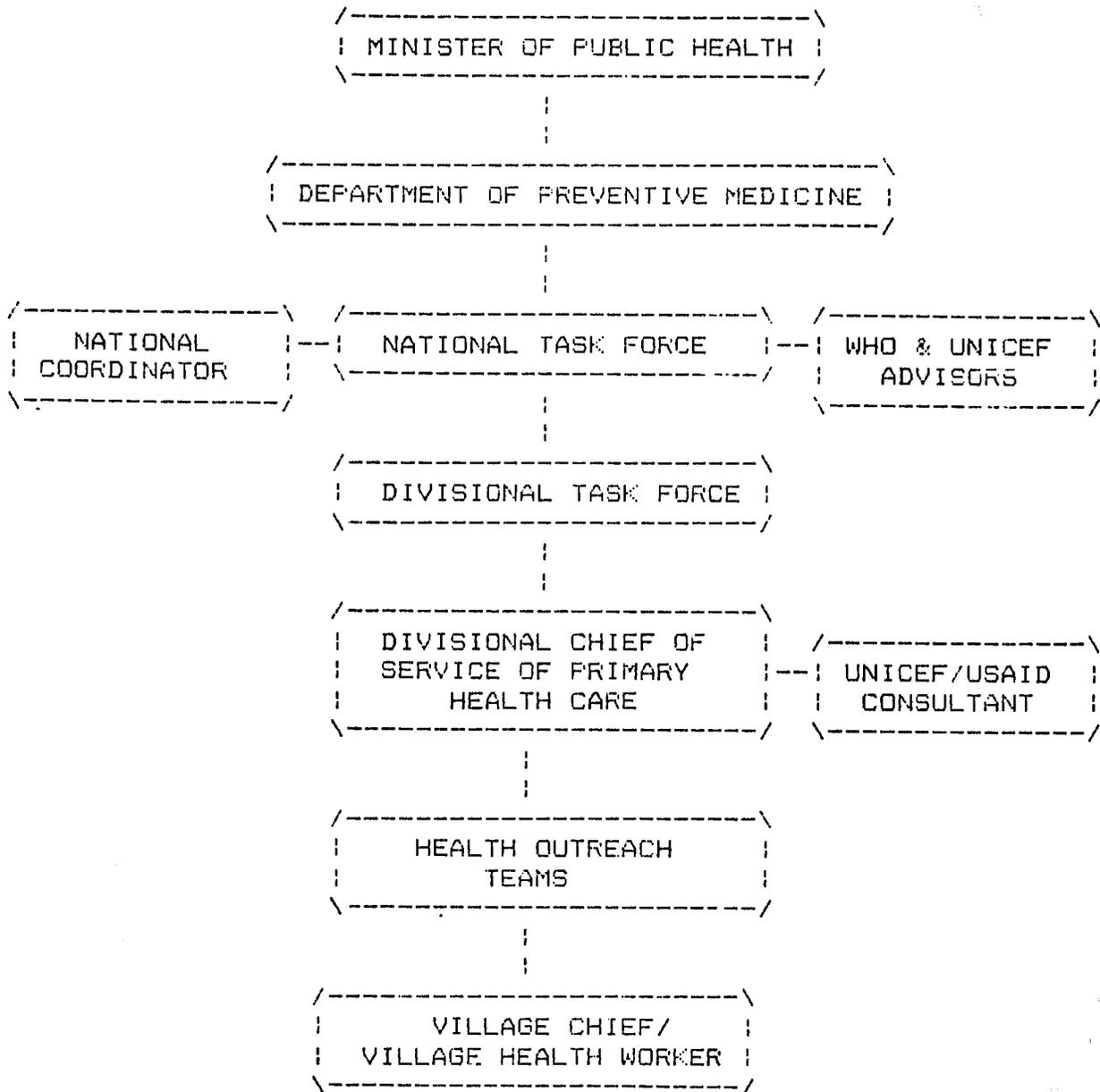
Village Chief/Village Health Workers

The HQTs will first contact the head of each of their assigned villages. A villager will be chosen as the main representative for the Guinea Worm Eradication Program. In villages where individuals have already been identified by the government or PVO as Village Health Workers (VHW), these will probably be the most suitable candidates. In cases where the Village Health Worker isn't fluent in the local language, another villager should be asked to join the team.

The HQTs will set up the surveillance system with the VHW as the person responsible for maintaining an accurate case registry. He/she will also be responsible for continued promotion and monitoring of the use of ritters in the village and for insuring new wounds are quickly treated with antibiotic cream and wrapped with occlusive bandages.

The village chief he should also be asked to serve as an advocate for the eradication program and use his influence to insure compliance by the majority of villagers. The chief should be involved as much as he is willing to be and it may in some cases be appropriate to have the chief maintain the case registry with the support of the VHW.

ORGANIZATIONAL CHART



51

BENCHMARKS

1. June 4, 1990: convene the first national Dracunculiasis Day.
2. June 15, 1990: initiate continuous house-to-house active case searches in all endemic villages.
3. June 15, 1990: begin temephos treatment of water sources in endemic region.
4. July 15, 1990: begin health education training courses for Health Outreach Teams in Mayo Sava.
5. November 1990: begin nationwide search for cases.
6. November 15, 1990: hold training courses for nurses and ASC from throughout Mayo Sava.
7. March 1991: Training course for personnel involved in national search for cases outside Mayo Sava.
8. April 1991: Every endemic village in Mayo Sava will have safe drinking water supply.
9. May 1991: Begin second year of intensive eradication effort in Mayo Sava.
10. June 1991: Begin intensive search for other foci of GWD in the Mayo Sava.
11. May 1992: Begin surveillance to confirm elimination of GWD from Cameroon.

SB

		BUDGET (\$ US)			
1. LABOR AND PERSONNEL		1990	1991	1992	1993
<u>Eradication in Mayo Sava:</u>					
1.1 First level:					
	Incentive pay to VHW	1,500	1,500	1,500	1,500
	Training VHW	1,000	1,000	-----	-----
1.2 Second level:					
	Per diem (weekly HOT visits to each village)	5,000	5,000	5,000	5,000
	Training (HOT's)	2,000	2,000	-----	-----
a	Peace Corps volunteers	(1) 25,000	(2) 50,000	(2) 50,000	-----
1.3 Third level:					
b	Chief of Service of Public Health - Mayo Sava (20% for 6 mo)	-----	-----	-----	-----
c	UNICEF/USAID Consultant (3 mo.) transport, per diem, salary) (1993 is for evaluation)	30,000	(2 mo) 25,000	(1 mo) 15,000	(2 mo) 25,000

All budgetary items are for consideration by UNICEF except:
(a)- for consideration by Peace Corps
(b)- Government of Cameroon contribution
(c) for consideration by USAID
(d) for consideration by Global 2000

Search for New Cases in Mayo Sava:

1.4 Second level:

Indemnité forfaitaire for 2 months of 20 nurses from throughout Mayo Sava	3,000	3,000	3,000	3,000
b 30% Salary for 2 months for 20 nurses from throughout Mayo Sava	-----	-----	-----	-----
Per diem for ASC's (60)	4,000	4,000	-----	-----
Training (Nurses and ASC's)	2,000	2,000	-----	-----

1.5 Third level:

Chief of Service-Mayo Sava (15% time for 3 mo.)	-----	-----	-----	-----
Per diem for 4 Supervisors	2,000	2,000	2,000	2,000

2. TRANSPORTATION

2.1 Vehicles:

Double cabin pick-up	35,000	-----	-----	-----
Suzuki 100 A motor bikes - 6	20,000	-----	-----	-----
2.2 Fuel and Maintenance	10,000	10,500	11,000	11,500

3. MATERIALS AND SUPPLIES

3.1 Field

GPS Units (geographical location devices)	7,000	-----	-----	-----
Educational materials	3,000	3,000	-----	-----
Camera	500	-----	-----	-----
Filters	4,000	4,000	-----	-----
d Abate	3,000	2,500	-----	-----

3.2 Office

Electric Typewriter	1,500	-----	-----	-----
Photocopier	4,000	-----	-----	-----
Mimeograph machine	1,500	-----	-----	-----
Personal computer	3,500	-----	-----	-----
Soft ware	2,000	-----	-----	-----
Supplies	2,000	2,000	2,000	2,000

3.3 Medical

Supplies	3,000	2,500	2,000	1,500
----------	-------	-------	-------	-------

4. GUINEA WORM DAY	7,000	7,000	7,000	7,000
--------------------	-------	-------	-------	-------

5. MISCELLANEOUS	7,000	5,000	3,000	2,000
------------------	-------	-------	-------	-------

ANNEX 2, p.19

BUDGETRY JUSTIFICATIONS

1. LABOR AND PERSONNEL

1.1 Village health workers will be given 1,000 CFA/week throughout the transmission season (mid-May to mid-September). For 16 villages this would come to 320,000 CFA annually.

1.2 Per diem pay for Health Outreach Teams. These 5 teams will make weekly visit to all villages which will require three days each week. The team will be composed of a team leader, preferably a nurse, and a translator. Per diem for these persons will be 2,000 and 1,000 CFA respectively. For team leaders this comes to 1,200,000 CFA annually for translators 600,000 CFA for a total of 1,800,000 CFA

Training costs will involve per diem and materials for HOTs for approximately one week each year.

1.3 Chief of Service of Public Health and consultant costs are determined by their respective institutions.

1.4 Twenty nurses from throughout the Mayo Sava will work for two months with the search for new cases. The indemnité forfaitaire/month for each is 20,000 CFA. Thus the total for the two month period is 800,000 CFA.

Per diem for ASCs is 2,500 CFA. They will work one week with the survey thus the total per diem costs for 60 ASCs will be 1,050,000 CFA.

Training costs include per diem and materials for a three day training in Mora.

1.5 The indemnité forfaitaire for four supervisor of this program will be 40,000/ month. Thus for two months the total will be 320,000 CFA.

2.1 One four wheel drive vehicle is needed for transport of the educational team, supervisors, etc. Motor bikes are needed for the five HOTs and one extra for use in Mora or in case one breaks down.

2.2 Fuel and maintenance costs are difficult to predict so the figure represents a rough estimate.

3.1 All these materials are required to carry out the tasks outlined in the plan. The costs are based on estimates from sources in Cameroon.

3.2 All materials are needed to support the activities outlined in the plan and costs are based on estimates of costs for duty free items purchased overseas or in Cameroon.

3.3 Cost of sterile bandages, topical antibiotic ointment, penicillin, alcohol, mercurachrome, etc. purchased

locally in Cameroon.

4. Costs for Guinea Worm Day are based on the present estimate of the cost of the 1990 Guinea Worm Day.
5. Miscellaneous cast are needed for cost overruns etc.

REFERENCES

1. Hopkins, D.R. (1988) Dracunculiasis, the tide has turned. Lancet 2, 148-150.
2. Watts, S.J. (1987) Dracunculiasis in Africa: its geographic extent, incidence and at risk population. Am J Trop Med Hyg 37, 121-127.
3. World Health Organisation (1987) Dracunculiasis global surveillance summary - 1986. Wkly Epidem Rec 62, 337-339.
4. Mouagound, J.-D. (1989) Comparaison des surveillances active et passive dans la lutte contre la dracunculose dans le département de Mayo Sava (Mora), République du Cameroun. Mémoire YSSP/EA OCEAC, Yaoundé (Cameroun) 55p.
5. Dama, M. (1989) Rapport de l'enquête domiciliaire effectuée dans le cadre de la surveillance active des cas de ver de Guinée dans le Mayo Sava du 23 Octobre au 9 Novembre 1988 - Doc poly copie 7 p. 08/11/89.
6. Plan of Action for Eradication of Dracunculiasis by 1993. Ministry of Public Health (1986).
7. Ripert, C.H., Roche, B. Couprie, B. Pataumo., E. Same-Ekobo, A. & Kollo, B. (1987) Epidémiologie de la dracunculose dans les Monts Mandara (Nord Cameroun) Med Trop 47, 133-139.
8. Kollo, B. & Agbor-Tabi, D. (1987) Rapport d'enquête C.A.P. Ministère de al Santé Publique du Cameroun. Doc Polyc non-diffusé.
9. Agbor-Tabi, D. & Kollo, B. (1987) Effectiveness of Abate in reducing dracunculiasis transmission in Mayo Svav Division. Report of Mission, Ministry of Public Health. Cameroon, 9p.
10. Laudkner, T. R., Ramkin, A. M. & Adi, F. C. (1961) Analysis of medical admissions to Univeresity College Hospital, Ibadan. W Afr Med J 10, 3.
11. Eriegar, W. E., Ramakrishna, J. & Adeniyi, J.D. (1985) Selecting alternative strategies for community health education in Guinea worm control. Int Octly Comm Health Ed 5, 313-320.

Annex 3

**Letters from the Ministry of Public Health to UNICEF
Requesting Commodities and Operational Funds**

N° 131 /L/MSP/SG/DI.FR/DANTE/SDE/SL.-

11. 09. 1992

Yaounde, le
the

19

Réf. :
Ref.

Le Ministre de la Santé Publique
The Minister of Public Health

Objet : Matériel d'appui du
Subject Plan National
d'éradication de la
Dracunculose.-

à Monsieur le Représentant de l'UNICEF
to au Cameroun

YAOUNDE

Monsieur le Représentant,

Dans le cadre de l'exécution du Plan National d'éradication de la Dracunculose au Cameroun,

J'ai l'honneur de vous demander de bien vouloir mettre à ma disposition le matériel déjà disponible que vous vous êtes engagé à fournir au Ministère de la Santé Publique.

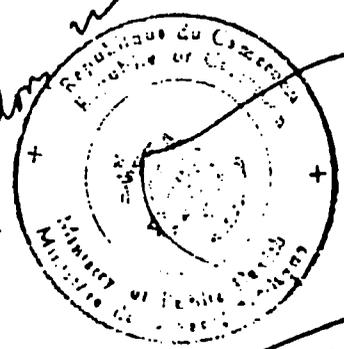
Il s'agit notamment de :

- un véhicule Pick-up double cabine
- 6 motos SUZUKI 100 A
- 2 GPS.

Je vous saurais gré de bien vouloir assurer le transport des motos jusqu'à MORA.

Veuillez agréer, Monsieur le Représentant, l'expression de ma considération distinguée./-

*D.S.
J'ai fait le nécessaire
- vérifiez si les motos de japonais
sont (disposés) sont conf. à la
demande (S 100A).
- les 2 GPS pour attendre
à l'adresse Nifera*



Pr. Joseph MBEDE

76

/L/MSP/SG/DMFR/DAMFR/SDE/SE.-

Mise en oeuvre du Plan
National d'Eradication
de la Dracunculose.-

Monsieur le Représentant de l'UNICEF
au CAMEROUN

YACOUNDE

Monsieur le Représentant,

Dans le cadre de la mise en oeuvre du Plan National d'Eradication de la Dracunculose du MAYO SAVA,

J'ai l'honneur de vous demander de bien vouloir prendre en charge les frais ci-après :

1°)- Achat de Matériels

- un appareil Photo OLYMPUS Infinity 300 avec Zoom
- un microordinateur compact SLT 286
- une imprimante EPSON LQ 950
- un photocopieur SHARP Z 55
- une machine à écrire électronique CANON ES 10.

2°)- Prestation de Service

- Etude de la réalisation du matériel éducatif par l'AN.A.

3°)- Formation des agents de santé communautaire.

Je vous prie d'agréer, Monsieur le Représentant, l'assurance de ma haute considération./-

MINISTRE DE LA SANTE PUBLIQUE
MINISTRY OF PUBLIC HEALTH

REPUBLIQUE DU CAMEROUN
Paix — Travail — Patrie

REPUBLIC OF CAMEROON
Peace — Work — Fatherland

N° D31/L/MSP/SG/DMFR/DASPR

Yaoundé, le 27 JUL 1980 19

Réf. :
Ref.

Le Ministre de la Santé Publique
The Minister of Public Health

Objet : Mise en oeuvre du plan national
Subject

d'Eradication de la Dracuncu-
culose dans le Mayo Sava./-

à M ONSIEUR LE REPRESENTANT DE L'UNICEF
to

AU CAMEROUN

YAGOUNDE

Monsieur le Représentant,

Dans le cadre de la mise en oeuvre du plan National d'Eradication de la Dracunculose,

J'ai l'honneur de vous demander de bien vouloir faire ouvrir et approvisionner un compte bancaire à Maroua pour permettre et faciliter le financement des activités locales ; la gestion dudit compte est placée sous la double responsabilité du Délégué Provincial de la Santé Publique de l'Extrême-Nord et du chef de service départemental de la santé publique du Mayo-sava.

La première provision de ce compte intitulé "Eradication de la Dracunculose" qui est de 3.316.000 FRANCS permettra de couvrir les activités ci-après :

- Réfection d'un atelier pour le stockage et l'entretien des matériels (motocyclettes et autres)
- Fabrication locale de 1000 filtres à eau
- Formation/recyclage des agents de santé communautaire devant participer aux activités de dépistage actifs des cas de dracunculose.

Je vous prie d'agréer, Monsieur le Représentant, l'assurance de
considération distinguée./-

YAGOUNDE

60

PLAN NATIONAL D'ERADICATION DU VER DE GUINEE

FINANCEMENT DES ACTIVITES LOCALES

PREVISION DES DEPENSES EN ESPECES

NATURE ACTIVITES	PERIODE EXECUTION	NOMBRE ET NATURE BENEFICIAIRES	MONTANT (F. CFA)
1/ TRAITEMENT			
- Confection filtre	09 Sept/Nov/90	300 litres	300.000
- Carburant et lubrifiants	Sept-Oct/90	6 motos + 1 V.	150.000
- Indemnités (perdiem)	Sept-Oct/90	6 équipes + 2 chefs	150.000
2/ FORMATION ASC + AT			
- Sensibilisation/Animation	Oct-Nov/90	32 ASC + 16 AT	470.000
- Formation	Oct-Nov/90	32 ASC + 16 AT + 7 formateurs	730.000
3/ FORMATION ENQUETEURS	Sept/90	60 ASC	463.000
(cartographie de l'endémie)		20 infirmiers 5 superviseurs	
4/ FORMATION DES EDUCATEURS		7 animateurs	48.000
(frais d'encadrement non inclus)		5 coordinateurs 6 membres d'éq. 1 chef SDSP	
TOTAL			2.311.000

08050652

BANQUE INTERNATIONALE

OUR LE COMMERCE ET L'INDUSTRIE

CAMEROUN

PAYER CONTRE CE CHEQUE *Deux millions trois cent onze mille francs*

RAY AGINST THIS CHECK

CFA

RAYABLE A LA

A L'ORDRE DE **ERADICATION DE LA DRACONCULOSE**

LE 30 Aout 1990

Annex 4

**"Development of Education Materials for the National
Programme for the Eradication of Guinea Worm"**

DEVELOPMENT OF EDUCATION MATERIALS
FOR THE
NATIONAL PROGRAMME FOR THE ERADICATION OF GUINEA WORM

Al

REPORT BY ATELIER DE MATERIEL AUDIO-VISEUL

Jacqueline Bouwmans

Phase I. Study Phase

Introduction

It was decided during meetings of the National Task Force for Guinea Worm Eradication that a major element in the plan for eradication by December 1993 was education. The Task Force agreed that professional educators would be asked to assist in the development of education materials and Atelier de Matériel Audio-Visuel (AMA) was contacted in early July 1990.

In principal we are interested in working with this project but it is hard to formulate a concrete proposal without a preliminary studies. The initial study (Phase I) would have the following objectives:

- I. Make an inventory of available educational materials and present recommendations.
- II. Make an inventory of available technical information and present recommendations.
- III. Make an inventory of available KAP studies and present recommendations.
- IV. Outline collaborative relationship among various participants
- V. Develop a global plan of action for the education component.

To complete a Phase I, the Chargée d'Etudes of AMA travelled to Mora in late July. In Mora, I interviewed the following persons concerning their experience with Guinea worm control.

Dr. DAMA Mana	Chef de Service Departementale de la Santé Publique de Mayo Sava
Dr. George GREER	USAID/UNICEF Consultant
Mr. AMADA	Superviseur d'Animation CARE/DC/Mora
Mr. ADAMA Maloun	Infirmier Breveté, Superviseur Santé CARE/Mora
Mr. AYوبا	Animateur CARE/Mora
Mrs. Heidi de BRUYN	Coordinatrice CARE/Mora
Mr. Larry KAYE	Peace Corps Volunteer/DC/Mora
Mr. MAHAMA Dougdje	Agent d'Etat

And I visited:

Hôpital de Mora
 CARE Mora
 Endemic villages: Sandawajiri and Vamé

The conclusions of this report are based largely on

72

information obtained from the field work in Mora and on the National Plan of Action for Eradication of Guinea Worm.

I. Inventory of available educational materials and recommendations.

Phamphlet on GWD by Professor Same-Ekobo et al. of CUSS published by IMFPM with a section containing educational material.

An illustrated booklet by UNICEF Benin directed at the local population.

An illustrated booklet from Burkina Faso, also directed at the local population.

Discussion cards in prepration by Dr. DAMA and CARE/Mora personnel.

The first three booklets are not well adapted to Cameroon situation. Although the discussion cards show good initiative, they need improvement on the didactical approach.

Recommendations:

- A. locally adapted educational materials should be designed and produced for use at the village level.
- B. professional assistance should be used to develop these materials because of a lack experience at the departmental level.
- C. a training program should be developed for the animators in the use of these materials.
- D. that an evaluation strategy should be developed.

II. Inventory of available technical information and recommendations.

General background information on Guinea worm disease (GWD) is widely available. In addition, there are a number of technical publications concerning GWD in the Mayo Sava (see reference list for National Plan of Action for Eradication of Guinea Worms). A review of these sources formed the basis for the technical messages to be transmitted to the local population. These messages are:

- A. Filter all unsafe drinking water.
- B. Deter infected persons from entering sources of drinking water.
- C. Accept the use of themephos for control of copepod intermediate hosts.
- D. Report cases to village health worker (VHW) or village chief.

These goals are to be achieved through community mobilization and animation. To convince the target group to fully particate, these objectves must be adapted to the local

circumstances: local knowledge, attitudes, and practices.

Recommendations:

In addition to available information on the prevalence of GWD in the Mayo Sava, I recommend that the prevalence in various ethnic groups and in relation to water sources be documented.

III. Inventory of available KAP studies and recommendations

Kollo & Agbor-Tabi (1987) did the only Knowledge, Attitudes and Practices (KAP) study concerning GWD in the Mayo Sava. Although this study provided useful information its focus was not to develop educational material.

Interviews with GWD workers in Mora, indicated that although they are knowledgeable about the target groups, that information is not formally organized.

Recommendations:

Formal KAP studies should be carried out in the endemic region by a professional anthropologist. The following questions should be addressed:

A. Local perception and treatment of GWD:

1. What are the different terms used for the disease?
2. What are the signs of the disease?
3. Does it exist in your village?
4. Does it cause problems?
5. If so, is it a major priority?
6. How do you catch the disease?
7. How do you treat it? Where? When?
8. How can you avoid or prevent it?

B. Communication systems and media.

1. What are the existing communication systems?
2. What are the media with high credibility?
3. What are the local spoken dialects?
4. What is the literacy level?
5. What is the level of understand of pictures?

6. What are visually important keys for the local populations?

C. Social structure related to GWD.

1. Who can have the greatest impact on prevention of the disease.
2. Identify the different sub-target groups.

These studies should require roughly two weeks of field work and one week of elaborating the results and producing a report.

If large differences between target groups related to religion, environment, water use, etc., are found, it may be necessary to develop different materials for each sub-group identified by the KAP studies.

The combination of technical information now available and the proposed KAP studies will enable AMA to develop educational materials adapted to reach the project goals.

IV. Outline collaborative relationship among various participants.

Production of the materials described above must involve a strong collaboration with local experts and field workers in GWD. Professional help guides the process of developing educational materials, but without feedback from the local level it is impossible to develop effective teaching tools. AMA is able to provide the professional services in producing educational materials and has already established good working relationship with the GWD team in Mora.

The National Task Force has to be in charge of organizing the production of educational material. At the local level a IEC team must help with designing, testing, training and evaluation. AMA will guide this process and maintain close contact with the National Task Force and the Information, Education and Communication (IEC) team.

V. Global plan of action for the education component.

1. 15-25 Sept 1990 : KAP studies
2. Nov: Elaboration by AMA of an adapted didactical approach and preparation of a scenario of pictures needed.
3. Dec: Discussion of the AMA proposal with the National Task Force, the IEC team and other experts.
4. Jan: Review of the didactical method and scenario.
5. Jan: Designing material at AMA.
6. Feb: Testing material in the field with AMA and IEC team.

7. Mar: Review of design.
Printing by AMA.
8. Apr: Training of animators.
9. May: Begin animation program by eradication team.
10. After one year: Evaluation and review of programme by project and AMA.

BUDGET

1. KAP studies 15-25 Sept 1990:

10 days anthropologist in the field

per diem	10 x 15.000	= 150.000
salary	10 x 25.000	= 250.000
transport to Mora		= 88.000

10 days experienced anthropology field worker from Yde

per diem	10 x 10.000	= 100.000
salary	10 x 10.000	= 100.000
transport to Mora		= 88.000

10 days local translator

per diem	10 x 5.000	= 50.000

Subtotal

= 826.000

Transport in the Extreme-North to be provided by project.

2. Elaboration of a didactical method and preparation of a scenario:

7 days x 30.000	= 210.000
-----------------	-----------

3. Discussions with National Task Force and IEC groups

3 days x 30.000	= 90.000
-----------------	----------

4. Reviewing didactical method and scenario:

3 days x 30.000	= 90.000
-----------------	----------

5. Designing material:

Flip chart series of 10 pictures in 5 colors (50 x 65)

10 x 22.500	= 225.000
-------------	-----------

Card series of 20 pictures in 5 colors (A4)

20 x 12.500 = 250.000

6. Field testing material:

Transport to Mora = 88.000

7 days x 30.000 = 210.000

7 days per diem x 15.000 = 105.000

7. Production costs:

50 x flip charts of 10 pictures in 5 colors (50 x 65)

50 x 10 x 900 = 450.000

50 series of 20 cards (A4) in 5 colors

50 x 20 x 125 = 125.000

50 animator booklets of 25 pages (A5)

50 x 1.700 = 85.000

Subtotal 1.928.000

+ 826.000

GRAND TOTAL 2.754.000

Annex 5

Outline for Training Programs

MINISTERE DE LA SANTE PUBLIQUE

DELEGATION PROVINCIALE DE LA SANTE
PUBLIQUE DE L'EXTREME NORD

SERVICE DEPARTMENTAL DE LA SANTE
PUBLIQUE DU MAYO SAVA

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie

FORMATION POUR ERADICATION DE VER DE GUINEE

L'ANNEE AUG 1990 - AUG 1991

- I. Formation des ASC (Agents de Santé Communautaire) et Accoucheuses Traditionnelle (AT) pour les villages d'endémie de Vers de Guinée dans le Mayo Sava.

But: Former 32 ASC et 16 AT pour les 16 villages d'endémie de la dracunculose à raison de 2 ASC et 1 AT par village.

Objectifs:

A. Former en 2 semaines des ASC capables de:

- faire l'éducation sanitaire en général
- enseigner l'hygiène de l'eau à la population
- décrire et transmettre à la population les modes de transmission de la dracunculose
- décrire et communiquer à la population les méthodes de prévention de la dracunculose
- aider à la vaccination, à la pesée des nourrissons
- aider à la consultation prénatale
- tenir des réunions avec le comité de santé en vue de choix des priorités sanitaires des villages
- d'entretenir les pompes des forages
- prendre part à l'alphabétisation des adultes

B. Former en 2 semaines des Accoucheuses Traditionnelles (AT) capables de:

- assurer les consultations prénatales
- faire les accouchements normaux
- reconnaître et référer les grossesses à risque et les accouchements dystociques

- tenir le registre d'Etat Civil et de le cas de dracunculose
- éduquer les femmes à garder les puits et les forages propres
- prendre part à l'alphabtisation des adultes (femme et hommes)

Budget:

La formation comprend 2 phases:

- la phase d'animation de sensibilisation
- la phase formation proprement dite

A. Sensibilisation et animation avant la formation

1) Carburant et lubrifiant pour visiter les 16 villages-santé:

- 3 voyages aller et retour dans chaque village soit en moyenne:

$$40\text{km} \times 2 \times 3 \times 16 = 3.840\text{km}$$

- consommation essence DATSUN de service Départemental de la Santé Publique du Mayo-Sava à Mora:

$$20 \text{ litres au } 100\text{km} \text{ soit } 786 \text{ litres}$$

- prix officiel essence 286 Frs le litre

$$786 \times 286 = 219.648 \text{ Frs}$$

- lubrifiant: 3 vidanges soit 12 litre d'huile 40-50 et 2 filtres d'huile

$$- 2.500 \text{ Frs par bidon de } 4\text{l} \times 3 = 7.500 \text{ Frs}$$

$$- 1.500 \text{ Frs par filtre à huile} = 3.000 \text{ Frs}$$

$$\text{TOTAL} = 230.149 \text{ Frs}$$

2) Frais de déplacement

- chauffeur: 2.000 Frs/j
- 1 médecin, Chef de SDSP: 5.000 Frs/j
- 1 infirmier principal, Coordinateur Département SSP: 5.000 Frs/j
- 1 coordinateur d'arrondissement 3.000 Frs/j
- 1 animateur CARE 3.000 Frs/j
- 1 animateur D.C. 3.000 Frs/j

2 villages par jour et 3 jours par village soit:

$$\frac{3 \times 16}{2} = 24 \text{ jours}$$

24 jours x 21,000 Frs = 504.000 Frs

TOTAL (sensibilisation et animation) = 734.149 Frs

B. Formation ASC et AT proprement dite

- 3 formation à faire dont 2 pour les ASC et 1 pour les AT

- 1 formation comprend 16 personnes

- 12 jours dont 90 hour ouvables et 2 jours de week-end

- perdiem par ASC et AT à 1.000 Frs/j soit

$$1.000 \text{ Frs} \times 12 \times 16 = 192.000 \text{ Frs}$$

- perdiem encadreur à 2.000 Frs/heure soit

$$2.000 \text{ Frs} \times 7 \times 10 = 140.000 \text{ Frs}$$

- transport ASC et AT forfait à 1.500 Frs soit

$$1.500 \text{ Frs} \times 16 = 24.000 \text{ Frs}$$

- cahiers: 150 Frs x 16 = 2.400 Frs

- papier: 4 rames à 2.500 x 4 = 10.000 Frs

- stencils = 5.000 Frs

- craie: 1 boite = 1.000 Frs

- matériels de démonstration de filtrage de l'eau et de latrine = 10.000 Frs

- secrétariat (perdiem) = 10.000 Frs

Total pour une formation 394.400 Frs

TOTAL (3 formations) 1.183.200 Frs

TOTAL GENERAL 734.149 Frs

1.183.200 Frs

1.917.349 Frs

II. Formation pour enquête général dans tous les villages du Mayo-Sava

But: Etablir de façon définitive la cartographie de l'endemie dracunulienne dans le département du Mayo-Sava.

Objectifs:

- former 60 ASC, 20 infirmiers et 4 superviseurs afin de diagnostiquer facilement le Ver de Guinée.
- planifier l'enquête et déterminer la zone et la calendrier pour chaque enquêteur.
- cette enquête devrait être terminée avant Octobre 1990.

Budget:

- durée de la formation une journée		
- transports enquêteurs soit	=	100.000 Frs
- repas d'une journée pour 84 personnes	=	150.000 Frs
- matériels de bureau	=	50.000 Frs
- transport de Dr. Desfontaine de Mora	=	88.000 Frs
- perdiem de Dr. Desfontaine 25.000 x 3j	=	75.000 Frs

TOTAL GENERAL		<u>463.000 Frs</u>

III. Formation pour des éducateurs pour la santé en matière de Ver de Guinée

But:

L'éducation pour la Santé est la principale composante de ce programme d'eradication de la dracunculose. Atelier de Matériel Audio-Visuel (AMA) à déjà réalisé la première phase de la production de matériels ducatifs appropriés. Le seconde phase consistera à la production et au test des matériels sur le terrain. En outre il est nécessairee de former les animateurs et les autres ducateurs de santé qui seront responsables de l'utilisation des matériels ducatifs sur le terrain au niveau de villages.

Objectifs:

Former en 4 jours:

- 4 animateurs de CARE
- 3 animateurs de D.C.
- 3 coordinateurs arondissements des Soins de Santé Primaires

Handwritten mark

- 1 coordinateur départemental des SSP
- 1 coordinateur de CARE
- 6 membres de 5 équipiers de traitement des points d'eau et recensement des cas
- le chef de service départemental de la Santé Publique du Mayo Sava

capables d'utiliser de façon correcte les matériels éducatifs en matière de Ver de Guinée.

Cette formation doit avoir lieu avant mai 1991.

Budget:

les personnes suivantes auront besoin de leur perdiem et leur transport pour Mora pour les quatre jours:

- 2 coordinateurs arrondissements des SSP
 - 4 membres de équipiers de terrain
 - soit 6 personne x 2.000 Frs/j x 4j = 48.000 Frs
 - encadreur de l'organisme qui prépare le matériel éducatif
 - transport de Mora = 88.000 Frs
 - perdiem: 15.000 Frs x 5j = 75.000 Frs
 - salare: 30.000 Frs x 4j = 120.000 Frs
 -
- TOTAL GENERAL 331.000 Frs

23 AOUT 1990

Le Chef de Service Départemental
de la Santé Publique du Mayo-Sava
MORA



DAMA IMANA

Docteur en Médecine

Annex C

**Sample Page from Prototype Village Registry and Sample
Form for Recording New Guinea Worm Cases**

M-1

Q: Adjiba
CQ: Adjiba

P: Chatata F: 9/90(1)

VG.

N	P	S	N	'90	'91	'92	'93
* ADJIBA	Finé	M	1930	-			
"	Madéva	F	'57	-			
"	Fanta	F	'79	+ (1)			
"	Jdinguré	F	'77	+ (1)			
"	Lamia	F	'85	-			
"	Salki	F	'82	-			

M = house number
 N = family name
 P = given name
 S = sex
 N = date of birth
 VG = Guinea worm (number for year)
 P = well that is principal source of drinking water
 Q = quarter, neighborhood
 CQ = chief of quarter
 F = date filter given and number given

Annex 7

**Request for a Peace Corps Volunteer in Health for the
Mayo-Sava Department**

PEACE CORPS/CAMEROON VOLUNTEER REQUEST FORM
 CORPS DE LA PAIX/CAMEROON FICHE DE DEMANDE D'AFFECTATION D'UN VOLONTAIRE
 HEALTH, COMMUNITY DEVELOPMENT AND AGRICULTURE SECTOR
 SECTEUR DE LA SANTE, DU DEVELOPPEMENT COMMUNAUTAIRE ET DE L'AGRICULTURE

Location: Town Mora Division Mayo Sava Province Ex-North
 Location: Ville Mora Departement Mayo Sava Province Ex-North

Name and Address of Government Service Requesting Volunteer
 Nom et l'adresse du Service Gouvernemental Demandant le Volontaire
Service Departmental de la Santé Publique du Mayo Sava

Work Hours 7:30-12:00; 2:30-6:00
 Heures Ouvrable

List names and titles of all service personnel
 Enumerer les noms et les positions de tout le personnel du service
Dr. DAMA Mana; Chef de Service Departmental de la Santé Publique du Mayo Sava
Mr. WANOT Aboukar; T.G.S. Chef de Service d'Hygiène et d'Assainissement du Mora
Mr. DOUGDJE Mahama; Titulaire Agent d'Etat, Mora

Attached, please provide a brief resumé of each of the above, listing each individual's past experience with Peace Corps, how long they have worked for the service, previous work experience, and previous training -- what type and where received)

(Ci-joint, fournir un resumé bref de chaque individu au-dessus montrant s'il a déjà travaillé avec un volontaire du Corps de la Paix, l'ancienneté, autre expérience de travail, et formation -- quel sorte et où reçu)

Is there office space for the volunteer, including a desk and chair?
 Y-a-t-il de la place au bureau pour le volontaire, avec un table et une chaise?
 Yes No
 Oui Non

Is there a service vehicle?
 Le service dispose-t-il d'un véhicule?
 Yes No
 Oui Non

Please provide a brief description of the current condition of the service vehicle?
 Quel est la condition actuel du véhicule de service?

Double cabin pick-up truck in good condition

List names of all gasoline stations in your town.
 Citez les différents points de vente d'essence de la ville.

None

Provide a detailed description of your current program and the names of individuals currently responsible for each work effort. Also include a description of your service's work relationship with other international organizations.

We are requesting a Peace Corps volunteer to work with the Guinea Worm Eradication Program. In the Mayo Sava the Divisional Chief of Service of Public Health, Dr. DAMA Mana is the project leader.

There are five Health Outreach Teams (HOT) comprised of a nurse, an animator and a translator, if required. During the Guinea Worm transmission season, which coincides with the rainy season (June-September), these teams are to visit their assigned villages once every two weeks. During these visits the teams will identify new cases, promote behavioral changes and treat drinking water sources (monthly) with chemicals to kill the intermediate stages in the life cycle of the parasite. The behavioral changes will be promoted by education material adapted to the region which will encourage the villagers to filter all drinking water, to keep infected individuals away from drinking water sources and to keep occlusive bandages over Guinea worm wounds.

The PCV would work as a coordinator of the HOTs and evaluate the success of the various interventions. In this capacity he will work closely with Mr. WANDI Aboukar TSG, Chef de Service d'Hygiene du Mora. His actual duties are described under the next section.

Other international organizations participating in the Guinea Worm Eradication Program include UNICEF, CARE, Centre Pasteur, OCEAC, AMA, USAID and Global 2000. Both Catholic and Protestant Mission in the Guinea worm endemic region have been actively involved in the program for many years.

Please describe in detail the reasons you want/need a Peace Corps Volunteer. Provide also a detailed job description, which should include the routine tasks and duties the volunteer will be required to perform and with whom the Volunteer will be working.

Détailler les raisons pour lesquelles vous voulez/avez besoin d'un Volontaire du Corps de la Paix. Fournir une description détaillée des responsabilités du volontaire, y compris les tâches dont il va s'occuper et avec qui il va travailler.

See Appendix: letter from Dr. OAMA Mana

Will it be absolutely necessary for the volunteer to have a motorcycle?

If yes, explain in detail why.

Est-ce qu'il sera absolument nécessaire que le volontaire ait un moto-cyclotte?
Si oui, expliquer en profondeur pourquoi?

Yes. The volunteer will need to visit village included within the Guinea Worm eradication program. Although the distances are not great, a motorbike is essential.

If you receive a Peace Corps Volunteer, he or she will arrive the second week of March 1989. Please attach a tentative work plan for the new volunteer's first six months (March 1989 - Aug. 1989). This work plan must include an introduction to other government services and local officials within the first two weeks and an introductory tour of the volunteer's work area within the first six weeks.

Si vous recevrez un volontaire, il ou elle arrivera la douzième semaine de Mars 1989. Ci-joint, fournir un programme de travail tentatif pour le volontaire pour les premières six mois (Mars 1989 - Aout 1989). Cette programme de travail doit avoir y compris une prise de contact avec les autres services et les autorités locaux dans les premières deux semaines et une tournée de prise de contact dans la zone de travail du volontaire dans les premières six semaines.

Is there safe and secure housing for the volunteer? Yes _____ No
Y-a-t-il une maison en sécurité pour le volontaire? Oui _____ Non

If yes, please attach a map. If no, please state when you believe housing will be available.

Si oui, fournir ci-joint une carte. Si non, quand est-ce que vous pensez qu'une maison sera disponible?

PCV work plan for the first 6 months (March - August 1991)

The Guinea worm transmission season begins in June of each year. The volunteer will spend his/her first week in country meeting officials in Yaounde, Maroua and Mora.

The key person in Yaounde will be the Coordinator of the National Guinea Worm Eradication Program, Dr. SAM-ABBENYI, Sub-director of Epidemiology, Division of Preventive Medicine, Ministry of Public Health. They should also meet with CARE-Yaounde personnel involved in educational projects in the Extreme-North (e.g., Dr. SEUMO FOSSO Eleonore) and with personnel at Atelier de Material Audio-Visuel, Mvolye Catholic Mission, who assisted in developing the educational material for the Guinea worm project (e.g., Ms. Jacqueline Bouwmans).

In Maroua the volunteer should meet with Dr. ISSOUFA Hamidou, Provincial Chief of Service of Public Health and in Mora with Dr. DAMA Mana, Divisional Chief of Service of Public Health. Contact with CARE-Mora would also be beneficial. The PCV should then visit and meet with all members of the 5 HOTs.

The remainder of March, April and May will be spent learning data recording system and discussing last years program. They should visit each of the 14 or so villages included in the program and meet with the Village Health Workers before the beginning of the season.

In mid-May the education program should begin and by mid-June the Abate applications to all drinking water supplies. These activities and monitoring will continue until October, 1991.

- 97

Description des tâches du volontaire du Corps de la
Paix Américaine dans le cadre du Programme d'éradication de
la Dracunculose dans le Département du Mayo-Sava, Province
de l'Extrême-Nord -

Par Dr. DAMA MANA, M.D.
Chef de Service Départemental de la Santé
Publique du Mayo-Sava à Mora.-

Affecté officiellement au Service Départemental de la
Santé Publique du Mayo-Sava, le Volontaire du Corps de la Paix
participera activement à l'exécution du programme d'éradication de
la dracunculose en menant les activités suivantes:

- 1/ Participation aux activités de formation et recyclage des agents
de santé communautaires dans le cadre des séminaires des Soins
de Santé Primaires.
 - Enseigner des actions des préventions de la dracunculose
(cycle de transmission ou mode de transmission de la maladie.
Prévention de la maladie de Ver de Guinée, filtration de l'
eau).

Période idéale: Décembre - Mars

- 2/ Sensibilisation et animation des villageois pour la création des
cases-santé dans les villages d'endémie citée de Ver de Guinée
en collaboration avec les coordinateurs des SSP et les animateurs
CARE et les formations sanitaires privées confessionnelles.

Période idéale: Septembre - Octobre - Novembre.

- 3/ Coordonner les activités des cinq (5) équipes en place impliquées
dans le traitement des points d'eau à l'abate en liaison avec le
Chef SDSP. Cette coordination consistera à:

- Etablissement des calendriers de traitement des points
d'eau en collaboration avec les chefs d'équipe et le chef
S.D.S.P.

- 2 -

- Distribution de l'abate aux équipes
 - Supervision des équipes sur le terrain
 - collectes des données recueillies par chque équipe à savoir résultats de traitement des points d'eau, résultats de recherche active des cas pendant la période de transmission.
- Période idéale: Juin - Juillet - Août - Septembre - Octobre.

4/ Enquête domiciliaire dans l'ensemble des villages du Département pour la recherche active des cas. Le Volontaire sera un superviseur pendant cette enquête générale.

Période idéale: Octobre - Novembre.

5/ Suivi de l'utilisation des filtres par la participation.

6/ Compte-rendu des données de traitement des points d'eau, de la recherche active des cas dans les villages d'endemicité et de l'utilisation des filtres au Chef de SDSF.

7/ Compte-rendu au Chef de SDSF des états d'avancement des ouvrages hydrauliques réalisés par les différents intervenants.

8/ Evaluation permanente du programme d'éradication (traitement des points d'eau; recherche active des cas, filtration eau).

9/ Recensement démographique des villages d'endémicité de Ver de Guinée.

Période idéale: Février - Mars - Avril - Mai.-

Le Chef de Service Départemental de
la Santé Publique du Mayo-Sava,



- Dr. DAMA Mana -

GM

Annex 8

**Request to UNICEF for Support for a Department-wide
Survey of the Known Endemic Region; Prepared by
Drs. Dama and Greer**

MINISTERE DE LA SANTE PUBLIQUE

DELEGATION PROVINCIALE DE LA SANTE
PUBLIQUE DE L'EXTREME NORD

SERVICE DEPARTMENTAL DE LA SANTE
PUBLIQUE DU MAYO SAVA

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie

ENQUETE GENERALE POUR RECHERCHE ACTIVE DES CAS DE
VERS DE GUINEE DANS TOUS LES VILLAGE DU MAYO SAVA
(CARTOGRAPHIE DEFINITIVE DE L'ENDEMIE DRACUNCULIENNE)

I. But: - établir une cartographie définitive de l'endemie
dracunculienne dans le département
- déterminer l'amplifier du problème pour l'année 1990.

II. Objective:

Les 60 ASC, 20 infirmiers et 2 superviseurs formés à la fin
de septembre 1990 assureront l'enquête dans les 500 villages du
Mayo Sava:

- les 20 infirmiers seront en moto et travailleront pendant
15 jours ouvrables.

- les 60 ASC seront à pieds et travailleront dans leurs
villages santé plus 2 autres villages voisins.

- les 2 superviseurs seront en voiture pour superviser sur
les terrain les enquêteurs, collectment les rapports et
visiteront les villages où au moins un cas de ver de Guinée sera
identifié.

Les objectifs spécifiques assignés à l'ensemble des
enquêteurs sont:

- 1) visiter tous les villages du Mayo Sava
- 2) recenser tous les "saré" avec le nom de leurs chefs de
famille
- 3) recenser toute personne ayant souffert de dracunculose en
1990 (nom, prenom, sexe, âge, date d'apparition du ver).

III. Budget:

1. Carburant et lubrifiant

- on utilisera 10 moto à raison d'un moto pour 2 enquêteurs
infirmiers.

- 15 jours d'enquête soit 3 semaines de 5 jours ouvrables.

- 5 l d'essence pour/jour soit 25 l par semaine.

96

pour 10 moto soit 25l x 3 x 10 = 750 l'essence		
prix officiel essence	= 300 F	
300 x 750		= 225,000 F
- pour les 2 voitures: 100 l/ semaine		
100 l x 2 x 3 = 600 l x 300 F		= 180,000 F
- pour le lubrifiant		
un vidange de moto soit 1,500 F x 10		= 15,000 F
un vidange de voiture soit 5,000 F x 2		= 10,000 F
Total carburant et lubrifiant		= 430,000 F
2. Perdiem		
- 1 ASC travaillera pendant 3 jours pour 3 villages.		
- 1 ASC aura 1,000 F de perdiem/jour		
soit 60 x 3 x 1000 F		= 180,000 F
- 20 infirmiers travailleront pendant 15 jours chacun aura 2,000 F/jour		
soit 20 x 15 x 2,000 F		= 600,000 F
- 2 superviseur travailleront pendant 15 jour chacun aura 5,000 F/jour		
soit 2 x 15 x 5,000 F		= 150,000 F
Total perdiem		= 930,000 F
3. Matériels de bureau:		
85 cahiers de 200 pages à 300 F		= 22,500 F
85 crayons à bille blues à 50 F		= 4,250 F
85 crayons à bille rouge à 50 F		= 4,250 F
Stencils		= 10,000 F
Papier duplicateur		= 10,000 F
Encre pour tirage stencils		= 10,000 F
Total matériel de bureau		= 61,000 F
TOTAL GENERAL POUR ENQUETE		= 1,421,000 F

Annex 9

**Meeting Announcement for the National Task Force and a
Final Report on the Author's Activities in Cameroon**

N° 512 / P/SG/DIFF/DIFF/SDL.-

 /))_ESSAGE - PORTE

LES DESTINATAIRES DE LA LETTRE DE SERVICE PORTÉE SONT INVITES
A PENSER A L'ECRIRE EN UN FRANÇAIS CORRECTIF AINSI QUE LE
BONHEUR DE L'ECRIRE ADRESSE AU J. MINISTERE DE LA SANTE PUBLIQUE
LE JOUR DE SA DELIVRANCE A 10H30 APPROXIMATIVEMENT.

L'OBJET DE LA LETTRE EST LE :

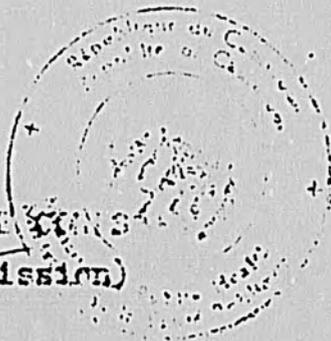
- (1) SITUATION ACTUELLE AU FOYER DE LA FRAGUNCULOSE AU
KAYO-SIVA.
- (2) PREVALENCE DU TESTAGE ACTIF DE CAS DE FRAGUNCULOSE
DANS TOUT LE TERRITOIRE DU KAYO-SIVA.

DESTINATAIRES :

- M. LAO, UNCLE
- Dr. PHOEN, CMC
- Dr. PHOEN, CMC
- Dr. HAN, CMC
- Mre ANG-KHEI, PLACE KHAN
- Dr. CHEN - UNK II (Mission)

YAKUM, le 12 SEP. 1990

Pour le Ministre de la Santé Publique
et par délégation
Le Directeur de la Nécessité Préventive et Rurale
et par délégation
Le Sous-Directeur de l'Épidémiologie



[Handwritten signature]

[Handwritten signature]

GUINEA WORM ERADICATION PROGRAM

Recent Activities, Current Status and Recommendations

A report to the National Task Force

George J. Greer

100

RESUME

I. Le "National Plan d'Action" du Task Force de Ver de Guinée a été accepté le 29 juin 1990, mais les lenteurs administratives demeurent l'obstacle majeur dans la bonne exécution de ce programme

*** Action urgente

1. Le Plan d'Action devrait être approuvé par le Ministre de la Santé Publique.

2. Une délégation de signature pourrait être accordée pour faciliter à l'UNICEF l'acquisition des matériel et le déblocage des fonds déjà approuvés dans le Plan d'Action, sans nécessité chaque fois le recours à l'autorisation du ministre.

II. L'acquisition du matériel didactique est urgente. Un inventaire du matériel déjà disponible au Cameroun, ainsi que de celui qui a été envoyé à partir d'autres pays démontre un manque de matériel adapté à l'éducation des populations villageoises. Une organisation locale (AMA), très expérimentée dans la production du matériel didactique, a soumis un devis estimatif sur ce programme. Nous trouvons aussi essentiel d'assurer la formation des animateurs dans l'utilisation de nouveaux matériels. Cette acquisition de matériel, ainsi que la formation des animateurs devraient être terminées avant Avril 1991.

*** Action urgente

Le "Task Force" devrait discuter assez rapidement le devis soumis par l'AMA et chercher, en cas de rejet, une solution de remplacement appropriée. De plus, le matériel destiné à la formation des animateurs devrait être disponible au mois d'Avril 1991.

III. Le programme de traitement des gites par l'Abate se déroule normalement bien que nous ayons observé des retards de livraison de ce produit cette année à Mora.

*** Action urgente

Pour éviter ces retards de livraison pendant la saison prochaine, nous suggérons que le "Task Force" adresse sa commande à l'UNICEF avant le mois de novembre 1990. La nouvelle livraison devrait être arrivée à Mora au mois de mars, et l'approvisionnement des équipes de traitement devrait avoir lieu au plus tard en avril 1991.

IV. Nous avons développé et testé un filtre de production locale facilement utilisable pas les villageois à domicile ou sur le terrain. La distribution de 500 filtres à la fin de mois d'act et au début du mois de septembre a suscité beaucoup d'enthousiasme dans les villages à forte prévalence.

* Action recommandée

Nous proposons le commande de 1000 - 1500 filtre qui seront distribués aux villageois au début de la prochaine période de transmission.

V. Nous avons ouvert un registre dans plusieurs villages et nous estimons que ce système pourra faciliter un suivi rigoureux des malades, élément essentiel pendant une phase finale d'éradication.

* Action recommandée

Nous recommandons l'ouverture d'un registre dans tous les villages endémiques en 1991.

VI. Chaque malade devrait bénéficier de soins élémentaires, cela suscite une bonne volonté chez tous les malades. Mais aussi, le pansement réduit considérablement la contamination des eaux.

* Action recommandée

Les "Health Outreach Teams" seront équipées de bandages, de gazes, de crème antibiotique et d'aspirine. Ce matériel pourra être confié à l'agent de santé communautaire ou au chef de village pour la distribution.

VII. L'analyse des données obtenues par le "Health Outreach Teams" et par les enquêtes menées de porte-à-porte dans nos villages de référence indique une baisse significative des cas de maladie dans tous les villages au début de mois de septembre. Même les cas qui ont été signalés tardivement dans l'année ne modifier pas cette tendance. En effet, jusqu'à présent, aucun cas n'a plus été signalé dans certains villages qui, de ce fait, ne figureront plus sur la liste des localités endémiques en 1990.

EXECUTIVE SUMMARY

I. A National Plan of Action was accepted on 29 June 1990 by the Task Force for Guinea Worm Eradication, but administrative complications remain an obstacle to smooth running of the program.

***Action Needed Urgently:

1. Approval of the Plan of Action by the Minister of Public Health.
2. Delegation of authority so that request to UNICEF for materials and operational funds, already agreed on in the Plan of Action, can be approved without having to pass to the minister himself for approval.

II. Appropriate educational materials are badly needed. A review of materials available in Cameroon and those sent from other countries indicates that there is a great need for material targeted at the largely illiterate village population. A local organization (AMA) with considerable experience in developing educational material has submitted a proposal for the production of educational materials for the Guinea worm program. Also essential is the training of animators to use the newly developed materials. This must be done before the beginning of the next transmission season.

***Action Needed Urgently

The Task Force should review the AMA proposal as soon as possible and decide whether to accept their plan. If it is not accepted, a suitable alternative must be chosen quickly. Materials must be available for the training of animators by April 1991.

III. The well treatment program is going well in spite of a late start this year caused by the delayed arrival of Abate in Mora.

***Action Needed Urgently

To insure its timely arrival for the 1991 season a request for Abate should be presented to UNICEF by the Task Force before November 1990. The new supply should be sent to Mora by March and distributed to the teams no later than April 1991.

IV. A locally produced water filter for use by villagers, both in the home and in the field, was developed and tested. The filter has been well received by villagers and a total of about 500 were passed out in late August and early September in villages with the highest prevalence of disease.

Action Needed

About 1000 to 1500 filters should be ordered and on-hand for distribution at the beginning of the next transmission season.

102

V. A prototype village registry was developed and used in several villages. This system will greatly facilitate the accurate recording of cases, an essential element during the final phases of eradication.

Action recommended

Village registries be set up for all endemic villages in 1991.

VI. Basic medical care should be offered to infected individuals. This not only fosters good will but occlusive bandages greatly reduce the exposure of the wounds to drinking water supplies.

Action recommended

Health Outreach Teams should be equipped with bandages, gauze, antibiotic cream and aspirin. Alternatively, these materials may be left with a village health worker or village chief for distribution.

VII. Current status: A review of information gathered by the HOTs and by house-to-house surveys in selected villages indicates that as of early September the number of cases is significantly lower in all villages. Even the addition of new cases appearing later in the year are unlikely to change this trend. In fact, several villages have, as yet, reported no cases, so it is possible that some villages will be removed from the list of endemic villages for 1990.

General Activities

This report is based on the authors activities in Cameroon between 16 June and 15 September 1990 under the auspices of the Vector Biology and Control II program, a USAID funded project. During this period roughly half of my time was spent in Yaounde, working with the Ministry of Health personnel and UNICEF, to expedite the delivery of badly needed operational funds and materials to the Guinea worm endemic region - Mayo-Sava Department, Extreme North Province.

The remainder of my time was spent in the Extreme-North, principally in Mora. The initial focus of my work there was to monitor the Abate treatment program and develop a simple, cheap and easily produced water filter. Later my efforts focused on distribution of the water filters and the development of a prototype case registry, which was used in house-to-house censuses of several highly endemic villages.

I. Administrative Activities

A National Plan of Action for the Eradication of Guinea Worm calling for financial support from UNICEF and other NGO was approved by the National Task Force on 29 June 1990. This agreement requested considerable input from UNICEF, which made funds immediately available for the program on the basis of the Task Force approval. Nevertheless, obtaining materials and operational funds remains a lengthy and complicated procedure.

Separate request are needed from the Ministry of Health for items approved in the general Plan of Action. On the Ministry of Public Health side, the procedure is encumbered by the fact that only the ministry himself can sign request for these items. This process should to be streamlined.

Recommendations:

1. The National Plan of Action approved by the National Task Force has yet to be approved by the Minister of Public Health. An appropriate version of the plan should be sent to the minister for his approval at the earliest possible date.
2. Arrangements should be made to authorize other officials in the Ministry, for example the Director of Preventive Medicine or his deputy, to approve request to UNICEF for materials, money, etc.

II. Acquisition of materials and support from UNICEF

Three letters requesting materials and/or operational support from UNICEF have been signed by the Minister of Health. The first requesting 6 motor bikes, a double cabin pickup and geographical positioning units (GPS units) was signed on 11 July and delivered to UNICEF on 12 July. The motorbikes arrived in Mora on 9 September. Other items have been ordered by UNICEF but will probably not be in Mora before the end of this transmission season.

A second letter requesting a camera, electric typewriter, personal computer and printer, and a photocopier was signed on 12

July but did not arrive at UNICEF until several weeks later. That letter also requested UNICEF to support a study by Atelier de Matériel Audio-Visuel (AMA) on the need for educational material.

The materials requested have been order by UNICEF and the study by AMA was carried out in early August.

A third letter requested that money be given to fund: 1) repairs to a building at the Mora Hospital which will serve as garage for the motor bikes and the pickup; 2) fabrication of 1000 water filters to distribute to families in the endemic areas; and 3) funds for training programs. That letter was signed and delivered to UNICEF on 27 July.

A check for 2,300,000 CFA was given to the Provincial Délégué on 30 Aug 1990 to cover the above activities and support field activities in the endemic region. UNICEF has also agreed to buy limited quantities of medical and office supplies directly from retailers in Maroua.

Recommendation:

To insure a continuous supply of operational funds in the Extreme-North, detailed and accurate records on expenditures must be keep and frequently sent to UNICEF for accounting. Request for additional funds should be presented to UNICEF in a timely fashion.

III. Development of the Educational Program

Education is perhaps the most important, but currently the weakest, component of the eradication program. There is a high illiteracy rate among the population in the endemic region, but there seems to be little educational material designed to reach this population. Although efforts have been made at the departmental level to develop appropriate materials, professional assistance is needed. Professional assistance should also be sought for training animators in the use of newly developed materials. Other workers who contact villagers on a regular basis, such as members of the HOTs, should also receive this training. The educational messages should be reinforced as often as possible by workers contacting villagers.

AMA was invited to prepare a preliminary report on the needs for educational materials and propose a plan for developing these materials. Copies of their report have been distributed to members of the National Task Force. A review of materials available in Cameroon and from several other countries indicates that there is a need for professional developed materials to reach villagers. AMA would develop a flip chart series and study cards. These materials would be ready before the next transmission season.

CARE has indicated that it can offer assistance in the animation and the Task Force should investigate how best to use CARE's vast experience in village level animation. It may also be possible to contract with CARE for the training of animators. The

office of Community Development in Mora is another source for animators.

Recommendations:

1. A review of material from several other African countries shows that there is little material designed for village level presentation. This is somewhat surprising and indicates that there is a much broader need than just northern Cameroon for such materials. The AMA proposal is rather expensive, but their material is generally of high quality. Furthermore, materials developed for northern Cameroon could easily be adapted for use in a number of neighboring countries with similar ethnic groups. In this light, the costs of developing materials for Cameroon seems more reasonable.

If the AMA proposal is not approved, the Task Force should appoint someone to seek proposals from other professional organizations. This must be done quickly in order to have the final materials ready to use in a training course for animators in April 1991.

2. Training of animators will be done under a separate contract. The group that develops the education material would be group to consider for this training program. Other possibilities, such as CARE, should also be considered.

IV. Abate treatment

Treatment of drinking water sources began late this year because the supply of Abate did not arrive until about mid-July. Twelve liters of Abate 500 were sent by Dr. Ripert, University of Bordeaux but that did not reach Mora until mid-July. Dr. Chippaux was given 55 liters of Abate 200 by OCP in Yaounde and this was transported to Mora, also in about mid-July.

Coverage of water sources has been very good by the five teams: Godigong, Mayo Ouldémé, Kolofata, Mora and Tala Mokolo. The first villages treated were Mbrimé and Vamé, on 9/7/90 and 12/7/90 respectively. Sanda Wadjiri was treated on 18/7/90 and all others between 20-28/7/90, except Sama treated on 4/8/90. Ndaba was not treated at all due to the large size of the mayos used as sources of drinking water in that village. Second and third treatments have been completed at all sites.

One problem still encountered in the Abate program is the discovery of previously untreated wells in the villages. This year we discovered 2 "new" wells in Vamé and 3 in Mbrimé. The location of these wells was revealed only after the villagers confidence in the team had been gained by passing out water filters. This points up the need to develop strong ties with the villagers by providing services such as water filter, medical treatment, etc. It is also necessary to periodically question villagers with regard to their water use.

With motor bikes and fuel supplied by UNICEF, next year's coverage should be even better.

Recommendations:

1. Abate must be sent to Mora before April 1991. Global 2000 can arrange shipment of the donation from American Cyanamide but several months lead time must be given. UNICEF can make this request and it should be placed no later than November 1990.

2. Treatment teams should periodically question villagers about water use. Not only may new sources be revealed as the villagers gain confidence in the team's work, but the source may change with the season.

V. Filters for drinking water.

Materials for use in filters were tested in Yaounde, with assistance and suggestions from Dr. Chippaux, and in Mora with Dr. Dama's input. A final design was chosen after testing several prototypes. The filter is made by tailors in Maroua from locally available material. They are cheap (about 200 CFA), durable, and easy to use. The filter is large enough to cover the largest cannery and is held in place by a large rubber band that can be adjusted to fit different sized openings.

We have been pleased by the initial response from the villagers and have reason to believe that most families will use the filters regularly. Villagers were also encouraged to take filters to the field, which some families indicated they were already doing. Unfortunately, we did not have time to produce enough filters to give out 2 per family, one for the home and one for the field.

Between 24 August and 11 September 500 filters were produced and distributed house-to-house. About 220 filter were passed out in Vame and Mbrime, 120 in Ndaba and 160 in Sanda Wadjiri. The only draw back noted in the program thus far is that in some areas, particularly Ndaba, the water is so muddy that the cloth filters clog quickly.

Recommendations:

1. Production of these filters should be continued through the dry season to build a stock of about 1500. This would probably be enough to provide two per family in all endemic villages.

2. Monofilament filter material, promised free of charge by Dupont, should be obtained and used for villages such as Ndaba and Sanda Wadjiri where water from temporary ponds is extreme dirty and quickly clogs regular cloth filters.

3. Local production of other designs, such as the Ghanaian filter should be explored.

VI. Village registry and monitoring prevalence.

1993

A simple prototype of a village registry was developed using a typical school note book (16.5cm X 22cm) for recording census data. Page 1 of the Appendix is a photocopied page from the registry. The first full page is used for House #1. General information is recorded across the top of the page, such as: house number, name of quartier, name of the chief of the quartier, the well used for drinking water, the date water filters were given out, etc.

Family members, head of household first, are recorded down the page with the family name, given name, sex, age and history of Guinea worm beginning in 1990 recorded for each. There is ample room on the left page for records of Guinea worm disease through 1993. The facing page can be use for other information or for future years of GWD records. There are 20 lines so there is generally ample room on one page to record future family members, if the family is larger than 12 or so members, the following page should be left blank for future family expansion. In this way the registries can serve as a record of long term vital statistics.

These registries are designed to give an end of year summary of GWD for each person and thereby will provide an overview of the prevalence from season to season. An up to date account of the status during the season is kept on another form shown on Page 2 of the Appendix. Ideally this form should be filled out by an appointed village health worker. Forms would be picked up and a new form given to workers in each village every two to three weeks by the Health Outreach Teams.

Using a village health worker for case detection offers two distinct advantages. First, the HOTs, already burdened with Abate treatment and possibly wound treatment, generally do not have time to carry out a house-to-house survey for new cases every two to three weeks. Secondly, house-to-house surveys done by HOTs will miss the majority of cases, because most villagers, including infected individuals, are in the fields from early morning until late afternoon.

Since few villagers can write, the most effective system would be to have infected individuals report to the chief who can appoint someone to record the names. Arranging with the village health worker or chief to keep simple medical supplies and treat wounds would also increase the number of infected persons reporting to the responsible individuals.

In villages where there no one can write, surveillance must be carried out by the HOTs. In this case the teams should carry medical supplies with them in order to attract infected individuals. And they should make rounds of the village at a prearranged time.

The record sheets will be returned to the team headquarters and results added to a master list for the region. Copies of the master list should in turn sent to the departmental headquarters on a routine basis.

Recommendations:

10/11

Recommendations:

The present surveillance system works very poorly. Using a village health worker or having the chief appoint someone to keep records would greatly improve coverage. In cases where there is no one in the community who can write, teams should allow additional time for case recording, perhaps even separate trips to the villages for this purpose only. Carrying medical supplies and scheduling visits to the village ahead of time will increase coverage.

VII. Medical Care.

To date no medical assistance has been given at the village level but that should change soon with the acquisition of medical supplies recently purchased by UNICEF. The requirements are simple: gauze pads, cloth bands to hold the gauze bandage in place and some antibiotic cream. Even if the dressings cannot be changed on an optimal schedule, they generally offer a great improvement over traditional treatment. Aspirin is also effective for pain relief and anti-inflammatory drugs should be available in severe cases.

Besides providing care for the patients, a main benefit of medical treatment is the good will it fosters in the community. Perhaps more than any other activity of the eradication program, treating the sick demonstrates that the program is there to benefit the villagers and thus can lead to greater cooperation with all phases of the project.

Treating wounds also has a very important effect on transmission. An occlusive bandage reduces greatly the chances of direct exposure of the female worm with sources of drinking water.

Recommendation: Medical treatment should be an integral part of the eradication program. Treatment of wounds should be carried out at the village level by one of two systems: 1) medical supplies could be left with the village health worker or chief of the village or 2) HOTs could carry medical supplies with them and treat patients during visits to the villages.

VIII. Current status

Although Abate treatment began late this season, a review of records of the HOTs and some spot checks of treated wells indicates that copepods were absent or present only in small numbers in the water bodies thought to play a main role in transmission.

Although surveillance by the HOTs is rather crude, being usually based on conversations with the village chief or other influential member of the community, they probably do accurately reflect the trend in the disease. From these reports it is evident that the prevalence of GWD is down in all villages and very near elimination in several.

110

The Mayo Guldémé team, responsible for the villages of Sama, Vandelay and Guzedédé (Wichdédé) have found no cases in any of these villages as of the end of August. These villages reported 3, 24 and 24 cases respectively in 1989.

Likewise, the team from Godigong, responsible for Tala Dabara and Kassa (6 and 1 case respectively in 1989) report only one case thus far this year.

The number of cases is low from the Tala Mokolo team also. Sagai with 30 cases last year has only 10 thus far in 1990; Maguiche with 15 in 1989 has only 1 in 1990; Golda with 18 in 1989 has only 1 in 1990. The cases in Sagai are all center on one well that had not been treated before this year.

These three regions Guinea worm disease seems to be near elimination. The two remaining regions have not progressed this far: Vame, Mbrime and Ndrime under the Mora team and Sanda Wadjiri and Ndaba under the Kolofata team.

In Vame, Mbrime and Ndrime reported a total of 160 cases in 1989. Unlike other villages these have been monitored by house-to-house surveys in the 1990 season. Of a total of 644 inhabitants, 110 (17%) have had GWD as of the end of August. It is hoped that the Abate treatment and the distribution of water filters to each home will have a significant impact on this year's transmission. But the discovery, late in the season, of several wells in these villages that have not previously treated may offset some of the hoped for gains.

Two villages under the Kolofata team continue to present significant problems. A complete house-to-house census of Ndaba in early September revealed that of 369 inhabitants, 52 had had Guinea worm in 1990. This village presents special problems because of its sources of water in the rainy season are two temporary streams that at most times are large, long stagnant ponds, which are not suitable for Abate treatment because of their large size. Filters have been given out to villagers but the water from these ponds is so dirty that filters quickly clog.

A house-to-house search for cases begun in Sanda Wadjiri in early Sept. has not yet been completed. However, initial results indicate that the number of cases has dropped from the 493 (56%) reported in 1989. The head-of-households in 58 homes censused in early September reported a total of 31 infected individuals. It is estimated that the survey covered roughly one-fourth of the total village and an extrapolation of results, even including new cases emerging later in the year, puts this year's number of cases well below last year's.

The other good news for Sanda Wadjiri was the competition of two new pump wells in the village. This should greatly reduce exposure for the coming years.