PN-ABN-41
81160

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: July,1992

4. Document Title/Translated Title:
Technical Assistance to the Guinea Worm Eradication Programme in Cameroon (Phases IV and V) February-March and July 1992

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

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

7. Pagination: 51

8. Report Number: 81327

9. Sponsoring A.I.D. Office: R&D/H

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)
1.
2.
3.
4.
5.
6.

12. Supplementary Notes

13. Submitting Official: Robert W. Lennox, Sc.D.

14. Telephone Number: 703-527-6500

15. Today's Date: February 2, 1993

DO NOT write below this line

16. DOCID

17. Document Disposition: DOCRD [ ] INV [ ] DUPLICATE [ ]

AID 590-7 (10/88)

PN-AAY-477

81160

VBC PROJECT

Tropical Disease Control for Development

Technical Assistance to the Guinea Worm Eradication Programme in Cameroon (Phases IV and V)

February-March and July 1992

3969
11435

George J. Greer, Ph.D.

VBC Report No. 81327

Managed by Medical Service Corporation International ■ Sponsored by the Agency for International Development
1901 North Fort Myer Drive ■ Suite 400 ■ Arlington, Virginia 22209 ■ (703) 527-6500 ■ Telefax: (703) 243-0013

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 Cameroon Ministry of Public Health for their assistance in various administrative and technical aspects of this program: Dr. Owona Essomba René, Dr. Sam-Abbenyi Amos, and others in the Department of Preventive Medicine, Yaoundé; Dr. Hamidou Issoufa, Provincial Delegate of Public Health for the Extreme-North; and Dr. Dama Mana, Departmental Chief of Services, Mayo-Sava Department, who, in spite of a very heavy schedule, has dedicated much of his time and energy to make the program a success.

The author also wishes to acknowledge the contribution of UNICEF in funding this program and its Program Director for Rural Water and Sanitation, Mr. Mohamed Bendriss Alami, for his unfailing support. Ms. Susan Graham, a Peace Corp Volunteer assigned to the GWEP, made substantial contributions to almost every aspect of the program from the moment she arrived in Mora in March 1991. Mr. Richard Greene, Health Officer in the A.I.D. Mission, is thanked for facilitating the author's work in Cameroon.

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 Research and Development.

Acronyms

AMA	Atelier de Matériel Audio-Visuel
CARE	Cooperative for American Relief Everywhere
CDC	United States Centers for Disease Control
GWD	Guinea worm disease
GWEP	Guinea Worm Eradication Programme
FSAR	Fond Spécial d'Action Rurale
HOT	Health outreach team
MINASCOF	Ministry of Social and Women's Affairs
MOPH	Ministry of Public Health
NGO	Non-governmental organization
NTF	National Task Force (for Guinea worm eradication)
OCEAC	Organization de Coordination pour la Lutte contre les Endémies en Afrique Centrale
PCV	Peace Corps volunteer
PHC	Primary health care
POA	Plan of Action (national plan for Guinea worm eradication)
PVO	Private voluntary organization
ROC	Republic of Cameroon
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VHW	Village health worker
WPC	Water Projects Coordinator

Table of Contents

1. Executive Summary 1

2. Scope of Work for 1992 Technical Assistance 3

3. Introduction 4

4. 1992 Activities 6

4.1 Review of the 1991 Program 6

4.1.1 1991 Operations 6
4.1.2 1991 Operational Costs 9

4.2 Planning and Organizing the 1992 GWEP 9

4.2.1 Developing the 1992 Plan of Action 9
4.2.2 1992 GWEP Budget in the Mayo-Sava Department 10

4.3 Mid-Year Assessment of the 1992 Program 10

4.4 Guinea Worm Eradication in other Regions 11

4.5 4th African Regional Conference on Dracunculiasis Eradication 11

5. Lessons Learned From The Cameroon Program 13

5.1 Reporting Frequency during Case Containment 13

5.2 Two Stages of Case Containment 14

5.3 Integration with the Primary Health Care System 14

5.4 Management of Water Development Programs 15

6. References 16

Figures

Figure 1. Dracunculiasis in the Mayo-Sava 8

Figure 2. Number of Cases by Month, 1991-1992 12

Annexes

Annex 1. Itinerary and Summary of Activities 17

Annex 2. Persons Contacted 18

Annex 3. Report on the 1991 GWEP in Mayo-Sava, Cameroon 19

Annex 4. Operational Costs of the 1991 GWEP 20

Annex 5. Financial Report of the Dracunculiasis Survey in Mayo-Sava, November 1991 21

Annex 6. Plan of Action for the 1992 GWEP in Mayo-Sava, Cameroon 22

Annex 7. Budget for the 1992 GWEP in Mayo-Sava, Cameroon 23

1. Executive Summary

This report presents the latest, and perhaps last, summary of assistance provided by the VBC Project to the Cameroon Guinea Worm Eradication Programme (GWEP). It follows a report by Dr. Frank Richards (VBC Report CE-010, 1986) and two by the present author (1990, 1991). Work with the Cameroon GWEP has led to the establishment of a village-based case containment program in the Mayo-Sava Department and a dramatic reduction in the total number of Guinea worm cases from 778 in 1990 to approximately 120 in 1992.

The author spent five weeks in Cameroon during 1992 working with various operational aspects of the program. During that period a Plan of Action and a Budget for the 1992 program were prepared. A detailed account of those activities is included (Annexes 6 and 7). The lessons learned from the Cameroon program, in the broader context for the possible benefit of other programs, are presented here.

In 1991 village-based case containment was carried out in all villages that had reported five or more cases the previous year. In 1992 the program was extended to all villages reporting more than one case and surveillance every two to four weeks was instituted in all endemic villages that had not been part of the 1991 program. Another innovation in 1992 was the registration of patients with pre-emergent worms, allowing the village-based health workers (VHWs) to follow cases more closely and the supervisors to monitor their work.

A model strategy for Guinea worm eradication has been suggested by Hopkins and Ruiz-Tiben (1991, 1992), with three operational phases recommended: 1) village-by-village search, 2) village-based surveillance, and 3) case containment. Since 1990 the Cameroon GWEP has followed this sequence fairly closely. Operational details of the Cameroon program, however, differed from those of the Pakistan program used by Hopkins and Ruiz-Tiben for the final stages of eradication.

Phase 3, the final phase emphasizing case containment, should begin when elimination of dracunculiasis appears imminent in a region. The key to the success of the case containment phase is a rapid response by

VHWs to new cases. VHWs should also provide simple topical treatment, educate patients about not contaminating drinking water sources, and inform community members that they should filter drinking water from potentially contaminated sources.

Another important element in the case containment phase is rapid reporting of cases to immediate supervisors. Although 24 hours has been suggested, the Cameroon program was designed to be maintained within the primary health care system, and a weekly reporting schedule was the most frequent possible. The advantages of the weekly schedule became apparent as the program progressed. The Cameroon experience suggests that adopting a weekly reporting schedule as a standard during the case containment phase may speed eradication.

The case containment phase of the Hopkins/Ruiz-Tiben paradigm could usefully be divided into two stages. Stage 1 would require weekly reporting and include all of the village-based interventions normally associated with case containment. Stage 2 would entail reporting cases to immediate supervisors within 24 hours if possible, and would include a reward system to encourage prompt case reporting.

Cameroon has well-established, functional public health and social welfare infrastructures with workers capable of implementing the surveillance and health education portions of the GWEP. A final key to instituting case containment in Cameroon was the availability of a full-time program manager. Without him, the rapid transition into Stage 1 of case containment would not have been possible.

The 1991 operating costs for village-based case containment in Cameroon in 1991 were approximately US$ 12,000. Surveillance included weekly reporting in 33 villages and monthly reporting in another 43. Although the situations in Cameroon and Pakistan differ and comparisons may be misleading, it should be noted that Cameroon's 1991 costs were a fraction of the cost of the 1990 Pakistan program, which covered 53 villages (Kappus, personal communication). A major reason the Cameroon program was much less expensive is that it is based entirely within the PHC system.

2. Scope of Work for 1992 Technical Assistance

2.1 Review the 1991 program, including cost analysis, as a starting point for developing the 1992 program.

2.2 Assist national counterparts and NGO workers involved in the program to plan and organize the 1992 GWEP in the Mayo-Sava Department.

2.2.1 Assist in developing a Plan of Action for 1992.

2.2.2 Prepare and submit a budget to UNICEF for operational costs of the 1992 GWEP.

2.3 Carry out a mid-year assessment of the 1992 program in the Mayo-Sava.

2.4 Review reports of cases from other regions with the National Coordinator of Guinea Worm Eradication, preparing action plans for other endemic regions if necessary.

2.5 Assist the Cameroon team with preparations for the 4th African Regional GWD Conference held in Enugu, Nigeria, in March 1992 and represent the VBC Project at those meetings.

3. Introduction

When the author began to work with the Cameroon GWEP in 1990, the only intervention systematically used was temephos treatment of drinking water sources. A comprehensive National Plan of Action (POA) was prepared by the National Task Force for Guinea Worm Eradication that year and eventually approved by the Ministry of Public Health and funded by UNICEF. Implementation of the POA began in Mayo-Sava Department during that transmission season (Greer, 1990). In November 1990, following the transmission season, the first department-wide survey in the Mayo-Sava was performed. 778 cases were documented as having occurred during the previous year.

GWEP activities in 1990, combined with the provision of three wells in two villages with large numbers of cases, resulted in a 49 percent drop in the number of cases in the Mayo-Sava to 393 in 1991.

In 1991 village-based reporting began. Village-based health workers (VHWs) were identified in all villages with two or more cases and trained to perform simple topical treatment of lesions and to record cases in village registries. Villages were prioritized, with high priority villages also receiving filters, health education and case containment. Case containment involved weekly reporting of new cases by VHWs to their immediate supervisors. In most other villages VHWs reported cases every two to four weeks.

By the end of September 1992 only 115 cases had been reported for that year, 66% less than at the same time the year before. Seven wells had been installed in six endemic villages prior to the 1991 transmission season. It proved impossible once again to separate the effects of water projects from those of village-based case containment.

In 1992 the case containment program, including weekly reporting, was extended to all villages reporting more than one case the previous year. Also in 1992 locally produced health education materials were used for the first time.

Recent publications have recommended a general strategy for the eradication of Guinea worm disease and have presented a paradigm for the evolution of eradication programs (Hopkins and Ruiz-Tiben, 1991 and 1992). Three operational phases were identified in the Pakistan program used by Hopkins and Ruiz-Tiben as a model for programs in the final stages of eradication: 1) village-by-village search, 2) village-based surveillance, and 3) case containment. Since 1990 the Cameroon GWEP has generally followed this paradigm, but operational details differed. The Cameroon experience provides perspective for programs in the advanced stages of eradication that may be particularly useful to other African nations.

This report will provide an overview of the lessons learned from the Cameroon program and propose a modification to the Hopkins/Ruiz-Tiben paradigm.

4. 1992 Activities

4.1 Review of the 1991 Program

4.1.1 1991 Operations

The 1991 program was first reviewed with Dr. Dama Mana and Ms. Susan Graham (Annex 3). A village-based case containment program consisting of surveillance, simple treatment of lesions, health education, distribution of water filters, and temephos treatment of drinking water source had been instituted in 1991 in the Mayo-Sava Department. Villages reporting cases in 1990 had been prioritized for inclusion in the 1991 program: those with five or more cases in 1990 were designated as "primary" villages and those with fewer cases as "secondary" villages. Any village reporting a confirmed case during the 1991 transmission season immediately became a "primary" village.

Primary villages received the full complement of program interventions: cloth filters for drinking water, health education, and temephos treatment of drinking water sources. They were also enrolled in the case containment program whereby village-based primary health care workers (VHWs) were taught to provide simple topical treatment of lesions and to record cases in a village registry. VHWs learned to identify cases and treat wounds within 24 hours of worm emergence. They were also responsible for reinforcing health education messages, in particular reminding patients with lesions to avoid contaminating drinking water sources by staying away from them. Villages without government-trained VHWs were asked to identify someone to serve as interim VHW. Secondary villages did not receive the interventions provided to primary villages, but most of them had VHWs identified and trained.

In primary villages weekly reporting of cases to health outreach teams (HOTs) allowed for early confirmation of cases and follow up by supervisors as necessary. HOTs comprised of one or two nurses or nurse assistants from local government or mission health facilities visited secondary villages every two to four weeks. Each team had access to a motorbike as needed. Each of the seven HOTs was responsible for two to six primary villages and five to nine secondary villages. During visits

to six primary villages and five to nine secondary villages. During visits to primary villages HOTs would 1) record all new cases from the village registry, 2) confirm as many of the new cases as possible, 3) treat cases that had developed secondary infections, and 4) resupply VHWs with bands, antiseptics and antibiotic cream. HOTs were also responsible for monthly temephos treatment of all drinking water sources in primary villages.

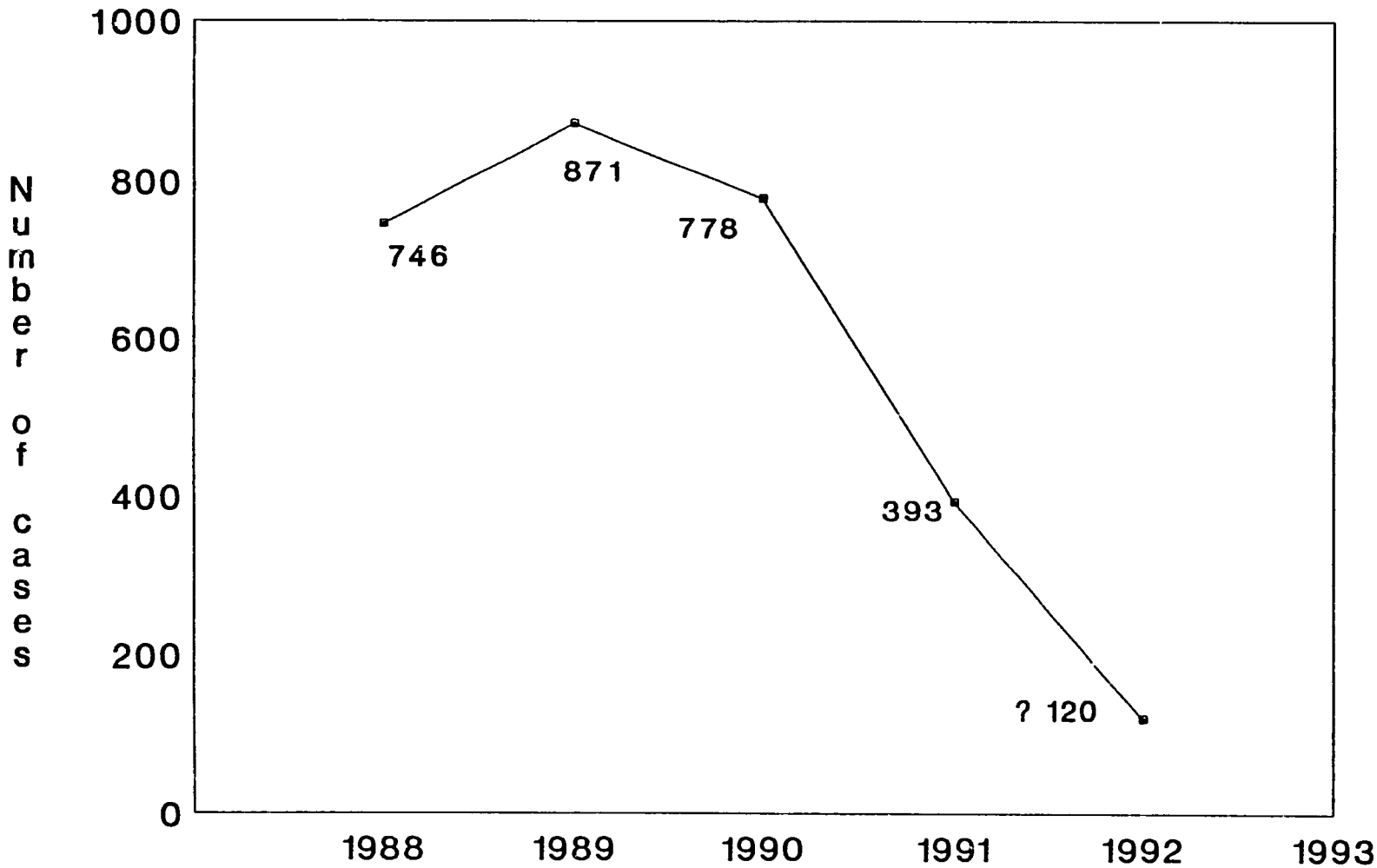
Experienced health educators from CARE, the Ministry of Social and Women's Affairs, and the Ministry of Public Health led group discussions in primary villages with the aid of flipcharts. They also demonstrated the use and maintenance of water filters.

There were 33 primary and 43 secondary villages in the case containment program by the end of the 1991 transmission season. Activities that year had included the distribution of 2,845 filters to 28 villages, monthly temephos treatment in 22 villages, and at least one health education session in 23 villages. VHWs registered and treated 19 percent of the cases within 24 hours of worm emergence, 73 percent within seven days. The HOTs arrived as scheduled for their weekly visits to primary villages about 90 percent of the time.

The village-based case containment program was concluded to be at least partly responsible for an impressive decrease in cases in 1992. As of October 1, 1992, 115 cases had been reported, compared to 338 for the same period in 1991, a 66 percent decrease in the number of cases (Figure 1).[1] Provision of potable water, in particular the completion of seven wells in six endemic villages shortly before the 1991 transmission season, was undoubtedly another important factor in the reduction of cases. Unfortunately, it was not possible to measure the impact of the case-containment program and the provision of potable water separately.

[1] Note that these numbers reflect cases detected by case containment and do not represent the total number of cases for those years based on the departmentwide survey.

Figure 1
Dracunculiasis in the Mayo Sava



4.1.2 1991 Operational Costs

A review of operational costs in 1991 was prepared by Dr. Dama (see Annex 4). Operational costs for the village-based case containment program for 1991 totaled 2,979,000 CFA francs (approx. US$ 12,000). During the transmission season of May to October 1991, VHWs received about $10 per month as incentive pay. Health educators and members of the HOTs held full-time jobs and worked with the GWEP for one to three days each week during the transmission season. These workers were either assigned to the program or worked with the program during their time off. They received $8 per diem for GWEP work. The project chief received $16 per diem for monthly supervisory visits to the field.

The budget included fuel and maintenance costs but not the purchase costs of motorbikes or the four wheel drive vehicle donated by UNICEF. Nor did the budget include the costs of filters, temephos, education materials or salaries.

4.2 Planning and Organizing the 1992 GWEP

4.2.1 Developing the 1992 Plan of Action

The 1992 Plan of Action was developed with Dr. Dama Mana and Ms. Susan Graham in February 1992 (see Annex 6). Major components of that plan are presented below.

Villages with two to four cases, considered secondary villages in 1991, were classified as primary villages in 1992. Villages reporting only one case in 1991 were still considered secondary villages. Of the 81 villages reporting cases in 1991, 47 were classified as primary and 34 secondary.

The 1992 Plan called for hiring a temporary worker from outside the PHC systems to cover villages in Kolofata District along the Nigerian border where the 1991 survey had found a number of previously unreported endemic villages. This was to be the first time a worker from outside the health care system was used in the program, but the health care workers in Kolofata do not speak the local language of the newly identified endemic villages and the region is extremely difficult to reach from Kolofata. A temporary worker living closer to the villages would

be able to get into the area at all times to visit all endemic villages in that region once a week.

Locally developed and tested health education materials were completed in March 1992. A training-of-trainers course on the use of those materials was planned for April, to be followed by a training course for community *animateurs* in May or June. Dr. Barry Hewlett, a Tulane University anthropologist working with the Schistosomiasis Control Project, was contacted and agreed to assist with the evaluation of the health education program and water filter use.

4.2.2 1992 GWEP Budget in the Mayo-Sava Department

A budget for the 1992 transmission season was prepared and submitted to UNICEF in late February (Annex 7). The 5,438,300 CFA ($ 21,700) is almost double the 1991 budget due to the inclusion of a number of expenses previously paid directly by UNICEF:

Fabrication of filters — 200,000 CFA
Medical supplies — 456,200 CFA
Two bicycles — 122,000 CFA

Also not included in the 1991 budget was training for *animateurs* in the use of new education materials and basic VHW training/retraining:

Training courses — 931,100 CFA

Removing these additional costs from the total allows for a more accurate comparison with the 1991 operational budget. The operational costs for 1992 come to about 3,730,000 CFA (approximately $ 15,000). The increase over the 1991 figure is due principally to the greater number of villages included in the expanded case containment program.

4.3 Mid-Year Assessment of the 1992 Program

During July 1992 it was possible to assess the progress of the program. The requirement that VHWs register pre-emergent cases appeared to have been an important addition to the program, allowing supervisors to follow cases more closely and to encourage VHWs to treat cases immediately after worm emergence.

Confirmation of cases by supervisors was also better in 1992. As prescribed in the POA, all cases reported by VHWs were confirmed by HOTs, and roughly 50 percent of those were confirmed by a departmental supervisor. The number of cases by month of 1991 and 1992 is shown in Figure 2. The large reduction in cases in 1992 allowed for greater attention to individual cases.

At the end of August 1992 all cases appeared to have been contained. If that trend holds and no cases slip through the surveillance net, the number of cases in 1993 should approach zero. However, villages along the Nigerian border will be susceptible to imported cases. Guinea worm disease can be expected to remain a problem there until it is eliminated from the Nigerian side of the border.

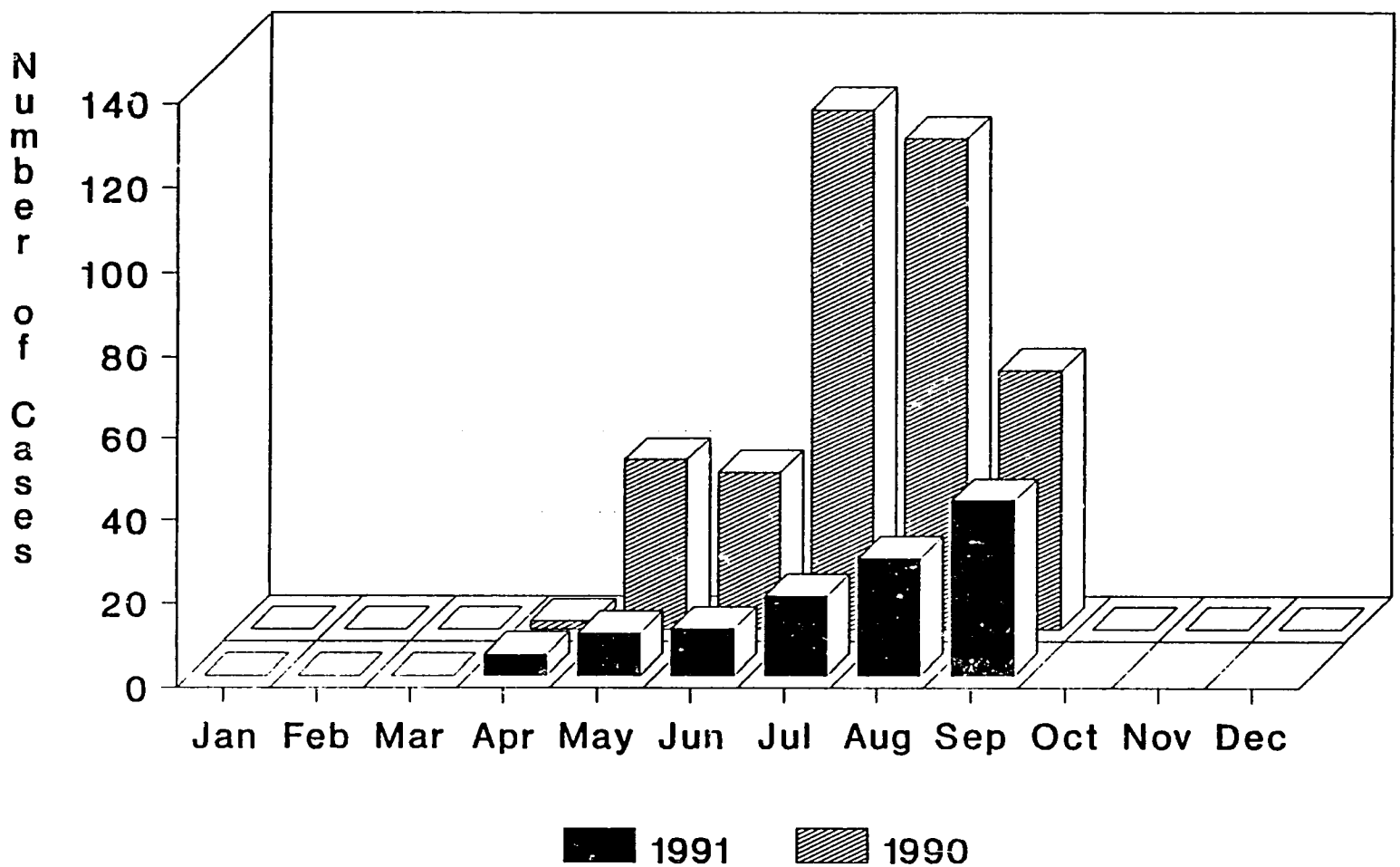
4.4 Guinea Worm Eradication in other Regions

In 1990 and 1991 there were reports of cases in the Mayo-Rey, Manyu, and Benué Departments of North Province, but the surveys scheduled for late 1991 had been postponed until late 1992. Without conclusive evidence of endemic dracunculiasis in those areas and a comprehensive analysis of the extent of the problem, it was not possible to develop a plan of action for eradication.

4.5 4th African Regional Conference on Dracunculiasis Eradication

Evaluation of the 1991 program was carried out with Dr. Dama Mana and Ms. Susan Graham, and the findings presented in the Executive Summary and Annex of the *Rapport d'Activités du Programme d'Éradication de la Dracunculose dans le Mayo Sava: Année 1991* (Annex 3). These data were sent to Dr. Sam-Abbenyi for his presentation to the conference in Enugu, Nigeria.

Figure 2.
Number of Case by Month: 1991-1992



5. Lessons Learned From The Cameroon Program

Cameroon is the first African nation to move from a national case search to the case containment phase of eradication. As such, Cameroon may serve as a model for other African nations as they move into the advanced stages of eradication. The more important lessons offered by the Cameroon experience are discussed below.

5.1 Reporting Frequency during Case Containment

The organization and management of the Cameroon GWEP followed rather closely the Hopkins and Ruiz-Tiben paradigm for national eradication. Operational details of the Cameroon program, however, differed from those of the Pakistan program used by Hopkins and Ruiz-Tiben as a model for programs nearing eradication.

Hopkins and Ruiz-Tiben (1991, 1992) outlined three operational phases: 1) village-by-village search and establishment of a national program office, 2) village-based surveillance, and 3) case containment. Phase 2 should begin shortly after completion of a national case search (Phase 1) and include monthly reporting of cases by VHWs to their immediate supervisors. Phase 3, emphasizing rapid case detection and treatment, advice regarding drinking water, and prompt reporting (within 24 hours is recommended), should begin once the VHW caseload is one case or less per worker per day.

With relatively few cases, the Cameroon GWEP was able to move quickly from village-based surveillance in 1990 to case containment in 1991. Since retaining the program within the primary health care system was an overriding concern during that transition, weekly reporting to immediate supervisors was the most frequent reporting schedule possible. A weekly schedule was felt to be adequate to interrupt transmission. Because *Dracunculus medinensis* larvae require two to three weeks develop in their copepod intermediate hosts before becoming infective to man, weekly reporting provides sufficient time for supervisors to reach new cases and carry out health education and temephos treatment before transmission can occur.

Other advantages of the weekly reporting schedule became apparent as the program progressed. The weekly visits by the HOTs served both to respond to new cases and to supervise the VHWs. When the registration of patients with pre-emergent worms was instituted in Cameroon in 1992, supervisors were able to monitor the VHWs even more closely.

Weekly reporting can be instituted earlier in a program than a more frequent schedule. Given the 778 cases reported from 82 villages the previous year, Cameroon could not have moved to Phase 3 in 1991, and eradication would have been delayed if weekly reporting had not been adopted.

5.2 Two Stages of Case Containment

The Cameroon experience suggests that Phase 3, case containment, can be divided into two stages. Stage 1 requires weekly reporting and includes all of the village-based interventions associated with case containment as presented above and in Hopkins and Ruiz-Tiben (1991). Programs should move from village-based surveillance to Stage 1 of case containment as soon as feasible. Cameroon depended on outreach teams to obtain weekly reports from endemic villages. Under different circumstances it might be possible for VHWs to report directly each week to a local health center.

Stage 2, to begin when there is one case or fewer per VHW per day, requires reporting cases to immediate supervisors as quickly as possible, optimally within 24 hours. This stage should also include a reward system which may prove to be more practical and less expensive than maintaining weekly surveillance.

5.3 Integration with the Primary Health Care System

Cameroon has well-established, functional public health and social welfare infrastructures that provide workers capable of implementing the surveillance and health education portions of the GWEP. This support and the availability of a full-time program manager were key elements in establishing the case containment program in Cameroon. The rapid transition into Stage 1 of case containment would not have been possible without a full-time manager for the first year.

The 1991 Cameroon program cost approximately US$ 12,000. Coverage included weekly reporting in 33 villages and monthly reporting in 43. Although comparisons might be misleading, Cameroon's 1991 costs were much less than the annual cost of the 1990 Pakistan program that covered 53 endemic villages (Kappus, personal communication). The Cameroon program was much less expensive because it was based entirely within the PHC system and because the case-reporting system in Cameroon was less rigorous.

The Pakistan program did demonstrate superior operational performance. 1990 results showed that 86 percent of the cases in Pakistan were contained by VHWs within 24 hours (Kappus et al., 1991). In Cameroon only 19 percent of cases were contained in that period of time.

5.4 Management of Water Development Programs

The Cameroon experience revealed a lack of communication between governmental and non-governmental entities concerned with water development (Greer, 1991), and the 1992 visit demonstrated that earlier efforts to improve communications among the various groups involved in water development had had little effect. The need for a strong central figure to coordinate the various water development projects is apparent.

The National Coordinator of the GWEP should appoint a responsible Water Project Coordinator (WPC) early in the program. Since the position is too important to be an honorary appointment, the person appointed must be a dedicated worker and have ample time available. The WPC must know the capabilities of the various organizations involved in the program and their specific plans, and must set up strong liaisons with regional parties because many programs are promoted at that level and financed from regional budgets. He or she must also ensure that villages with the greatest need are the first to receive help and that organizations are not duplicating each other's work.

6. References

Greer GJ. 1990. Guinea Worm Eradication Program in Cameroon. VBC Report No. 81133.

Greer GJ. 1991. Technical Assistance to the Guinea Worm Eradication Program in Cameroon (Phases II and III). VBC Report No. 81235.

Hopkins DR, Ruiz-Tiben E. 1991. Strategies for dracunculiasis eradication. **Bulletin of the World Health Organization**, 69: 533-540.

Hopkins DR, Ruiz-Tiben E. 1992. Surveillance for dracunculiasis, 1981 - 1991. **Morbidity and Mortality Weekly Report**, 41: 1-13.

Kappus KD, Hopkins DR, Ruiz-Tiben E, Imtiaz R, Anderson J, Azam M, Attiq A. 1991. A strategy to speed the eradication of dracunculiasis. **World Health Forum**, 12: 220-225.

Richards F. 1986. Dracunculiasis in the United Republic of Cameroon I: A proposal for a national plan of action for drancunculiasis control and elimination. VBC Project Report No. CE-010.

WHO Collaborating Center for Research, Training and Control of Dracunculiasis. 1989. Guidelines for chemical control of copepod populations in dracunculiasis eradication programs. 39pp.

Annex 1

Itinerary and Summary of Activities

February 7-13, 1992: Yaoundé

Meet with USAID, AMA, Ministry of Public Health, UNICEF, OCEAC and Centre Pasteur.
Assist with preparations for Enugu, Nigeria, meetings.

February 19 - March 1, 1992: Mora

Work on review of 1991 program; prepare plan of action and budget for 1992; assist with planning of health education program and training courses; assist in developing an evaluation for health education and filter utilization.

March 13-15, 1992: Yaoundé

Prepare for Enugu meetings.

July 6-8, 1992: Yaoundé

Discuss this mission and the 1992 program with Dr. Sam-Abbenyi, Mr. Alami, Ms. Deborah Agbor-Tabi and Mr. Richard Greene.

July 8-17, 1992: Mora

Work with Dr. Dama Mana, Ms. Susan Graham, and others on assessing the 1992 program. Discuss the lessons learned from the Cameroon program in the context of paradigms for eradication programs.

Annex 2

Persons Contacted

Dr. Sam-Abbenyi Amos,* Deputy Director for Epidemiology and Coordinator of National Task Force for Guinea Worm Eradication, Department of Preventive Medicine, Ministry of Public Health, Yaoundé

Dr. Hamidou Issoufa,* Provincial Delegate, MOPH, Extreme-North Province

Dr. Dama Mana,* Departmental Chief of Service, MOPH, Mayo-Sava Department

Mr. Richard Greene,* Health Officer, USAID/Yaoundé

Mr. Mohamed Bendriss Alami,* Program Director Rural Water and Sanitation, UNICEF/Cameroon

Mrs. Deborah Agbor-Tabi,* Associate Director for Health and Community Development, Peace Corps/Cameroon

Ms. Susan Graham, Peace Corps Volunteer, Mora

Ms. Leslie Moore, Peace Corps Volunteer, Mora

Ms. Nina Payne, Peace Corps Volunteer, Kolofata

Mr. Larry Kaye, Peace Corps Volunteer, Mora

Ms. Jacqueline Bouwmans, Cadre Audio-visuel, Atelier de Matériel Audio-visuel, Yaoundé

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

Dr. R. Migliani,* OCEAC, Yaoundé

* Representative to the National Task Force for Guinea Worm Eradication

Annex 3

Report on the 1991 GWEP in Mayo-Sava, Cameroon

MINISTERE DE LA SANTE PUBLIQUE

DELEGATION PROVINCIALE DE LA
SANTE PUBLIQUE DE L'EXTREME NORD

SERVICE DEPARTEMENTAL DE LA
SANTE PUBLIQUE DU MAYO SAVA

REPUBLIQUE DU CAMEROUN
Paix - Travail - Patrie

RAPPORT D'ACTIVITES DU PROGRAMME D'ERADICATION DE LA DRACUNCULOSE DANS LE MAYO SAVA

ANNEE 1991

Présenté par le Docteur DAMA MANA* et Mlle. Susan GRAHAM**

* = Chef de Service Départemental de la Santé Publique du Mayo Sava à Mora

** = Volontaire du Corps de la Paix Américain

20

EXECUTIVE SUMMARY

In 1991 a comprehensive, village-based eradication program was established in the Mayo Sava. Health education; distribution of water filters; active surveillance and a strategy of case containment, including treatment of lesions by village health workers; were instituted widely in the Mayo Sava for the first time. These strategies were added to a long-standing program of Abate treatment.

Four levels of responsibility were established. At the foundation are the Village Health Workers (VHWs). Health Outreach Teams (HOTs) form the link between the VHWs and Supervisors. Peace Corps Volunteer Supervisors report to the overall head of the program, the Departmental Chief of Health Services for the Mayo Sava. Health education was carried out by professional health educators who worked closely with the HOTs and VHWs.

Several training courses to prepare personnel for their specific tasks were held before the 1991 transmission season . A total of 18 VHWs, 7 village-based mid-wives, 18 health workers (nurses and hygienists for the HOTs) and 10 health educators were trained.

A summary of the village-based activities, including the number of new water sources established in endemic villages in 1991 with projection for 1992 is shown in the following table:

Intervention	Villages Covered in 1991	Villages Projected In 1992
Filters	28	6 new
Animation	22*	24*
Abate treatment	28	47
Surveillance	27 + 49**	47 + 34**
Training of ASCs	18	47
New wells	7	19

* number of sorties, several village may be covered by a sortie
** weekly + monthly

As part of the case containment strategy, villages that had 5 or more cases in 1990 received weekly surveillance in 1991. In those villages, VHWs recorded cases and treated wounds daily. HOTs verified new cases and reported them to the departmental headquarters each week. Villages with 2-4 cases in 1990 were covered by surveillance every two to four weeks. Seven villages in this category were shifted to weekly surveillance when the number of cases reached 5 during the 1991 transmission season. Also, 11 villages with no cases in 1990 were discovered during the 1991 season by passive case detection.

21

A total of 380 cases were reported in 42 villages by the case containment program in 1991. Of those, 30 reported 2 or more cases.

WEAKNESSES IN THE 1991 PROGRAM:

- Many endemic villages lacked VHWs.

- Not all cases found by VHWs during case containment were confirmed by HOTs.

- Health education and filter distribution were begun late in the year due to delays in the delivery and production of materials and supplies.

- Villages with 2-4 cases were not covered by weekly surveillance in 1991.

- Lists of villages needing water projects were not prioritized or complete.

- A lack of coordination exists among donors willing to undertake water projects.

PROGRAM IMPROVEMENTS FOR 1992

- Increased emphasis on village mobilization - this will be based on identifying and training a greater number of VHWs. A total of 47 villages will have a trained community worker in place by the end of 1992.

- All cases found by VHWs during the transmission season will be confirmed by HOTs; approximately 50% of those will be confirmed by supervisors.

- Health education will begin before the transmission season begins, when villagers have free time to attend sessions. Animators will be trained beforehand in the use of new educational materials developed for the Mayo Sava; these materials are aimed at increasing the community involvement and participation in decision-making.

- The program of weekly surveillance and case containment will be expanded to include all villages with more than one case. Based on 1991 results the program will begin the year with 47 villages and others may be added during the year. Villages with only 1 case are not included because so many of these do not report cases the following year. Those villages will receive bi-weekly or monthly surveillance.
- Most villages with 5 or more cases have already received water filters. The 6 new villages programmed for filters will receive them and instruction on their use before the 1992 transmission season begins.

22

CURRENT EPIDEMIOLOGICAL SITUATION

A departmental survey was carried out in November 1991 that instituted several modifications of the previous year. Improvements included the introduction of simplified survey forms, of plastic-coated identification photos used by teams to assist with the door-to-door search for cases, and of case confirmation by supervisors. In addition the survey benefitted from the 1990 experience: the list of villages was more comprehensive and accurate, survey teams performed more efficiently, and supervision was more thorough.

The 1991 departmental survey reported 393 cases in 74 villages. It failed to find cases in 7 villages that had reported cases during the transmission season. Thus, in 1991 a total of 81 villages reported cases either during case containment or the departmental survey.

A comparison of 1990 and 1991 results shows a decrease of cases detected by departmental surveys from 778 to 393, respectively, a 49.5% reduction. Most of the reduction came in villages with the largest number of cases. Sanda Wadjiri/Agai-Agai and Vame (Montagne and Plaine), which accounted for 64% of all cases in 1990, had 76% reduction in cases. Among other villages that had cases in both 1990 and 1991 there was an overall reduction of 36%. Sanda Wadjiri and Vame both received wells before or during the 1991 transmission season. Those villages plus Mbrime and Ndaba received water filters during the 1991 season. Another factor that may have contributed to the reduction was a strengthened Abate treatment program that included several new water sources in the most important villages.

Although the number of cases fell dramatically, the number of villages in 1991 (81) was only one less than in 1990 (82). Yet only 43 villages had cases in both years: 39 villages reporting cases in 1990 had no cases in 1991; 38 villages with no cases in 1990 were added in 1991. A significant proportion of those swing villages reported only one case: 32 of the villages dropped from the list in 1991 and 19 of the new villages in 1991 had one case. This large swing indicates that transmission is seldom established in villages reporting one case. These cases are probably imported or spurious.

23

As can be seen in the table below, from 1989 to 1991 there has been a steady and large increase in the number of villages with more than one case.

CANTON	# VILLAGES WITH MORE THAN 1 CASE 1989	1990	1991	VILLAGES WITH MORE THAN 1 CASE 1990 0 CASES IN 1991 (NUMBER OF CASES())	VILLAGES WITH MORE THAN 1 CASE 1991 0 CASES IN 1990 (NUMBER OF CASES())
BOUNDERI	-	1	2	0	1 (3 cases)
DJOUNDE	-	-	-	0	0
DOULO	-	-	-	0	0
KERAWA	-	3	4	0	2 (8 cases)
KOLOFATA	2	5	8	1 (2 cases)	5 (53 cases)
KOSSA	-	-	-	0	0
KOURGUI	-	-	-	0	0
LIMANI	-	-	2	0	2 (6 cases)
MADA	-	1	1	1 (2 cases)	1 (5 cases)
MEME	-	3	1	2 (6 cases)	0
MORA	-	2	2	0	1 (2 cases)
MORA MASSIF	2	8	8	0	1 (19 cases)
M. ZOUELVA	3	8	9	2 (7 cases)	4 (8 cases)
OULDEME	3	4	7	1 (2 cases)	1 (8 cases)
PODOKO CENTRE	0	-	1	0	1 (3 cases)
PODOKO NORD	-	1	-	0	0
PODOKO SUD	1	-	1	0	0
WARBA	-	1	1	0	0
TOTAL	11	37	47	7 (19 cases)	19 (115 cases)

The survey in 1989 was limited to known endemic villages, so t is not unexpected that the number of villages increased greatly ollowing the first department-wide survey in 1990. Much of the ncrease between 1990 and 1991 can be explained by better reporting f cases, particularly by the departmental survey. Of the 19 new illages reporting more than one case in 1991, 10 are located along he Nigerian border, a region poorly covered by the 1990 survey.

PROJECTIONS FOR 1992

- New villages discovered by the 1991 departmental survey were not covered by the eradication program. Of those, villages with more than one case accounted for 115 cases. The number of cases in those villages will probably be as high or higher in 1992.

- There were 18 new villages discovered in 1991 with only 1 case. Results from 1990 and 1991 show a high turn over from one year to the next. One would expect to see the same phenomenon next year.

24

- Villages covered under the 1991 eradication program accounted for 235 cases. The number of cases in these villages should be down by 50% or more in 1992.

- If the above prediction are correct, approximately 250 cases can be expected in 1992.

TABLE DES MATIERES

I. INTRODUCTION 1

II. ACTIVITES DE LA SAISON DE TRANSMISSION.....1

FORMATION DU PERSONNEL.....1
SURVEILLANCE - ENDIGUEMENT DES CAS.....2
DISTRIBUTION DES FILTRES ET EDUCATION.....6
TRAITEMENT DES POINTS D'EAU.....8

III. OUVRAGES HYDRAULIQUES 9

IV. ENQUETE GENERALE DEPARTEMENTALE.....11

BUT.....11
OBJECTIFS SPECIFIQUES.....11
PERIODE DE L'ENQUETE.....12
RESSOURCES.....12
METHODE.....13
RESULTATS.....13
CONCLUSIONS.....19

V. CONCLUSION.....20

VI. ANNEXES

RAPPORT ANNUEL DES ACTIVITES DU PROGRAMME D'ERADICATION DE LA DRACUNCULOSE DANS LE MAYO SAVA POUR L'ANNEE 1991

I. Introduction

Au cours de l'annee 1991 les activites du programme d'eradication de la dracunculose dans le Mayo Sava ont ete marquees par l'introduction de la strategie d'endiguement des cas pendant la periode d'emergence et le traitement informatique des donnees. Ces activites se regroupe en trois categories:

1) les activites pendant la saison de transmission (formation, endiguement des cas, distribution des filtres et education pour la sante, traitement des points d'eau au temephos);

2) realisation des ouvrages hydrauliques (approvisionnement en eau potable); et

3) enquete departementale de recherche active des cas.

II. Les activites de la saison de transmission (periode d'emergence)

II-1. Formation du personnel

La periode d'emergence proprement dite de la dracunculose a ete precedee par trois formations:

a) du 4 au 13 mars 1991 - formation de 12 Agents de Sante Communautaire (ASC) pour les villages Vame, Mbrime, Tala Dabara, Koulong, Golda, Houdmekoua, Sigai, et Sanda Wadjiri;

b) du 8 au 11 avril 1991 - formation de 8 animateurs CARE; 2 animatrices du MINASCOF; 1 chef de Service Departemental de Mines, Eau et Energie; et 18 infirmiers et agents d'hygiene des secteurs public et prive soit 29 personnes. Les themes traites sont:
   - l'animation
   - l'education pour la sante
   - la surveillance et endiguement des cas
   - le traitement des points d'eau au temephos;

c) du 21 au 29 mai 1991 - formation de 7 accoucheuses traditionnelles (AT) des villages Sanda Wadjiri, Vame, Golda, Sigai, Koulong.

II-2. Surveillance - endiguement des cas

La surveillance active s'est intensifiee et amelioree avec l'endiguement des cas. Elle s'est effectuee de juin a octobre 1991. Elle a ete quotidienne pour les villages ayant des agents de sante communautaire et des volontaires villageois et hebdomadairement pour les autres villages. L'endiguement consiste au depistage precoce (quotidien si possible), au pansement des plaies, a l'education pour la sante (filtrer son eau de boisson, ne pas aller a la source d'eau, garder son pansement sec).

C'est ainsi que 22 villages ont ete surveilles hebdomadairement et 49 surveilles tous les 15 jours (2 fois par mois). Au cours de la periode de surveillance d'autres villages se sont ajoutes a cause de l'importance du nombre de cas. Il s'agit de Pouche Bleble, Kerawa, Vandelar, Madavare, Plata Kapa, Doume et Tidiwe.

6 equipes ont ete chargee de la surveillance et endiguement:

Equipe	Composition	Surveilles par semaine
Godigong	2 infirmiers prives 2 ASCs	Tala Dabara Slalavada Pouche Bleble
Kerawa	2 infirmiers publics 2 ASCs, 1 volontaire	Sanda Wadjiri Ndaba I, II Kerawa
Mayo Ouldeme I	1 infirmier prive 2 ASCs 1 volontaire	Ouzedede I, II Vandelar Jilve
Mayo Ouldeme II	1 infirmier public 1 ASC	Mayo Plata Madavare Plata Kapa

28

Equipe	Composition	Surveilles par semaine
Mora I	1 infirmier public 1 agent d'hygiene 4 ASCs 1 volontaire	Vame-Ndrime Mbrime Doume Tidiwe
Mora II	2 infirmiers 2 volontaires	Gagadama Adekele Tchakouyaba
Tala Mokolo	2 infirmiers prives 6 ASCs	Sigai-Maguiche Koulong-Guebede Golda

Pour le traitement des malades, les ASCs et les equipes de surveillance ont utilise les materiels et les medicaments suivants:

- bandes: 823
- compresses: 175 paquets
- coton: 15.5 kilo
- alcool: 28.5 litres
- mercryl lauryle: 10 litres
- pommade aureomycine: 138 tubes
- aspirine: 12.400 comprimes
- bactrim: 3.140 comprimes

Il faut noter que 65% des medicaments ont ete utilises dans les zones de Mora (Vame, Doume, Tidiwe) et de Kerawa (Sanda Wadjiri et Ndaba).

La duree moyenne entre la date d'emergence du Ver et la date ou le cas a ete signale est de 8,8 jours. Les ASC ont confondu la date d'emergence du Ver avec la date d'apparition des premiers symptomes cutanes. Le succes de l'endiguement depend du niveau de formation et de la volonte de l'agent.

DISTRIBUTION DES CAS PAR MOIS

MOIS	Cas	Pourcentage	% Cumulatif
AVRIL	1	0.3%	0.3%
MAI	31	8.5%	8.8%
JUIN	25	6.9%	15.7%
JUILLET	116	32.0%	47.7%
AOUT	133	36.6%	84.3%
SEPTEMBRE	35	9.6%	93.9%
OCTOBRE	22	6.1%	100.0%
Total	363	100.0%	

La plupart des cas ont apparu entre juillet et aout (69%), cependant des cas ont ete signales d'avril a decembre. (17 rapports manquaient les dates d'emergence du ver.)

CAS DEPISTES PAR EQUIPE

EQUIPE	Cas	Pourcentage
AISSA HARDE	1	0.3%
KOLOFATA	3	0.8%
BOUNDERI	3	0.8%
GODIGONG	16	4.2%
KERAWA	136	35.8%
MORA I	130	34.2%
MORA II	18	4.7%
MEME	4	1.1%
MAYO OULDEME	19	5.0%
MAYO OULDEME II	25	6.6%
TALA MOKOLO	25	6.6%
Total	380	100.0%

L'age moyen des malades etait de 27,0 ans. La plupart des malades etaient de sexe masculin (52,4% contre 47,6% feminin). 26 personnes seulement (6.8%) ont presente plus d'un ver.

99% des malades ont recu des conseils pour eviter la contamination des sources d'eau et 78% ont vu leurs plaies protegees par des pansements pendant la periode d'emergence.

CAS DEPISTES PAR VILLAGE

VILLAGE	Cas Endigues	Enquete Generale Departementale
DJOUE	1	0
DJOUNDE	1	1
DOUGDJE	5	4
DOUME	21	21
GAGADAMA	11	7
GALDAMATS	1	0
GOLDA	1	1
GOUZOUDOU	1	1
HODEWAY	2	0
HOUDMEKOUA	2	2
JILVE	4	6
KASSA	1	3
KERAWA	4	1
KOULONG-GUEBEDE	6	2
MADAVARE	7	6
MAGUICHE-GOTADA	1	1
MAYO PLATA	4	3
MBRIME	5	5
MEME/GOLDOKO	1	1
MOKOL	3	2
MORA	3	1
NDABA I & II	52	24
NDALA	2	2
OUZEDEDE	5	5
PLATA DOUMLALE	2	0
PLATA KAPA	8	3
POUCHE BLEBLE	4	2
SAMA-MANDREFE	2	2
SANDA WADJIRI ET AGAI-AGAI	72	81
SAVA	1	1
SERA DOUMDA	2	1
SIGAI-MAGUICHE	8	8
SLALAVADA	1	0
TAGAWA	3	3
TALA DABARA/DABALA	15	13
TCHOKOYABA	2	2
TIDIWE	18	19
VAME	85	40
VANDELAR-TAHOUYAME	6	11
WARA WIDE	5	5
ZOUELVA	1	0
Total	380	290 (parmi 393 cas rapportes par l'enquete)

Quelques rapports de cas a Vame et a Ndaba etaient repetes ou bien prematures, donc les cas rapportes par suveillance active sont exageres.

Difficultes

- L'etat des routes n'a pas facilite la supervision des activites surtout aux mois de juillet et aout. Les pluies ont gravement endommage les routes et pistes.
- Les medicaments et materiels commandes ne sont pas souvent livres a temps.

II-3. Distribution des filtres et education pour la sante

Le but est d'eviter la contamination de l'eau et donc la transmission. Les objectifs sont:

- de promouvoir l'endiguement des cas
- de faire comprendre le cycle de transmission et les sources de contamination
- d'encourager l'utilisation des sources d'eau potable
- d'enseigner comment filtrer l'eau de boisson.

Au total 146 seances educatives ont eu lieu dans 25 villages endemiques.

Materiels utilises:

- Boite a images de WORLD NEIGHBORS et celle du Programme d'Eradication de Ver de Guinee du Nigeria.
- Filtres en nylon cousu autour d'une tige de bambou circulaire.

Methodes:

- discussion de groupes
- demonstration

Au total 2845 filtres ont ete distribues dans 28 villages par les equipes de traitement et les animateurs. Ce sont les villages infectes de 1990 et leurs environs immediats qui ont benificie de cette distribution des filtres. Toute femme adulte mariee ou non et tout homme celibataire habitant seul ont recu un filtre. Les

37

villages infectes mais ayant un forage n'ont pas recu des filtres.

Un probleme a souligner: La distribution s'est effectuee pour la grande partie apres le mois de juillet (la moitie des filtres).

Resultat de l'Animation et Distribution des Filtres:

VILLAGE	Seances	Filtres	Popul.	Cas	CANTON
ADEKELE III/IV	4	48	148	0	MORA
DOUGDJE	6	80	261	4	KERAWA
DOUME	4	134	479	21	MORA MASSIF
GAGADAMA	5	96	305	7	MORA MASSIF
GOLDA	2	130	430	1	MOUKTELE ZOUELVA
HODEWAY	--	56	52	0	MOUKTELE ZOUELVA
HOUDMEKOUA	--	100	514	2	MOUKTELE ZOUELVA
JILVE	10	247	922	6	WARBA
KOULONG-GUEBEDE	13	115	595	2	MOUKTELE ZOUELVA
MADAVARE	2	80	579	6	OULDEME
MAGE	--	25	121	0	MORA MASSIF
MAGUICHE	8	30	410	1	MOUKTELE ZOUELVA
MAYO PLATA	6	--	536	3	OULDEME
MBRIME	10	89	684	5	MORA MASSIF
MOKOL	2	--	861	2	MOUKTELE ZOUELVA
NDABA	6	126	229	24	KOLOFATA
OUZEDEDE I/II	11	140	708	5	OULDEME
PLATA KAPA	5	98	295	3	OULDEME
POUCHE BLEBLE	4	40	103	2	MORA
SANDA WADJIRI	6	344	1595	81	KOLOFATA
SAVA MADA	--	20	147	1	MEME
SIGAI/MAGUICHE	8	57	237	7	MOUKTELE ZOUELVA
SLALAVADA*	12	50	558	0	PODOKO NORD
TALA DABARA	12	110	2070	13	PODOKO SUD
TCHOKOYABA	--	49	171	0	MORA
TIDIWE	--	113	573	19	MORA MASSIF
VADAVOUA	1	40	102	0	MORA MASSIF
VAME	17	300	732	40	MORA MASSIF
VANDELAR	4	40	253	8	OULDEME
WARA WIDE	--	88	110	5	KERAWA
Total	146	2845	14728	267	

II-4. Traitement des points d'eau a l'abate (Temephos)

Le traitement des sources d'eau a l'Abate (Temephos) a couvert 27 villages pendant la saison 1991. 20 villages etaient dans le programme des le mois de mai; Ndaba et Adekele ont ete elimines a cause de difficulte de traitement des mayos. Au vu des rapports, 9 villages ont ete ajoutes: Kassa, Pouche Bleble, Hodeway, Houdmekoua, Zouelva, Plata Kapa, Vandelar, Doume, Tidiwe, et Vame Sama. Les villages de Doume, Tidiwe, Plata Kapa et Vame Sama ont ete ajoutes un peu tard. Ils ont donc ete traites seulement 2 fois au cours de la saison.

EQUIPE	VILLAGE	NO. SOURCES	NO. TRAITEMENTS
GODIGONG	SLALAVADA*	15	6
	KASSA	7	4
	TALA DABARA	22	5
	POUCHE BLEBLE	4	2
KERAWA	SANDA WADJIRI /AGAI-AGAI	4	11
	DOUGDJE	1	11
MAYO OULDEME	JILVE	11	5
	OUZEDEDE I/II	7	5
	PLATA KAPA	1	2
	VANDELAR	10	3
MORA I	VAME PLAINE	12	6
	MBRIME	3	6
	VAME SAMA	7	2
	DOUME	5	2
	TIDIWE	4	2
MORA II	GAGADAMA	2	5
TALA MOKOLO	SIGAI-MAGUICHE	12	5
	GOLDA	14	5
	KOULONG-GUEBEDE	10	5
	HOUDMEKOUA	11	5
	HODEWAY-MOKOL	21	4
	ZOUELVA	20	4
	Total	203	105

* SLALAVADA comprend et GOURVOUYEDE et OURAGA MAKOULAHE.

90% des sources traitees etaient des puits traditionels ou des mares. Le reste etait des puits a margelle ou des puits ouverts.

34

III. Realisation des ouvrages hydrauliques

SITUATION ACTUELLE DES OUVRAGES HYDRAULIQUES

Les partenaires pour l'approvisionnement en eau potable des villages endemiques comprennent le Ginirural (GINIR.) et le Ministere des Mines, Eau, et Energie (MINES), CARE International, le Fonds des Nations Unis pour l'Enfance (UNICEF), le Banque Islamique du Developpement (BID), les Fonds Special d'Action Rurale du Banque Mondiale (FSAR), le Corps de la Paix (PC), et les missions catholiques et protestantes du departement du Mayo Sava (MISSION).

before '90 census, one of these before '91 census

VILLAGE	CAS	POP.	AVANT 1990	1990-1991	1991-1992
SANDA WADJIRI					
CENTRE/MATAKAM	31	830	1 P GINIR.	2 F BID	1 F FSAR*
TALA BIRI	37	371	--	--	1 F UNICEF
AGAI-AGAI	13	394	--	--	1 F FSAR*
VAME SAMA (MONTAGNE)	17	115	--	--	--
VAME PLAINE/NDRIME	23	617	--	3 P CARE	--
NDABA I, II	24	229	--	1 F BID	--
NDABA III	0	260	1 F	--	1 F UNICEF
KORDO	35	302	--	--	1 F CARE*
DOUME AGOULA (MONTAGNE)	21	204	--	1 P	1 P PC*
TIDIWE	19	573	--	--	1 F FSAR*
TALA DABARA/DABALA	9	155	--	--	--
VANDELAR-TAHOUYAME	11	550	--	1 P CARE	--
KODOGO	9	146	--	--	--
SIGAI-MAGUICHE	8	647	1 P	1 P CARE	--
GAGADAMA	7	305	2 P MISSION	--	1 F FSAR*
JILVE	6	922	1 P GINIR.	--	3 F FSAR*
MADAVARE	6	579	--	--	1 F CARE*
SERADJI	6	67	--	--	1 F FSAR*
OUZEDEDE	5	260	--	1 P CARE	--
MBRIME	5	684	--	--	1 P CARE*
WARA WIDE	5	110	--	--	1 F UNICEF
MAINANKOA	5	282	--	--	--
MALIKA	5	608	1 F	--	1 F FSAR*
OURO DOLE	5	416	1 F, 1 P	--	--
HOMAKA III	4	129	--	--	1 F FSAR*
DOUGDJE	4	261	--	--	1 F FSAR*
KASSA	3	430	1 P	--	1 F FSAR*
MAYO PLATA	3	536	1 F FSAR	--	--
TAGAWA	3	200	--	--	--
PLATA KAPA	3	295	--	--	1 P MISSION*
MOKOL	2	861	--	--	1 F FSAR*
KOULONG-GUEBEDE	2	595	2 P MISSION	--	1 P CARE*

P = PUITS F = FORAGE * = pas encore realise

AMCHIDE et KERAWA, des gros villages sur la frontiere Nigeriane ont eu 3 et 4 cas, respectivement, cette annee. Bien qu'ils aient plusieurs forages chacun, les pannes et la provision des pieces detachees restent un probleme important qui met ces villages a risque d'infection.

Ouvrages realises

En 1990:
- 3 forages par la Banque Islamique de Developpement a Sanda Wadjiri et Ndaba
- 6 puits par CARE dans 6 villages endemiques

En 1991:
- 3 forages UNICEF a Sanda Wadjiri, Wara Wide et Ndaba

En prevision:
- 2 puits par CARE a Mbrime et Koulong
- 2 forages par CARE a Madavare et Kordo
- 13 forages par FSAR
- 2 puits par Corps de la Paix a Sanda Wadjiri et Doume
- 1 puits de la Mission Catholique a Plata Kapa

Ces ouvrages vont couvrir 19 villages endemiques.

La coordination de la realisation des ouvrages hydrauliques reste un probleme. La communication entre les partenaires et les responsables du programme, n'est pas systematise ou formalise. Ceci a conduit a des duplications d'effort (2 groupes programmes a faire chacun un projet dans un meme village), et a des problemes avec la choix d'endroit pour les ouvrages (choix de quartier, etc.).

Par ailleurs, la formation des comites de gestion et des reparateurs des pompes reste le plus grand probleme, surtout dans les villages qui ont des forages. Quand un forage tombe en panne, il peut le rester pour plusieurs mois parce que les villageois ne savent pas ou aller chercher de l'aide. Le programme d'animation n'a pas inclus un volet hydraulique ou un volet hygiene, en dehors des villages animes par

le projet hydaulique de CARE ou par DC a Mora, la formation des groupes responsables pour la gestion des sources manque.

Nous recommandons:

1) que le programme d'animation de 1992 comprenne un volet hygiene et entretien des sources d'eau.

2) qu'un reparateur de pompe soit forme dans chaque village ayant recu ou a recevoir un forage.

3) qu'un comite de gestion d'eau soit etabli et forme dans chaque village anime en 1992.

4) qu'une reunion des partenaires hydrauliques se tienne a Mora pour la coordination des efforts.

5) que le CARE ou le Developpement Communautaire a Mora soit charge de suivre la gestion des sources d'eau dans les villages endemiques.

IV. Enquete generale de recherche des cas de dracunculose dans le departement du Mayo Sava

IV-1. But:

- Evaluer la situation de l'endemie a la deuxieme annee du programme d'eradication.

IV-2. Les objectifs specifiques sont:

- Determiner le nombre de cas du dracunculose pour l'annee 1991;

- Determiner le nombre de villages infectes;

- Determiner l'incidence par village infecte.

31

IV-3. Periode de l'enquete

L'enquete s'est deroulee du 15 au 30 novembre 1991 precedee d'une journee de formation des enqueteurs. Cette formation a beneficie de l'appui technique du Responsable National du Programme d'Eradication de la Dracunculose, le Dr. Sam ABBENYI, et du Dr. MIGLIANI de l'OCEAC a Yaounde.

IV-4. Ressources

A) Ressources humaines

L'enquete a mobilise:

- 6 ASCs
- 42 enqueteurs dont:
  - 8 animateurs CARE
  - 5 infirmiers du secteur prive
  - 1 volontaire de Corps de la Paix
  - 28 infirmiers et agents du secteur public
- les medecins-chef d'arrondissement de Rey Bouba et de Pitoa dans la Province du Nord pour 6 jours seulement
- 2 infirmiers venant de Pitoa et de Rey Bouba pour 6 jours seulement
- 4 superviseurs dont:
  - le chef de Service Departemental de la Sante Publique du Mayo Sava,
  - une volontaire de Corps de la Paix,
  - le chef de bureau de la sante au SDSP Mayo Sava, et
  - le Coordinateur des SSP d'Arrondissement de Mora
- 2 responsables du Ministere de la Sante Publique dont:
  - le Coordinateur National du Programme d'Eradication de la Dracunculose, et
  - le chef du bureau Onchocercose-Dracunculose.

B) Ressources materielles

Les fiches d'enquete ont ete confectionnees et tirees par l'OCEAC a Yaounde avec l'appui financier de l'UNICEF. Les photos guide-enqueteurs ont ete developpees et multipliees par l'UNICEF a Yaounde.

Les moyens logistiques suivants ont ete mobilises:

- 1 voiture UNICEF
- 1 voiture CARE
- 1 voiture privee
- 30 motocyclettes dont:
    - 8 appartenant a CARE
    - 6 UNICEF
    - 3 Soins de Sante Primaire
    - 2 Corps de la Paix
    - 11 personnelles

- 2 mobylettes du circuit-lepre

C) Ressources financieres

Une somme de 2.946.000 francs (deux millions neuf cent quarante six mille francs) a ete viree au compte ERADRA pour couvrir le carburant et lubrifiant, les entretiens des vehicules, les fournitures de bureau, les frais de transport, le repas le jour de la formation, les per diems et les diverses indemnites. Les depenses se sont elevees a 2.768.490 francs (deux millions sept cent soixante huit mille quatre cent quatre vingt dix francs).

IV-5. Methode

Une combinaison des methodes a ete utilisee: la methode de porte-a-porte a ete utilisee dans plusieurs villages; dans d'autres une reunion generale s'est tenue en presence du chef et des notables de la communaute.

IV-6. Les Resultats

Le nombre de villages infectes en 1990 etait 79; en 1991 l'enquete a releve 66 villages infectes. Parmi ces 66 villages, 33 n'avaient aucun cas rapporte en 1990. Ces 33 nouveaux villages comptaient un tiers des cas en 1991 (126 cas).

ENQUETE GENERALE DEPARTEMENTALE DE LA DRACUNCULOSE DANS LE MAYO SAVA, 1991

DISTRIBUTION DES CAS PAR ARRONDISSEMENT

ARRONDISSEMENT	Enquete 1990	Enquete 1991	Endiguement 1991
KOLOFATA	393	183	139
MORA	358	173	207
TOKOMBERE	27	37	34
Total	778	393	380

DISTRIBUTION DES CAS PAR CANTON

CANTON	Enquete 1990	Enquete 1991	Endiguement 1991
BOUNDERI	2	6	3
DJOUNDE	2	1	1
DOULO	3	1	0
KERAWA	17	19	14
KOLOFATA	376	164	125
KOSSA	1	0	0
KOURGUI	1	1	0
LIMANI	1	9	0
MADA	6	7	0
MEME	18	6	5
MORA	9	5	9
MORA MASSIF	223	94	148
MOUKTELE ZOUELVA	75	28	25
OULDEME	20	30	34
PALBARA	1	0	0
PODOKO CENTRE	0	3	0
PODOKO NORD	6	0	2
PODOKO SUD	1	13	10
WARBA	16	6	4
Total	778	393	380

DISTRIBUTION DES CAS PAR VILLAGE, 1991 ENQUETE

Canton	Village	Cas
BOUNDERI	TAGAWA	3
	GARNAK	2
	HOUGNE	1
DJOUNDE	DJOUNDE	1

40

DOULO	OUMOULDI	1	
KERAWA	SERADJI	6	
	WARA WIDE	5	
	DOUGDJE	4	
	GAKARA	2	
	KERAWA	1	
	TALA MALLA BRAHIM	1	(1 CAS IMPORTE)
KOLOFATA	SANDA WADJIRI	68	
	KORDO	35	
	NDABA 1	23	
	AGAI-AGAI	13	
	KODOGO	8	
	MAINANKOA	5	
	AMCHIDE	3	
	GANCE	2	(1 CAS IMPORTE)
	BIA 1	1	
	BROUVARE	1	
	GADERO	1	
	GOUZOUDOU	1	(1 CAS IMPORTE)
	GREA 2	1	
	MELLERI	1	
	NDABA 2	1	
KOURGUI	KOTSERFHE BAFELE	1	
LIMANI	HOMAKA 3	4	
	LIMANI BANKI	2	(2 CAS IMPORTES)
	KANGALERI	1	
	MBRECHE	1	
	TCHAKRAMARI	1	
MADA	OURO DOLE	5	
	TIZINGUE	1	
	ZAZAGO	1	
MEME	SERA HADIA	2	
	MEME	1	(1 CAS IMPORTE)
	MOUVANE	1	
	SAVA	1	
	SERA DOUMDA	1	(1 CAS IMPORTE)
MORA	POUCHE BLEBLE	2	(2 CAS IMPORTES)
	TCHAKOUYABA	2	
	MORA VILLE	1	(1 CAS IMPORTE)

MORA MASSIF	VAME PLAINE	23
	DOUME	21
	TIDIWE	19
	VAME SAMA	17
	GAGADAMA	7
	MBRIME	5
	NDALA	2
MOUKTELE ZOUELVA	SIGAI	7
	MALIKA	5
	GAIBEDAM	2
	GUEBEDE	2
	HOUDMEKOUA	2
	MAHAWAK	2
	MOKOL	2
	GOLDA 1	1
	HOUDIANG	1
	KASSAYAO	1
	KATOUA	1
	MAGUICHE	1
	MATCHOKA	1 (1 CAS IMPORTE)
OULDEME	VANDELAR	8
	MADAVARE	6
	OUZEDEDE 1	4
	MAYO-PLATA	3 (1 CAS IMPORTE)
	PLATA KAPA	3
	TAHOUYAME	3
	MANDREFE	2
	OUZEDEDE 2	1
PODOKO CENTRE	KASSA	3
PODOKO SUD	TALA DABARA	13
WARBA	JILVE	6
	Total	393

42

VILLAGES IMPORTANTS (>2 CAS EN 1991)	ENQUETE 1990	ENQUETE 1991	SURVEILLANCE 1991
Anciens Villages:			
SANDA WADJIRI	316	68	72
et AGAI-AGAI*	--	13	--
VAME	180	40	85
NDABA	53	24	52
TALA DABARA	1	13	15
SIGAI	38	7	8
GAGADAMA	10	7	11
JILVE	16	6	4
OUZEDEDE	10	5	5
MBRIME	8	5	5
DOUGDJE	11	4	5
MAYO PLATA	3	3	4
KOULONG-GUEBEDE	18	2	6
Villages Ajoutes au Cours de la Periode Surveillance Active:			
DOUME	4	21	21
TIDIWE	0	19	18
VANDELAR-TAHOUYAME	1	11	6
MADAVARE	1	6	7
WARA WIDE	2	5	5
PLATA KAPA	1	3	8
TAGAWA	0	3	3
KASSA	0	3	1
POUCHE BLEBLE	0	2	4
MOKOL	2	2	3
KERAWA	4	1	4
MORA	4	1	3
VILLAGES SUIVIS	683	274	355
Nouveaux Villages:			
KORDO	0	35	--
KODOGO	--	8	--
SERADJI	--	6	--
MAINANKOA	--	5	--
MALIKA	0	5	--
OURO DOLE	0	5	--
HOMAKA	0	4	--
AMCHIDE	0	3	--
NOUVEAUX VILLAGES	0	71	---
HORS VILLAGES IMPORTANTS	95	48	25
GRAND TOTAL	778	393	380

* AGAI-AGAI est un village distinct jadis inclus dans SANDA WADJIRI.

42

QUARTIERS ET VILLAGES PAR ORDRE D'INCIDENCE DECROISSANTE (INCIDENCE > 1%)

NOM DU VILLAGE	NOM DU QUARTIER	CAS	POPULATION	INCIDENCE
VAME	SAMA (MONTAGNE)	17	115	14.78%
KORDO	KORDO	35	302	11.58%
NDABA	NDABA I	23	137	10.48%
SANDA WADJIRI	TALA BIRI	37	371	9.97%
KODOGO	KODOGO III	8	84	9.52%
DOUME	AGOULA (MONTAGNE)	19	204	9.31%
SERADJI	SERADJI	6	67	8.95%
VAME	ZOULE (PLAINE)	7	112	6.25%
TALA DABARA	DABALA	9	155	5.80%
WARA WIDE	WARA WIDE	5	110	4.54%
SANDA WADJIRI	CENTRE	30	708	4.23%
OUZEDEDE	OUZEDEDE I	4	95	4.21%
VAME	DJAHE (PLAINE)	9	230	3.91%
TIDIWE	TIDIWE	19	573	3.31%
AGAI-AGAI	AGAI-AGAI	13	394	3.29%
VANDELAR-TAHOUYAME	VANDELAR	8	253	3.16%
HOMAKA III	HOMAKA III	4	129	3.03%
SIGAI-MAGUICHE	SIGAI	7	237	2.95%
MADAVARE	GUIJGUIJE	4	154	2.60%
VAME	MADJOUGA (PLAINE)	7	275	2.54%
MAYO PLATA	HADJAGA	2	81	2.47%
KOULONG-GUEBEDE	GUEBEDE	2	86	2.32%
GAGADAMA	GAGADAMA	7	305	2.29%
OURO DOLE	SAIDOU	3	146	2.05%
POUCHE BLEBLE	POUCHE BLEBLE	2	103	1.94%
MAINANKOA	MAINANKOA	5	282	1.77%
DOUGDJE	DOUGDJE	4	261	1.53%
TAGAWA	TAGAWA	3	200	1.50%
VANDELAR-TAHOUYAME	TAHOUYAME	3	297	1.01%
PLATA KAPA	PLATA KAPA	3	295	1.01%

CAS IMPORTES: 12 (3.1% DES CAS)

VILLAGE D'ORIGINE	ARRONDISSEMENT	PAYS	Freq
VAME	MORA MASSIF	CAMEROUN	3
KALO	MORA MASSIF	CAMEROUN	1
PRISON MORA	MORA	CAMEROUN	1
DOUGVE	TOUBOURO, MAYO REY	CAMEROUN	1
BANKI	--	NIGERIA	1
GIMINI	--	NIGERIA	1
YERAWA	--	NIGERIA	2
--	--	NIGERIA	2
		Total	12

44

La definition d'un cas etait: une personne ayant eu une plaie et ayant vu sorti un ver depuis le debut de cette saison de pluies, 1991. Sur 63% des cas, l'enqueteur a vu une plaie. La plupart des vers (76%) ont emerge entre mai et la fin d'aout, mais il y avait des cas encore actifs lors de l'enquete (fin novembre). L'age moyen des malades etait 26.6 ans, et la distribution entre les sexes etait de 54.6% hommes, 45.4% femmes. 77.6% des malades ont reconnu la photo du ver de Guinee.

CONCLUSIONS

L'enquete de 1991 montre une importante reduction de 49.5% par rapport a l'incidence de 1990. Les localites suivantes ont beneficie d'une reduction:

- Sanda Wadjiri: 74,4%
- Vame: 77,8%
- Ndaba: 54,7%

Les cantons ou le nombre des cas a surtout diminue sont:

- Canton Kolofata: 56%
- Canton Mouktele Zouelva: 63%
- Canton Mora Massif: 58%
- Canton Meme: 67%
- Canton Warba: 62%

Il y a eu augmentation des cas dans:

- Canton Ouldeme: de 20 a 30 cas
- Canton Podoko Sud: de 1 a 13 cas.

Certains villages de Mora Massif ont vu le nombre de cas augmenter:

- Village Doume: de 4 a 21 cas
- Village Tidiwe: de 0 a 19 cas

Des nouveaux villages ont ete decouverts (Kordo, Kodogo, Seradji, Mainankoa, Malika, Ouro Dole, Homaka, Amchide). 71 cas se trouvent dans ces nouveaux villages.

45

Le nombre des cas depistes par l'enquete (393 cas) est presque le meme que celui rapporte par la surveillance active (380 cas) bien que des nouveaux villages aient ete decouverts. Le nombre des cas dans les villages surveilles pendant la saison de transmission devrait etre beaucoup plus inferieur. En effet, certains ont du etre rapportes deux fois, d'autres ont ete des cas fictifs, non emergents. Cependant, certains cas depistes par la surveillance active etaient aussi rates par l'enquete (2 cas verifies dans Mora Ville).

Problemes rencontres:

- Certains villages sont connus par plusieurs noms.
- Certains villages ont deja disparu de la carte.
- Les blama (chefs de villages) ont ete mal informes, mal sensibilises ou pas du tout par les autorites administratives.
- Les villageois ont ete mal ou pas informes a l'avance par les chefs traditionnels.
- La situation politique actuelle avec des multiples descentes des hommes politiques sur le terrain a rendu les villageois reticents devant les enqueteurs, qui sont pris pour des politiciens. Heureusement que les photos de Ver de Guinee detenues par les enqueteurs ont facilite les choses.
- Les pannes des motos ont ete tres nombreuses au cours de l'enquete.

V. Conclusion

Trois principales activites ont marque la deuxieme annee du Programme National d'Eradication de la Dracunculose dans le Mayo Sava:

- l'endiguement des cas
- la generalisation de l'utilsation des filtres dans tous les villages endimiques
- l'introduction du volet educatif dans le programme.

Par ailleurs des efforts louables ont ete fournis sur le plan de l'approvisionnement en eau potable des populations affectees par la dracunculose mais beaucoup reste encore a faire dans ce domaine.

Quant a l'enquete generale de recherche des cas, elle nous revele 393 cas contre 778 en 1990 soit une reduction des cas de 49,5% malgre la decouverte d'un important village endemique appele Kordo dans le canton de Kolofata (arrondissement de Kolofata).

Eu egard aux activites menees au cours de la saison de transmission ecoulee, des espoirs sont permis. On doit s'attendre a une reduction de 50 a 70% des cas en 1992.

Remerciements

Nos remerciements vont

- a l'UNICEF Yaounde, plus particulierement le Representant de cet organisme et Mr. ALAMI B. Mohamed
- au Docteur SAM ABBENYI, responsable du Programme National d'Eradication de la Dracunculose
- a USAID/VBC consultant, Dr. GREER George
- a CARE
- a MINASCOF
- a AMA Yaounde
- a l'OCEAC
- aux missionaires protestantes et catholiques de Godigong, Tala Mokolo, et Mayo Ouldeme
- a Peace Corps

ANNEX

NUMBER OF VILLAGES COVERED BY DIFFERENT INTERVENTIONS IN 1991

The table below shows the interventions for the Guinea Worm Eradication Program (GWEP) in the Mayo Sava in 1991 and the projected number of villages that will be covered in 1992.

Intervention	Villages Covered in 1991	Projected Number Villages in 1992
Filters	28	6 new
Health Education	22*	24*
Abate Treatment	28	47
Surveillance	27 + 49**	47 + 34**
Training of VHWs	18	47

number of sorties, several villages were covered during each
** weekly + monthly

The following table shows the number of villages with cases by canton for 1989, 1990 and 1991. It also indicates the number of villages dropped and added in 1990 and 1991.

BREAKDOWN OF THE VILLAGES INFECTED BY CANTON FOR 1989, 1990 AND 1991

CANTON	# ENDEMIC VILLAGES			VILLAGES WITH CASES IN 1990, 0 CASES IN 1991	VILLAGES WITH CASES IN 1991, 0 CASES IN 1990
	1989	1990	1991		
BOUNDERI	0	1	3	0	2
DJOUNDE	0	2	1	1	0
DOULO	0	3	1	3	1
KERAWA	0	3	6	0	3
KOLOFATA	2	10	15	6	11
KOSSA	0	1	0	1	0
KOURGUI	0	1	1	1	1
LIMANI	0	1	5	1	5
MADA	0	5	3	5	3
MEME	0	12	5	7	0
MORA	0	5	3	3	1
MORA MASSIF	2	8	8	1	1
M. ZOUELVA	3	15	18	4	7
OULDEME	3	9	8	3	2
PODOKO CENTRE	1	0	1	0	1
PODOKO NORD	0	4	1	3	0
PODOKO SUD	1	1	1	0	0
WARBA	0	1	1	0	0
TOTAL	12	82	81	39	38

Of a total of 82 endemic villages in 1990, 39 had no cases in 1991, and of the 81 villages with cases in 1991, 38 reported no cases in 1990. Thus, only 43 villages had cases in both 1990 and 1991. A large protion of those swing villages were villages with only one case (34 villages reporting one case in 1990 had 0 cases in 1991). Cases in these villages are thought to be imported or spurious.

Considering only villages with more than one case, as in the table below, it is easier to see changes over time among more epidemiologically important villages.

CANTON	# VILLAGES WITH MORE THAN 1 CASE 1989	1990	1991	VILLAGES WITH MORE THAN 1 CASE IN 1990 0 CASES IN 1991 (NUMBER OF CASES())	VILLAGES WITH MORE THAN 1 CASE IN 1991 0 CASES IN 1990 (NUMBER OF CASES())
BOUNDERI	-	1	2	0	1 (3 cases)
DJOUNDE	-	-	-	0	0
DOULO	-	-	-	0	0
KERAWA	-	3	4	1 (2 cases)	2 (8 cases)
KOLOFATA	2	4	8	1 (2 cases)	5 (53 cases)
KOSSA	-	-	-	0	0
KOURGUI	-	-	-	0	0
LIMANI	-	-	2	0	2 (6 cases)
MADA	-	1	1	1 (2 cases)	1 (5 cases)
MEME	-	3	1	2 (6 cases)	0
MORA	-	2	2	0	1 (2 cases)
MORA MASSIF	2	8	8	0	1 (19 cases)
M. ZOUELVA	3	8	9	2 (7 cases)	4 (8 cases)
OULDEME	3	4	7	1 (2 cases)	1 (8 cases)
PODOKO CENTRE	0	-	1	0	1 (3 cases)
PODOKO NORD	-	1	-	0	0
PODOKO SUD	1	-	1	0	0
WARBA	-	1	1	0	0
TOTAL	11	37	47	7 (21 cases)	19 (115 cases)

The number of important villages increased from 11 in 1989 to 37 in 1990 and to 47 in 1991. Seven villages with more than 1 case disappeared between 1990 and 1991, accounting for a total of 21 cases. However, 19 villages with more than 1 case appeared for the first time in 1991 and these accounted for 115 or 29% of all cases. This increase in cases from new villages runs counter to an overall reduction of about 50% in the total number of cases between 1990 and 1991. What is the explanation for these contradictory trends?

49

The increase in the number of villages with more than 1 case can be explained by the use of expanded and improved surveys:

- In 1989, only those villages known to have active cases in 1988 were covered by active surveillance and by the end-of-year survey.

- In 1990, the first department-wide survey was undertaken and many new villages were discovered for the first time. However, coverage in regions along the Nigerain border was spotty.

- In 1991, the second departmental survey was undertaken with a revised village list and with two, rather than one, survey team for Kolofata. Those teams identified 10 new villages with more than one case (5 in Kolofata Canton, 2 in Limani, 2 in Kerawa and 1 in Bounderi).

The reduction in cases is due to a large reduction of cases in villages with the largest number of cases. These villages have received interventions from the very beginning of the program.

- Sanda Wadjiri/Agai-Agai and Vame, which accounted for 64% of all cases in 1990, had a combined reduction of 76% of cases.

- Sanda Wadjiri received 2 bore hole wells and 160 water filters during the transmission season.

- Vame received one draw well, 130 water filters and Abate treatment during the 1990 season.

- In other villages with cases in 1990 and 1991 there was a reduction of 36%. This reduction was probably due to an intensified Abate treatment program and distribution of water filters in Mbrime (90) and in Ndaba (120).

Annex 4

Operational Costs of the 1991 GWEP

MINISTERE DE LA SANTE PUBLIQUE

DELEGATION PROVINCIALE DE LA
SANTE PUBLIQUE DE L'EXTREME NORD

SERVICE DEPARTEMENTAL DE LA
SANTE PUBLIQUE DU MAYO SAVA

REPUBLIQUE DU CAMEROUN
Paix - Travail - Patrie

RAPPORT FINANCIER DES ACTIVITES DU PROGRAMME D'ERADICATION DE LA DRACUNCULOSE POUR L'ANNEE 1991

N.B.: Le rapport financier de l'enquete generale n'est pas inclus dans ce rapport. Il fait l'objet d'un document a part.

Nature de la Depense	Credit Delegue	Depense Effectue	Reliquat
Animation dans 14 villages	420.000	305.500	+114.500
Endiguement			
Traitement des points d'eau	165.000	----	
Surveillance dans 14 villages	344.000	----	
Surveillance dans 63 villages	605.000	----	
Depistage et endiguement	336.000	----	
TOTAL	1.450.000	1.655.580	-205.580
Supervision generale des activites	450.000	230.700	+219.300
Entretien des moyens de mobilite	300.000	157.045	+142.955
Fournitures de bureau	100.000	129.940	- 29.940
Budget supplementaire	1.173.690	----	+1.173.690
Reliquat de l'annee 1990	1.460	----	+ 1.460
Autres	0	92.295	- 92.295
TOTAL	3.895.150	2.571.060	+1.324.090

Remarque: Sur le total theorique delegue ou vire au compte nous avons recu sur le terrain de la part de la Delegation de la Sante 2.570.000 francs (1.170.000 F + 1.000.000 F + 400.000 F). Il restait 1.460 francs du reliquat de l'annee 1990. Au total nous avons eu a gerer sur le terrain au cours de l'annee 1991 2.570.000 F + 1.460 F soit 2.571.460 F (deux millions cinq cent soixante onze mille quatre cent soixante francs). Nous avons donc un reliquat de 400 F avec nous. Le reliquat theorique en compte serait donc de 1.324.090 F - 400 F soit 1.323.690 F (un million trois cent vingt trois mille six cent quatre vingt dix francs).

Il reste a payer les perdiems pour les activites de traitement, de surveillance et de depistage des cas en mois d'octobre, qui font au total 408.500 F (quatre cent huit mille cinq cent francs).

Annex 5

Financial Report of the Dracunculiasis Survey in Mayo-Sava, November 1991

MINISTERE DE LA SANTE PUBLIQUE

DELEGATION PROVINCIALE DE LA
SANTE PUBLIQUE DE L'EXTREME NORD

SERVICE DEPARTEMENTAL DE LA
SANTE PUBLIQUE DU MAYO SAVA

REPUBLIQUE DU CAMEROUN
Paix - Travail - Patrie

Rapport financier de l'enquete generale de la dracunculose dans le Mayo Sava Novembre 1991

I. Introduction

La deuxieme enquete generale pour la recherche active des cas de dracunculose dans le Mayo Sava s'est deroulee du 15 au 30 novembre 1991. Deux jours supplementaires ont ete ajoutes pour la confirmation des cas suspects a Kordo et a Tchakouyaba (2 villages suspects).

II. Ressources utilisees

II-1. Moyens logistiques

- 1 voiture UNICEF
- 1 voiture CARE
- 1 voiture privee
- 30 motocyclettes dont:
  - 8 appartenant a CARE
  - 6 UNICEF
  - 3 Soins de Sante Primaire
  - 2 Corps de la Paix
  - 11 personnelles
- 2 mobylettes du circuit-lepre

II-2. Ressources humaines

- 42 enqueteurs du Mayo Sava
- 4 enqueteurs venant de Pitoa et de Rey Bouba (dont 2 medecins et 2 infirmiers)
- 2 chauffeurs
- 6 agents de sante communautaire
- 4 superviseurs
- 2 personnels du Ministere de la Sante dont:
  - le Sous Directeur de l'Epidemiologie
  - un chef de Bureau
- 1 consultant de l'OCEAC Yaounde

II-3. Ressources financieres

Ceci ne concerne que les ressources financieres virees au compte bancaire ERADRA. Une somme de 2.946.000 francs (deux millions neuf cent quarante six mille francs) a ete viree au profit du dit compte. Les depenses effectuees se trouvent reparties sur le tableau ci-joint ainsi que leurs justificatifs.

Il ressort qu'apres recapitulatif des depenses, il reste un reliquat de 177.510 francs (cent soixante dix-sept mille cinq cent dix francs) Nous suggerons que ce reliquat soit utilise pour la maintenance des motos, voiture et equipement logiciel du programme d'eradication de la dracunculose pendant l'intersaison.

A Mora le 20 decembre 1991

Nature de la Depense	Credit Delegue	Depense Effectue	Reliquat
1) Transport des enqueteurs venant de Pitoa et Rey-Bouba	60.000	60.000	0
2) Transport des enqueteurs venant du Mayo Sava (hors de Mora)	60.000	65.00	- 5.000

Nature de la Depense	Credit Delegue	Depense Effectue	Reliquat
3) Repas pour enqueteurs et personnel d'encadrement	120.000	120.000	0
4) Fournitures bureau et diverses	150.000	149.800	+ .200
5) Per diem infirmiers de Pitoa et Rey Bouba	96.000	96.000	0
6) Per diem medecins de Pitoa et Rey Bouba	180.000	180.000	0

Sle

7) Per diem ASC	80.000	12.000	+68.000
8) Per diem enqueteurs du Mayo Sava	1.230.000	1.096.000	+134.000
9) per diem chauffeurs	0	31.000	-31.000
10) per diem Delegue Provincial Sante Publique Extreme Nord	30.000	30.000	0
11) per diem Medecin-chef SSP Mayo Sava (superviseur)	75.000	75.000	0
12) per diem superviseurs (Susan Graham, Moussa Nouhou, Koumey Michel)	135.000	135.000	0
13) carburant et lubrifiant	600.000	587.790	+12.210
14) reparation moto et voiture au cours de l'enquete	60.000	65.900	- 5.900
15) indemnite pour entretien motos privees	60.000	55.000	+ 5.000
16) indemnite pour entretien voiture privee	10.000	10.000	0
TOTAL	2.946.000	2.768.490	+177.510

Il reste donc en caisse un reliquat de 177.510 francs (cent soixante dix sept mille cinq cent dix francs).

Annex 6

Plan of Action for the 1992 GWEP in Mayo-Sava, Cameroon

PLAN OF ACTION FOR THE PROGRAM OF THE ERADICATION OF GUINEA WORM DISEASE IN THE MAYO-SAVA - 1992

I. General Program

In 1991 there were 393 reported cases of GWD in 81 villages in the Mayo-Sava Department. Of those 47 villages had 2 or more cases and 21 had at least 5 cases. The remainder had one case.

The general objective of the plan of action is to further reduce the transmission of GWD during the 1992 transmission season.

Specific objectives are:

- Insure that community takes and active and effective role in the program

- Reorganize the surveillance and health education programs so that the teams responsible for these activities are more effective and efficient.

- Integrate surveillance into the routine activities of the Primary Health Care program throughout the department.

- Identify and train Village Health Workers (VHWs) or volunteers in all villages with 2 or more cases.

- Accelerate the program for provision of potable water in 50% of villages with 2 or more cases.

- Evaluate the water filter and health education programs.

II. Program activities:

1. Training courses

- Training of trainers for health education.

- Training health educators in the use of new materials.

- Retrain the Health Outreach Teams (HOTs) in surveillance, case containment and Abate treatment.

- Train or retrain VHWs and village volunteers.

2. Evaluation

- Evaluate the impact of filter distribution and health education on the risk behaviors in the community.

3. Surveillance and case containment

- Surveillance and case containment will be carried out in all villages with 2 or more cases.

4. Abate treatment of drinking water.

- All sources that present a reasonable risk of transmission in villages with 2 or more cases will be treated.

5. Health Education

- Community mobilization, promotion of the use of potable water and filtering other water and education on how to avoid transmitting GWD.

- Identification of VHWs or village volunteers.

6. Treatment of lesions

- To be done by the VHWs with supervision from the HOTs.

7. Provision of potable water in endemic villages

8. Supervision of activities.

III. Roles of the VHWs, village volunteer and a special agent for the Kolofata and Kerawa subdivision

a) VHWs and volunteers - case containment

- Maintain daily surveillance of cases in the village.

- Treat lesions

- Reinforce the health education messages (do not go to fetch water until the worm is extracted, keep the bandages dry, filter drinking water)

- Dispense anti-inflammatory drugs

- Record and report cases to the HOTs

b) Special worker for Kolofata

This worker must be able to speak and write french and speak Guemargou. the local language which is not well known to the health personnel in the department. With a bicycle provided by the project, he will carry out surveillance in 13 villages in the region of Kolofata. He will visit each village once a week. He will collect

information from and provide supplies to the VHWs and volunteers in those villages.

IV. Detailed plan of action

1. Surveillance teams (HOTs)

Villages à surveiller	Nom du responsable	Moyen de locomotion
Vamé Plaine Gagadama Mbremé Ndala Pouché Bléblé	Brahim Lala	Moto UNICEF
Vamé Sama Doumé Tidiwé Tchakouyaba Sera Hadja	Mahama Dougdje	Moto UNICEF
Ouro Dolé Vandelar Ouzedédé Tahouyamé Mandrefé	Koulifa SimonPierre	Moto UNICEF
Mayo Plata Madavaré Plata Kapa Jilvé Plata Doumlalé	Koumey Michel	Moto SSP
Seradji Dougdjé Gakara Ndaba	Amadou Gountai	Moto UNICEF

Villages à surveiller	Nom du responsable	Moyen de locomotion
Sanda·Wadjiri Agai-agai Kordo Kodogo Mainankoa Wara Wide Gancé	Agent Itinérant	Velo UNICEF
Sigai Malika Gaibedam Guebede Houdmekoua Mahawak Mokol Hodeway Koulong	Josué et Tavia	Moto UNICEF
Kassa Tala Dabara	Megene Luc	Velo UNICEF
Tagawa Homaka Garnak	Gordjong Gaston	Moto UNICEF
Amchidé	Barré Samuel	A pieds
Limani Banki	David	A pieds

Each village will be visited once a week in order to:

- confirm all cases reported by the VHWs
- track down other cases
- notify the supervisor of these cases
- resupply the VHWs with medical supplies for treating lesions
- continuously train the VHWs or volunteers
- check on filter utilization

These activities will be carried out from May to October 1992.

2. Health education

These activities will take place between April - June 1992. The objectives of the health education program are to:

- mobilize the communities to take action against GWD

- deliver messages concerning the transmission of GWD, the use of filters, case containment and care of lesions

These activities will be performed by:

- Health educators from CARE

- Health Educators from the Ministry of Social and Women's Affairs

- the subdivision coordinators for primary health care

- Peace Corps volunteers

RESPONSIBILITY BY VILLAGE:

VILLAGE	HEALTH EDUCATOR
Vame Sama Vame Plain	Poudito Bouba
Doume Tidiwe	Hamadou Garga
Gagadama	Hadja Djanabou
Mbreme	Helene Djomze
Orou Dole Vandelar	Tamar Bello
Ouzedede Kodogo Tala Dabara	Abba Mastafa
Jilve	Susan Graham
Madavare	Koumey Michel
Seriadji Kordo Mainankoa	Abdoul Karim

VILLAGE	HEALTH EDUCATOR
Ndaba Wara Wide Sanda Wadjiri	Fadi Kadi
Agai-Agai	Assana Elie
Sagai Malika	Ayouba

3. Fabrication of filters

About 1,000 filters will be needed for distribution to new villages and as replacements for damaged filters.

4. Abate treatment

Each HOT will list and map all drinking water sources in their respective villages. Large ponds will not be treated nor will draw wells that are too deep for an infected persons to immerse their limbs.

The teams and their responsibility are as follows:

- Kolofata villages: Assaba Elie and the Special worker for Kolofata

- Kerawa villages: Amadou Gountai and Wadou Jean-Louis

- Tala Mokolo villages: Josue and Tavia

- Mora I villages: Mahama Dougdje and Aboukar Wandi

- Mora II villages: Brahim Lala and Toukour Mallang

- Godigong villages: Megene Luc

- Mayo Ouldeme villages: Koulifa Simon Pierre

- Jilve and Plata villages: Koumey Michel

- Bounderi villages: Gorjong Gaston

Water points will be treated from May to October 1992. Each village will have a treatment book with a list of all water points, the volume of water, the quantity of Abate used, and the date of treatment. Sites will be treated monthly.

5. Treatment of lesions

This constitutes one of the main elements of case containment and will be given high priority. We anticipate about

200 cases in 1992 with approximately 300 lesions. This will require three bandages per lesion for a total of:

- 900 gauze bands
- 200 tubes of antibiotic cream
- 200 boxes of 20 tablets Bactrim
- 200 boxes of 30 tables of aspirin
- 20 liters alcohol
- 100 tablets of potassium permanganate

6. Identification of ASC or village volunteers

The health educators (HEs), subdivision coordinators of primary health care and Peace Corps volunteers will identify suitable persons in all villages with 2 or more cases before April 1992.

These individuals will receive training in primary health care, with emphasis on GWD, either 4-8 May or 11-15 May 1992. Previously trained VHWs in endemic villages will be given a refresher course in GWD during the final two days of these training sessions.

7. Training of the HOTs and HEs

- Training of trainers course: 30 March - 1 April 1992

- Training of health educators using new materials: 6 - 10 April 1992

- Retraining of HOTs for Abate treatment and surveillance: 20-21 April 1992.

8. Evaluation

An evaluation of the impact of distribution of filters and health education on the behavior related to transmission of GWD will be carried out: April - May 1992

9. Supervision of activities

Primary level: each week

- Resupply the HOTs and HE's with bandages, water filters and medication to deliver to the villages and gas for their transportation.

- HOTs will check the work of the VHWs

- Collect records of new cases

Supervisors:

- Susan Graham
- Koumey Michel
- Assana Elie
- Nina Payne
- Leslie Moore

Secondary level: 2 visit each month by the supervisors to check the work of all persons at the primary level

Supervisor: Dr. Dama Mana
Department Chief of Public Health, Mayo-Sava

Tertiary level: 1 visit per month to check work at all levels.

Supervisor: Dr. Hamidou Issoufa
Provincial Delegate of Public Health, Extreme-North

Mora
26 February 1992

Annex 7

Budget for the 1992 GWEP in Mayo-Sava, Cameroon

PROGRAMME D'ERADICATION DE LA DRACUNCULOSE
DANS LE MAYO SAVA - BUDGET DE LA SAISON 1992
(Projet de Budget)

I. Formations

a) Formation des ASC - crédit déjà délégué par l'UNICEF: 292.600 F

b) Récyclage des ASC - crédit déjà viré: 69.400 F

c) Formation des animateurs à l'utilisation du nouveau matériel éducatif du Programme - budget déjà confectionné et le financement reste à etre débloqué par le Peace Corps: 161.800 F

d) Atelier préparatoire de la formation des animateurs - budget déjà confectionné et financement à débloquer par le Peace Corps: 308.000 F

e) Récyclage des équipes de surveillance et traitement

15 personnes à récycler dont 10 venant hors de Mora, 2 jours de formation.

1. Transport participants: 2000 F x 10 = 20.000 F
2. Perdiems participants: 2000 F x 10 x 2 = 40.000 F
3. Perdiems encadreurs: 2500 F x 3 = 7.500 F
4. Matériels de bureau:
   - 60 cahiers x 100 F = 6.000 F
   - 20 bics x 50 F = 1.000 F
   - 20 crayons x 20 F = 400 F
   - 10 calculatrices x 2000 F = 20.000 F
   - 2 rames papier x 2200 F = 4.400 F

TOTAL: 99.300 F (Ie)

II. Identification des ASC ou volontaires dans 22 villages

6 secteurs pour 18 sorties dont 6 en voiture et 12 sorties pour 2 moto.

En voiture:
- carburant: 2000 F x 6 = 12.000 F
- perdiem chauffeur: 1000 F x 6 = 6.000 F

En moto:
- carburant: 500 F x 24 sorties = 12.000 F

TOTAL: 18.000 F + 12.000 F = 30.000 F

III. Surveillance et endiguement des cas

A. Villages avec 2 cas et plus

1) 50 ASC et volontaires

Perdiem: 500 F/semaine soit 2000 F/mois

2000 F x 50 x 6 = 600.000 F

2) Agent itinérant de Kolofata

Forfait: 10.000 F/mois pendant 6 mois et pour 13 villages soit 10.000 F x 6 = 60.000 F

3) Equipes de Surveillance (infirmiers)

1000 F/village/semaine pour 45 villages à surveiller

Perdiem: 1000 F x 45 villages x 4 semaines x 6 mois = 1.080.000 F

Carburant: 300 F/village/semaine
300 F x 45 x 4 x 6 = 308.000 F

Lubrifiant:
Huile 2 temps: 2 L/mois/moto = 14 L/mois
1000 F x 14 x 6 = 84.000 F

Huile 40-50 moteur:
1 L/2 mois/moto = 1 L X 7 X 6/2 = 21 L
1000 F x 21 = 21.000 F

B. Villages avec 1 cas

1 visite/village/mois soit 1000 F/village/mois
1000 F x 38 x 6 = 228.000 F

Grand Total pour la Surveillance:
600.000 F + 60.000 F + 1.080.000 F + 308.000 F + 84.000 F + 21.000 F + 228.000 F = 2.381.000 F

IV. Traitement des points d'eau

9 équipes à 5.000 F/mois/équipe pour 6 mois soit 5.000 F x 9 x 6 mois = 270.000 F

V. Supervision générale

1er niveau de supervision:

Les 3 volontaires de Peace Corps sont pris en charges par Peace Corps ou se déplaceront en voiture UNICEF. 2 superviseurs à prendre en charge (perdiem).

5 superviseurs au total à 1 sortie/semaine soit 5 sorties/semaine soit 20 par mois. Pour 6 mois = 120 sorties dont 40 en voiture.

Voiture: carburant: 2000 F x 40 = 80.000 F
perdiem chauffeur: 1000 F x 40 = 40.000 F

Moto: carburant: 500 F x 80 = 40.000 F
perdiem de 2 superviseurs (2 coordinateurs SSP):
1000 F x 4 x 2 x 6 = 48.000 F

TOTAL: 208.000 F

2e niveau de supervision:

Chef de SDSP Mayo Sava: 2 sorties/mois. Ces sorties coincident avec les sorties des superviseurs du niveau numéro 1.

Perdiem: 5000 F x 2 x 6 = 60.000 F

3e niveau de supervision:

Délégue Provincial Santé Publique: 1 sortie/mois

Perdiem: 10000 F x 6 = 60.000 F

Grand Total: 328.000 F

VI. Entretien des moyens de mobilité

1) Voiture

Vidange moteur, pont, renouvellement pneus et chambres à air: 170.000 F

Eventuelle panne: 50.000 F

Soit 220.000 F

2) 6 Motos

50.000 F/moto/an x 6 motos = 300.000 F

TOTAL: 520.000 F

VII. Achat de 2 vélos dont 1 pour l'équipe de Godigong et 1 pour l'agent itinérant de Kolofata

Prix 2 vélos: 60.000 F x 2 = 120.000 F
Transport 2 vélos: 2.000 F

Total: 122.000 F

VIII. Achat médicaments

- 900 bandes à 103.500 F
- 200 tubes de pommade auréomycine 3% à 96.000 F
- 200 boites de bactrim adultes à 200.000 F
- 6 boites de 1000 comprimées d'aspirine à 30.000 F
- 20 litres d'alcool à 90% à 25.200 F
- 100 comprimées de permanganate de potassium à 1.500 F

Soit un total de 456.200 F

IX. Fabrication des 1000 filtres

200 F x 1000 = 200.000 F

X. Fournitures de bureau

Achat rubans machine électrique, papiers, stencils, cartouches photocopieuses

Entretien photocopieuse, machine à écrire, ordinateur, imprimante

Forfait: 200.000 F

XI. L'évaluation de l'impact de l'éducation de la santé fera l'objet d'un budget spécial.

GRAND TOTAL:

I.	Formations	931.100 F
II.	Identification des ASC	30.000 F
III.	Surveillance et Endiguement	2.381.000 F
IV.	Traitement des points d'eau	270.000 F
V.	Supervision générale	328.000 F
VI.	Entretien des moyens	520.000 F
VII.	Achat de 2 vélos	122.000 F
VIII.	Achat des médicaments	456.200 F
IX.	Fabrication des filtres	200.000 F
X.	Fournitures de bureau	200.000 F
		5.438.300 F

dont 831.800 F (Ia + Ib + Ic + Id) ont été approuvés et financés par UNICEF et Peace Corps,

et 4.606.500 F (quatre millions six cent quatre mille cinq cents francs) à financer par UNICEF c'est-à-dire à virer au compte ERADRA Maroua.

A Mora le 26 février 1991

72