CLASSIFICATION

PROJECT EVALUATION SUMMARY (PES) — PART I

Report Symbol U-447

1. PROJECT TITLE	2. PROJECT NUMBER	3. MISSION/AID/W OFFICE
Rural Medical Assistance Project	682-0202	Mauritania

4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 84-1

☒ REGULAR EVALUATION ☐ SPECIAL EVALUATION

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equivalent FY 79	B. Final Obligation Expected FY 79	C. Final Input Delivery FY 84	A. Total $ 2,169,086 B. U.S. $ 1,661,773	From (month/yr.) August 1979 To (month/yr.) November 1983 Date of Evaluation Review October - November 1983

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
Follow-on activities under the new rural Health Sector Project (682-0230) have already been approved. The new project has attempted to address the following lessons which were highlighted by this evaluation: 1. An early and accurate assessment of administrative needs is essential including sufficient staff, clearly defined lines of authority and responsibilities and an adequate accounting system. 2. A least-cost solution for supervision needs to be developed. 3. The medical supply system continues to pose problems with limited outlets and potential price rises. 4. The educational program requires additional attention if the longstanding bias towards curative medicine is to be counterbalanced. 5. The overall approach must be kept simple. Attempts to do too many things at once will prove counterproductive.		

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

- ☐ Project Paper
- ☐ Financial Plan
- ☐ Logical Framework
- ☐ Project Agreement
- ☐ Implementation Plan e.g., CPI Network
- ☐ PIO/T
- ☐ PIO/C
- ☐ PIO/P
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

- A. ☐ Continue Project Without Change
- B. ☐ Change Project Design and/or ☐ Change Implementation Plan
- C. ☐ Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

Mona Grieser, Public Health Advisor, RMA Project.
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Mohamed Mahmoud Ould Hacen, Project Director, Ministry of Health.
Dr. Evariste Midy, MD-MPH, Team Leader.

12. Mission/AID/W Office Director Approval

Signature: Peter Benedict

Typed Name: Peter Benedict

Date: 12 FEB. 1984

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PES, Rural Medical Assistance Project

13. Summary

The Rural Medical Assistance (RMA) Project (682-0202) has successfully initiated a primary health care system in the Trarza Region of Mauritania. At the village level the formation of 192 Community Health Committees (CHCs) led to the selection and training of 197 Community Health Workers (CHWs) and the development of local systems for the resupply of medications and reimbursement of workers. Currently 156 workers are active in their villages, providing at least minimal health education, basic first aid and treatment and referral services for common local diseases, especially diarrhea, malaria and respiratory problems. CHWs have held 152,381 consultations for 70,023 people. The villages have responded positively to the need to establish local systems for the resupply of medications and reimbursement of workers. The program was reinforced at the regional level by the provision of medical equipment and supplies and the establishment of contact with regional personnel. At the Ministry level, the project promoted concern for rural primary health care, leading to the reorganization of the Ministry of Health to better accommodate the program, the training of GIRM nurses in primary health care techniques and the initiation of licensing of private distributors for medical supplies.

The project's successful completion of all proposed technical activities took place despite a number of administrative difficulties that prevented the project from running as smoothly as desired. Inadequate attention to administrative needs in the project design required a number of ad hoc adjustments. The project had to absorb the additional costs of administrative staff (an accountant, chauffeurs, secretaries) which had not been foreseen in the design. Similarly, no appropriate accounting system had been designed for the local currency accounts. Lack of definition of responsibilities and parallel lines of authority, one for technical staff, another for administration, produced some confusion and tension affecting project operations.

The technical achievements of the project might have been even greater if the original package of planned technical assistance, including a health education advisor, had been left intact. The administrative load assigned to the single long-term Public Health advisor reduced the individual's capacity to contribute fully to the technical development of the project.

While some supervision of community health workers has been sustained over time, efforts must be made to increase the frequency of contact with professional health personnel while reducing the high costs involved. The proposed experiments in new methods of supervision, combining supervisory visits to health workers with visits by mobile immunization teams, may provide a solution to this particularly difficult problem.

Despite these administrative difficulties, it is evident from the level of support for the activity from the national to the local level, that Mauritanians are keenly interested in expanding their ability to promote and maintain a system of village level primary health care. Progress made to date and the lessons learned from this first effort will be capitalized upon in expanding the village health worker model to other regions of the country.

14. Evaluation Methodology

This final evaluation of the Rural Medical Assistance Project (682-0202), assessed the degree to which the project achieved its goals and revealed appropriate lessons for the follow-on activities of the new Rural Health Services Project (682-0230).

The evaluation team provided by Management Science for Health consisted of:

1. Dr. Evariste Midy, MD-MPH, Public Health Specialist, Chief-of-Mission
2. Mr. Donovan Rudisuhle, MBA, Health Economist
3. Ms. Suzanne Prysor-Jones, Ed. D-MA.BA. Program Formation and Health Education Specialist

The team worked closely with Ministry of Health officials and RMA project personnel. All pertinent project documentation was reviewed, as was data collected by the project and analyzed by Bureau of Census Statisticians prior to the team's arrival. The team, joined by representatives from the Ministry of Health, spent a week in the field, visiting 15 villages where the program was operating, 3 villages where activities had ceased, and regional and departmental facilities and staff. The villages constituted 10% of those with active CHWs. They were chosen at random, taking into account the need to represent all three ethnic groups and all six departments. To standardize the information gathered, questionnaires were designed to be administered to relevant groups (CHWs, CHCs, departmental nurses, etc).

The attached report presents the results of the short field survey and review and analysis of the project's extensive collection of data on health conditions and project operations in the Trarza Region.

15. External Factors

The persistance of drought conditions in Mauritania has made primary health care more important than ever, as increased malnutrition makes village populations more susceptible to disease. The economic hardship resulting from the drought also threatens the viability of community support for the system. As local economies weaken, the ability of villages to pay CHWs and renew medical supplies will certainly be affected.

16. Inputs

All major project inputs were provided as specified in the Project Paper. Most notably the dedication of the Mauritanian government was evident in its provision of more than the required number of personnel, and its eventual policy change permitting the private distribution of drugs.

Peace Corps provided an initial group of five volunteers. A second group was not made available due to the inability to define a meaningful role for the volunteers within the project.

Oversights in terms of administrative staff and the GIRM decision to use rental properties for the training programs required some alterations in the project budget. The system of financial management established to meet the local currency needs proved inadequate, a problem which has been fully addressed in the new Rural Health Services Project. On some occasions delays in replenishing the local currency fund nearly paralyzed project activities. Similarly, though all material purchases were made, the procurement process was often subject to delays. This suggests a need for more thorough procurement planning and use of more lead time in handling commodity procurement.

The decisions to reduce technical assistance to one Public Health advisor (who was burdened with excessive administrative responsibilities) compromised the technical achievements of the project. Additional gains would have been possible had the positions for a long-term educational specialist and short-term village animator been retained.

In reviewing the primary health care system as it has been established, the evaluation suggested a number of additional inputs that might increase the effectiveness of the system. The development of visual aids and the implementation of educational campaigns promoting one clear primary health care message over an extended period of time would strengthen the education component of the project. Additions to the CHWs' medical supplies, including ORT formula and oral antibiotics would increase the range and effectiveness of the CHWs' village activities.

The project amassed a great deal of statistical data. Unfortunately, its utility was limited by weaknesses in the collection methodology and the lack of sufficient personnel and equipment to properly analyze the information. Inclusion of the services of professional statisticians would permit the data to be used as a tool in project monitoring and an aid in adapting project operations to conditions revealed by the data analysis. The new project will attempt to streamline database collecting capacity and institutionalization of that information for planning and evaluation purposes.

17. Outputs

The original project paper proposed the following project outputs: (1) the training of a cadre to deliver community health services (192 CHWs), (2) the training of supervisors and trainees to support the CHWs, (3) the development of a curriculum for the training program, and (4) the establishment of operating community health care centers. The Rural Medical Assistance Project has successfully provided all of these outputs.

More specifically, as regards training, 197 CHWs chosen by 192 villages have completed their initial 45 day training program. Of these 94 have also attended ten days of in-service training after their first year in the village. There has been, of course, some attrition for reasons ranging from marriage, to village dissatisfaction with the worker, to lack of pay. However, 156 CHWs remain in active service.

Training of supervisors consisted of sending four GIRM nurses to the WHO center in Lome, Togo for a health education program. Four additional nurses are scheduled for the same training in 1984. Other medium-term training to commence during 1984 includes two nurses to CESSI nursing school for two years and four nurses to the WHO Training Center in Benin for one year.

During the life of the project, nine seminars were held for project personnel and interested Ministry of Health staff on such relevant topics as Training of Trainers, Supervision and Integration.

The curriculum developed for the training program was based on WHO modules adapted for use in Mauritania by the project staff.

Evidence of on-going community health services is offered by the continuing activities of the 156 CHWs. To date, CHWs have made 152,381 consultations involving 70,023 patients. The problem most frequently treated was diarrhea, followed by malaria and respiratory difficulties. Measles, intestinal worms and whooping cough were also treated on a regular basis. During their field trip, the evaluators were convinced that the CHWs took seriously their role as educators. Unfortunately, this aspect of their work will take much longer to affect any change in a society where emphasis has traditionally been placed on curative rather than preventative medicine.

Local support mechanisms for the CHWs have been established. Eighty-three percent of the villages have resupplied their medical kits at least once. Unfortunately, this is often not a complete replenishment of original supplies and may at any time contain only marginally useful supplies, or unacceptable drugs (i.e., injectable penicillin). Accessibility and cost of medications remains a potential stumbling block. Although only thirty-three percent of the villages have provided financial support for their CHW, only six of the forty-one workers who have left their posts claim to have done so because they were not paid.

The impact of the centers on village health is very difficult to accurately assess. This is due to the short period of time many of the CHWs have been installed in their villages and to the multitude of other variables which affect health status. A great deal of data on all aspects of health status and program administration was collected by the project. Unfortunately the lack of a clear statistical methodology in collecting the data has limited their utility in assessing the overall impact of the project. The evaluators did discover great local enthusiasm for the program which people explained saved them costly trips to more distant health facilities to receive minor medical treatments.

18. Purpose

1. To develop a basic health care system in Trarza Region which, with modifications can serve as a model for similar projects throughout Mauritania.

2. To assist the GIRM to develop the capacity to plan, manage and operate a low cost primary health care system.

EOPS	STATUS
1. System of training which provides functioning community health workers and their continuing education.	1. A cadre of trainers has been created, as well as a curriculum adapted to local conditions from WHO modules.
2. System of support for CHWs, both personal and professional.	2. Approximately 33% of the villages have reimbursed their CHWs. However, only 14.6% of the CHWs who have left the program have done so because they were not being paid. Despite some interruptions, supervisory activities have been sustained with 60% of the planned visits being accomplished. More consistent visits would be desirable.
3. System for supporting CHWs medicines supported by Community Health Committees.	3. Eighty-three percent of the villages for which data is available have renewed the medicine packet at least once. All the CHCs appear aware of their responsibility for this activity.
4. Secondary and tertiary health facilities in support of primary health care.	4. In general the CHWs have received positive support in their dealings with departmental and regional medical staff. Personnel improvements at Rosso hospital have improved its capacity to assist the project and act as a is a continuing need to improve facilities at the departmental level.

The Ministry of Health now has the basic technical capacity and facilities to manage the PHC program. Further integration of PHC activities into the routine operations of the Ministry would permit smoother functioning and additional support for the system. Provision of primary health care at a cost affordable to the GIRM remains problematic.

If the system is to be maintained a higher percentage of the GIRM budget will have to be allocated to the health sector. In the meantime, the system will remain heavily dependent on donor support.

19. Goal/Subgoal

Goal: To help stabilize the rural population in the interior of Mauritania.

Data was not available with which to judge population movement in the area.

Subgoal: To improve the health status of Mauritanians, particularly in the rural areas of the Trarza Region, by providing a low cost primary health delivery system that is accessible to all.

Improvement in the health status of a population is very difficult to accurately assess because of the many variables involved, the short period of field experience of the recently trained CHWs, and the inability to develop accurate statistical indicators based on the available data. There are currently 156 CHWs. During the life of the project, they have held 152,381 consultations, involving 70,023 patients. Given a sedentary population of approximately 50,000 in the villages served by the CHWs, these figures suggest that a significant percentage of the settled population and many transhumants have been served by the project. Records indicate that all age groups of the population, both male and female, were assisted by the CHWs.

20. Beneficiaries

Direct beneficiaries include all those who received training, that is 197 CHWs, eight GIRM nurses and the many participants in the nine seminars that were held. Also benefitting were the 70,023 people recorded to have received medical care and advice. Of these 30.3% were children under five and 33.6% were women between 14 and 49 years of age. This breakdown indicates that all groups in the population were reached. According to the project staff familiar with the region the project operated in all but approximately 15 villages with populations greater than 200 persons and not already served by medical facilities.

21. Unplanned Effects

A positive unplanned effect was the Ministry of Health's recognition that they cannot afford vertical projects. Integration of the Ministry's various activities are essential to providing health services efficiently and effectively.

22. Lessons Learned

a. The most important lesson learned has been the need to properly assess and provide for the administrative needs of the project in the design stage. This includes the clear definition of authority and responsibilities, provision for adequate staff and preparation of a proper accounting system. Such planning would also eliminate the overburdening of technical staff with administrative functions.

b. Supervision has proven to be both an essential and costly component of the program. It is important if the program is ever to be independent of donor support that a least cost solution to this activity be found.

c. Lack of payment of health workers has not proven to be a major constraint to starting project activities. However, during the new project, attrition rates and payment will be studied further. More problematic has been the replenishment of medicines, primarily because of the distances to suppliers and the limited number of existing outlets. It is important to assure a regular supply at reasonable costs and accessible locations.

d. The educational program on preventative care requires strengthening particularly with regard to household sanitation and nutrition. The traditional emphasis on curative health treatment and the continued lack of understanding of the relation of sanitation to health has tempered concrete responses to the new information. Constant stress on the importance of this aspect of the program is necessary if the preventative possibilities are to be recognized by the population.

e. If anything the project has been trying to do too much. It is very important to keep the approach simple, stressing a limited number of activities. For example, in the case of education, single message campaigns sustained over a long period of time would have a stronger impact than a number of messages offered simultaneously.

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EXECUTIVE SUMMARY ON TECHNOLOGY TRANSFER

Date: December, 1983

Project: Rural Medical Assistance (682-0202)

Country: Mauritania

Period of Project: 1979-1983

1. What constraint does the project attempt to overcome and who does it constrain?

The Rural Medical Assistance project has attempted to overcome the lack of primary health care services at the community level in the Trarza region of Mauritania. Without such services the first line of defense against infectious and chronic disease is lost. Unnecessary medical complications may develop when appropriate first aid methods are not readily available. Opportunities to eliminate improper sanitary and nutritional practices and improve the level of prenatal and child care are foregone. Weak health services at the community level contribute to high levels of infant mortality and the generally high rate of morbidity among Mauritanians, which leads to significant productivity loss throughout the country.

2. What technology does the project promote to relieve this constraint?

The project promoted the establishment of a system of Community Health Workers (CHWs) trained in the recognition of disease symptoms and the use of basic medicines, first aid techniques and the elementary components of community sanitation. Basic treatment of malaria, diarrhea, upper respiratory and eye infections was included in the training. The use of materials to assist newborns was promoted including eyedrops to prevent syphilis and puralent conjunctivitis and scissors, alcohol and sterile bandages to cut and bind the umbilical cord to prevent tetanus and puerperal sepsis. Village health kits, to be restocked by means of the community's own resources included antimalarial pills, cough medicine, eye and skin ointments, antihelminthics and first aid materials.

3. What technology does the project attempt to replace?

Knowledge of the relationship between diseases and the disposal of waste and the use of impure water is rudimentary in Mauritania. The availability of sterile materials and medications for the care of newborns and the prevention and treatment of disease and injuries is extremely limited. So too is the knowledge of how properly to use such medications and health supplies. The project aimed to upgrade local health care skills and knowledge and to promote the availability of products useful in improving community health.

4. Why did project planners believe that intended beneficiaries would adopt the proposed technology?

Traditional medical practices, encompassing fairly organized if antiquated criteria of diagnosis and treatment, are widespread in the region. The project meets an expressed need for curative services (first aid, malarial treatment, and rehydration) that was not previously being met. The project has attempted to build on this demand, where possible, by providing up-to-date knowledge of medical practices and techniques and introducing commodities of proven efficacy. The many requests made by villages, both within and beyond the Trarza Region, to be included in the project's program is evidence of the strong demand for village level health services in Mauritania. The adoption of the technology has not been resisted for social reasons, however, its ability to be maintained will depend on the Mauritania's capacity to support the costs of the system.

5. What characteristics did the intended beneficiaries exhibit that had relevance to their adopting the proposed technology?

See item 4 above.

6. What adoption rate has this project achieved in transferring the proposed technology?

The project has to date trained and installed 197 Community Health Workers in communities which have agreed to accept and support the program. One hundred fifty-six of the CHW remain active. Eighty-three percent of the villages have renewed their medical kit at least once, and 33% have reimbursed workers. CHWs have been visited regularly by all segments of the population.

7. Has the project set forces in motion that will induce further exploration of the constraint and improvements in the technical package proposed to ovecome it?

The project has been instrumental in assisting the Ministry of Health to reorient its program planning from an essentially urban-based, curative approach to an approach which includes a primary health care component with a focus on rural areas. This reorientation is expressed in the Government's desire to expand the primary health care scheme developed under the project to other regions of the country, once cost-reducing administrative changes have been effected. It is also evident in the reorganization of the Ministry to accommodate the program, including the creation of a full time position to handle project related activities. The MOH provided more than the number of personnel requested by the ProAg and has implemented a major policy change by licensing private agents to distribute medications.

8. Do private input suppliers have an incentive to examine the constraint addressed by the project and to come up with solutions?

The GIRM has authorized the licensing of a limited number of individuals to participate in the distribution of drug supplies to rural areas. This approach reflects a shift in public policy toward allowing greater private participation in health practice and drug supply.

9. What delivery system does the project employ to transfer technology to intended beneficiaries?

The delivery system consists of a series of training programs which transfer skills to all participants in the project: supervisory staff, the community health workers and local trainers who are now capable of continuing the education process.

10. What training techniques does the project use to develop the delivery system?

Training seminars have been held for first-aid agents, local trainers themselves, community health workers, and CHW supervisors. The CHW training program is carried out on a recurrent cycle, including reinforcement sessions for previously trained workers. The curriculum is based on WHO modules adapted by project participants for local use. Trainers and supervisors have also been sent on short-term educational programs in village health to the WHO facilities located in Lome.

11. What effect has the transferred technology had upon those impacted by it?

Improvements in community health due to the project are difficult to assess. Health status is dependent on too many factors and the CHWs have been in the villages too short a period of times to do a quantitative analysis of the project's contribution. The number of consultations alone, 152,300 for 70,000 people indicates that advice and treatment are being provided for a significant percentage of the settled population and a number of transhumants. Visits by the evaluators to villages convinced them that both CHWs and CHCs take their roles seriously and are attempting to carry out their respective responsibilities. Villagers interviewed voiced great enthusiasm for the program which saves them costly trips to distant medical facilities in search of basic medical treatment.

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NOUAKCHOTT, I.R.M. - OCTOBER - NOVEMBER 1983

FINAL EVALUATION REPORT OF THE RURAL MEDICAL ASSISTANCE PROJECT

(Project 682-0202
Contract No.: AID/Afr. 0202-C-00-1014-00)

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A C K N O W L E D G E M E N T S

THE EVALUATION TEAM WOULD LIKE TO GIVE SPECIAL THANKS TO:

1) THE THREE MAURITANIAN MINISTRY OF HEALTH EVALUATORS WHO WORKED WITH US IN STUDYING THE RURAL MEDICAL ASSISTANCE PROJECT: ANNE CHEIKH, MAMADOU SAMBA SY AND MAMADOU KANE.

2) THE TWO STATISTICIANS FROM THE U.S. BUREAU OF CENSUS, WASHINGTON, D.C., WHOSE WORK WAS IMMENSELY USEFUL FOR OUR UNDERSTANDING OF THE PROJECT. MOST OF THE TABLES PRESENTED IN THIS REPORT ARE BASED ON DATA THAT THEY ANALYSED.

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PART I

INTRODUCTION

A grant agreement was signed on 28 August 1979, between the Islamic Republic of Mauritania (IRM) and the United States of America (USA), for the implementation of the Rural Medical Assistance Project in the Trarza region. The United States of America was represented by the US Agency for International Development (USAID). Following the preliminary phase of establishing the Project, implementation activity commenced in August 1980, and is scheduled to conclude on 30 December 1983. This report constitutes, as planned, a final evaluation of Project activity undertaken during this period. The Evaluation Team was provided by "Management Sciences for Health", a firm contracted by USAID for this purpose, and comprised of:

1. Dr. Evariste Midy, MD-MPH, Specialist in Public Health: leader of the Evaluation Team;
2. Mr. Donovan Rudisuhle, M.B.A., Health Economist;
3. Ms. Suzanne Prysor-Jones, Ed.D., MA., BA., Specialist in Training and Health Education Programmes.

The Team arrived at Nouakchott on 23 October 1983, and on the following day commenced meetings with staff of USAID, the National Ministry of Health, and the

Trarza Rural Medical Assistance Project. During the course of these meetings, a great deal of valuable materials was made available by USAID and the Project personnel, enabling the team to collect the information necessary for the evaluation. Additional and complementary information was gathered over subsequent meetings with Government of Mauritania officials actively engaged in the execution of the Project, as well as through field trips undertaken by team members. It should also be noted that the Government of Mauritania, on its own initiative, appointed three officials of the Ministry of Health to assist the team and participate in the Project evaluation. These were:

Mr. Anne Cheikh, Maternal and Child Health Service

Mr. Mamadou Samba Sy, Health Education Section, Preventive Medicine Service

Mr. Mamadou Kane, Planning and Research.

This was an extremely welcome initiative, as it afforded the Evaluation Team an opportunity to work with national counterparts who provided a background on various phases of Project execution, as well as an insight into the habits and customs of the diverse ethnic groups of the villages in Trarza where the Project was implemented.

As part of its effort to retrieve the maximum possible

information on the Project, the evaluation team planned a field visit to Project areas. Details of this one-week visit were worked out with the assistance of Project personnel. The actual number of villages covered by the Project amounted to 156, distributed over six Departments, and inhabited by three distinct ethnic groups. A random selection was made of 10% of these villages, based on the criteria that the 15 villages selected represented all three ethnic groups and were well distributed within the six geographic Department areas.

Distribution of ethnic groups per department and per village in the Project area:

Ethnic Group	Department	Total Villages
Wolof	2	14
Poular	2	22
Hassanya	6	120

The stratified selection of 10% of villages for the survey yielded the following results:

1. Wolof : 2 Departments and 2 villages
2. Poular : 2 Departments and 3 villages
3. Hassanya : 5 Departments and 10 villages

For the Wolof group, the selection was made of:

One village of a total of 10 in the District of Rosso;

One village of a total of 13 in the District

of Keur Macene.

For the Poular group, selection was made of:

Two villages of a total of 14 in the District of R'Kiz;

One village of a total of 8 in the District of Rosso.

For the Hassanya group, the team selected:

Two villages of a total of 21 in the District of R'Kiz;

Three villages of a total of 29 in the District of Mederdra;

One village of a total of 19 in the District of Rosso;

Three villages of a total of 29 in the District of Boutilimit;

One village of a total of 14 in the District of Ouad-Naga.

Following the random selection of these 15 villages, the team was divided into three groups, each group comprising of one member of the evaluation team and one person appointed to the team by the Mauritanian Government. Supervisors and training personnel of the Project were made available to assist as interpretors and resource persons during the visits.

Each group was also expected to visit the District

dispensaries and Health Centers in the area covered by them, as well as one village where a Community Health Worker (CHW) had dropped out of the Project.

Distribution des Groupes

Group	Researchers	No. of Villages Visited	Duration
I	Dr. Midy - M. Anne Cheikh	6	6 Days
II	Ms. S. Prysor-Jones M. Sy	5	5 Days
III	D. Rudisuhle - M. Kane	4	4 Days

Project Villages Visited by the Three Groups of the Evaluation Team

Ethnic Group	Department	Village	Group
Wolof	Rosso	Gani	I
	Keur Macene	Davor	I
Poular	Rosso	Soringo	I
	R'Kiz	Dabaye	I
		Doue Reo	I
Hassanya	Rosso	M'Bouss Sed	I
	Mederdra	Twefike	II
		Jaber	II
		Abadah	II
	R'Kiz	Mayou Chayed	II
		Bir Ould Issa	II
	Boutilimit	Archane	III
		N'Jeringue	III
		Missasoud	III
	Ouad-Naga	Igarn	III

For the purpose of the field visit, the evaluation team devised questionnaires for the following respondents:

- Members of Community Health Committee;
- Community Health Agents;
- villagers; (mothers)
- persons in charge of Department Health Centers;
- persons in charge of Health Posts;
- inhabitants of villages no longer served by a community health worker.

In addition, the Evaluation Committee prepared a questionnaire to be used by the groups to determine sanitation conditions in the villages visited.

A copy of all questionnaires is annexed.

The Project Administration made all necessary arrangements to enable the departure of the three groups on Monday 30 October, at 6:30 a.m. Most of the day was spent at Rosso, where the team met with the Governor of Trarza Region. Technical discussions were held with Dr. Traore, chief-physician of the region, and the team established contact with health institutions in the area: the Rosso Hospital, the EPI Team and the MCH Center. These meetings were very satisfactory, and at 3:00 p.m., the groups dispersed to commence visits to villages on their respective itineraries. Mention must be made here of the kind assistance of Dr. Traore, who offered to accompany Group I on

their field visit.

The field trip, concluded on Saturday, 5 November, afforded each member a unique opportunity to savour the hospitality of the Mauritanian people. The ways and customs encountered by the team members will certainly remain an unforgettable experience.

The members of the team take this opportunity to express their appreciation and gratitude to:

- The Mauritanian Government, the National Ministry of Health, for the warm welcome accorded to the team by the government officials they had dealings with;
- the staff of USAID, Nouakchott, who anticipated all our needs and did as much as possible to make the stay of the team a pleasant one;
- the management of the Trarza Rural Medical Assistance Project, whose planning to the minutest detail for the arrival of the Evaluation Team reflects their strong sense of responsibility;
- and finally, to the Project personnel, the supervisors and trainers, the secretaries and accountant, dedicated and always available for all that was requested of them by the members of the evaluation team.

Undeniably, the functioning of the team would not have been

possible without the assistance and goodwill extended to them.

Our grateful thanks to all!

PART II

CHAPTER I

GENERAL INFORMATION ON THE ISLAMIC REPUBLIC OF MAURITANIA

1. Geography and Climate:

The Islamic Republic of Mauritania has an area of 1,030,700 square kilometers. It is bordered on the North-West by the Western Sahara and Algeria; on the East and South-East by Mali; in the South, by the Senegal River, and the West by the Atlantic Ocean.

Climatically, Mauritania is sub-divided into four zones: the Sahelo-Sudanese, the valley of the Senegal River, and the Sahelian and Saharan zones. Most of the country is situated in the Sahara zone. The Sahel zone comprises of the southern part of the country.

Rainfall is low, and diminishes from South to North and West to East. The annual average is approximately 600 mm in the extreme South of the country; 100 mm in the Nouakchott area; and less than 50 mm along the Northern coastline and in the North-East. For close to two years, severe drought conditions have been prevailing in the country. Nouakchott received a mere 6 mm of rainfall last year.

The average annual temperature varies from 19 to 32 degrees centigrade at Nouakchott, from 23 to 34 degrees centigrade on the Senegal River, and from 10 to 40 degrees centigrade in the Sahara.

2. Political Divisions and Sub-Divisions of Territory:
Administratively, the country is divided into 12 regions, and the district of Nouakchott. Each region is sub-divided into departments, which number 35 in total. These departments are further sub-divided into a number of "Arrondissements".

Regional Administration is decentralized; regions where there is no military Commandant are placed under the administrative authority of a Governor. The Department is governed by a Prefect. The smallest administrative unit is the village in the case of fixed population, and the camp for nomadic populations.

3. Demography:
Based on the 1977 census, the population of Mauritania was estimated at 1,605,000 as of 1 January 1982. The population distribution by age is as follows:

Table 1

Age Group Distribution of Population
in the IRM, 1982 (Estimation Based on the 1977 Census)

Age Group	Male	%	Female	%	Total	%
0 - 14	345.091	46.3	339.422	43.3	684.513	44.8
15 - 59	369.072	49.5	405.657	51.7	774.729	50.6
60 and over	32.341	4.2	38.871	5.	70.212	4.6
	745.504	100	783.950	100	1.605	100

The annual population growth averages 2.5%.

4. Culture and Ethnology:

There are four ethnic groups in the Islamic Republic of Mauritania:

= The Moors: Originally a largely nomadic group. As a result of many years of drought, the Moors now increasingly tend to settle in habitations.

= The Poular: Inhabit many parts of the country, but chiefly along the Senegal River between Rosso and Selibaby.

= The Sonnike: This group mainly inhabits the regions of Guidimaka and Gorgol, and the frontier area bordering Mali.

= The Wolof: Who dwell in the lower valley of the Senegal River, close to Rosso, a geographical area shared with the Moors.

The black ethnic groups of South Mauritania are traditionally agriculturists; the Moors are nomadic herdsmen.

5. Economy and Budget:

The economy of the Islamic Republic of Mauritania is essentially based on the following factors:

- Agriculture: 70% of the population lives on agriculture, fishery and livestock. Almost half the manpower in rural areas is engaged in raising of livestock, while a quarter practices agriculture.
- Fisheries yield between 50,000 to 60,000 tons of fish per year; the potential annual production has, however, been estimated at 400,000 tons. Over the past three years, the fishing industry has received a great inpetus in Nouadhibou.
- Industry: mining and handicrafts. Mauritania also produces iron, copper and gypsum. There is a potential for exploitation of phosphate resources.
- The gross national product of IRM for the year 1980 amounted to 460 million Ouguiyas (US $9.2 million), and the per capita income for the same year was the equivalent of US $480.

6. Public Health:

Management of all health services in the country is

executed by the Minister of Health, Labour and Social Affairs. The organigram of this Ministry is provided in this chapter.

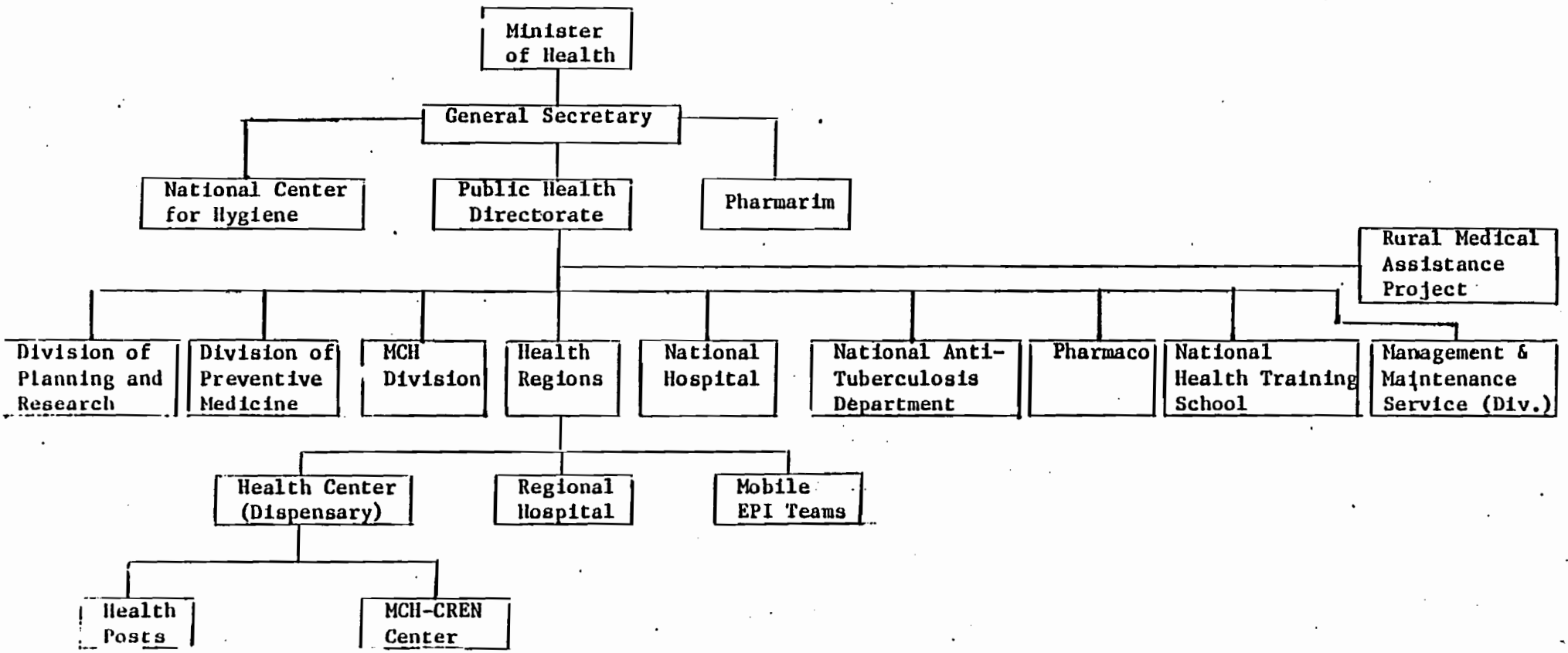
The territorial sub-division for the management of health services generally follows the political/administrative divisions. There are, thus, 12 regions plus the District of Nouakchott, comprising of 35 Departments, which in turn are sub-divided into Arrondissements and then villages or encampments. Each Region has a Regional Hospital; a Health Centre situated at Department level, and each Arrondissement has a health post.

The number of health institutions is currently somewhat limited. The following institutions were enumerated as of 31 December 1982: (1)

- 13 Hospitals
- 1 Polyclinic
- 2 Mother & Child Care Centers
- 13 Health Centres, Grade A
- 43 Health Centres, Grade B
- 74 Health Centres, Grade C
- 12 Mobile Health Units
- 13 School Health Centres
- 15 Antennes SNATL
- 27 CREN (Centres for Nutritional Recuperation and Education)
- 19 MCH Centres
- 1 CNH (National Hygiene Centre)
- 1 Drug Supply Agency
- 1 Health School for Nurses

(1) Figures obtained from the Annual Statistical Report, 1982.

Organigram of the Ministry of Health
(From the Bureau of Planning and Research of the Ministry of Health)



With the exception of the Nouakchott District, Mauritania is also lacking in sufficient professional resources and expertise. Available resources comprise of: 136 doctors, 7 dentists; 447 Nurses (1st grade); 87 State Midwives; 12 Pharmacists; 256 Nurses (2nd grade); 5 Dental Technicians; 2 Sanitation Engineers; 1 Nutritionist; 1 Statistician; 7 Laboratory Technicians; 253 Assistant Nurses; and 38 Nutrition Auxiliaires. (1)

Although the nurses are trained within the country, there are no facilities for the training of medical doctors.

The mortality rate averages 21 per thousand; the infant mortality rate is estimated at 170 to 180 per thousand.

The country's major health problems can be traced to poor environmental sanitation, and a lack of safe drinking water. These are manifested in incidences of diarrhoea, malaria, measles, malnutrition, pulmonary tuberculosis, and other problems related to inadequate maternal and childcare services. Against this background, the nature of health services tends to emphasize curative rather than preventive medicine.

The budget for health activities, which represents barely 3.6% of the national budget, is entirely disproportionate

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(1) Figures obtained from the Annual Statistical Report

to the health services requirements of the population. The total figure for the year 1982 amounted to 412,972,800 Ouguiyas (US $8.2 million).

External assistance to the health sector is provided by bilateral and international organisations, chiefly USAID, UNICEF, OMS, etc.

CHAPTER II

THE RURAL MEDICAL ASSISTANCE PROJECT

1. Justification of the Project:

The level of health services in the IRM was comparatively poor in the late seventies. Existing services were almost entirely curative and provided mainly in urban or semi-urban areas through hospitals, dispensaries and health posts. No provision was made for rural communities, where the lack of health facilities was perhaps most acutely felt. In the event of illness, villagers had to travel dozens of kilometers for medical treatment at the nearest dispensary or health post.

In view of the serious threat this situation posed to socio-economic development, the Government examined the possibilities of extending health services to the rural areas of the country. The Project for Rural Medical Assistance in the Trarza Region was thus conceived, in cooperation with USAID, to devise and field test a strategy for the provision of such services.

2. Aims, Objectives and Strategy of the Project:

The Project for Rural Medical Assistance had two basic purposes. The general aim to improve existing medical services in rural areas of the country. A more specific objective was the planning, execution and evaluation of

a pilot project for the provision of health services to one region of the country, in order to develop a replicable model which could be implemented in other regions, following appropriate modifications. Trarza region was therefore, selected as an experimental project area.

Many elements had to be taken into account at the planning stage. These were:

a. Training: Motivation of 192 villages - the creation of 192 Community Health Committees within these villages, followed by the selection and training of 192 health agents for the provision of Primary Health Care to these villages.

b. The establishment of a community-supported system to make medicines and medical equipment available to the CHWs.

c. Compilation by CHWs of basic information relating to the communities served and the services provided to these communities.

d. Supervision of CHWs to ensure their continued training, the maintenance of their motivational level, and the support of the Community Health Committees.

e. Improvement and reinforcement of existing health care systems at regional and departmental levels. One outcome of this activity was to be an improved service

level of these facilities, allowing for better care of cases referred to them by CHWs.

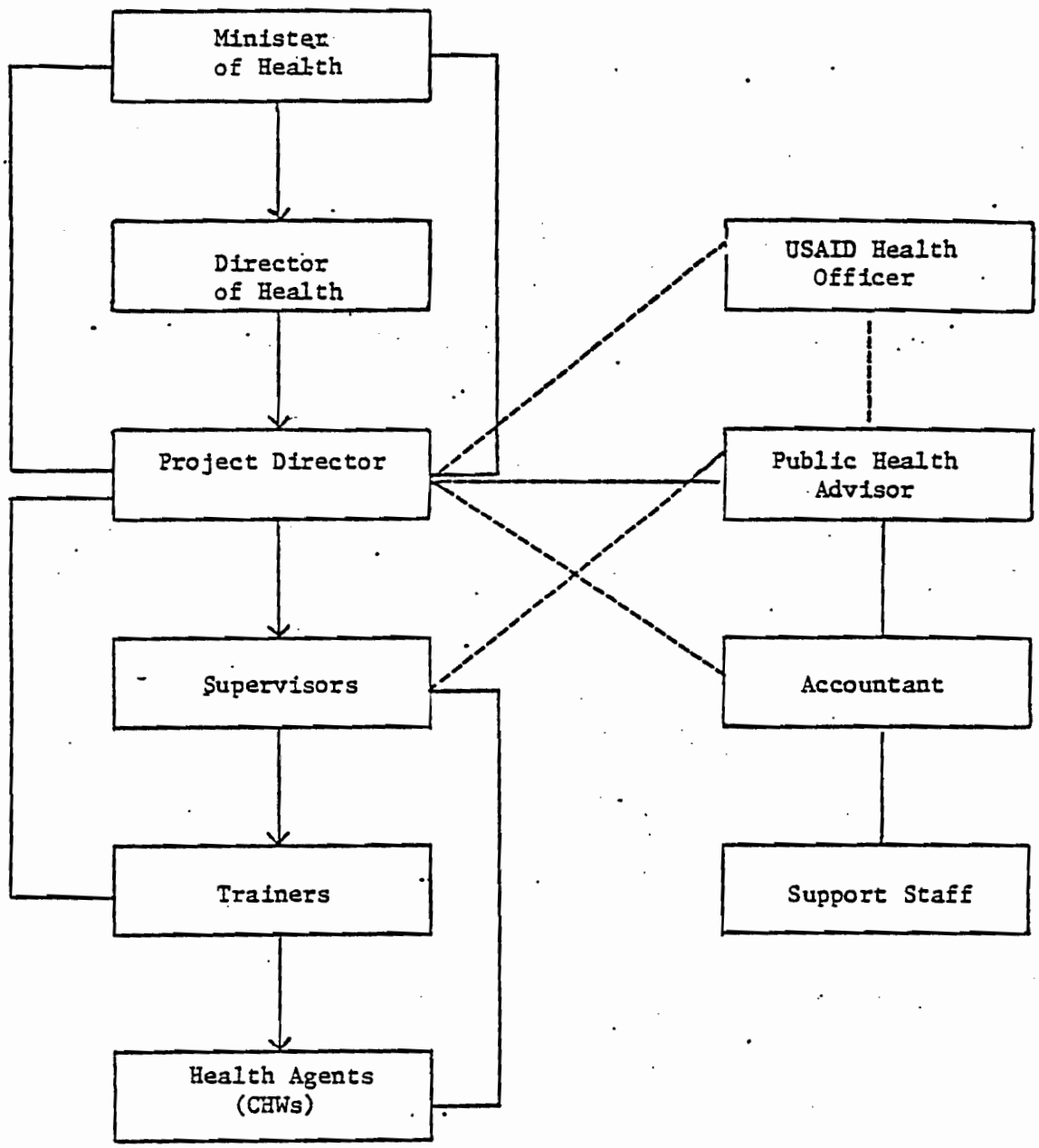
f. Finally, the diverse aspects of Project activity needed to be integrated within the health network of the Government of Mauritania, to enable continuity of this approach after the termination of the pilot project.

3. Management and Administration of the Project - Organigram:

The Project is headed by a Project Director and a Technical Consultant. As indicated in the organigram, there are two lines of authority: one, comprising ~~of~~ the Project Director, supervisors, trainers and CHWs, and the other consisting of the Technical Consultant, the accountant, and support staff. There is no direct line of authority between technical personnel and administrative staff. Thus, the administrative staff is entirely responsible for the financial management aspect of the Project, which falls outside the purview of the Project Director. As it stands, this system could result in potential conflict situations; it would seem, however, that Project execution had, nonetheless, been smoothly implemented.

In effect, the Project operated vertically with relatively limited staff: a director, two supervisors, seven

Organigram of Rural Medical Assistance Project



trainers and, at field level, Community Health Councils and Community Health Agents. In the adminstrative context, the technical consultant assumed responsibility context for all disbursements, liaising with the health personnel of USAID. The accounting operation was maintained by an accoutant under the supervision and guidance of the technical consultant. The Project support personnel, drivers, secretaries and peons came under the direct supervision of the technical consultant and the accountant.

4. Budget:

The overall budget of the Project amounted to US $2,169,086. Of this total,

1. USAID contributed US $1,661,086, representing 77% of the outlay;
2. The Government of IRM provided US $224,188, as 10% of the total; and
3. Other donors contributed US $283,125, providing 13% of the budget.

USAID participation consisted of:

a) Technical Assistance	$ 768,000
b) Education and Training	140.282
c) Equipment and Supplies	409,024
Sub-Total	$ 1.317.306
Unforeseen Expenses (10%)	131.731
Sub-Total	$ 1.449.037
Inflation (15%)	212.736
Total	$ 1.661.773

The Government of IRM contribution comprised of:

a) Personnel	$	164,249
b) Infrastructures and Offices		13,100
Sub-Total	$	177,349
Unforeseen Expenses (10%)		17,735
Sub-Total	$	195,084
Inflation (15%)		29,105
Total	$	224,188

Other funding agencies were:

a) The American Peace Corps	$	215,000
b) The Mauritanian Red Crescemt		4,000
Sub-Total	$	219,000
Unforeseen Expenses (10%)		21,900
Sub-Total	$	240,900
Inflation (15%)		42,225
Total	$	283,125

5. Project Achievements:

5.1 Motivation and Awareness-Building at Village Level:

Since the programme was to depend on community inputs, it was essential to prepare communities for the responsibilities they were expected to undertake. Specific emphasis was, therefore, placed on motivational activity at the village level. The Project relied initially on the involvement of the Mauritanian Red Crescent, with its substantial experience in training first-aid agents in villages.

The Mauritian Red Crescent began its animation and motivation tour on 16 April 1980, and visited from 17 to 31 August 1980, 130 villages and encampments in the department of Rosso, R'Kiz and Mederdra. a total of 157 volunteers were recruited to participate in their first-aid training sessions. The objective of these visits was to inform and create an awareness amongst communities in villages and encampments of the concept of Primary Health Care, and of village pharmacies, hygiene and environmental sanitation and also to recruit rural volunteers for training in first-aid. Four training seminars for first-aid workers were, therefore, held at Rosso, Mederdra, R'Kiz and Jidr El Mohghen between 10 to 20 September 1980, with 234 trainees. A Mauritanian Red Crescent Report indicates that "a presentation of the Trarza Project and its relationship to rural first-aid workers was made by MM. Diouf and Ould Memah, representatives of the Preventive Medicine Service". It would appear that this tour and the seminars constituted the only actual motivational activities contributed by the Mauritanian Red Crescent to the Project.

Other motivation tours and training of Community Health Committees were undertaken by teams established by the Project. The villages selected were those which were accessible, and with a population of over 200 inhabitants.

Each team comprised of a nurse fluent in the language of the villages to be visited; a driver; and a Peace Corps Volunteer. Assisted by the Prefect, it was possible to visit all the departments in the region, including those which had been covered by the Red Crescent. During the course of these motivational visits, the aims and objectives of the Project were explained to both village dignitaries and villagers, in an effort to engender their interest and support. A Health Committee was established wherever the teams met with a positive response. After having clearly delineated the responsibilities of the Committee to committee members, the team undertook a village survey and mapped the village area. In all, the Project supervisors and training agents estimated one day per village visited. A total of 197 villages of the number visited were included in the Project.

The following table indicates the number of villages per department for each training session. The same table establishes the total number of villages per department for the six departments of the region.

Table No. 2

Distribution of Villages Chosen for Inclusion by Department and Training Session

Training Session	Departments						
	Rosso	Mederdra	R'Kiz	Keur Macene	Boutilimit	Ouad Naga	Total
1st	21	6	9	X	X	X	36
2nd	13	6	7	X	5	X	31
3rd	6	10	4	4	7	X	31
4th	1	5	7	5	10	5	33
5th	2	5	X	4	7	6	24
6th	10	10	10	2	6	4	42
Total	53	42	37	15	35	15	197

Source: First Annual Report, December 1981: Dimpex Associates Inc.

5.2 Training Activities:

Training of personnel constitutes one of the most important aspects of Project activity. Scholarships for training abroad were provided to Project staff to prepare them for their work on the Project. Between July 1979 and December 1981, four nurses/trainers were sent to Lomé, Togo for training of trainers and community motivation courses.

A number of in-country courses and seminars were organised,

not only for Project personnel but also for employees of the Ministry of Health who were working in the Project's geographic area. Nine staff training courses/ seminars were organised during the period under review, from October 1980 to October 1983. These courses/ seminars focussed on a variety of subjects, including: Training of trainers, supervision, in-service training, integration of the Project within the context of national primary health services, etc. Training sessions ensured the participation of all Project personnel as well as officials and employees of the Ministry of Health. Table No.3 gives, on the next page, a resumé of the various in-country courses organised by the Project with dates, subjects covered, and the number of participants.

Another important training activity undertaken by the Project, was the training of Community Health Workers. The Project plan envisaged the training of 192 village level Community Health Workers over the duration of the Project. Six training courses conducted by the Project resulted in the training of a total of 197 agents. Of this number, there were 41 dropouts, leaving an actual total of 156 active Community Health Workers.

Table No. 3

Staff Training
For Primary Health Care Services
By the Project for Rural Medical Assistance
September 1983

Subject	Institution Responsable	Dates	Total Participants	Non-Project Participants
Training of Training Agents	OMS/SHDS	15.10.80 3.11.80	15	11
Supervision	Project	1.04.81	5	
Refresher Courses for Supervisors	OMS/SHDS	15.08.81	13	4
Nutrition	OMS/Min. of Health	10.81	17	10
Research Methodology	Consultant/ Project	10.81	17	10
Evaluation Review	Project	4.08.82 13.08.82	8	
Integration - Public Health Services	Project/ Ministry/ OMS	24.01.83 27.01.83	53	43
Project Integration	Project/USAID/ Ministry	10.04.83 14.04.83	17	8

Table No. 4 presents the total number of CHWs trained by department, ethnic group and training course. Training courses were for an average duration of 45 days. All CHWs trained returned to their villages with complete medical kits to enable them to commence their activities.

These training and animation activities should be fully appreciated. Undeniably, the Project was able to create a high degree of awareness within the rural milieu of Trarza region, as well as a community infrastructure essential to the development of Primary Health Care services. The professional staff of the Ministry of Health trained by the Project will be a major asset, on which the government will rely for the future extension of PHC activities undertaken in the context of meeting the overall objective subscribed to by the Government of Mauritania, of "Health for All by the Year 2000".

5.3 Health and Hygiene Activities at Village-Level:

With the establishment of the Community Health Committees and CHWs, the Project planned to initiate a system of preventive and curative medical care at village-level. This system was firmly based on community participation, for communities were to ensure the replenishment of medical supplies and equipment to the CHW, who received after his training a basic kit containing the most commonly used medicines for the provision of first-aid. All cases requiring medical attention beyond the capacities of the CHW were to be referred to the nearest health centre, whether dispensary or health post. All cases dealt with as well as the treatment administered were to be recorded in a form maintained by the CHW.

The role of the CHW in the village was not limited to

Table No. 4

Total Number of CHWs Trained, by Department, Ethnic Group and Training Course

Departement	Rosso			R'Kiz			Boutilimit			Méderdra			Oued-Naga			Keur Macène			Total			Total
Date of Training	H	P	W	H	P	W	H	P	W	H	P	W	H	P	W	H	P	W	H	P	W	
January 1981	-	6	8	9	6	1	-	-	-	6	-	-	-	-	-	-	-	-	15	12	9	36
October 1981	4	4	-	8	4	-	5	-	-	6	-	-	-	-	-	-	-	-	23	8	-	31
February 1982	6	-	-	4	-	-	7	-	-	10	-	-	-	-	-	2	-	2	29	7	2	33
October 1982	1	1	-	-	6	-	10	-	-	5	-	-	5	-	-	5	-	-	26	-	-	26
January 1983	2	-	1	-	-	-	7	-	-	4	-	-	6	-	-	4	-	-	23	-	1	24
May 1983	7	-	3	8	1	1	6	-	-	10	-	-	4	-	-	1	-	1	36	1	5	42

Source. Studies Undertaken by the Team of Statisticians

H = Hassanya

P = Poular

W = Wolof

curative action, he was also trained to educate villagers on prevention of illness, disease control, and improvement of health status. The CHW was also required therefore to visit individual households, organise meetings and educative sessions on health issues, and instruct the community on hygiene and environmental sanitation. Activities in this sector were to be regularly recorded by the CHW in his activities register. During supervisory visits, information contained in the registers was to be transferred onto special forms and forwarded to the Project headquarters. Unfortunately, however, no system for tabulation and analysis of this data was provided for at the central office level. However, the evaluation team with the assistance of trainers from the Project, was able to tabulate this information and get an idea of the scope and extent of work undertaken by the CHWs within the duration of the Project. This information has been presented in Table 5, and accompanying figures 1 and 2.

The data thus tabulated, indicates that CHWs monitored by the Project undertook a total of 152,381 consultations for 70,023 individuals, arriving at an average of 2.17 visits per patient. If we estimate the population served in the area of CHW operation at 50,458, we can reasonably conclude that a high percentage of the population was able to consult with CHWs at least once during the course of the three-year Project.

The table presenting information on consultations by Department and nature of illness indicates that the main reason for consultation was diarrhoea; followed by malaria, and respiratory disease. Problems seen less frequently were parasitical infections, measles and whooping cough (see Table No. 6 and figures on the following pages).

Table No. 5

TRARZA REGION

CHW ACTIVITIES BY DEPARTMENT

Age Group / Département	CONSULTANTS				CONSULTATIONS				Concen-tration	Evacua-tion	Reported Deaths	Reported Births
	0 à 5 Years	14 à 49 years	Other	Total	0 à 5 Years	14 à 49 Years	Other	Total				
ROSSO	2.423	2.061	1.838	6.322	2.928	2.412	2.597	7.937	1.25	8	55	87
R'KIZ	5.929	4.395	4.845	15.169	8.399	6.307	6.757	21.463	1,41	4	103	161
MEDERDRA	5.406	7.241	7.716	20.363	17.951	11.436	12.099	41.486	2,03	0	24	99
BOUTILIMIT	7.840	7.463	7.718	23.021	22.090	20.635	21.347	64.072	2,78	0	41	90
KEUR MACENE	950	590	482	2.022	1.767	1.097	896	3.761	1,86	0	12	25
OUAD-NAGA	2.880	1.802	2.653	7.335	5.299	3.500	4.863	13.662	1,86	0	13	36
TOTAL	21.270	23.552	25.201	70.023	58.434	45.387	48.559	152.381	2,17	12	248	498

Source: Compilation from Supervision Forms in the Project Archives

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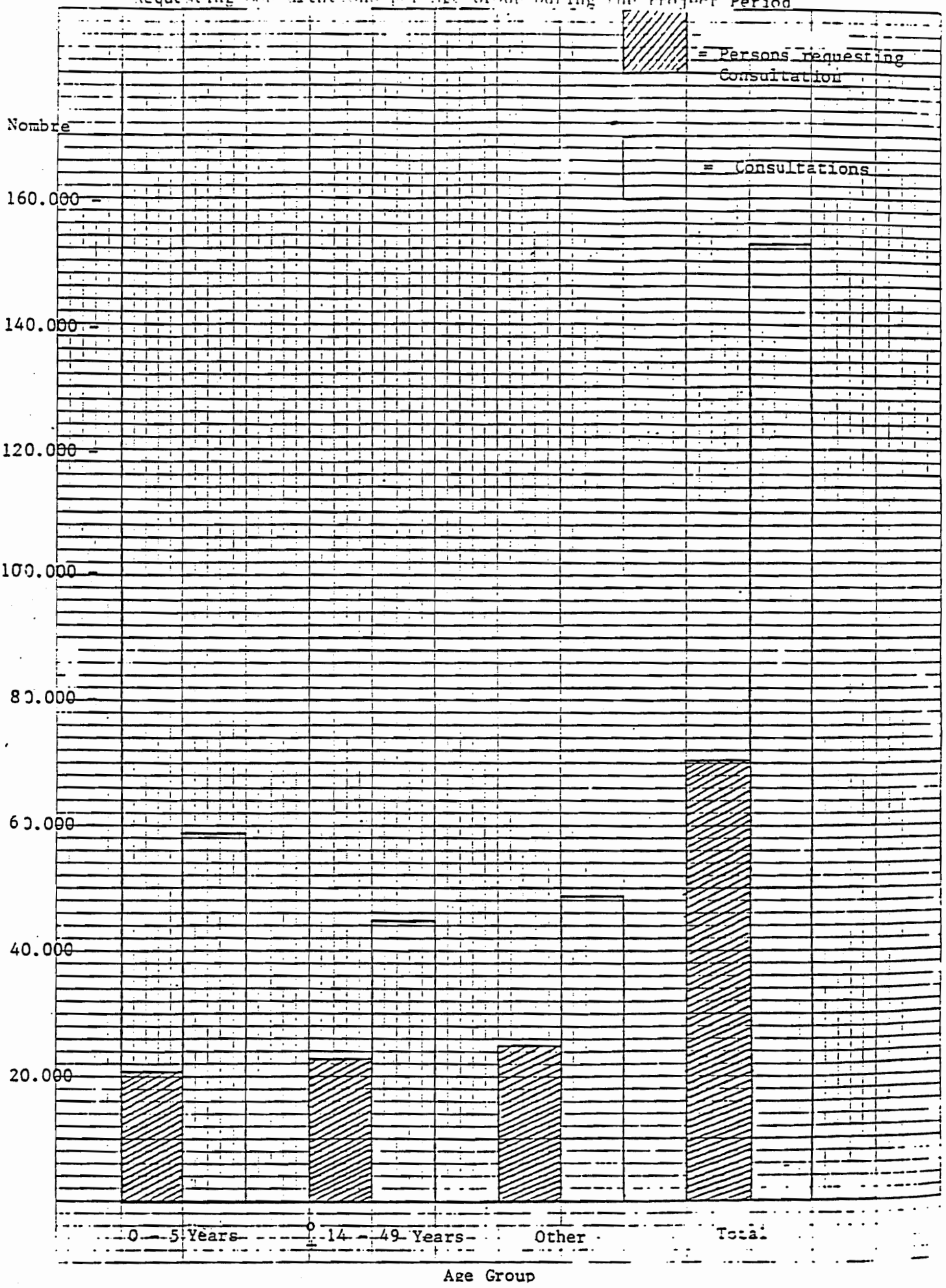
Distribution of Consultations Undertaken by the CHW, and Persons Requesting Consultations per Age Group During the Project Period



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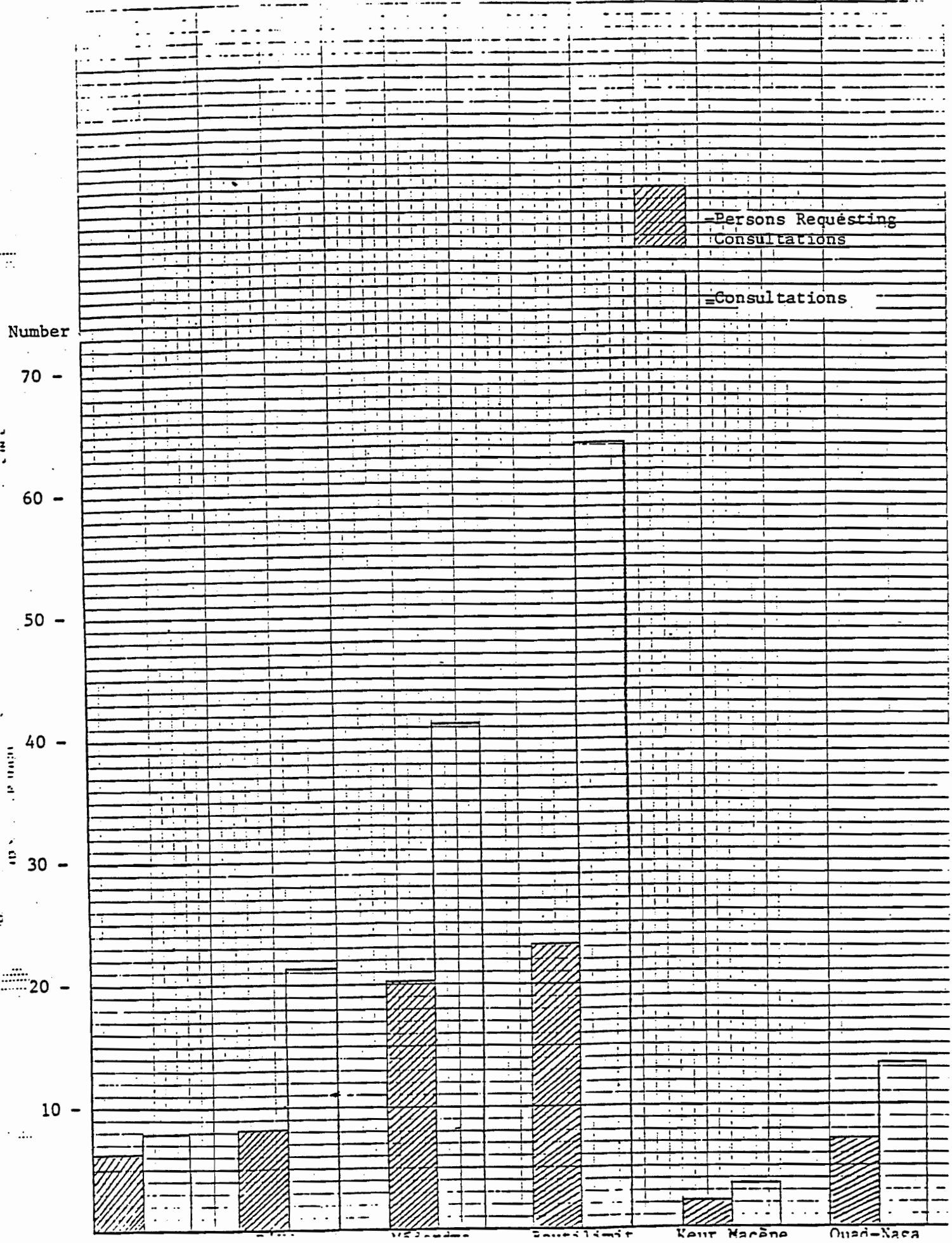
Distribution of Total Number Requesting consultations, and Consultations per Dept.



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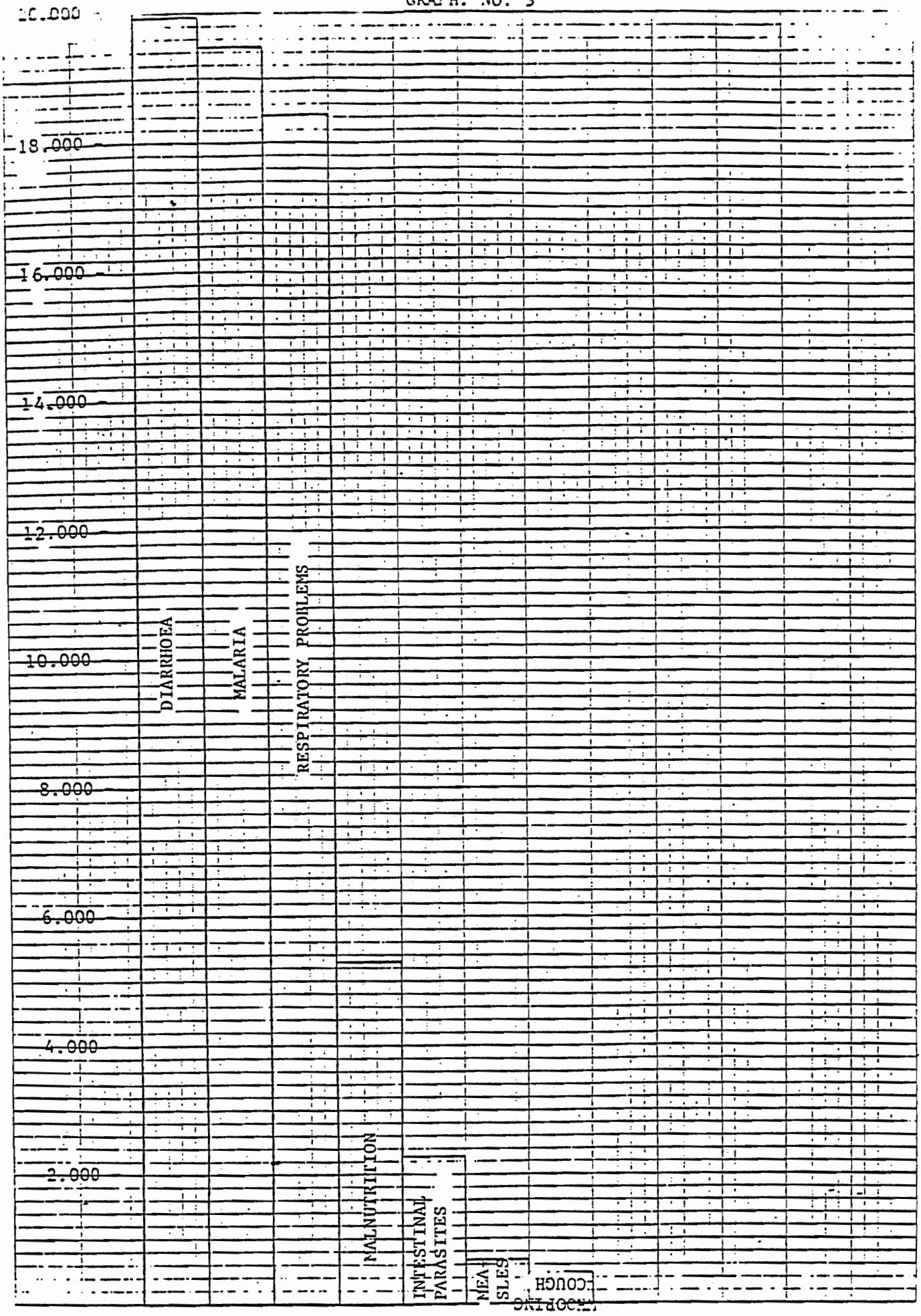
PREDOMINANT DISEASES IN THE REGION BY DEPARTMENT

Diseases / Departements	Diarrhea	Whooping Cough	Measles	Malaria	Intestinal Parasites	Malnutrition	Respiratory Problems
ROSSO	1.106	87	60	2.096	94	195	525
R'KIZ	3.251	312	476	3.491	228	334	3.157
MEDERDRA	5.480	35	35	3.556	1.097	1.162	5.586
BOUTILIMIT	7.631	108	201	8.623	492	2.731	7.093
KEUR MACENE	172	5	0	350	35	76	229
OUAD-NAGA	2.207	0	9	1.436	373	880	1.823
TOTAL	19.847	552	781	19.552	2.319	5.378	18.413

Source: Derived from Project Supervision Archives

35

Prevalence of Predominant Diseases in the Trarza Region, based on CHW Reports
GRAPH. NO. 3



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Judging by the number of consultations, the most active Department was that of Boutilimit, followed by Mederdra, and then R'Kiz, Ouad-Naga, Rosso and finally, Keur Macene.

It is interesting to note that this distribution does not correspond with the distribution of CHWs, nor with the size of the population, as is clear from the following Table.

Table No. 7

Distribution of Consultations According to Population and the Number of CHWs by Department

Dep.	Rosso	R'Kiz	Boutilimit	Mederdra	Ouad-Naga	Macene	Total
Population	9.787	14.519	10.790	8.278	3.103	3.981	50.458
No: of CHWs	43	48	35	41	15	15	157
Total No. of persons req. consultations	6.322	15.169	23.021	22.090	7.335	2.022	70.023
Total consultations	7.937	21.463	64.072	41.486	13.662	3.761	152.381

Source: Project Archives

If we now refer to the case tabulation, we observe that the diseases most prevalent in the region can be listed in the following order of magnitude: Diarrhoea - Malaria - Respiratory Problems - Intestinal Parasites - Measles - Whooping Cough.

Table No. 8 shows the causes of illness per 100 inhabitants and by Department over the duration of the Project. (It was difficult to make an annual tabulation). According to this data, respiratory problems and malaria constitute the most prevalent diseases affecting the population. Diarrheoa comes third, followed by malnutrition. Respiratory problems are predominant amongst the populations of Mederdra, Boutilimit and Ouad-Naga.

Malaria apparently affects the population of Boutilimit, Ouad-Naga, Mederdra, R'Kiz and Rosso.

Diarrhoea is most frequently the major health problem in Boutilimit, Mederdra and R'Kiz.

Malnutrition is most prevalent in Boutilimit, Ouad-Naga and Mederdra.

Table No. 8

Causes of Morbidity per 100 Population
Identified by CHWs by Department

Diseases / Department	Diarrhoea	Malaria	Respiratory Problems	Malnutrition
Rosso	11,30%	21,41%	5,36%	1,99%
R'Kiz	22,39%	24,04%	21,74%	2,30%
Mederdra	66,19%	42,95%	67,48%	14,03%
Boutilimit	70,72%	79,91%	65,73%	34,57%
Keur Macene	4,32%	8,79%	5,75%	1,90%
Ouad-Naga	0	46,27%	58,74%	28,35%
Average	29,15%	37,22%	37,46%	13,86%

Referring back to Table No. 5, a rapid assessment would indicate that the figures for births and deaths were under-registered.

The value of available data is questionable and must be considered in the light of the circumstances under which it was compiled - by health agents with an extremely limited medical background. However, they have some importance as an information base upon which to structure further activities for the provision of health services to this region.

5.4 Aid to Health Institutions in the Region -

In enumerating the achievements of the Project, an important factor is the assistance provided to the health facilities in the region. This region received medical equipment and other supplies to the value of US $80,000. During our visit to the Regional Hospital at Rosso, the Physician-in-Chief of the region, Dr. Traore, expressed satisfaction at the support provided by the Project to the centers in the area. The Head-Nurse of the dispensary at Keur Macene expressed similar views. Equipment and other assistance to these centers has contributed to building up their capacity for the improved provision of medical attention to cases referred to them by CHWs in rural areas. Some materials and supplies were distributed to virtually every center functioning in the area. (cf: Annex IV: List of Equipment and Supplies provided by the Project in the region).

5.5 Supervisory Activities -

An essential component of this Project, supervisory activity had various objectives:

a) Continuing education of the CHW, and evaluation of his work.

b) Continued motivational activity directed at Community Health Councils and village-level beneficiaries.

c) Collection of information from the registers maintained by CHWs.

d) Collection of data related to changes in the health status of villages.

As planned, supervisory activity was geared to these objectives. Monthly supervision was foreseen as essential for the first three months, followed by tri-monthly supervision over the course of the first year, and bi-annual supervision during the subsequent period.

Unfortunately, these schedules were not maintained. In actual fact, a total of 504 supervisions were effected against the envisaged 842, achieving only 60% of the supervisory objective. The reasons for inadequate functioning of this important aspect of the Project are provided further on in this report.

CHAPTER III

EVALUATION AND ANALYSIS OF THE PROJECT

RATIONALE AND PLAN FOR THE EVALUATION

The Project Agreement clearly stipulated that the Project was to represent "a joint effort on behalf of the Government of Mauritania, assisted by USAID, for the development of a system for improvement of health services in the rural areas of Mauritania". The same document further states that there will be developed, within Trarza region, "a pilot Project for a system providing medical supplies and assistance to rural communities. It is anticipated that the implementation and evaluation of this pilot Project will better enable the Government of Mauritania to increase health coverage through similar Projects, with the experience and resources at the disposal of the country".

This final evaluation of the Project for Rural Medical Assistance at Trarza therefore constitutes an impowtant aspect of the Agreement. It follows the first, mid-project evaluation conducted in May 1982. The final evaluation will, in principle, provide guidelines for the structuring of extended PHC activities for rural communities, undertaken by the Government of the Islamic Republic of Mauritania.

Project evaluation includes the following components:

A - Technical achievements of the Project.

B - The integration of the Community Health Workers into the Ministry of Health.

C - The General Administration of the Project.

D - Economic Evaluation.

A - TECHNICAL ACHIEVEMENTS OF THE PROJECT

A.1 Selection of Villages for Inclusion in the Project

At the initiation of the Project, the following criteria were outlined for the identification of villages for inclusion in the Project:

- Relatively settled (sedentary) villages.
- Villages remote from health institutions.
- Villages with a population of 300 or more inhabitants.

In selecting villages for motivational activity, the Project team first contacted Regional and Departmental authorities. The team thereafter identified villages for the Project, bases on the 1977 Census figures, as well as on priorities indicated by local authorities.

To begin with, it was possible to function according to the established criteria. As the Project progressed, however, there was an increasing tendency to accept villages with smaller populations as well. The population criteria was subsequently amended to include villages with 200 or more inhabitants and, in fact, many villages with a population below 200 were also included within the Project. In effect, 31 villages selected (16.6% of the total) had populations below 200, and 55 villages, comprising 29.5% of the total number, had populations of less that 300 inhabitants. This was a result of two main factors:

a) The population of Trarza Region tends to live in small villages (see Table No. 9 on the following page), and the larger villages were already included in the Project.

b) Once the Project was underway, the team received a great many requests from small rural communities, requesting their inclusion in the Project.

Project staff judged it necessary to respond to these direct requests from communities, and it was therefore, decided to not adhere too strictly to previously determined criteria for village selection.

This decision proved quite acceptable, as the drop-out rate amongst small villages was not higher than that of the larger ones. (See figures 4,5 and 6 on the following pages).

Similarly, the smaller villages were able to provide as much financial support to their Community Health Workers (CHWs) as were the larger ones (see Table No. 10, page 47).

With regard to community responsibility for replenishment of the CHW medical kits, Table No. 11 (page 48) clearly indicates that there was no real deviation in the degree to which this responsibility was assumed by both small and large villages. In villagers with a population of under 200, medical supplies were restocked in 68% of the

Table No. 9

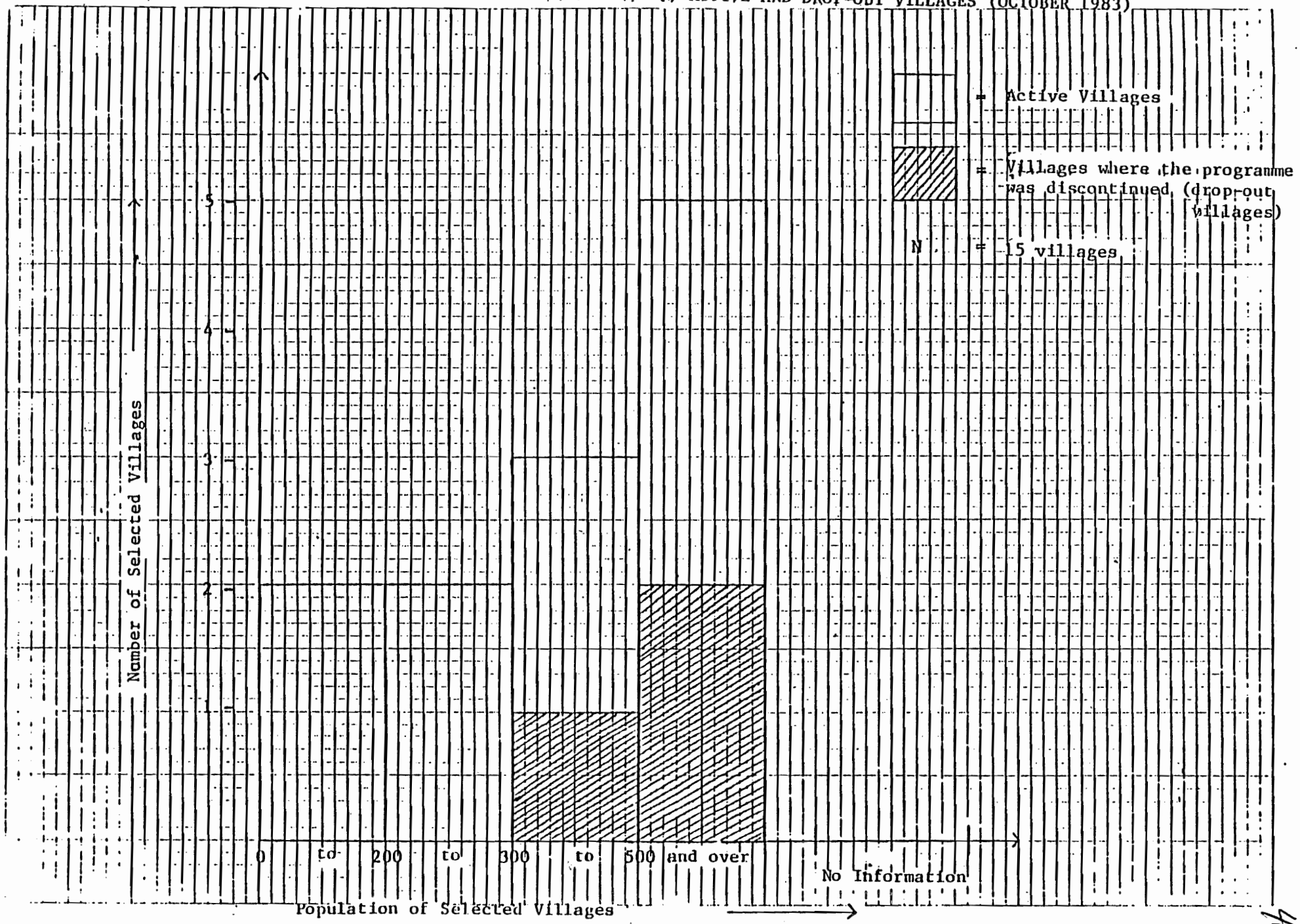
Population of Villages in Trarza Region

	Total Number of Villages	Number of Villages with over 300 Inhabitants	Number of Villages with less than 300 Inhabitants
Boutilimit	54	23	31
Ouad-Naga	39	5	34
R'Kiz	85	41	44
Mederdra	46	22	24
Keur Macene	51	20	31
Rosso (Incomplete)	25	10	15
Total	300	121	179

Source: 1977 Census and Information from the Trarza Project.

GRAPH No. 4

SELECTED WOLOF VILLAGES: ESTIMATED POPULATION OF ACTIVE AND DROP-OUT VILLAGES (OCTOBER 1983)



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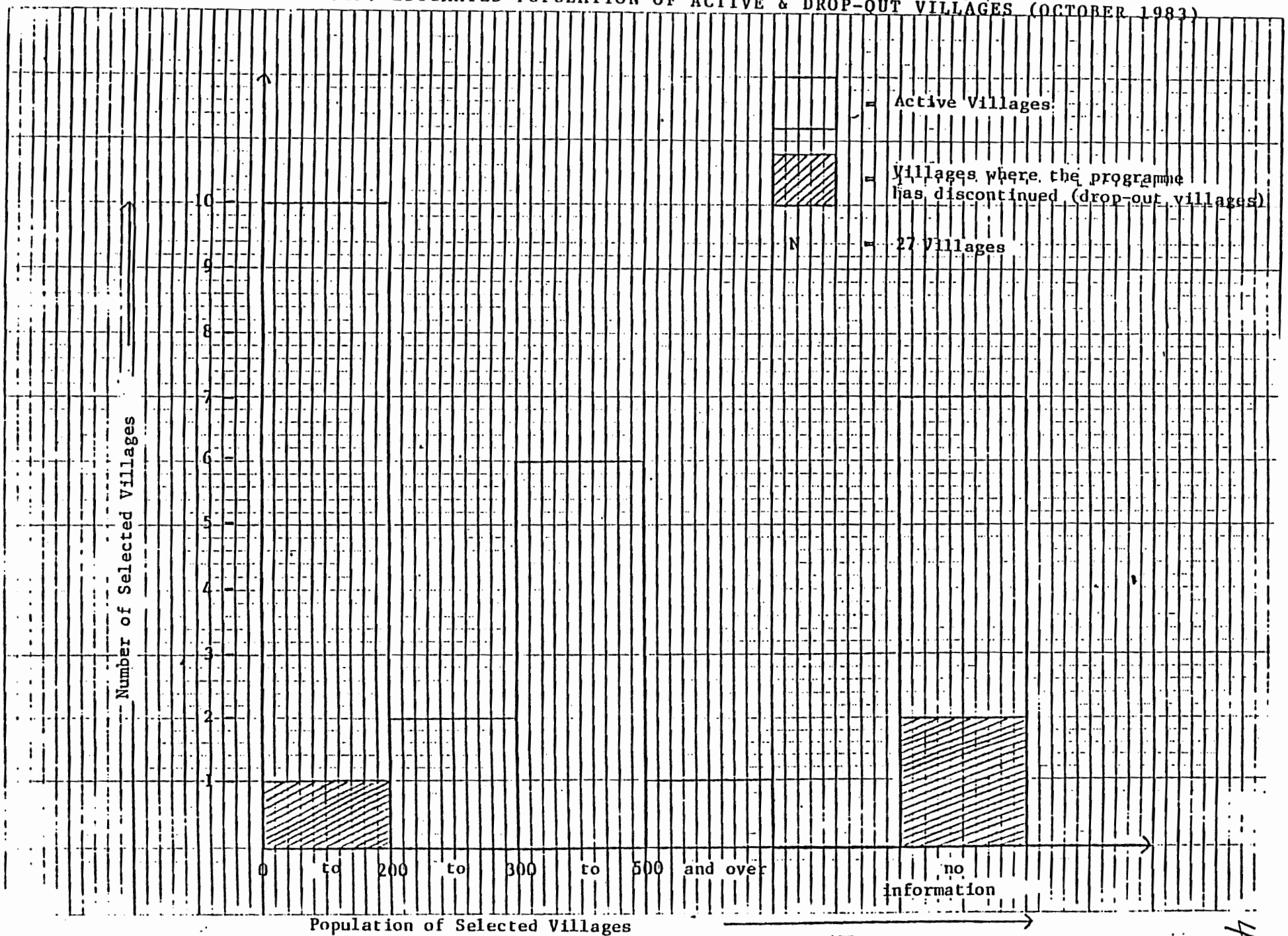
Graph No. 2

SELECTED POULAR VILLAGES: ESTIMATED POPULATION OF ACTIVE & DROP-OUT VILLAGES (OCTOBER 1983)



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GRAPH No. 6

SELECTED HASSANYA VILLAGES: ESTIMATED POPULATION OF ACTIVE & DROP-OUT VILLAGES (OCTOBER 1983)

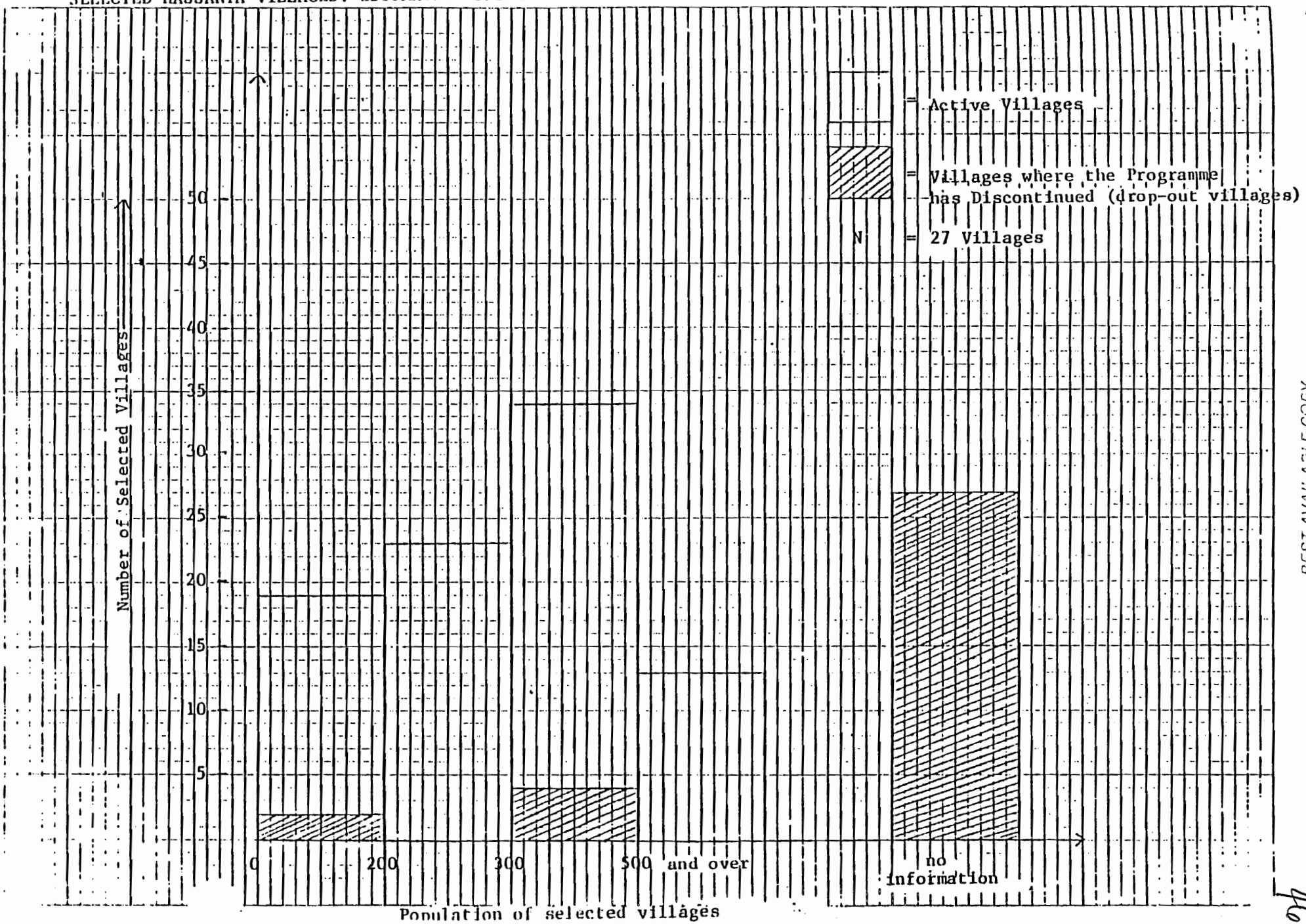

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Table No. 10

RELATION BETWEEN SIZE OF VILLAGE AND THE PERCENTAGE OF PAID HEALTH AGENTS

ACTIVE HASSANIA VILLAGES

Population	Number of Villages	Number with Paid CHW	% with Paid CHW
200 Population	17	8	47%
200 - 299	23	10	43%
300 - 499	30	14	47%
500 +	13	6	46%
No Information	1	-	-
TOTAL	84	38	45%

Note: No Poular village had a paid CHW, and only one Wolof village paid its CHW.

Table No. 11

RELATION BETWEEN SIZE OF VILLAGE AND THE REPLENISHMENT OF MEDICAL KITS

1. ACTIVE POULAR VILLAGES

Population	Number of Villages	Number Having Restocked Medical Kits	Percentage Having Restocked Medical Kits
200	9	6	67%
200 - 299	2	2	100%
300 - 499	6	5	83%
500 +	2	2	100%
TOTAL	21	15	71%

2. ACTIVE WOLOF VILLAGES

Population	Number of Villages	Number Having Restocked Medical Kits	Percentage Having Restocked Medical Kits
200	2	1	50%
200 - 299	2	2	100%
300 - 499	2	1	50%
500 +	3	1	33%
TOTAL	12	6	50%

3. ACTIVE HASSANIA VILLAGES

Population	Number of	Number Having Restocked Medical Kits	Percentage Having Restocked Medical Kits
200	17	12	71%
200 - 299	23	19	83%
300 - 499	30	27	90%
500 +	13	12	92%
TOTAL	84	70	83%

N.B.: The total number of active villages for each group include villages with unidentified population.

cases. Where villages had a population of over 300, this figure rose marginally, to 76%.

In conclusion, it is apparent that the size of the village had little bearing on the functioning of the Project, when viewed in isolation from economic considerations. The most important selection criteria for functional purposes was the motivation of community groups to assume responsibility for primary health services, and the availability of a suitable Community Health Worker. Both these criteria were dependent upon adequate motivation at the village level.

The experience of the Project raises questions regarding the national policy for selecting villages to have CHWs. The Ministry of Health had envisaged placing CHWs in each village which had a population of no less than 300 and a maximum of 600 inhabitants. Villages with a population of over 600 were, in principle, expected to have a health post. In practice, however, the potential budgetary restrictions of the Government of IRM will probably inhibit the establishing of a health facility to serve every large village. In the Region of Trarza, 27 of the 314 villages were identified as having populations exceeding 600. Of these villages,

- 9 had a health post,
- 13 had a CHW,
- 4 were no longer served by a CHW.

- 1 did not wish to participate in the Project.

It should be noted that 7 of the 16 health posts in the Trarza Region were located in villages with population of under 600 inhabitants.

Project personnel with a detailed knowledge of the Region estimated that the number of villages not covered by the Project amounted to a very small number. Approximately 15 villages refused to participate, but virtually all the others were included in the Project.

This estimate is probably correct. The 1977 Census figures, however, indicate a rural population of 174,000 (excluding towns and villages with established health centres). The Project extended coverage to a population of 50,455, which would imply that it reached only 30% of its target population.

It is obvious that more reliable demographic data is called for. Conceivably, there has been a reduction in rural population as a result of migration to urban areas. In any case, it would be best to clarify these figures.

A.2 Motivation and Awareness-Building ("Animation") in Villages

According to the plan for the Project, motivational activity at the village level was to have been undertaken by the Mauritanian Red Crescent. The objective of this organisation was to establish 300 rural first-aid workers, as well as Village-level First-Aid Committees and village pharmacies in the Trarza Region. Given that the stated objectives of the Trarza Project were in accord with those of the Red Crescent, the Project placed the sum of US $25,000 at the disposal of the organisation, for use in motivational activity.

The Red Crescent trained 224 first-aid workers in September 1980, and established 145 Village-level First-Aid Committees. An additional 72 first-aid workers were to be trained subsequently. However, on account of certain technical and administrative difficulties posed by this system of operation, the Project did not see fit to continue this second phase of Red Crescent intervention.

The experience of field staff engaged in the Trarza Project clearly established that, in spite of the dynamism and goodwill of the members of the Red Crescent in the execution of their activities, the system of delegating village motivation proved to have the following drawbacks:

a) Visits of two different teams, one for recruiting trainees for first-aid workers and the other to identify and establish a CHW, tended to create confusion amongst the villagers who were not always able to differentiate between the two concepts.

b) The fact that the Red Crescent had often distributed free goods and medicines created false expectations in many villages, and was in conflict with the Trarza Project's approach which encouraged self-sufficiency.

c) Trarza Project personnel was, in any case, required to undertake motivational activity and this resulted in overlapping and duplication of efforts in the villages selected by the Project.

d) When the CHW chosen by the village was not the same person as the first-aid worker trained by the Red Crescent, conflict situations tended to develop more readily.

e) The type of "animation" required by a Primary Health Care programme (creating a village-level awareness of the concept of preventive medical care, village self-sufficiency etc.) was basically at variance with the standard approach of the Red Crescent. Moreover, the personnel employed by the Red Crescent for their motivational campaigns (the majority of whom were school teachers), did not have the same orientation as health staff trained in the provision of primary health care

services.

The Trarza Project developed a motivational approach comprising of the following stages:

1. The explaining of the Project to the village, usually before a general assembly. The role of the Community Health Committee and the CHW would be discussed, along with the selection criteria for CHWs, the responsibilities and undertakings of the village and those of the Project, the modalities of restocking medical supplies, and the eventual financial support to the CHW.
2. The selection of a Community Health Committee and a Health Worker, followed by a "Charter of Agreement" entered into by the village and the Project.
3. Utilisation of the "Village Information Sheet" by the Project staff.
4. The picking-up of CHWs selected for training and their transportation to the Department Training Center.
5. Discussion of the commitments of all parties on the occasion of the CHW's presentation to the village after his training.

The first three stages were normally executed within the the first visit to a village, specially in the cases of villages which had requested participation in the Project.

The "Charter of Agreement", the instructions for motivational activity, and the "Village Information Sheet" were mechanisms evolved by the Project in 1982 to better define a uniform "animation" approach. It should be noted that the Information Sheet, regarding the sanitary status and health practices in the village, was not discussed with the population concerned. This information forms a part of each village dossier, and should serve as baseline information against which to measure future improvements.

In practice, the motivators were not always able to discuss with large numbers of persons, especially in the Moor communities, since the tradition of community assemblies and discussions is not widely practiced in this culture.

There seems to be a consensus among those who have been associated with the Project (evaluators, consultants, Peace Corps Volunteers, etc.) that the process of motivation was neither long enough nor sufficiently well-oriented to be fully effective. Most members of the Project staff share this point of view.

However, no additional activities have so far been defined, and some of the members of the team feared that repeated motivational visits might serve little purpose other than

putting a strain on villages, if villagers perceived no tangible benefits from the visits.

Before we proceed further, it is useful to identify some "objective" indicators, in order to refine our perspective of the motivational system. To this end, we may ask the following questions:

a) Has motivational activity ensured that CHWs are well-chosen?

47 of the 197 CHWs selected (23.8%) did not correspond to all the criteria established by the Project, and 41 of the 197 CHWs who were trained (20.8%) discontinued their involvement with the Project for one reason or another. It is difficult to establish to what extent this is due to inadequate motivational activity, but the statistics do give cause for concern.

b) Did the villages fulfill their commitments to the Project following motivational activity?

Table No. 12 shows that the percentage of villages which restocked the CHW medical kit is fairly high (active villages as well as those which discontinued the Project are included in the Table). Nonetheless, it would be worthwhile to assess whether the lack of response of the remaining villages was not due, in some measure, to a lack of clear understanding or of acceptance of their role at the start of the Project.

With regard to the remuneration of the CHW, it is necessary to take ethnic differences into account, (voluntary community service is more acceptable in Poular and Wolof communities). Economic constraints of certain Hassaniya (moor) villages should be considered when assessing their degree of motivation vis-a-vis the Project. However, observations of the field staff of the Project would indicate that a number of Hassanya villages do have the resources to provide greater support to their CHWs.

Table No. 12

Percentage of Villages Having Restocked CHW Medical Kits, and Percentage Having Remunerated the CHW

Villages (by Ethnic group)	Percentage of Villages Having Restocked CHW Medical Kits	Percentage of Villages Remunerating the CHW
Hassaniya (No. = 116)	72%	39%
Poular (No. = 27)	59%	0%
Wolof (No. = 15)	60%	13%

It should be added here that 51% of the CHWs who discontinued their involvement with the Project villages attributed their decisions to either a lack of remuneration (14.6%) or insufficient community motivation (36.4%).

c) Do the Villages Understand the Concept and Importance of Preventive Medical Care?

Ideas about health villages in the Trarza Region must necessarily be evaluated against the background of a well-entrenched tradition of anarchic drug sales, and widespread use of "modern" curative medicine, often administered by persons with no medical training whatsoever. The objective of established villages, as far as health is concerned is to have their own dispensaries to avoid travelling long distances for medical attention. Villages which are well-connected with the Central Government have high hopes that the State will provide them with a dispensary, and do not find alternative schemes particularily attractive.

It is difficult to change this mentality, and motivate villages to think in terms of self-managed preventive health care. In effect, despite the interventions of the Project, these attitudes still prevail in some villages. A sample of 15 Health Committee interviewed indicates that 73% of the villages mentioned curative health care as a priority for CHW activities, 33% considered hygiene most important, and 47% emphasized education. These

findings were supported by those based on individual household visits where it was apparent that health, in general, is defined by the population solely in terms of curative medical interventions.

It would be unrealistic to expect villagers to espouse Primary Health Care concepts in such a short time. However, we may ask if a more intensive "animation" effort in the villages would not have contributed to greater attitude change.

In the light of these considerations, we feel that the initial motivation of the villages should have a somewhat different orientation. It is presently overly concerned with obtaining village agreement to the Project as quickly as possible. Thus, the educational potential of these first contacts tends to be neglected.

In view of the fact that villagers are interested in tangible results, and are perhaps little inclined to listen to abstractions, the animation should be structured around specific activities (weighing and consultation of children, survey of health problems, village self-assessment of its problems, etc.). The animators could initiate <u>educational discussions</u> based on these activities in order to make the village more aware of the causes of its problems and gain a better knowledge of its health status.

A.3 The Role of the Community Health Committees (CSC)

The Project's policy concerning CSCs is reflected in the Project Agreement, which sets forth both village and Project commitments for primary health care. The village is requested to appoint a committee of from four to six members, representing the various population groups (youth, women, prominant citizens) and, as much as possible, those carrying out health activities (traditional birth attendants (TBA), Red Crescent health agents, etc.).

As explained in the Project Agreement, the Committee's role is:

a) To select a CHW for training.
b) To find a system for supporting and encouraging the CHW, according to village capabilities.
c) To set up a system for keeping the CHW supplied with medicines.

Following the spirit of the Project, the CSC should deal with all aspects of village health. This would normally include the mobilization of the village for preventive health activities. This is not specified either in the Project Charter or in the document, Points to be Discussed during Animation.

All villages participating in the Project have formed health committees, which meet with variable regularity. Of the 15 committees visited by the Evaluation Team, 60% affirmed that they met at least once or twice a month. Others meet on

occasion or irregularly, or sometimes only when called together by the CHW (13%).

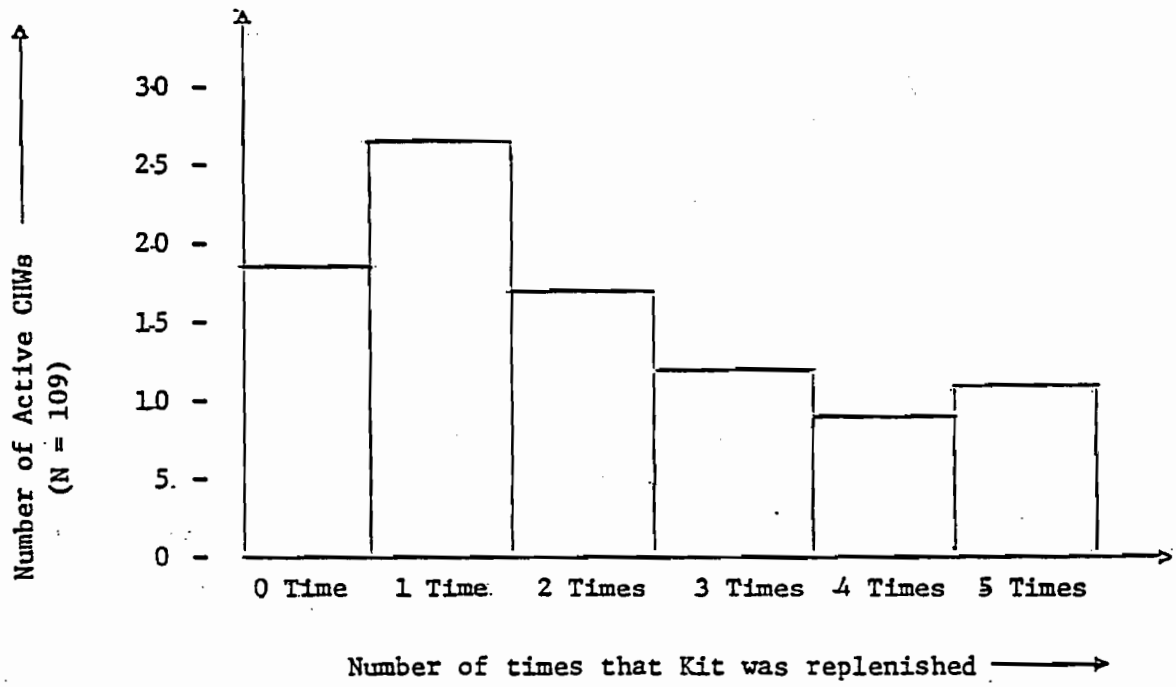
The composition of the committees is also variable and the different groups of the population are not always represented. Only 3 of the 15 CSCs visited had women as members. Five had teachers as members, and two had representatives from the Mass Education Structures (SEM). The Imam was a member of only one committee, and the TBA was also a member of only one committee.

The CSCs have been fairly active, judging by their efforts to replenish the CHWs' kits. As we have already indicated, 83% of the 109 villages on which we have information replenished the kit at least once. This impression of CSC dynamism was confirmed by the field visits. We found that the CHWs' kit was complete in 66% of the cases, in spite of the presently very precarious economic situation of several villages.

Figure 7 shows the number of times that the kits were replenished by the CHWs. We observe that, one way or another, the CSCs organized a total of 184 replenishments during the life of the Project. (The information refers to the 115 CHWs trained in the first 5 trainee groups).

Figure 7

Number of Times that the Kits of Active CHWs were Replenished (N = 109)



In the course of the evaluation, we observed that several CHWs had medicines in their kits that were not authorized by the Project. This constitutes a danger for the population from a medical point of view, and indicates the need for better control of CHW activities. The sale of medicines by the CHWs also requires stricter control in order to counter the tendancy to make a business out of pharmaceuticals. The CSC, with the support of the Project supervisors, should play a greater role in these aspects of CHW supervision and control. The CHW is in fact, responsible to the

Committee, and it is necessary for the latter to take steps to protect the population from possible abuses. This would facilitate the Project supervisors' task, as they are sometimes uncomfortable about taking the necessary measures alone. At the same time, the supervisors should do some thorough educational work with the CSCs to make them more aware of the importance of this aspect of their responsibility.

The remuneration of the CHWs has been less regular than the replenishment of kits (33% of the villages on which we have information, have a CHW remuneration system). This could be a problem for the future of the primary health care system, especially in the Maure areas, where it seems that the CHWs tend to demand this remuneration. In fact, 45% of the active Hassaniya villages remunerate their CHWs, whereas the other ethnic groups make practically no effort in this area. During our visits to the villages, the discontent of several Hassanya CHWs because of their remuneration, or lack thereof, was clearly sensed, whereas the CHWs of other ethnic groups seem to have simply accepted their situation. Several committees visited expressed the desire to pay the CHW once the economic crisis situation has improved somewhat. Two of the fifteen committees visited had organized the construction of a room for the CHW, and it is encouraging to note that half the committees had organized village sanitation activities.

The following table gives a very rough idea of the way that the CSCs see their own role.

Table No. 13

Answers of the 15 Community Health Committees to the Question: In your opinion, what is the CSC's role?

Answer Given by the Committee	Percentage of the Committees Giving this Answer (N = 15)
1. Support the CHW	60.0%
2. Replenish the CHW's kit	60.0%
3. Repeat the CHW's advice	53.3%
4. Build a room for the CHW	6.7%
5. Organize villages for health activities	13.3%
6. Increase the awareness of the population	13.3%
7. Give assistance to the poor	6.7%

Emphasis is placed on CHW support and the replenishement of medicines. But the idea that the CHW also has an educational role to play seems to be accepted in several cases.

Table 14 on the following page, complements the preceeding one by presenting the achievements that the CSCs would like to make in the future. As we can observe, their ambitions are generally limited to the support of curative care.

Table No. 14

Answers of the 15 CSCs to the Question: What are CSC Plans for the Future?

Plans Mentioned by the CSC	Percentage of the CSCs Mentioning Each Answer (N = 15)
1. Build a building for the CHW or to stock medicines.	40%
2. Replenish or increase the stock of medicines.	33%
3. Plant kitchen gardens if water is available.	27%
4. Remunerate the CHW.	20%
5. Continue to support the CHW.	13%
6. Give care to school children.	7%

It would perhaps be difficult for the Project team to have great influence on the initial choice of CSC members by the villages. More intensive educational work with the committees, however, both during the animation period and subsequent supervision visits, could help them to mobilise villages more effectively around specific preventive health activities. This educational work could also encourage the CSC to incorporate other people in the village able to contribute to the identified activities.

A.4 The Selection of Community Health Workers (CHW)

The CHWs are selected by the health committees in the course of village animation. During the first visit, the trainer/

supervisors explain to the village the role of the future CHW, as well as the selection criteria. The established criteria are set forth in the Project Charter between the village and the Project, where it is specified that the CHW should:

a) be at least 25 years of age;
b) be married;
c) be stable in the village;
d) be respected by the village.

Table 15 (page 66) shows to what extent the CSCs have adhered to the established criteria in choosing CHWs. We see that 16% of the people chosen were not married and that 11% were under 25. It is difficult to know the reasons for these choices. Had the CSC misunderstood the importance of the established criteria? Was it unable to find a person in the village who could meet the criteria and was, at the same time, willing to become a CHW?

The Project Team intervened only on rare occasions, since it wished to give the villages the maximum possible liberty in selecting their CHW. It accepted the candidate proposed by the CSC except in rare cases where the CHW was clearly too young.

Table No. 15

CHW SELECTION CRITERIA
(Informations on 197 CHWs selected)

Selection Criterion	Criterion Adhered to		Criterion Not Adhered to	
	No.	Percentage	No.	Percentage
1. Person at least 25 years of age	176	89%	21	11%
2. Person married	166	84%	31	16%
3. Person stable in village	183	93%	14	7%

Among the characteristics of the CHWs chosen, it is interesting to note that 59% were literate in Arabic and 12% in French (see Table 16, page 68). In Table 17, we observe that 23.3% of the CHWs chosen had some health experience before their training within the framework of the Project.

Of the 197 CHWs chosen by the villages and trained by the Project, 41 CHWs dropped out of the Project. This represents an overall drop-out percentage of 20.8%. This percentage must be considered in light of the number of months that the CHWs have worked, since they were trained at different times. There are as yet no drop-outs from the two most recent trainee groups, who were installed in April and July 1983 respectively.

In Table 18 (page 69), we can see the percentages of drop-outs according to the number of months that the CHWs of the first four trainee groups have worked. First, this enables us to compare the trainee groups, and secondly, to get a sense of the drop-out rates over time.

We can see that there is not a great difference between the trainee groups, but the second group seems to have had more drop-outs than the others. In general, we can expect to lose about 17% of the CHWs during their first year of work, and about 40% after the second year.

Table No. 16

LITERACY STATUS OF CHWs BY ETHNIC GROUP

Group	Illiterate	Literate in French*	Literate in Arabic*
Hassaniya	36	13	112
Poulard	20	6	3
Woloff	10	5	3
TOTAL	66 (33.5% of total CHWs)	24 (12% of total CHWs)	118 (59.9% of total CHWs)

* Certain CHWs are literate in both French and Arabic.

Table No. 17

PREVIOUS HEALTH EXPERIENCE OF CHWs SELECTED

Previous Experience	CHWs Selected	
	No.	Percentage of Total Number of CHWs Selected (N = 197)
Red Crescent Health Agents	30	15.2%
Traditional Healers	13	5.8%
TBAs	7	3.5%
People who habitually give care (untrained)	13	5.8%
People who have worked in a dispensary	7	3.5%
TOTAL	70	23.3%

Table No. 18

PERCENTAGE OF CHWs WHO HAVE LEFT THE PROJECT BY NUMBER OF MONTHS OF WORK AND TRAINEE GROUP

TRAINEE GROUP	Percentage of trained CHWs who left Project			
	After 10 Mths of Work	After 18 Mths of Work	After 22 Mths of Work	After 30 Mths of Work
1st Trainee Group N = 36	11.0% (N = 4)	27.7% (N = 10)	33.3% (N = 12)	38.8% (N = 14)
2nd Trainee Group N = 31	19.4% (N = 6)	32.2% (N = 10)	41.9% (N = 13)	
3rd Trainee Group N = 31	19.4% (N = 6)	25.8% (N = 8)		
4th Trainee Group N = 33	18.0% (N = 6)			
TOTALS	16.8%	28.5%	40%	38.8%

This drop-out rate appears to us to be quite high, considering the human and financial resources required for the animation, training, installation and supervision of these CHWs. It should be noted, however, that in 9 of the 41 cases where a CHW dropped out (21.9%), the villages chose a second CHW, who was trained to replace the one who dropped out.

Table 19 (page 71) shows the reasons why CHWs drop-out of the Project, as identified by the Project Team through interviews in the villages with the CSCs and the CHWs. We can see that the first three reasons (the CHW got married, moved, or was too young) account, at least partially, for 73.1% of the drop-outs. These three reasons correspond exactly to the criteria established by the Project for the selection of CHWs. So, the fact that the three criteria concerned (married, 25 or older and stable in the village) were not adhered to by the villages in 16%, 11% and 7% of the cases respectively (see Table 15, page 66) does seem to have had negative consequences for the Project.

In Table 21 (page 72), the effect of the various characteristics of the CHWs on the drop-out rate can be more clearly determined. We see that unmarried CHWs are much more likely to leave the Project than married ones. Up to now, there have been more drop-outs among women than men, among illiterate CHWs than literate ones and among those under 25 than among those who are older. We also note that the CHWs who

Table No. 19

REASONS IDENTIFIED FOR CHWs DROPPING OUT
(Based on Interviews with CSCs and CHWs)

Reason Identified*	Drop-Outs	
	Number	Percentage of Total Number of Drop-Outs
1. CHW got married	4	9.7%
2. CHW moved	15	36.6%
3. CHW was too young	11	26.8%
4. The village did not remunerate the CHW	6	14.6%
5. The village lacked motivation or rejected the CHW	15	36.6%
6. Other reasons (CHWs who continued their studies in health)	9	22.0%

* In several cases, more than one reason was given.

Table No. 20

ORIGINATOR OF CHWs' DECISION TO DROP OUT

Originator of the Decision	Number of Drop-Outs	
	Number	Percentage
1. The village	11	26.8%
2. The CHW	24	58.5%
3. The Project	6	14.6%

Table No. 21

CHW CHARACTERISTICS AND DROP-OUTS IN EACH CATEGORY
(1st, 2nd, 3rd and 4th Trainee Groups)*

Characteristics of CHWs Trained	CHWs with Each Characteristic		CHWs Who Dropped Out	
	Number	Percentage	Number	Percentage
1. Total Number of CHWs trained	131	100%	41	31%
2A. CHW under 25	13	100%	5	38%
2B. CHW over 25	118	100%	36	31%
3A. CHW not married	20	100%	17	85%
3B. CHW married	111	100%	24	22%
4A. Women CHW	40	100%	15	36%
4B. Men CHW	91	100%	26	20%
5A. CHW Illiterate	45	100%	17	38%
5B. CHW Literate	86	100%	24	28%
6A. CHW with previous training in modern health care	31	100%	4	13%
6B. CHW lacking such previous training	100	100%	37	37%
7A. CHW with previous training in traditional health care	19	100%	3	16%
7B. CHW lacking such previous training	112	100%	38	34%

* There have not yet been any drop-outs among the CHWs of the fifth and sixth trainee groups.

have had previous training in modern or traditional medicine are less likely to leave the Project than those without such training. Table 22 (page 74) enables us to analyze more thoroughly the effect that the CHWs' age has on his stability. We can see that the CHWs over 40 drop-out much less often than those in younger age groups. In Table 23 (page 75), we can see that there is very little difference in CHW drop-out rates among the three ethnic groups in the Trarza.

These observations suggest that it would be advisable in the future to insist more on adherence to the selection criteria of CHW marital status, age and stability. It will also be in the Project's interest to give preference when possible to older people, literate people and those with previous training in health. As for the CHW's sex, there are other factors to consider, such as the demographic composition of the village, the acceptability of a male CHW for work to be done with women and children, etc.

It is naturally desirable that the village, through the CSC, take full responsibility for the choice of its CHW. The PHC program animators should, however, make the CSC understand the importance of the established criteria. They should then conduct a structured interview with the chosen candidate and discuss the choice with the CSC before the appointment is final. This would require an extension of the time given to village animation, which reinforces the comments made in Section 2.

Table No. 22

Active CHWs and Drop-Out Rates: By Age Group

Age Group	Number in Each Group			Percentage of Drop-Outs in Each Group
	Active CHWs	Drop-Outs	Total	
- 20	3	1	4	25%
20 - 29	45	16	61	26%
30 - 39	40	15	55	27%
40 - 49	39	5	44	11%
50 - 59	22	2	24	8%
Over 60	7	1	8	12%
No Info.	-	1		
Total	156	41	196	

Table No. 23

DROP-OUTS BY ETHNIC GROUP

Ethnic Group	Total Trained	Active CHWs in October 1983		CHW Drop-Outs	
		Number	Percentage	Number	Percentage
Poulard	28	22	79%	6	21%
Woloff	17	14	82%	3	18%
Hassania	152	120	80%	32	21%
TOTAL	197	156		41	

In any case, a certain drop-out rate must be expected in this type of program. Even if one manages to reduce this rate through improved selection of CHWs and other activities, it will always be necessary to plan for the training of a certain number of replacements for the CHWs that are lost.

Several of the villages visited during the evaluation were favorable to the idea of having a second CHW. Sometimes, when there was already a male CHW, particular villages saw that it might be of interest to have a female CHW to deal more effectively with maternal-child health matters. Having two CHWs would also assure the continuity of primary health care in case one of the CHWs drops out or is absent.

A.5 Work Done by the CWHs

First, it must be stated that there are many differences in the work carried out by the CHWs. Also, there is a lack of reliable information with which to carry out an objective evaluation of this work, and therefore, the following generalizations and comments will necessarily be of limited value.

Among the 15 CHWs visited by the evaluation team, 11 (73%) gave the impression of being well motivated for their work, and 12 (80%) of having a good technical level for

the work to be done.

The time devoted to the work by the CHW is quite variable and depends on several factors, such as the CHW's other activities-which vary according to the ethnic group - the degree to which the population comes to him, the CHW's level of motivation, etc.

The CHWs visited by the evaluation team gave the responses presented in Table #24 concerning their role.

Table # 24

RESPONSES TO THE QUESTION, "WHAT IS THE CHW's ROLE?

Response	Number of Times Given	Percentage of CHWs Giving This Response (N=15)
1. Be an educator (especially for advice on hygiene).	14	93%
2. Provide curative care.	11	73%
3. Carry out home visits.	6	40%
4. Evacuate cases beyond his competence.	3	20%

We can see that the CHWs are well aware of the importance of their role as educators in the villages, even if this aspect of their work is not, in fact, often well developed.

Table # 25 below complements table #24 on page 77, showing the difficulties encountered by the CHWs in their work.

Table # 25

RESPONSES TO THE QUESTION,

"WHAT ARE THE MOST DIFFICULT ASPECTS OF THE CHW's WORK?

Response	Number of Times Given	Percentage of CHWs Giving This Response (N = 15)
1. Education	6	40%
2. Lack of medicines	3	20%
3. Not being sufficiently respected by the population	3	20%
4. Diagnosis of illnesses	2	13%
5. The necessity of being available to give care at any moment	2	13%
6. Working with the women	2	13%

Table 26 on page 79 represents the efforts made by the Project to obtain some idea of the CHWs' performance in the field. The aspects of the CHWs' work that are considered are listed at the bottom of the table. If a minimum grade of six out of ten is required, we can say that the performance of 74% of the CHWs has been satisfactory. In fact, the grouping together of all these aspects of CHW work can obscure more specific indications of weaknesses in one area or another. It would be advisable to study

each aspect of the work separately to reach the type of conclusions that would make it possible to orient the supervision and continued training of the CHWs.

Table # 26

CHWs' Grades Computed on the Basis of the "Monitoring List"*
(Information Available for 84 CHWs)

CHW Grades	CHW/Department				Total Number	Percentage
	R'Kiz (H)	Mederdra	Keur Macene	Boutilimit		
0 - .99	-	-	1	-	1	1.2%
1.0 - 1.99	-	-	-	-	-	-
2.0 - 2.99	2	1	1	1	5	6.0%
3.0 - 3.99	1	-	-	2	3	3.6%
4.0 - 4.99	1	3	2	3	9	10.7%
5.0 - 5.99	2	1	-	1	4	4.8%
6.0 - 6.99	2	5	1	6	14	16.7%
7.0 - 7.99	2	3	4	4	13	15.5%
8.0 - 8.99	2	4	1	3	10	12.0%
9.0 - 9.99	4	14	-	7	25	29.8%
Total	16	31	10	27	84	100%

* The grades refer to the part of the list that directly concerns the CHWs. It involves the following: if his house is clean and in order, if he has a latrine at his home, if his clothes are clean, if he has a work schedule, if CHW forms are filled out properly, if he carries out health education, if he has a good relationship with the community.

The greatest part of the CHW's time is spent in providing curative care, which is quite natural if we consider that it is the aspect of CHW work in which the population is most interested. The CHW's records are not often very accurate, which makes it difficult to assess the amount of curative work done. Several CHWs still find it difficult to follow the record-keeping system that the Project requires of them (of the 15 CHWs visited, only 9 (60%) kept their records in an acceptable manner).

From the beginning of the Project, the CHWs recorded a total of 152,381 consultations carried out for a total of 70,023 people. These figures refer to a population of 50,458 inhabitants of the villages covered by the Project. 30.3% of the patients (21,201) were children from 0 to 5 years of age, and 33.6% (23,552) were women from 14 to 49. These figures give the impression that the CHWs are consulted by all population groups, despite the difficulties sometimes mentioned by the male CHWs, who sometimes encounter reticence from women to consult certain gynaecological problems.

Table # 27 on page 81 shows the average number of consultees seen by the CHW at each village by department. Considerable variation between departments can be observed, which may indicate a point for further investigation. The records currently available are not sufficiently reliable

to draw conclusions from them. Are there fewer ill people in certain departments? Do the sick have easier access to the nearest dispensary? Are the CHWs of Rosso and Keur Macene less competent in the eyes of the population?

Table # 27

Number of Consultees per Village and Department

Department	Number of Villages with CHW	Number of Consultees	Average Number of Consultees per Village
Rosso	48	6,322	132
R'Kiz	36	15,169	421
Mederdra	40	20,363	509
Boutilimit	35	23,021	658
Keur Macene	14	2,022	144
Ouad-Naga	15	7,335	489
Total	188	70,023	372

All the families visited by the evaluation team expressed their appreciation for the CHW's curative work. It is a great help for them to be treated in their own villages. The village's "health independence" was also mentioned by several CSCs visited.

As for the impact of the care offered, any judgement must be made with many reservations. It is certain that the many cases of wounds, conjunctivitis and skin diseases received much appreciated treatment from the CHW. As for

illnesses having a greater effect on population mortality and morbidity, the number of cases treated and recorded by the CHW are the following:

- Diarrhea	19,847 cases
- Malaria	19,552 cases
- Respiratory Diseases	18,413 cases
- Malnutrition	5,378 cases

The CHW is trained to prevent and treat diarrhea-related dehydration with an oral rehydration solution (salt + sugar + water). The CHWs know how to prepare and use the solution, but tend to reserve it for cases of children who already show signs of dehydration. In constrast, it seems that "Ganidan" and charcoal are prescribed in all diarrheal cases. Therefore, there is good reason to believe that the impact of CHWs on the ravages of diarrhea could be much greater, were a more systematic approach adopted for using oral rehydration and feeding affected children.

It is to be noted that the CHWs do not normally have packets of oral rehydration solution available. At present, only MCH centers have these packets on a regular basis. They distribute them to trained TBAs but not to CHWs. Not even dispensaries have stocks of ORS packets. With the implementation of the National Plan for the Fight against Diarrhea-Related Diseases in the Islamic Republic of Mauritania, prepared in August 1983 by the Ministry of

Health and Social Affairs and the WHO, the policy onthe distribution of packets will surely be rationalized. Certain questions remain, however, and may affect the work of the CHW:

- Will enough free packets be available to ensure that the CHWs will be regularly supplied?
- How will the supply system operate?
- Should the sale of packets also be envisioned at Pharmarim outlets and boutiques?
- Should the planned educational campaign be centered around the use of packets or the preparation of a sugar-salt solution? (From the educational point of view, it is not desirable to introduce two messages at the same time. But one must be very certain that packets will be available at all levels before promoting its use on a massive scale.)

For malaria, the CHWs administer Nivaquin as a curative measure. They are aware of the use of nivaquin for prophylaxis, but no policy has been adopted on this, neither for the Project nor elsewhere in Mauritania. The cost of such an effort would obviously limit its generalization. CHWs are also trained to encourage villagers to eliminate breeding grounds and use mosquito nets.

The CHWs have no way of effectively treating respiratory diseases. They can only administer cough syrup and evacuate

serious cases. The CHWs who have received further training are qualified to give injections. This allows them to continue treatments prescribed by health centers, thus saving patients from having to make several follow-up trips.

Given the real difficulties that patients face to reach dispensaries and the importance of respiratory diseases among the causes of morbidity/mortality in Mauritania, greater use should be made of the CHWs in this area. They should be retrained for this and medicines included in their kits that would enable them to deal with this group of diseases.

The CHWs have had general nutrition training and can use the arm band to identify cases of malnutrition among children 1-3 years of age. Their training is oriented toward nutrition education activities, which should, in theory, allow them to make some contribution toward solving the problem. A pilot experiment in systematic nutrition surveillance was planned, using the CHWs of certain villages. The plan was first to assess whether the CHWs were capable of using the required materials properly, and then to orient them to this end.

This program has not yet been tried. We believe that it is important to do so, since it would enable the CHW to:

- Identify very early on the children who are not gaining

weight and who are therefore at "risk".

- Bring together the children of the village and screen them for other things as well, thus ensuring more or less regular contact for the CHW with the majority of the small children of the village.
- Organize education sessions, taking advantage of the grouping of villagers, and thus;
- Raise the level of awareness of the village concerning the nutrition problems of small children.

The treatment of those children already suffering from malnutrition remains problematic. At this time, the CHW can only give advice and refer the case to MCH and CREN programs (Recuperation and Nutrition Education Centers). A more systematic nutrition surveillance approach should be linked to procedures for ambulatory treatment of malnutrition cases. This could involve the preparation of enriched porridge in the villages, using as far as possible, ingredients that are habitually eaten in the area. Of course, this would require considerable organization, and well-monitored preliminary trials would be in order.

As for the prevention of malnutrition, several CHWs and CSCs expressed the desire to organize kitchen gardens at the village level. Certain villages had already made attempts, but the drought years made the task very difficult.

Before moving on to other aspects of the CHW's work, it should be noted that the CHWs have not received any training for dealing with cases of venereal diseases, in spite of the fact that these diseases are fairly widespread, according to epidemiological data on the region.

The vaccination of children in the villages is assured by the Enlarged Immunization Program (EPI) Regional Teams, which theoretically visit each village three times a year. The Head of the team that covers several departments of the Trarza gives the CHWs credit for the improved attitude toward vaccination that the team now encounters in the villages. In the past, people tended to disappear at the approach of the team, but this situation has now improved considerably. The team is not always able to alert the CHW before it comes, but once it has arrived, the CHW helps in assembling the children, maintaining order, etc.

The CHWs visited seem to be well aware of the importance of vaccination and the doses of each vaccine that the child must have. They often do not know the number of children who have not been completely vaccinated at any given time. Certain CHWs claim to be able to interpret the vaccination card, but it is more often the case that they simply assemble all children from 0 to 5 when the team arrives. In anycase, the CHWs give considerable support to this important activity

by increasing the effectiveness of the EPI Teams.

As indicated in Table # 24, the CHWs are well aware of their role as health educators in the villages. The CHW understands that he must give advice on health, especially during home visits. Eleven of the fifteen CHWs visited saw the home visits as being very useful. All of them reported that they carried them out with more or less regularity. Cleanliness of food, water and clothing seem to be the themes that are most often dealt with during these visits. This was confirmed during the home visit interviews carried out by the Evaluation Team.

Certain CHWs have been fairly active in the area of village sanitation and hygiene, but it is difficult to find precise information about this. The wealth of information gathered by the Project on village hygiene and on the changes that occurred during the life of the Project has not been analyzed, partly because of its excessive volume. Of the 15 villages visited during the evaluation, identifiable improvements in hygiene were reported in 9 cases (60%) by the trainers/supervisors.

The level of hygiene in the villages often leaves much to be desired (water containers uncovered, unfiltered water, unprotected wells, excreta nearly everywhere, etc.). The people with whom the Evaluation Team spoke were,

nevertheless, at least aware of the importance of hygiene, and it was clear that the CHWs had made efforts in this area.

Three of the CHWs contacted admitted that they did not hold education meetings in the village. The others affirmed that they do (10 had held meetings in the last month), especially to discuss hygiene problems. Though the CHWs have the good will to play an educational role, the team found several indications that they are not well oriented to carry it out effectively.

In the course of home visits carried out during the evaluation, the Team tried to gauge the mothers' level of knowledge, as well as what they had learned from the village CHW. As far as the oral rehydration solution (SRO) is concerned, for example, 14 of the 15 CHWs contacted said that they gave explanations to mothers on this subject. Of the 52 families contacted, however, only six (12%) mentioned SRO as the appropriate treatment for the child suffering from diarrhea. Medicines were mentioned in 11 cases ("ganidan", charcoal and tetracycline) and traditional remedies in 39 cases (rice water, "monkey bread", arabic gum, tamarind, etc.)

The mothers' ideas on the causes of diarrhea demonstrated

perhaps even more clearly the lack of penetration of the educational activities carried out by the CHWs. Twenty-three people (44%) had no idea what can cause diarrhea. Only 9 (17%) associated it with unsanitary food, and 5 (10%) with dirty water. A large number of other causes were mentioned, including mother's milk (13%, especially when the mother is hot or ill), the mixing of incompatible foods, thirst, hunger, cold, a poorly prepared meal, etc.

As for the proper time to add other foods to the baby's diet in addition to mother's milk, the responses varied from two weeks (if mother's milk is lacking) and 40 days up to two years. Twenty-nine people (56%) thought that it was necessary to introduce other foods between four and seven months, but 17% thought that one should wait 10 months or more.

It must be stated that the CHWs have no visual aids to assist them in their education activities. We think that such materials would be useful to them both to orient education sessions and to give greater credibility to the specific messages that they are to convey. Other sources of support for education that are still under-utilized are the radio, modern and traditional village teachers and the Mass Education Structures (SEM).

As for activities with pregnant women, deliveries and

newborns, we must remember that these are normally the responsibility of the TBAs. The CHW has had some training in this area, but his role therein at the village level is often unclear. Only 43 (27.5%) of presently active CHWs are women, which may explain the low level of activity recorded for this by the CHWs. The CHWs have normally established some relationship with the village TBAs (8 of 15 - 53% - of the CHWs contacted said that they gave advice to the TBAs, 27% give them medicines for deliveries and 20% affirm that the TBAs often call them to attend deliveries). However, the relationships between the TBAs and the CHWs are quite variable and there is a need to identify more clearly specific activities around which they can coordinate their work (for example, joint visits to pregnant women or newborns, etc.).

In summary, we can say that the Project CHWs have an appreciable level of activity in the areas of curative care and prevention through education on hygiene. This is to praise worthy achievement, especially when we remember the relatively low percentage (24% of CHWs who are remunerated by the villages.

We think, however, that the activities could be better delineated in certain areas (the prevention of diarrhea-related dehydration, nutrition, group education, etc.),

and that the use of educational materials in support of this would serve to focus more effectively the efforts made. This should enable the program to have a greater impact on the health status of the population.

The CHWs' tasks should be better defined and more clearly oriented toward the specific interventions that they can carry out in each priority health area. Once this is done, the CHW can be helped to organize his work better.

To further strengthen CHW activities and make the whole health staff more aware of well-defined priorities (for example, the use of SRO, weaning practices, the various types of anaemia, water conservation), one could also consider organization of "campaigns" around a given priority.

To this end, all available resources (health staff, CHWs, CSCs, radio, teachers, religious leaders, etc.) could be mobilized and action could be focussed on one problem for a certain period of time. The distribution of educational materials would be necessary to give proper support to such undertakings. Regular supervision of the CHWs would ensure that the activities developed during the "campaigns" will be appropriately incorporated afterwards into their normal work routine.

A.6 Supervision of the Village Health Workers (CHWs)

Supervision of the health workers is widely recognized as

being the cornerstone of primary health care programs. The smooth operation of activities at the village level and the sustaining of both the CHWs' and village's motivation seems to depend on the proper implementation of this supervision. Supervision is also one of the most costly activities in primary health care programs, as well as the most problematical from an organizational and logistical point of view.

In this section of the evaluation, we will comment on the quantitative and qualitative aspects of the CHW supervision carried out by the Trarza Project. The financial aspects will be dealt with below.

Quantitative Aspects of CHW Supervision

According to project plans, supervision of the CHWs should be done at the following rate:

- Once a month during the first three months of the CHW's work.
- Once per quarter for the remainder of the first year.
- Once every six months after the first year.

Although these norms seemed reasonable at the beginning of the Project, experience has shown first, that they were not easy to adhere to, and secondly, that monthly supervision was not always necessary at the beginning, whereas supervision every six months is insufficient for certain CHWs after the first year of operation. These judgments

are necessarily subjective (based on opinions of Project technical staff) because it is extremely difficult to isolate the effect of supervision on CHW performance or on the changes that have occurred at the village level. Many other factors enter into the picture.

Table # 28 on page 94, shows the number of months that the 156 active CHWs have been operating and the number of supervision visits that the CHWs should have received. Table # 29, page 95, complements Table # 28 by presenting the number of supervision visits that were actually carried out for the active CHWs (504 visits), and comparing it to the number of visits that should have been carried out (842). The Project, therefore, carried out 60% of the planned supervision visits as set forth in the norms, which represents a considerable amount of work.

If we study the intervals between the supervision visits carried out (figures No. 8A, B and C), we can observe the following:

- It was possible to carry out the first supervision visit to the CHW within two months after his installation in 85% of the cases.
- 58.6% of the second supervision visits were carried out after an interval of less than three months.
- 51.3% of the third supervision visits were carried out after an interval of less than three months.

TABLE # 28

Number of Months of Operation of the Active CHWs by October 1983

Trainee Group	Number of Active CHWS by October 1983	Number of Months of Operation of Active CHWs	Number of Supervision Visits that Each ASC Should Have Received
First	22	32 months	9
Second	18	22 months	7
Third	23	19 months	7
Fourth	27	10 months	5
Fifth	24	8 months	4
Sixth	42	4 months	3
	156		

Table # 29

Number of Supervision Visits Carried Out Compared to Number of Supervision Visits Planned For as Set Forth in Norms*

Supervision Visit	Number of Supervision Visits Expected, According to Project Norms*	Number of Supervision Visits Carried Out for the 156 CHWs
First	156	156
Second	156	111
Third	156	82
Fourth	114	54
Fifth	90	48
Sixth	63	39
Seventh	63	11
Eighth	22	3
Ninth	22	0
Total	842	504

* Computations take into account number of months of work of various CHW trainee groups (see Table # 28).

- For the fourth and fifth supervision visits, it was possible to carry out the supervision visit within four months in 35.7% and 70.4% of the cases respectively.
- For the sixth and seventh supervision visits, it was possible to carry out the visit within seven months in 65.2% and 69.2% of the cases respectively.

There have been several factors that have influenced the rate of the supervision visits during the life of the Project, among which are the following:

a. The Project has experienced three periods of inactivity in the field, for six months, two months and three months respectively. The first two were due to the fuel stock having run out, and the third was due to an administrative problem.

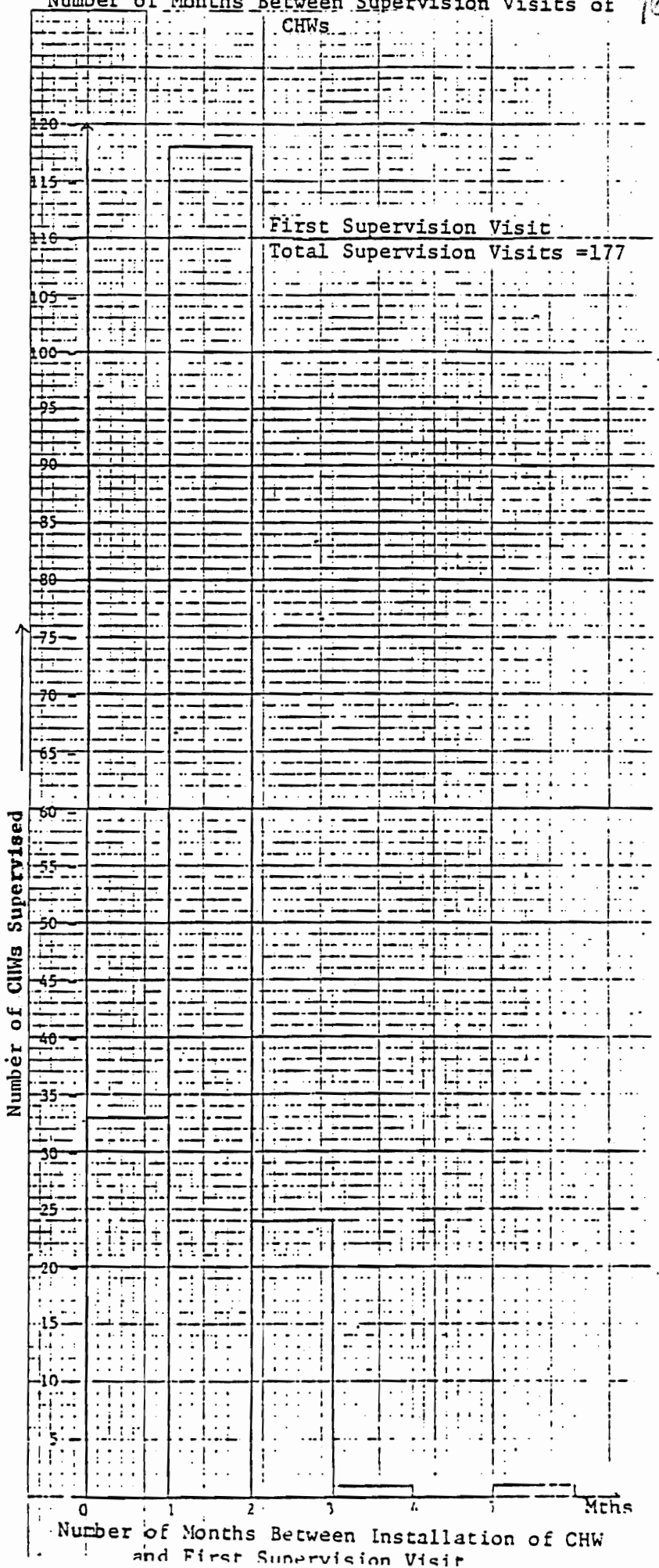
b. During the first year of the Project, four of the Project nurses left to complete a three-month training course in Lome. There was thus a lack of Project supervisory staff, especially for the villages of the Poular and Wolof language groups.

c. The filing of the supervision reports was not well systematized at the beginning of the Project, which may have caused an under-estimate of the work done.

d. The rate of supervision visits is also affected by the seasons (rains), especially in the river area.

Graph No. 8A

Number of Months Between Supervision Visits of CHWs



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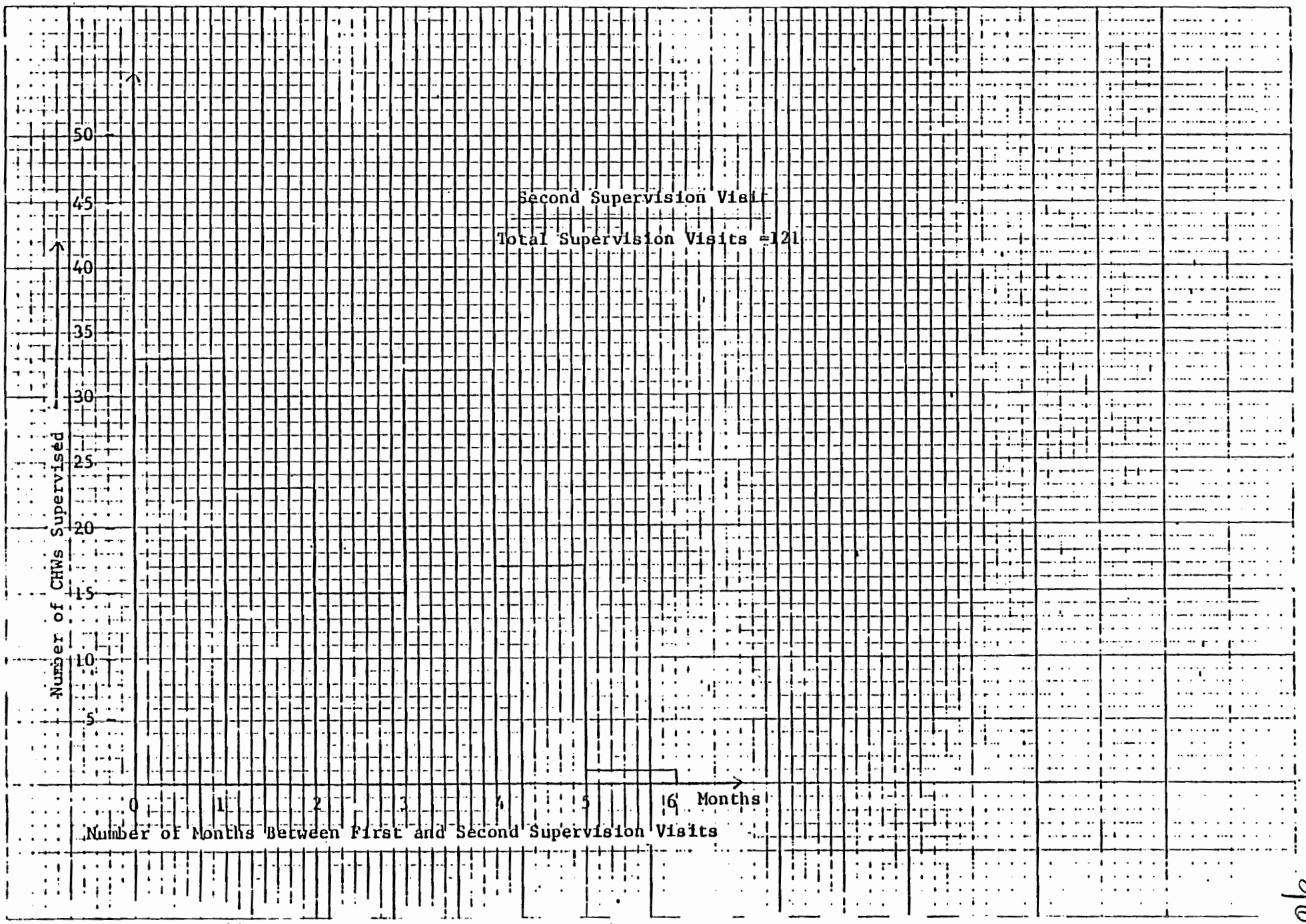

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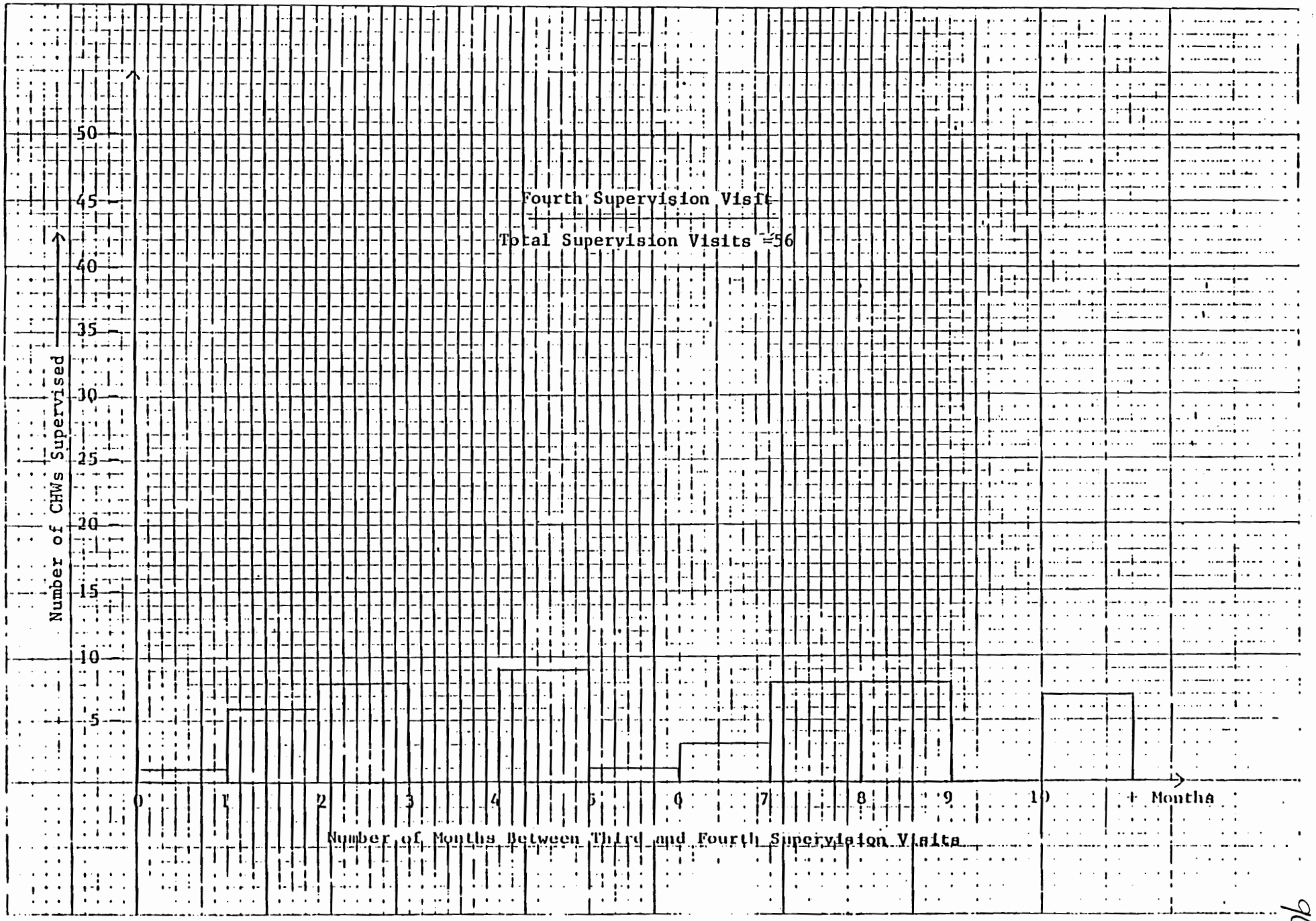

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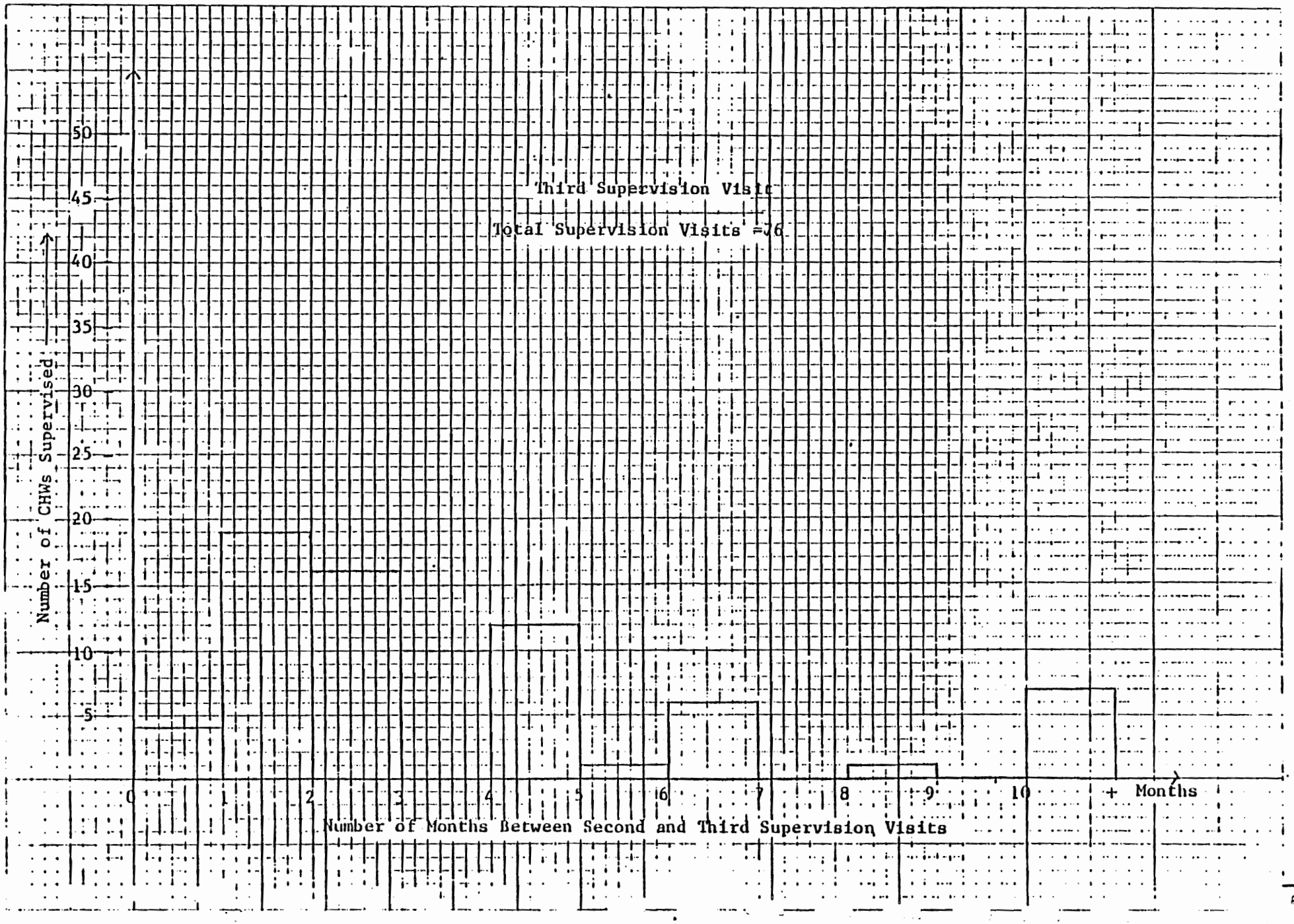

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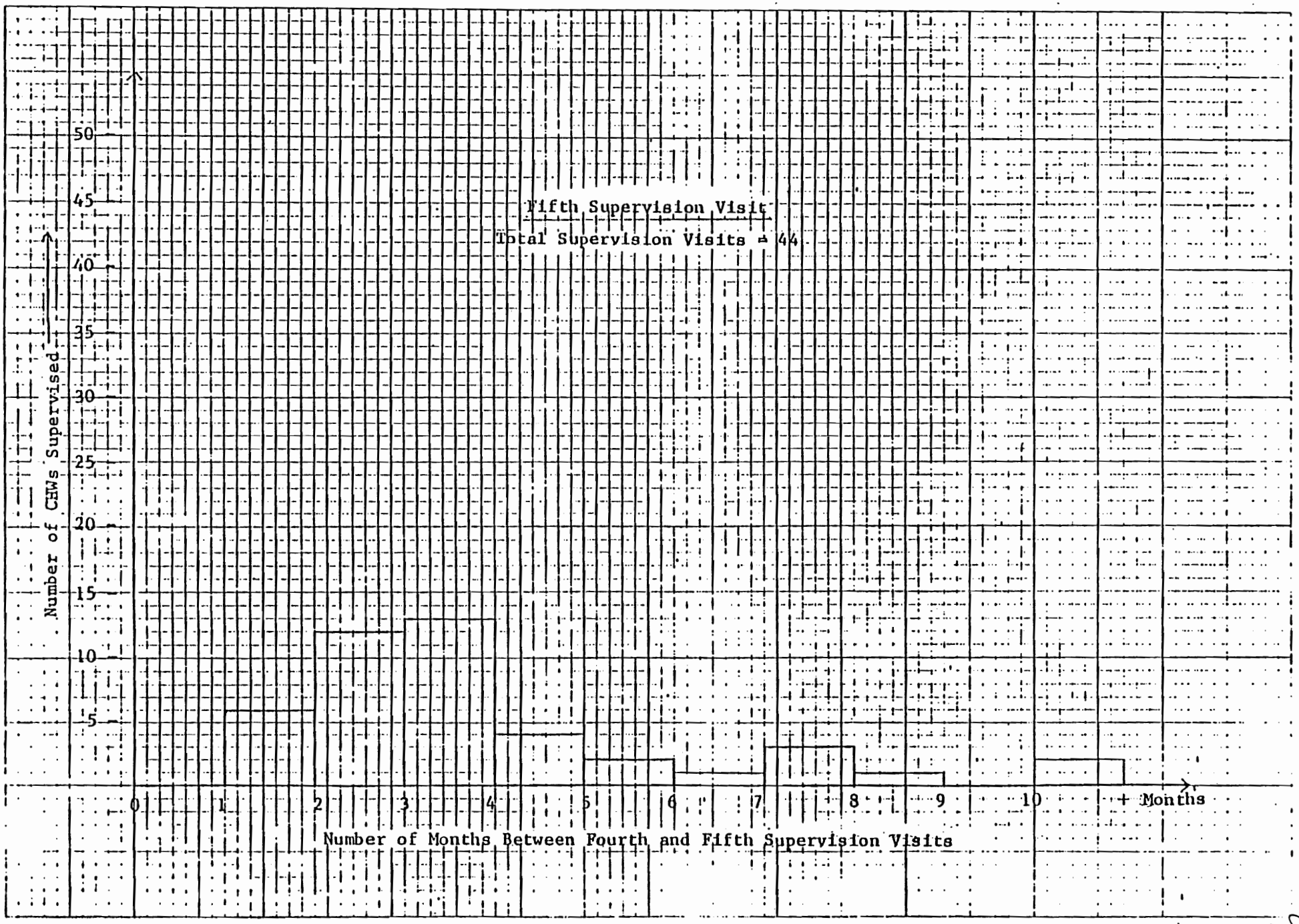

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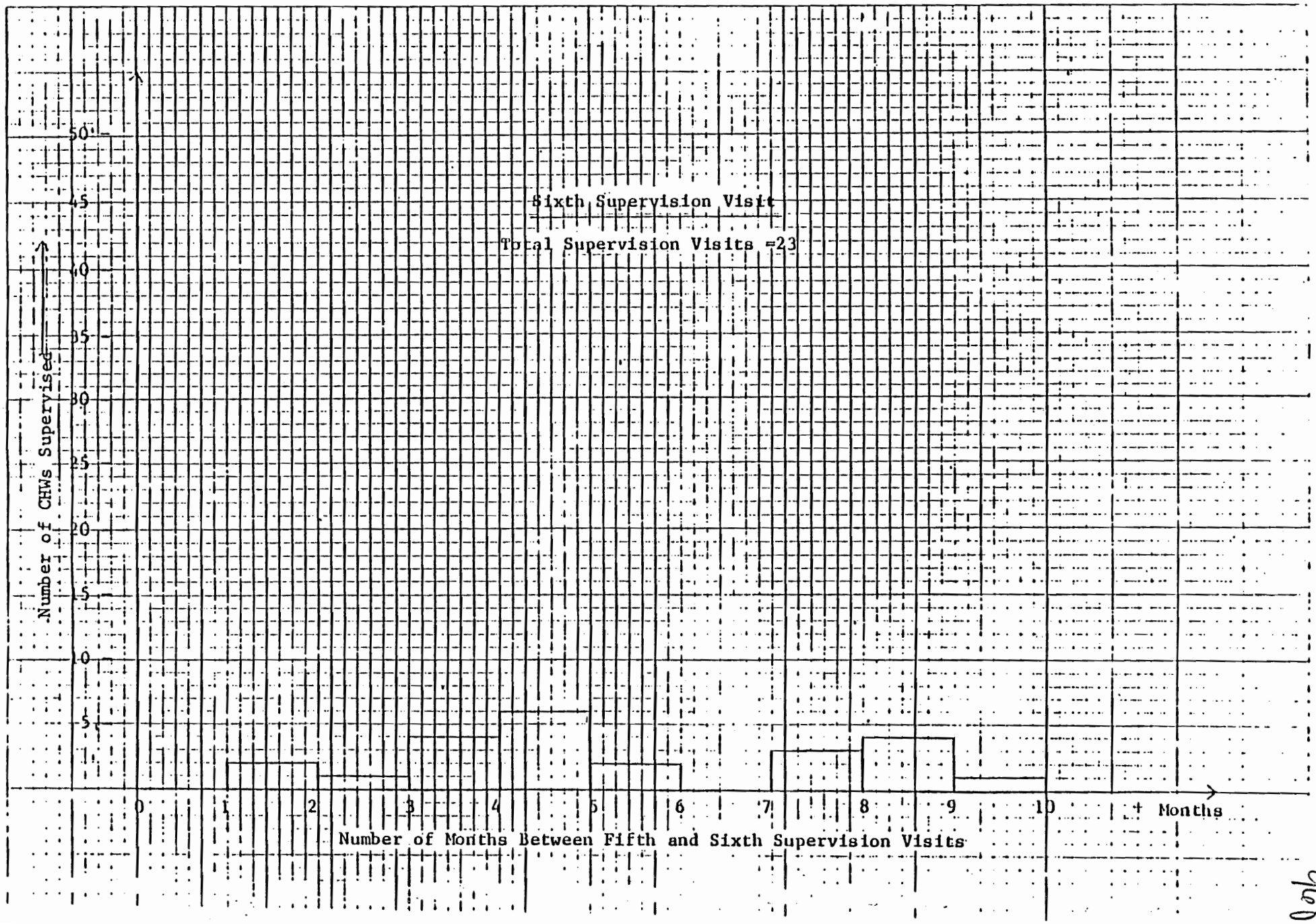

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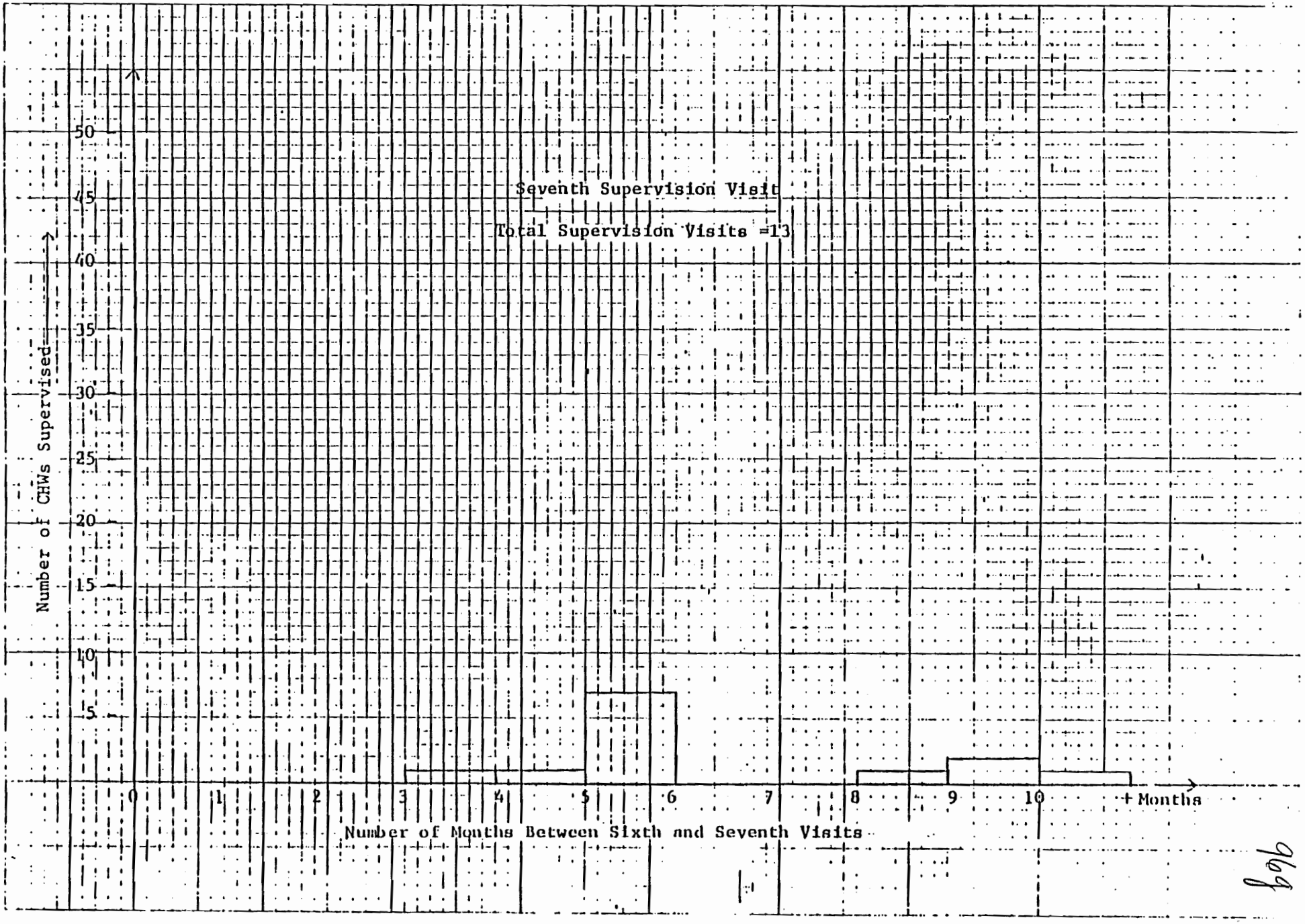

e. The Project's nurse/trainer/supervisors were sometimes busy with other activities (training in Lome, training of CHWs, etc.).

In conclusion, we can see that the supervision of the CHWs was fairly continuous, even though the interval between supervision visits for certain villages was sometimes overly long. We feel that better planning of the visits to be carried out, together with a constantly updated graphic representation of the supervision of each village, displayed at the training centers, would have perhaps allowed for the rectification of certain of the gaps that were noted.

A supervision plan cannot, of course, always be followed to the last detail. The development of the program will necessarily vary from village to village, as well as the level of activity of each CHW. This requires that the supervisor exercise judgment in determining the real supervision needs in each case while adhering to minimum standards. It is thus preferable to set the most realistic standards possible. There seems to be a certain consensus among the Project technicians that a CHW should receive at least one supervision visit every four months after the first supervision visits, which should be more frequent (every other month for the first two supervision visits). It remains to be seen, from a logistical point of view, whether it will be possible to maintain such a rate.

Qualitative Aspects of CHW Supervision

Supervision, as presently conceived by the Project, consists chiefly of the following activities:

a. The administration of a knowledge test to the CHW. At each supervision visit, the "Answers to Pre-Post Tests" form is used. It includes the same series of questions that the CHW is asked before and after his training, covering 120 questions. The administration of these tests allows the supervisor to see whether the CHW has forgotten what he had learned during his training and fill in the gaps, should there be any. The CHW's answers result in a grade which can be compared to those obtained in the past.

b. Checking the records of patients treated by the CHW.

c. Checking the CHW's medicine supply.

d. The administration of a practical test to the CHW. The supervisor must observe the CHW as he carries out certain activities: a consultation, the preparation of oral rehydration solution, the examination of a child to assess his nutritional status, a home visit, and the preparation of the materials and equipment to give an injection. A final grade is also given for this test.

e. A visit to the village to fill out the "checklist", which consists of 54 questions concerning environmental conditions. The list should make it possible to note the improvements made at the village level.

f. An interview with the Village Health Committee (CSC).

In this methodology, one can perceive great concern for the systematization of supervision activities and the maintaining of a reasonable level of knowledge and aptitudes among the CHWs. Our impression, however, is that the system is rather onerous, and this was confirmed by several trainer/supervisors. We are therefore led to make the following comments:

1. The supervision work is excessively dominated by the requirements of the knowledge test. It is tiring both for the CHW and for the trainer to repeat the same questions, and such a large number of questions, every time. In practice, it was not found that the CHWs had easily forgotten the answers to the questions. The grades of each CHW have tended to remain constant over time. It would perhaps suffice to administer the test four months after the training, during the second supervision visit, and before continuing training sessions.

2. The emphasis placed on the CHWs' knowledge and the time needed presently to assess this can easily lead the supervisor to give less attention to CHW activities. The CHW's ability to retain the correct answers to the questions does not necessarily indicate the effectiveness of his work.

3. The time spent by the supervisor in each village could

be better spent in giving support to the CHW in some of his priority tasks. For example, the supervisor could reinforce the CHW during an education session, or assist him in monitoring young children, pregnant women, etc. In this way, the impact of the supervision visit on village health, as well as CHW learning, could be increased.

4. The information generated during the supervision visits (CHW's grades, checklist, etc.) are not really used at the level of Project management. The supervisor himself could make better use of simpler instruments, which would enable him to assess sufficiently CHW activities and village problems, allowing him to take appropriate steps as a result.

If the CHWs had memory aids (depending on their level of literacy) and clear illustrated guides for health education, there would perhaps be less concern about them forgetting what they have learned.

Some key indicators could be identified to enable Project staff to follow the development of CHW priority activities, following the particular health needs of each village.

A considerably reduced supervision form could include these indicators and leave space for the supervisor to note the particular problems of the village and the CHW; the activities carried out since the last supervision visit; the

difficulties encountered; the character of the supervision itself; the activities planned by the CHW and the CSC. This would give an overall picture of the health of the village and facilitate the follow-up of the activities undertaken.

Some non-systematic supervision is, de facto, carried out by the Health Posts and the Departmental Health Centers. The CHWs often enter into contact with the staff of these centers when referring cases or looking to obtain certain medicines. Also, Project supervisors are sometimes accompanied by local health staff during supervision visits. This practice can only be beneficial since it should encourage a harmonization of approach of all who have direct or indirect contact with the CHWs and the villages.

A.7 Basic Training and In-Service Training

1. Basic Training of the Community Health Workers (CHW)

A total of 197 CHWs were trained in six groups at the Project's four Departmental Training Centers. This was accomplished by seven nurse/trainers supervised by the two Project nurse/supervisors.

The training lasts 45 days, six hours per day, with four hours of classes and two hours of practical work at a dispensary or MCH center. There are also three field trips to the villages during the course: one to study the problem of child malnutrition, one to study village hygiene, and one to investigate TBA practices. In

general, the trainers feel that the training is of sufficient duration, although certain of them find the curriculum to be a little over-loaded.

One very positive aspect of the training is that it takes place in small groups of no more than ten trainees. The courses are given in national languages according to the ethnic composition of the groups. While admitting that the learning possibilities are greater as the group diminishes in size, some of the training sessions were done for four or five people, which necessarily involved a considerable increase in the cost per person trained. It would be desirable in the future to have representatives from at least eight villages of one language group trained at the same time, while maintaining a maximum of ten trainees per trainee group.

The pedagogical methods to be used are specified in the curriculum, and include exposés, the presentation of fictitious cases, discussions, practical demonstrations and role-playing, in addition to practical sessions in the health services. The trainers encourage the CHWs to review the courses themselves at the end of each "unit". Each one explains a part of the course, and the others discuss his presentation, thus enabling the trainer to evaluate the level of assimilation of each. The overall training is evaluated by means of the questionnaire, "Answers to Pre-Post Tests", which have already been

mentioned in the section on supervision (see Chapter III, Section 6).

In Table #30, we can see that 89.4% of the CHWs about whom information is presently available had grades of 7.0 or greater out of 10 for the post-test. This seems to indicate fairly good assimilation of the course, although 10% showed some difficulties, requiring intensive follow-up during supervision visits.

The CHWs from the first four training sessions were given ten days of in-service training on the intra-muscular injection technique, aspects of nutrition, water and hygiene. The principle of holding annual in-service training sessions for the CHWs is a good one and should be maintained. It allows for the addition of additional CHW tasks as needed (for example, the injection technique was very necessary, since several CHWs were already giving injections poorly and other villages had demanded this service), and the reinforcement of certain weak areas identified during supervision visits.

When CHWs' tasks are better specified and measures taken to concentrate their work on certain activities for specific periods of time (see comment on the work of the CHWs, Chapter III, Section 5), the in-service training sessions can be profitably used to support these initiatives.

TABLE #30

GRADE OF TRAINED CHWs ON THEORETICAL POST-TEST
(FOR FOUR DEPARTMENTS)

CHW's Grade (over 10)	Number of CHWs trained Per Department				Total Number	Percentage
	R'Kiz (Hassanya)	Mederdra	Keur Macene	Boutilimit		
5.0 - 5.99	1	1	-	1	3	2.8%
6.0 - 6.99	3	1	1	3	8	7.7%
7.0 - 7.99	7	7	2	13	29	27.9%
8.0 - 8.99	2	24	8	14	48	46.1%
9.0 - 9.99	7	3	2	4	16	15.4%
Total CHWs on which there is information	20	36	13	35	104	100%

The CHW curriculum deals, in this order, with first aid, common illnesses and their prevention (worms, diarrhea, respiratory problems, tuberculosis, fevers, conjunctivitis and other diseases, skin diseases), infectious diseases and the EPI, nutrition, the pregnant woman and delivery, home visits, the organization of CHW work and the use of the kit.

The curriculum is divided into 71 "course units". A course unit is understood to be a session of two or three uninterrupted hours on a given subject. The 180-page curriculum is composed of two elements (each page has two columns): "Activities" (such as directed discussion, summary, group activity, review, etc.) and "Program", which suggests the points to cover and the teaching methods to use.

The curriculum is based essentially on the one developed by the WHO Training Center in Lome. With the technical assistance of the Center and using as a base a diagnostic study of eight villages in the Trarza, Project technicians chose the course units that seemed most useful for the milieu and modified the contents of the curriculum somewhat. After the first training session, other modifications were made, based on the experience of all the trainers.

Visual aids - drawings done by one of the Project's contract staff-were eventually designed for every course.

The trainers expressed their needs for these and helped test the materials with the CHWs in training.

Unfortunately, the evaluators did not have the opportunity to observe training sessions. We could not therefore really assess the trainers' handling of the curriculum, the training methods used, etc. There is no doubt that the trainers worked with a great deal of energy and dedication. Four of them had received orientation in Lome in the area of training, and the three others were trained by the Project nurse/supervisors (also trained in Lome), as well as by their colleagues during training sessions. The results of the Project - 156 active health workers with a fairly good level of knowledge - must be largely attributed to the skill and devotion of these nurse/trainer/supervisors.

The following comments must in no way be taken as a lack of appreciation for the work done, but rather as considerations that may possibly assist the technicians in improving the encouraging results already obtained. Some of the observations were expressed by nurse/trainers themselves.

a) The tasks of the CHWs are not well defined in the curriculum. If, in a curriculum, the knowledge to be conveyed is organized around tasks, this can strengthen the link between what the trainee learns

and what he is expected to do in the field. This avoids to some degree the problem of CHWs who may have extensive knowledge, but do not see exactly how to apply it in the village.

b) Specific learning objectives are not set forth in the curriculum, even though they are, to a certain extent, implicit in the pre-post test. Learning objectives, which should indicate what the trainee must be able to do at the end of the training session, serve as a guide for the trainer in orienting his courses. Setting forth the learning objectives based on every task that the CHW will be expected to carry out makes sure that the trainer deals with all the course contents necessary to carry out the task and, at the same time, limits himself to the information essential to the achievement of the task. For example:

TASK: Educate the village as to the necessary measures to be taken to make water potable.

Learning objectives (at the end of the training, the CHW must be able to):

a) Explain to village inhabitants the relationship between dirty water and illness.

b) List two common diseases that can be caused by

dirty water.

c) Explain three ways that the villagers can make water potable, mentioning the advantages and disadvantages of each method.

d) Demonstrate how to make a sand and charcoal filter with means that are available locally in the villages.

Etc.

c) The course contents are set forth in the curriculum, but they could be better defined in certain units. If the course content were presented separately, apart from the teaching methods to be used, it would be easier to assess the content in its entirety.

The essential points of the content could then be used to prepare memory aids for the CHWs, after translation into national languages and appropriate illustration. These memory aids should also be distributed to all Heads of Health Posts and dispensary, MCH center and CREN staff, who should be in contact with the CHWs.

d) In general, the curriculum gives the impression of having a curative care focus, even though it does not cover the subject of nutrition, hygiene, etc. This impression comes perhaps from the fact that the

training begins with first aid and diseases. Practical work is also essentially based on dispensary care. From the first day and on almost every day thereafter, the CHW is placed in the health services. It is therefore to be expected that he should regard his role as being largely curative. (It should be noted that there are practically no educational activities at the dispensary level. Some education is carried out in MCH centers, especially when they have a CREN attached to them).

It is, of course, more complicated to organize field trips in the villages than it is to place the CHWs in dispensaries and MCH centers. However, the possibility should be considered of doing more practical work in the communities (surveys on the number of children vaccinated, the nutritional status of small children; the organization of group education sessions, nutrition monitoring, water filter demonstrations, protection of wells, construction of latrines, etc.).

e) Given the problem encountered in the field of CHWs using unauthorized medicines, it would be good to include some sessions in the curriculum to make sure that CHWs understand the dangers inherent in such abuses.

f) The CHWs practice giving advice to sick people individually, either during classes through role

role playing or at dispensaries and MCH centers. But it seems that they have very little opportunity to practice group education, group animation techniques, etc. After test-runs in the classroom, it would be interesting for each student to carry out several education sessions in the presence of the trainer and other trainees before returning to his village. A learning exercise of this type could stimulate the CHWs to show more initiative in organizing health education sessions (see comments, Chapter III, Section No. 5).

g) Certain trainers inform the nurses at the dispensary or the MCH center staff of the theme that the CHWs have just studied to enable them to select appropriate cases for the CHWs. This seems to be a good method to reinforce. The trainers supervise the CHWs at the dispensary and discuss with them the work done during the hours of practical work. This enables them to assess their experiences. It would, however, be useful to lay out in more detail what each CHW must practice during his training. The CHW would have a list of practical tasks to carry out during the training (for example, rehydrate three children with oral rehydration therapy, diagnose five cases of malnutrition and give appropriate advice, examine five cases of fever, etc.). The dispensary nurse would sign the list when each was

completed, adding comments for the trainer, if necessary.

h) Great efforts have been made to develop local visual aids to support the training of CHWs. The trainers identified the needs for visual materials for every course theme. They tested the materials with the CHW trainees to be sure that they understand them. Indeed, several of the visual aids are simple and expressive. Others are less clear, and require explanation on the part of the trainer.

It would be of interest to develop further the work that has already begun. Certain key themes could be chosen, and visual aids improved so that they could serve both for the training of CHWs and for the education of the population at the health centers, and at the village level. Visual aids should be chosen which convey one simple message each. Given the considerable variations between ethnic groups, different sets of visual aids would be required to reflect the various ways of life. The process of testing and modifying visual aids cannot be short-circuited. A fairly diversified sample in each ethnic group should be used for testing since perceptions may vary according to age, sex, different educational level, level of contact with the cities, etc.

The Health Education Service should normally orient the development of all these education materials, ensuring the participation of all the concerned services of the Health Ministry. First, all the materials produced in the country up to now should be brought together and a consensus reached on the form and content of what is to be designed.

i) What is currently lacking is systematized baseline data on the beliefs and habits of the population. This is necessary both for the orientation of these education materials and also for the more detailed development of the CHW curriculum. A thorough analysis in this area, based on studies using an anthropological methodology (focus groups, etc.), should lead to a solid educational approach for each of the health priorities. Key messages can be designed in each area, to be classified according to criteria of conceptual acceptibility for the various population groups, feasibility of the recommended behavioral changes, etc.

Without a base of this type, there is a risk that the health education efforts will bypass the real perceptions of the people to be educated.

2. <u>Training (CSCs)</u>

Up to now, the CSCs have been oriented on the primary

health care program during village animation, as well as during the supervision visits carried out by the Project. As we have already noted, the animation had, in general, been brief in character, and this has not permitted the execution of thorough education work. Similarly, the supervision visits have been dominated by pre-determined activities, and we have the impression that contacts with the CSC were especially centered around the problems of replenishing kits and remunerating CHWs.

Greater use should be made of animation and supervision visits to carry out the progressive training of these Committees. Supervisors could establish a list of themes to discuss with the CSCs, as well as with other village groups. The themes would be introduced gradually, according to the particular problems of the villages and the availability of people. The CHW would be the prime animator of the talks/ discussions, and the supervisor would give him the necessary moral and technical support.

All efforts should be made to ensure that the education work carried out in this way is linked directly to concrete activities to be carried out at the level of the village concerned.

It is difficult logistically and organizationally to bring together the various CSCs for more formal meetings.

This should perhaps be tried, especially if and when an education "campaign" is launched in a given geographical area. In this case, the shared orientation and exchange of points of view may be an effective means to increase the awareness of CSC members in support of specific activities. Given the increasing level of activity of the Mass Education Structures (SEM), their zonal, regional, etc. meetings could be used as a forum for orienting village leaders. Indeed, they may well be the same leaders that are also members of village Community Health Committees.

3. Training of Trainers

We already refer to the various training courses that the Project nurses have completed (on page 132). We also pointed out the importance of these experiences, especially given the absence of adequate primary health care preparation offered to date by the country's health schools.

The considerable ability demonstrated by Project technicians can be attributed at least partially to these training efforts, although it is always difficult to separate the effects of formal training, on-the-job learning and "natural" individual talent.

In any case, the technicians should continue to participate in short-term training in Lome, and a higher

level of training should be planned for those of them that will no doubt be called upon to take responsibility for generalizing the development of PHC in the country.

Training seminars in Mauritania should also be held, both for the technicians presently working in the Project and for nurses in the field that will play an increasingly important role in the regions where the extension of PHC activites is planned.

Each nurse on the Project has different natural abilities. For example, some are quite gifted for training activities, but are less competent in carrying out negotiating and education tasks at village level. In planning future activities, the temporary assignment of small groups of two or more could be arranged to enable each person to address his particular weaknesses through practical learning experiences with his colleagues.

There are certain areas, often pointed out by the technicians themselves, that deserve to be explored more thoroughly in structured continuing training sessions:

a) The techniques of village animation and community development.

b) Group animation techniques for health education activities, including consideration of the obstacles to the diffusion of innovations and methods of

minimizing them.

c) Scientific advances and approaches to the organization of oral rehydration and nutrition monitoring programs.

It would be good to develop training modules for the trainers on these subjects, adding other subjects needed by the regional, departmental and post nurses, who will eventually have responsibility for training and supervising CHWs in the various regions of Mauritania.

Visits to other countries, especially in West Africa, should be encouraged to observe primary health care programs. National colloquia to discuss certain points of specific PHC strategy in Mauritania will be particularly important as PHC develops in the different regions.

A.8 Health Information System

The health information system in Mauritania is not yet organized. We thus understand the considerable utility of the data gathered by a network of 192 health agents working in rural areas. The project has thus wished to make maximum use of this resource and gathered the following;

a) Basic data on population, births, deaths and migration.

b) Data on illnesses and types of patients.

c) Data on nutrition.

d) Information on infant and child health.

e) Information on the possibility of improving village hygiene and sanitation.

To collect these data, special forms have been given to the CHWs on which they take daily note of their activities, and of births, deaths, etc. Since a large population of CHWs are illiterate, the Project had to invent a special system to enable them to gather and report this information. The system uses pictures that we have found to be very ingenious. Each type of information is represented by an illustration that has been well explained to the CHW during his training. When he sees a given illustration on the form, he knows what type of information is desired. Each form has 24 different pictures, corresponding to home visits, committee meetings, deaths, births, pregnancies, deliveries, post-partum care, malnutrition, measles and intestinal worms. In brief, most of the country's major public health problems could be reported by the CHW. The forms use conventions to represent three age groups: children under five, women 15-49 years of age and all other groups. We think that one could not have done better under the circumstances, and the system, if well understood and assimilated, should supply some precious information.

As for CHWs' understanding of the system and especially their interpretation of the pictures, our visits in the field showed that this does not now constitute a major problem.

Out of the 15 CHWs that the team visited in the villages:

- In nine cases, that is, 60% of the cases, the records were well kept.
- In only two cases (13.33%) were the records poorly kept.
- In the four others, the results were not clear.

The analysis of the forms on file at the office, however, showed that CHWs were better at reporting the cases of illness that they treated themselves than reporting pregnancies, births and deaths, for example. There is no space in the CHWs' report for information on the number of latrines built or wells protected in the village. This is a point that should perhaps be considered more thoroughly in future projects, taking into consideration, of course, the illiteracy of many CHWs.

The report-collecting system depends solely on supervision visits. If these are carried out regularly and at frequent intervals, all goes well. But we have seen that supervision visits were often quite irregular. In some cases, the interval between two consecutive supervision visits was greater than 10-12 months. In addition, during a relatively short supervision visit, and in addition to all the other activities to be undertaken, the supervisor must total all the data reported on the CHW form since the last supervision visit, and copy them one by one in his own records - an operation subject to many errors. At present, however,

we fail to see how to proceed otherwise to collect these data. We note simply that the supervision system must be considerably strengthened in future projects. Supervision visits must be more regular, and supervisors helped to organize their time for all the operations to be carried out during this important action.

The supervisors themselves had to use their visits to the village to collect data that CHWs had not gathered. This also is a precious source of information. Supervision forms included for every locality information on village water supply and storage, the waste disposal system, the number of inhabitants who have latrines and the state of cleanliness of these houses and latrines, etc.

Finally, another source of information found in the Project is the studies and surveys completed during the training of the Community Health Workers, as well as other surveys carried out in the course of program implementation.

It is indeed unfortunate that all these interesting data are simply stored at the central Project office. Steps have not been taken for their systematic tabulation and analysis. We strongly believe that it is important to assign statisticians and/or assistant statisticians to complete this work. Initial processing could even be carried out at the regional office, and then continued at the central Project office. This would require the assignment of

statisticians at the regional base level, which seems to be a future plan of the MOH.

Some analysis was done and has just been published by the contract firm Dimpex Associates, Inc. It consisted of a study of some data compiled by the Community Health Workers. It was published in March 1983.

When we arrived in Nouakchott, a team of statisticians from the U.S. Bureau of Census had just completed another study on certain information concerning the progress and development of the Project. Useful tables and analyses were done on the demographic data compiled by the Project, and on a range of information concerning the CHWs. The study had a fairly high level of reliability since it took place following the revision of the Project's data compilation method. A whole census of the villages was completed on this occasion. The resulting analyses were used extensively by the members of the evaluation team in its work.

The team itself, for the needs of the evaluation and with the assistance of the Project trainers, completed the tabulation and analysis of data on the activities carried out by the Community Health Workers. Useful information could thus be obtained from available data.

The collection of information and the compilation of data constitute important and interesting activities in projects such as the Trarza Medical Assistance Project, especially

given that it is an experimental or pilot project. Under such circumstances, there is often a tendancy to collect the greatest amount of information possible. This was somewhat the case with the Trarza Project, reflected in the thickness of the form to be filled out during supervision visits. There is reason to fear that requesting excessive quantities of information can be detrimental to its reliability, especially considering the relatively short time available to collect it. In any case, we can say that the central Project office presently has a bank of interesting and varied information.

Despite the circumstances in which some of this information was collected, it can nevertheless always be used at any time by decision-makers at various levels to better orient the development of rural health services.

On the occasion of the latest census completed by the Project, there was an improvement in the method used to collect certain data; we must hope that this improvement continues and is extended to other activities. The Project is now established and can be satisfied with some basic information, without loading itself with useless details. What is required is easily-usable information that can help to give a better idea of the country's health situation and of the improvement and extension of primary health services. We hope that the Health Ministry will indeed place statisticians in the Regions. The information collected could first be processed at this

level, then sent to Nouakchott to the appropriate departments, particularly the Department of Planning of Studies and the central Project office.

A.9 Referral System

Case referral is a very important element in the development of rural health systems everywhere. The knowledge and capabilities of the Community Health Worker are necessarily limited. Many cases will be presented to him that he will be unable to treat effectively; he will have to evacuate them to a higher level of care. This is why the referral system must be provided for and made effective in planning the extension of primary health care services in rural areas.

In examining the information filed at the central Project office, we were surprised to see the relatively small number of cases evacuated by the CHWs - only a total of 12 cases, according to the forms. There must certainly have been an error somewhere. Besides, this truly low rate did not agree at all with the findings of the Evaluation Team during its village visits. In the 15 villages visited, we found that, according to the CHWs, 120 cases were referred upward by them since the beginning of the year alone, and in a high percentage of the cases, the CHW accompanied them himself to the center or dispensary. In any case, these results prove that the evacuation of difficult cases is already a need felt by the CHWs themselves. It is therefore

advisable for the health authorities to organize and facilitate the case referral system. It is a question of increasing the contacts and relationships between the CHWs and the dispensaries. In a certain number of cases - very few, fortunately - it was found that the patients referred by the CHWs had some difficulty being received by the dispensary. In two of the 120 cases spoken of above, the referral cards were torn up in the presence of the patients and they were told to get in line like everyone else. In three cases where the CHW was present, the latter had to see the Chief Regional Physician, who intervened immediately to give priority to the patients brought by the Health Workers. A certain distrust on the part of the CHW can be noted, however, toward certain heads of centers or dispensaries. By contrast, we must say that 100% of the latter reported that they had excellent relations with the CHWs, and that they sometimes gave them medicines and advice.

The health authorities, for their part, have not been inactive. Written orders were sent to all dispensaries and health centers, calling upon them to give priority to patients referred to them by the Community Health Agents. This positive attitude should be gradually reinforced as the integration of primary health care services become a reality. The heads of dispensaries will play an active part in the supervision of the workers; they will receive reports from the latter that they will include in their monthly or quarterly reports to the region. They will go

into the field and be able to see for themselves the CHWs' working conditions, problems and efforts. The CHWs, on their side, will certainly not remain indifferent to these repeated visits of the dispensary staff and will truly feel that work relationships now exist between the dispensary and the village. The Community Health Workers will see themselves as effectively integrated into the health care system and will, at the same time, feel comfortable about evacuating their difficult cases.

In organizing and developing the referral system, the technical reinforcement of the dispensaries must not be forgotten. A whole range of measures must be taken to put the centers and dispensaries in the best possible condition to take in the cases that will be referred and offer them adequate care. The three or four dispensaries visited by the evaluation team during its trip were not really attractive, and we learned that more than 60% of health facilities were more or less in the same condition. In the interest of improving the referral system, reconditioning the physical condition of the buildings and a refurbishing of the supplies and equipment of the health centers concerned is not too much to ask as primary health care services are gradually extended to rural areas. Unfortunately, the Trarza Project did not sufficiently emphasize this domaine, which would have been a valuable and lasting investment.

A.10 Supply System for Medicines

If there is one really crucial element in the implemenatation of

the Rural Medical Assistance Project as it is conceived, it is the supply of medicines. In examining and analyzing the system, several questions can be raised:

1. How are medicines acquired and stock replenished?
2. Is stock replenished regularly?
3. Is the stock satisfactory from the qualitative point of view?
4. What has the government done to facilitate the supply process?

Immediately after their training, the CHWs each receive a kit containing the medicines that they should use in the course of their activities in the village. This initial stock is calculated for three months, but the communities themselves are responsible for replenishing them. One of the major roles of the village health committee is to find the necessary funds on a regular basis to replenish the kits. Indeed, our survey of village Community Health Committee members showed us that they took this role very seriously. Sixty percent of the Committees questioned answered spontaneously that they considered the replenishment of medicines as an important part of their role and responsibility vis-a-vis the CHW. We are certain that if the response had been suggested in the questionnaire, the result would have been 100%.

Several methods have been envisaged by the Committees to

collect the funds necessary to purchase medicines. The following are included among them: village levies, receipts from the sale of medicines, gifts and payment for care given by the CHW. Two or three of these methods are often combined. We have taken the following percentages for each of the methods mentioned from the study carried out by the group of statisticians. They come from a total of 90 Community Health Workers whose medical kit was replenished at least once:

Method Used to Replenish the Medical Kit

Method	Number of Agents	%
1. Resale of Medicines	5	6
2. Village Levies	39	43
3. Gifts	2	2
4. ASC Payment	5	5
5. Other Methods	7	8
6. Combination of Methods	32	36
Total	90	100

(Table based on data compiled by team of statisticians)

The following table, again taken from the team of statisticians, gives an idea of the frequency of kit replenishment for the first five CHW groups trained.

Frequency of CHW Kit Replenishment

Training Group	Total CHWs with Information		Kit Replenished at least Once		Kit not Replenished	
1	20	100%	19	95%	1	5%
2	17	100%	16	94%	1	6%
3	22	100%	22	100%	0	0
4	27	100%	19	70%	8	30%
5	23	100%	14	61%	9	39%
Total	109	100%	90	83%	19	17%

(Data from statisticians' study)

The table shows that the kit was replenished at least once in 83% of the cases.

In the course of our visits with the Health Workers in the field, the following observations were made: of 15 CHWs visited, 8 of them (53.33%) were found to have complete kits. Seven (46.66%) had incomplete kits. We also found unauthorized medicines in six cases (75%) of the 8 complete kits. In the seven cases where the kit was incomplete, the reason given was:

- the order was late in arriving - three cases (42.85%)
- financial difficulties - four cases (57.14%).

It is clear that the Community Health Workers, as well as the Health Committees, are fully aware of the need to replenish the medicine supply regularly. Only economic or financial difficulties sometimes prevent this replenishment.

This then is a serious handicap to the proper functionning of the Project since the economic situation of nearly all of the villages is presently quite precarious, given the drought that is decimating livestock and preventing the cultivation of the land.

As far as the content of the kit is concerned, it is necessary to take several factors into account, inter alia the potential harm that the product could do and the type of cases that the worker is likely to encounter. It seems that these factors were taken into account in making the list of 19 medicines authorized for the Community Health Worker. In the initial three-month stock given to the CHWs after their training, however, it was observed that the products planned for use against diarrhea were omitted, that is, "Ganidan", charcoal and Paregoric. The origin of this omission seems to have been that these products, not having been approved by the Food and Drug Administration, could not be purchased with Project funds. It was found necessary to complete the kit by buying these products. It appears that the Project is having enormous difficulties in getting reimbursement for the amounts spent for this purpose.

We found that in a relatively high percentage of cases, unauthorized medicines were found in the CHWs' kits. During training sessions and supervision visits, the responsible parties should insist that CHWs adhere strictly to the list of authorized medicines. The training and supervision

should emphasize the disadvantages - even the dangers for the CHWs and the population of using forbidden pharmaceutical products. This information should be extended to the members of the village Community Health Committees.

In addition, it also seems to us that one should seriously consider training CHWs to use at least one common antibiotic in the form of oral tablets or capsules. The instruction for use, posology and duration of the administration of the product could be emphasized so as to avoid problems linked to the appropriate use of these medicines. This idea was reinforced after seeing that CHWs encounter many cases of infections that they cannot always evacuate to the dispensary. Many primary health care programs authorize the use of penicillin tablets; we wonder if it would not be a good idea to train CHWs in Mauritania to do so.

As for the treatment of diarrhea, given that there now exists the simple technique of oral rehydration that CHWs can use and teach in the villages, it is of utmost urgency to add ORS packets to the medical kit.

To facilitate the replenishment of medicines by the Community Health Committee, PHARMARIM, the national agency for the distribution of pharmaceutical products, should have a suitable agent in each of the four points of the Project area where there is a dispensary or MCH center; that is, Rosso, R'Kiz, Mederdra and Boutilimit. At the

beginning of the Project this was not possible, and the CHWs could only be resupplied at Rosso or Nouakchott, the two places where Pharmarim had depots. Thus, an accessibility and cost problem complicated the supplying of medicines to the CHWs. Only recently has Pharmarim authorized retired nurses to establish sales points. At the same time, a 10% reduction on Pharmarim drugs was given to CHWs who were authorized to show their identification cards when demanding this. The CHWs can, of course, buy only those medicines included on the list of 19 authorized medicines. In the Project area, there are at present depots outside of Rosso, at R'Kiz, Boutilimit and Mederdra. The Head of Pharmarim, however, whom we interviewed, fears that the 10% reduction cannot be maintained should the Project be expanded. He says that this reduction represents a loss for Pharmarim. Since it has been given to the Project, requests of this type have flooded into the Office of the Director of Pharmarim from rural communities who have formed health committees to buy drugs. The Director explained that Pharmarim sells to Government health institutions at cost. The 20% profit that it earns from its own pharmacies does not really represent net profit, but rather just what the institution needs to survive. When they deliver these products to department stores, which are really private depots, Pharmarim loses this 20% profit. It therefore loses by authorizing these private depots in the departments; it loses even more when it grants the 10% reduction to the CHWs. The Director feels that under the circumstances, a

government subsidy to Pharmarim is necessary, given the policy of the Mauritanian government to expand primary health care services in rural areas and sell pharmaceutical products at lower prices.

Given the importance of the drug supply problem, it behooves the Mauritanian government to carry out a serious and thorough analysis of the Pharmarim situation, the procedure for acquiring the products, the costs involved, the structure of the service, etc., thus obtaining the full understanding necessary to take whatever measures are appropriate. We believe that the policies of extending primary health services and selling drugs at the lowest prices possible must be maintained and safeguarded at all costs.

A.11 Project Preparation and Management

The Project gave considerable importance to the preparation of the technical staff. Naturally, this preparation could not be done all at once at the beginning of the Project; but there was always concern about having technically qualified staff, and all possible steps were taken to improve their competence and qualifications. We have listed here the qualifications and training of key Project staff:

Name	Title	Entered Project In:	Training
Moctar Ould Memah	Supervisor	October 1979	Govt. Nurse. Course in Lome: July-October 1979; October - December 1981.
Ibrahima Diouf (1)	Supervisor	October 1979	Govt. Nurse - CESSI Course. Lome Course: July - October 1979.
Mamadou Sene (2)	Supervisor	August 1982	Govt. Nurse - CESSI Course (Dakar).
Kane Sidi Baidy	Supervisor	August 1983	Govt. Nurse - CESSI Course (Dakar).
Mohamed Ould Alew	Trainer	October 1980	Govt. Nurses - Trainers' Training Course (Rosso). Lome Course (April 1982).
Mika Fall	Trainer	October 1980	
Abdullai Sow	Trainer	October 1980	
M'Barek Ould Bilal			
Mahmouden Ould Hally	Trainer	April 1981	Govt. Nurse.
Sghair Ould Mohamed El Abd	Trainer	April 1981	Govt. Nurse.
Ramdane Ould Mohamed Ramdane	Trainer	February 1982	Govt. Nurse.

(1) In April 1982, Diouf transfered to the Mauritanian Workers' Union (UTM).

(2) In August 1983, Sene Mamadou transfered to the School of Public Health of Nouakchott.

As we can see, there are still three trainers who have yet to complete the advanced training course in Lome or Dakar. Arrangements to this effect should be made within the shortest possible time in order to expand the Project.

Administrative and support staff was not planned for in the Project. Only after the Project began were they seen to be necessary. This provided some adjustments in the budget. It was necessary to decide whether this staff would be paid by the Government or with USAID funds. It was finally decided to pay them using USAID Project funds, managed by the public health Consultant. The present Project accountant was recruited only in October 1981. It seems that this staff was not required to complete any specific training to improve its performance.

All training courses planned for the Community Health Workers were completed. 197 CHWs were trained. Eight seminars were organized, not only for the Project staff but also for other Ministry staff. Finally, four in-service training sessions were held in March 1982, November 1982, April 1983 and July 1983, for CHWs of the first four training groups.

It is necessary, however, to speak of certain technical weaknesses. There should have been an educator attached to the Project from its inception to work with the team in organizing animation and continued health education for the villages, thus supporting and strengthening the action

of the CHWs and the CSCs; there should have been a statistician at the Project central level to analyze the numerous and valuable data collected in the field by the CHWs, the supervisors and special surveys, so that they could be used by the different departments of the Ministry of Health.

Since no administrative staff was planned for at the beginning, the Public Health Consultant sent by Dimpex Associates Inc. had to assume sole responsibility for a time for the management of funds, with the assistance of USAID. Only in October 1981 was an accountant appointed to spare the Consultant a difficult task for which she was perhaps not well-prepared. The burden she had to bear was even heavier for her since there was no specialist in education, and one of the Project supervisors was often absent for one reason or another.

We should also add that tasks were not well-defined in the Project. With the two parallel lines of authority already indicated on the organization chart and the horizontal or oblique relationships with the other members of the Project, it was rather difficult to determine the responsibilities of the Director, the Public Health Consultant and the USAID Project Manager. This made the situation somewhat difficult at the beginning. In the first report submitted by Dimpex Associates, Inc., we have excerpted the following:

"..... The Project began in 1980 with the American (USAID)

Project Manager as Administrator and the Mauritanian Director as her counterpart. When the Project Head sent by the contract firm arrived, her role in the Project was never fully explained by the Project Manager to the Mauritanian Director. This is why he continued to consider the Project Manager as his counterpart, while he saw the Project Head sent by the contract firm as a subordinate .....".

It seems, however, that in the course of time things changed for the better, since the Evaluation Teams found the Mauritanian Director and the Public Health Consultant (Project Head) in perfect harmony.

It also seems that this was not always the case for the lower levels. There again, it was necessary to define the roles and responsibilities of each staff member. Beside the fact that the authority of the Health Consultant over the supervisors and trainers was practically non-existant, the latter had no authority over the Project drivers.

The supervisors themselves felt they did not completely understand the extent of their authority in the Project.

Finally, in contrast to the technical staff, the Project accountant was never given advanced training. Although, recruited relatively late, he was in great need of it, as evidenced by the numerous weaknesses in his work!

Projects with sizeable financial assistance from abroad and national counterpart funds usually generate management complications at all levels. This is why it is always important to have well-established administrative rules for the staff from the start. Although the technical side is very important, the administrative and management staff must in no way be neglected; they must be experienced and if they do not yet have the necessary expertise, they must be given further training. Regular monitoring of their work, especially at the beginning, is also very important. If these precautions are not taken, there can be serious errors that are sometimes noticed too late to be corrected in a way that is beneficial to the Project.

A.12 Project Impact on the Health Status of the Community

It is extremely difficult to measure the impact of a given Project on the health status of a population. Health is dependent on too many things. Besides, we must also note that even though the Project has been in existence for three years, the activities of the Health Worker as such did not all begin at Project start-up. The last two training sessions did not take place until January and May respectively. The workers trained in these sessions have only been working for a few months.

It is easy, however, to appreciate the positive psychological effect on a community of having its medical problems attended within the community itself. The villagers'

opinion on this point is unquestionable. When we asked them whether they thought that the CHW was of service to the village, the answer was yes in 100% of the cases. When asked what services were rendered, people explained that in the past, they were required to pay transportation fees to go to Rosso or a far-away health center for their health problems, and now they are happy to be able to find care and drugs where they live. They seem to make frequent use of the services of the CHW. This is the person to whom the villagers turn first in most cases of illness, except for gynaecological or obstetrical problems. If, in this case, the CHW is a man, the patient prefers to approach the TBA or go to the dispensary. This is a cultural trait that we found in most of the villages visited and which was confirmed by the Mauritanian who accompanied us.

The tables included in this report on CHW activities are quite eloquent as to the services rendered by these CHWs to the villages. The people in the villages agree in affirming that there have been changes in the village since the worker has been there.

Among the CSC members interviewed on this subject, 93.7% think that there have been changes in the village health situation. Among the improvements indicated, we have

found the following:

Opportunity for local care	86.7% of the cases
Improvement in Hygiene	46.7% of the cases
Improvement in Education	26.7% of the cases
Reduction in Number of Cases of Illness	26.7% of the cases

Only one member answered that he saw no change.

The nurses at the dispensaries think that, in general, the presence of the CHW is useful and can assist them in their work.

Indeed, although these answers are necessarily quite subjective, their value must not be discounted, since the high percentage of positive answers probably represents some consensus on the part of villagers. The tabulation and analysis of the forms used by the trainers during their supervisory visits would provide us with a more objective assessment of program impact, allowing the comparison over time of village sanitation and hygiene.

The check-lists used represent a veritable mini-survey on the progress of the state of village health at every supervision visit. The questionnaire, which is rather lengthy, considers key hygiene and sanitation factors such as:

Water: Source
How Stocked
Quality of Drinking Water

Waste Disposal: Latrines
Garbage
Village Cleanliness

Habitat - Vectors - Nutrition - Food Hygiene.

Unfortunately, the data collected have not yet been analyzed.

In any case, the impression in all circles is that Community Health Workers have done some good and necessary work.

B - THE INTEGRATION OF COMMUNITY HEALTH WORKERS INTO THE HEALTH MINISTRY

When we consider the Project's place in the Health Ministry organization chart, we immediately realize that the Project was planned as a vertical service. No technical or administrative relationship between the Project and the various Ministry departments was officially provided for. In practice, however, we cannot say that Project field activities in the villages were conducted in isolation. Various relationships had to develop at different levels between the Project and the several Health Ministry services which are also working in the area of primary health care.

a. Relationships with the Maternal-Child Health services:- These services are an integral part of the Ministry of Health. They have already established about thirty MCH centers throughout Mauritania, with each center operating over a radius of about 10Km. In theory, the MCH centers should be able to deal with all primary health care services within their area of influence. In addition, these centers supervise the activities of the TBAs of certain villages and have established a training program for them. In the Trarza Project area, there are three such centers: at Rosso, Mederdra and Boutilimit. The relationships between the CHWs and the MCH services are at the TBA level, but are not officially defined. In the course of our visit to the villages, we found that contacts were frequent

between the Community Health Workers and the TBAs, trained or otherwise.

Among the 15 villages visited, there were:

- 3 (20%) with trained TBAs.
- 12 (80%) with untrained TBAs.

The following were the types of contacts described between the CHW and the TBAs:

Information on births: 9 times (60%)
Giving supplies to the TBA: 6 times (40%)
Giving advice and explanations to the TBA: 11 times (73.3%)

Of the villages visited, in 11 cases (73.3%), the contact between the Health Worker and the TBA had occurred less than three months ago.

b. Relationships with Mobile Vaccination Teams -

These mobile teams are part of the Enlarged Immunization Program, which operates under the Ministry's Division of Preventive Medicine. There is a mobile vaccination team in each region. In addition, there is a team based in Nouakchott that also touches on part of the Trarza region. Each team should carry out about three visits per year to each village to vaccinate children 0-5 years of age.

Of the 15 villages visited by the evaluation team, the CHWs were interested and participated in mobile team activities in 86.66% of the cases. This participation

consisted of:

The promotion of the vaccination program: 86.66% of the cases.
The organization and control of cards: 60% of the cases.
The distribution of anti-polio vaccines: 6.66% of the cases.
The treatment of and advice on possible complications: 40% of the cases.

c. Contacts with the Dispensaries and Health Posts -

We have already seen that these contacts were frequent and usually positive. They took place especially when difficult cases were evacuated to dispensaries or when CHWs made visits to sollicit advice and medicines from the Head of the Dispensary.

Thus, there are already informal relationships established between the CHW and several departments of the Ministry, especially with those that are particularly concerned with primary health care.

It should be mentioned that the integration of primary health care services and Community Health Workers is a dominant concern of the Ministry of Health. All the authorities visited by the team, whether the Health Director, the Chief of Preventive Medicine or the Chief Physician of the Trarza region, recognized the need for integration. The Project Director, on his part, spared

no effort to prepare and facilitate this integration. Thus, Ministry of Health staff not part of the Project were always invited to participate, and did participate, in seminars organized by the Project. This fact can be verified in the following table:

Participation in Rural Medical Assistance Project Seminars by Ministry of Health staff:

Seminar Date	Subject	Number of Ministry Staff
10/15 - 11/3/80	Training of Trainers	11
4/01 - 4/5/80	Supervision	-
8/15 - 8/29/81	Advanced Training - Supervision	4
10/81	Nutrition	10
10/81	Research - Methodology	10
8/04 - 8/13/82	Evaluation - Review	-
1/24 - 1/27/83	PHC Integration	43
4/10 - 4/14/83	Project Integration	8

As we can see, in the course of this year, the last for Project Trarza, there were two seminars organized specifically on the integration of primary health care and Project activities. The January 1983 seminar was particularly important and interesting. It was inaugurated by the Minister of Health himself and brought together all the directors of the Ministry's technical departments. In his inaugural speech, the Minister emphasized, interalia, that:

"This meeting is a valuable opportunity for all participants to deepen their individual and collective reflection not only

on the specific objective of the seminar (integration), but also on primary health care strategies, of which the Rural Medical Assistance Project is an important example".

"In fact, you will be led", continued the Minister, "to provide specific answers to a series of questions and define a certain number of concepts such as ... the practical problems of the integration of the Rural Medical Assistance Project with the Trarza Regional Health District..."

It is appropriate to extract and reproduce here the recommendations of this important seminar:

1. The creation of a central primary health care coordinating unit.
2. The institutionalization of primary health care in Mauritania.
3. The clarification and systematization of the national PHC policy.
4. Better health planning and programming for the country.
5. Coordination and integration at the central level.
6. The introduction of primary health care in the initial and on-going training of the health staff.
7. The decentralization of depots for medicines.
8. The strengthening of already-existing health referral facilities.
9. The reorganization of regional health services.
10. The creation of regional primary health care units.
11. The strengthening of human, material and financial resources at the regional level.

12. The improvement of links between regional health services and rural communities through the rational use of traditional structures already existing there, the standardization of the user fees payment system, and the supplying of medicines at low cost.

Thus, there is no doubt as to the intentions of the Mauritanian Government vis-a-vis the integration and institutionalization of primary health care. It remains only for the authorities to put these good intentions into action. The issue was thoroughly discussed during a meeting with a high official of the health Ministry. It seems that the decisive step will be the creation of the Primary Health Care Coordinating Commission within the Ministry.

This Commission, placed under the Director of Health, will be composed of:

- The Chief of the Preventive Medicine Department
- The Chief of the MCH Department
- The Chief of the Planning and Research Department
- The Director of the Rural Health Services Project, formerly the Rural Medical Assistance Project, who will also serve as Commission Secretary.

This Commission will have the mandate and authority necessary to restructure the programs of the existing departments that operate more or less vertically, and bring them together into one integrated whole within the primary health care system. The action of the Health Education Committee will also be integrated into the primary health care system.

We must mention, however, that up to now, there has been no ministerial or other document officializing the creation of this Commission. We found only a "Service Note" dated June 19, 1982, from the Directorate of Health creating a Primary Health Care Technical Committee. The Planning and Research Department of the Ministry was not mentioned as being part of this Committee.

We think that the existence of the Primary Health Care Coordinating Commission would indeed represent a decisive step in the process of institutionalizing and integrating primary health care services. Such a commission, however, should be officially created with clearly established regulations and functions. Furthermore, since this Commission theoretically has a normative role, it needs an executive arm which, under the circumstances, should be the Planning and Research Department. To carry out its role effectively, this Department should be completely restructured and reorganize; its function should also be well-defined within the framework of its new and important mission within the Ministry of Health. All of this naturally implies the technical strengthening of this Department so that it will be able to analyze the various plans presented by the other departments and coordinate them into one truly integrated plan. It is this integrated plan that should constitute the annual national health plan and should be implemented in the health regions. There should not, in the future, be a vertical

service dealing with primary health care.

In this integration process, the Ministry should give special importance to the region. The Regional Director, who will have great responsibility in the implementation of the integrated national health plan, should also have the authority corresponding to this responsibility. He must, therefore, have the complete support of all Ministry of Health and regional authorities in the decisions made to facilitate integration in his region.

A well-planned integrated system should facilitate the execution of the various PHC activities and improve their cost-effectiveness. Thus, for example, a polyvalent mobile team could be responsible for supervision, immunization and education in the villages. It would be left to each regional direction, which is most familiar with available resources, to plan the details of these activities. Planning Department technicians would assist as needed in this task.

It is indeed possible that special resources may be available through one of the departments for a given program; they would simply be made available to the regional direction for the execution of the program, in accordance with the joint plan prepared by the Planning and Research Department under the aegis of the Primary Health Care Coordinating Commission.

SUPERVISION OF CHWs IN THE INTEGRATED SYSTEM

We must address the question of how to improve the supervision of the CHWs in an integrated system of primary health care services in rural area, given the need for integration and the limited resources of the Government. We therefore consider:

1. The level of supervision.
2. The frequency of supervision.

These two issues, if well analyzed, will perhaps enable us to arrive at an appropriate system.

Level of Supervision -

In the course of our travel in the Project area, we asked the Head of the Mobile Team, three nurses who were Heads of dispensaries and three nurses who were Heads of health posts, their opinions concerning the level which would be most appropriate for the supervision of Community Health Workers. Each of these employees answered by citing the advantages of using his own level. The Health Post Heads think that with relatively limited logistical means, they would be able to ensure the regular supervision of the CHWs in their work area at least every two or three months.

The Chief Physician of the Region need only make a small amount of money available to them for travel expenses. As for village accessibility, they think that the Post Head should, in theory, have a good knowledge of the various means

to be used to reach any CHW village in his area of influence. The Post Heads would also benefit from this supervision, since they would get to know their work area and gather from the CHWs the information needed to write a more complete quarterly report.

At first sight, this solution appears to be fairly attractice. Still, we wonder:

a) If all CHW villages are really accessible to the corresponding Health Posts in all cases.

b) If the CHWs will give the desired importance to the supervision visits from the Health Posts.

c) If all Post Chiefs have the qualifications and competence necessary to carry out proper supervision.

Three nurses who were dispensary Heads were also interviewed. All three thought that they were perfectly able to carry out supervision visits about four times a year. This would even be desirable, in their opinion, because they would thus have the opportunity to gain a good level of knowledge about their area of influence and the staff therein.

These supervision visits would also enable them to collect the necessary statistical information to write more complete reports on the health situation in the Department. To carry out these supervision visits, however, they would need transportation and fuel. Herein lies the problem! For the moment, the Ministry does not provide for the expenses involved in

the purchase and maintenance of a vehicle for each Department, including fuel, and we were told that this will be the case for a long time to come.

What about supervision from the regional center using mobile teams? On this subject, we got the nurse who is Head of the mobile EPI team in Rosso. He thinks that it would be quite logical to entrust supervision of the CHWs to members of the mobile teams, all the more since they often meet CHWs in the field during vaccination visits. In this case, however, two problems should be solved:

1. The supervision of the CHWs by the mobile teams should require the members of these teams to stay in the villages longer. Should this be the case, the Ministry should consider granting a per diem to team members.
2. Extending the team's stay in the field also poses the problem of preserving vaccines.

The solution of the CHW supervision problem should not be an exclusive one. An intelligent and practical combination of the three methods mentioned will probably be necessary. We may agree theoretically that supervision will be done through mobile teams, but we must remember that the CHWs will be attached to the dispensaries in a regionalized and integrated health systems. This is why it is advisable for the mobile team to be accompanied by a dispensary nurse on each trip. His role will be to organize the

supervision of the CHWs of the area together with the Head of the mobile team. furthermore, it should be possible, even with the limited means of the dispensary, for the nurse to carry out CHW supervision visits between the visits of the mobile team. The Regional Director, with a knowledge of what is feasible, will plan accordingly to make maximum use of the resources available to improve CHW supervision.

On the other hand, supervision by Health Post Chiefs must be well examined in each area. If the region finds it possible and efficient, this resource can also be used, provided that these nurses first receive adequate training.

The fuel issue, even in the case of the mobile teams, remains a very serious problem for the Government. Given the crucial importance of supervision for the success of the system, external assistance should be arranged to meet the cost of gasoline until the Government is able to take over.

On its part, the Ministry of Health should make all the effort necessary to pay the expenses of the supervision teams from the region or Department, if it cannot pay a fixed per diem. It goes without saying that such teams should henceforth be polyvalent and carry out immunization, supervision and education activities.

MISCELLANEOUS

In the course of our travel through the villages and our

interviews with various heads of the country's health services, we saw that, apart from USAID, there are many other agencies and institutions working in primary health care, the following being the most important: the Mauritanian Red Crescent, Catholic Relief Service, the U.S. Peace Corps, the World Lutheran Foundation and Caritas. There are also international institutions such as the WHO, UNICEF and other bilateral agencies.

The World Lutheran Foundation funded the establishment of village pharmacies in El Assaba through the Mauritanian Red Crescent. CARITAS has given considerable assistance to the volunteer health worker program in the ADRAR. Catholic Relief Service maintains a certain number of community food distribution and nutrition education centers in the country. These centers cover about 32,000 people.

These activities - and many others - represent a valuable contribution to primary health care. The relationship between the Project and the Mauritanian Red Crescent and the role that the latter paid at the beginning of Project implementation, have already been discussed. It is clear that there is presently a certain conflict between the Project and the Mauritanian Red Crescent, but we think that it can be smoothed out. At a time when primary health care services are being integrated in a country with limited resources facing enormous health needs, it is necessary to bring together the energy and good will of all in a common planning process

that will avoid dispersion, duplication and waste. No spirit of competition can be allowed, and the best way to avoid it is by coordinated planning. In this regard, the Primary Health Care Coordinating Commission can be a decisive factor.

This Commission, chaired by the Health Director himself, will be able to analyze all the various health activities carried out by private, voluntary or other institutions, to coordinate them and integrate them into the National Health Plan. Among these institutions is U.S. Peace Corps Volunteers, who accompanied the Supervisors and Trainers of the Rural Medical Assistance Project in their various activities in the Trarza. We are sure that they will participate effectively in this joint effort of the Mauritanian Government in favor of the extension of primary health care in rural areas.

The integration of private and voluntary institutions is no less important, and the Ministry should call upon them also to coordinate their efforts with the Ministry's. It seems that there is already a PVO activities coordinating committee which should facilitate the efforts of the Primary Health Care Coordinating Commission.

As for international organizations such as the WHO and UNICEF, even though they have not had a very active part to play in Project field activities, their moral and practical

support in the organization of training courses and seminars, and in giving fellowships, is undeniable. Here again, the Primary Health Care Coordinating Commission is called upon to fulfill a valuable liaison role between the Mauritanian Government and these international organizations. For example, the contribution of the WHO in the area of technical assistance and staff training is already well known, as is UNICEF's role in the provision of supplies and equipment for education and immunization.

This campaign in favor of the integration and development of primary health care in rural areas should also extend to all Government agencies involved in rural development. Many of these agencies were pointed out to the evaluation team in the course of its work. Some of them, such as PHARMARIM, played a truly decisive rôle in the implementation of the Rural Medical Assistance Project. Others, such as certain departments of the Rural Development, Agriculture and Education Ministries, the Mass Education Structures and the Hydraulic Department were not particularly involved in the program, which is a shame.

The role of intersectoral and interdisciplinary cooperation in the success of health programs, especially in rural areas, has been acknowledged in all the countries in the world. Collaboration and cooperation with departments such as those mentioned above, especially when they carry out

their activities in the same village as a health worker, can only be beneficial to planned community action. If we can reach a stage where we plan action jointly, this is even more ideal, and the reciprocal benefits in these cases are immense.

Such cooperation also expands the range of action of the health worker himself. He will have a wider vision of community organization which will lead him to undertake other activities with the assistance of the village health committee for the benefit of the Community. In the course of our travel through the 15 villages of the Trarza Project, we were already favorably impressed with the interest shown by CHWs and CSCs in kitchen or community gardens. In two cases, we found a mothers' club, in which the CHW and CSC participated: these, we feel, are encouraging results. It would be a good idea to stimulate such initiatives as much as possible.

C - OVERALL PROJECT ADMINISTRATION

Although from the beginning, there were gaps in Project planning, the obligations of the various agencies participating in the Project were, however, fairly clearly established. We must consider now whether each agency has indeed fulfill its commitments:

1. The Government of the Islamic Republic of Mauritania (GRIM) -
   The Ministry of Health had the following obligations:
   a) Appoint a Project Director to be responsible for Project implementation.
   b) Appoint a health education and training specialist.
   c) Appoint two nurses to act as instructors/supervisors.
   d) Appoint nurses in the CHW training centers.
   e) Authorize PHARMARIM to approve a distribution agent for pharmaceutical products in each community where there is a training center.
   f) Equip facilities in Rosso, R'Kiz, Boutilimit and Mederdra for CHW training courses.
   g) Equip a central office for the Project in Nouakchott and facilities for seminars.

It cannot be said that the GRIM has punctually and completely met all these obligations.

The Project Director was indeed appointed, but not the educator. As for the latter, the Government maintained that technicians from the Lome center who came to Nouakchott to carry out some training would largely suffice. It, therefore, saw no need for other technical assistance in education and thus the appointment of a Mauritanian counterpart. One of the two Project supervisors was also to have worked as an educator and serve as a counterpart for the trainers from the Lome center.

The nurse supervisors and trainers were gradually appointed as their presence was needed, but PHARMARIM always refused to appoint the planned-for agents for the training centers, relying only on its office in Rosso. Only very recently have depots for pharmaceuticals been authorized in Boutilimit Mederdra and R'Kiz. We have already seen the difficulties that this delay has caused in the replenishment of medicines for the CHW's kit.

Finally, a tiny office was assigned to the Project in Nouakchott, but for CHW training courses, space had to be rented in the Departments. Contrary to the Memorandum of Understanding, the expenses were paid by USAID with Project funds.

2. USAID

USAID had the following commitments:

a) The appointment of a technical consultant in public

health as the Mauritanian Director's counterpart.

b) The appointment of an education and training specialist.

c) The appointment of short-term contract specialists/ consultants as specifically needed by the Project. Technical assistance was planned for the community health committees in particular to assist them in creating and managing the local funds needed to purchase and distribute the medicines set forth on the CHW list.

d) Project evaluation: funds were provided for three evaluations during the life and at the end of the Project.

e) The purchase of materials and supplies for the Project and the preparation of corresponding PIO/Cs. This was the responsibility of the USAID Mission in Nouakchott.

USAID did indeed make the necessary arrangements to appoint the Public Health Consultant. These arrangements included first the formalities of engaging a consulting firm, Dimpex Associates, Inc. Thus, the Public Health Consultant was in Nouakchott as of December 1980.

As for evaluations, the Project had a mid-term evaluation during May 1982. The present evaluation is, therefore, the second and last Project evaluation.

3. DIMPEX ASSOCIATES, INC.

Dimpex Associates, Inc. was the consulting firm selected by USAID to implement the Rural Medical Assistance Project in cooperation with the Ministry of Health.

According to the contract, the firm had to provide the Project with the following:

1. A Public Health Consultant
2. A training and Education Consultant
3. Short-term consultants as follows:
   a) An X-Ray technician (two months)
   b) A Community Development Technician for health (two months)
   c) A Radio-Communications Expert (one month).

These conslutants were to assist the people chosen by the Ministry of Health in continuing and completing Project objectives. These objectives are already known:

- The selection and animation of villages and the training of CSCs.
- The selection and training of CHWs.
- The collection of health, demographic and other data.
- The use of the radio by the CHWs and Ministry Departments, if possible, in case of emergency.
- The promotion of the replenishment of basic medicines in the CHW kits.
- The supervision of CHW training and activities and the re-orientation of health staff.

- The strengthening of other regional health units.
- Serving as the liaison between the GRIM and USAID (for the Rural Medical Assistance Project).

In fact, Dimpex only furnished the Public Health Consultant. We know that the Mauritanian Government had proposed another solution to replace the Education Consultant. There was a lot of discussion about short-term consultants. First, their time was increased from five to eight months. Then, instead of consultants, a contract with PRICOR was spoken of to do research on Project activities. In the end, there was only one short-term consultancy during the entire project. There were no other consultants, nor was PRICOR called in. We must add that the Mauritanian side was never very enthusiastic about the hiring of these consultants.

We have already seen that the Education Specialist was eliminated because the Mauritanian Government preferred to leave the education task to the Lome group of trainers assisted by its supervisors.

We understood that the idea of trying radio communication between the CHWs and dispensaries was not very carefully considered. It was not at all practical, and we do not think that the failure to meet this objective has affected the Project in any way. On the contrary, this can be considered in a certain sense as a sort of saving for the

Project.

The X-ray consultant was especially planned for the Rosso hospital, to which special assistance was to be given to extend and improve its services. But, since the assistance received was rather limited, this technician was not found to be necessary.

On the other hand, we deplore the fact that the animation specialist, needed in a project of this nature which is totally dependent on community participation, was not hired. More in-depth work would certainly have been done with CSCs, and precious experience would have been accumulated for the future extension of primary health care services in rural areas.

In considering the Dimpex contract, it is difficult to find evidence of provisions to support all the administrative responsibilities the firm assumed in the implementation of the Project. Its role was, it seems, to be primarily technical. In fact, however, it seemed to play a predominantly administrative role.

We have already indicated in passing the administrative weaknesses of an organization chart with two direct lines of authority: a technical line under the Project Director, a Mauritanian, and an administrative line under the foreign Administrative Consultant. Although the Project represents only one entity, in fact, both at the office and in the

field, we found it difficult to see how it could function with two heads and two parallel lines of authority. It is a situation which could have constituted a source of conflict. The fact that the Project, in fact, ran quite smoothly, is a tribute to the tact of the Director and Public Health Consultant.

However, this situation, coupled with the circumstances described in a previous section concerning the presence of a USAID project manager and the initial lack of a local revolving fund, certainly made Project management all the more difficult.

From a logistical point of view, the Project has complained about the slowness of the purchase of materials and supplies. This was the case for an order of materials for CHW kits that was placed with a supplier who did not have the requested articles at the time. This considerably delayed Project activities. We think that it would be to the advantage of this type of project for USAID to simplify its logistical procedures and make them more flexible. The essential thing is to do good basic planning from the beginning and have a good monitoring and follow-up system for the implementation of the Project.

From a financial point of view, the Project began practically without an accounting department; it even seems that a well-established accounting system never existed, nor was there a financial plan where all line items would

be clearly set forth with procedures to be followed for disbursements.

The Ministry of Health had problems paying for the training centers, and USAID finally had to pay these costs. It was the same for the salaries of the administrative support staff and the drivers, who were not explicitly provided for at the beginning. For all these reasons, the need for a revolving Project fund was felt. After much discussion, an agreement was made with USAID in February to establish this fund. Management of the fund was entrusted exclusively tothe Public Health Consultant, which increased her responsibilities to a point where she could barely deal with the technical needs of the Project.

It seems, however, that the creation of this fund could only partially solve the local expenses problem, considering the slowness of the reimbursement process. Once funds have been spent, vouchers must be sent to USAID for reimbursement to the Project. But USAID cannot reimburse locally, so these vouchers must be sent to France where, as we see, there were delays at various levels; first, in the Project accounting department, where we noticed a certain amount of disorder, then at USAID/Nouakchott and finally, in France, where the Project's problems are not of prime importance. We were told that certain reimbursement requests can be held up for six months or more before

being paid. Project activities were almost paralyzed at times. At the end of the first training session, for example, money for the payment of trainees failed to arrive on time, and it was necessary to extend the duration of the course for several days to await the arrival of the funds. On another occasion, the supervision visits had to be temporarily stopped for a time because of a lack of funds to procure gasoline. It was necessary at that time to contract for a loan to unblock the situation.

It was stated in the Memorandum of Understanding, that, "the responsibility for Project monitoring shall be assumed mainly by the USAID Mission in Nouakchott with additional technical assistance supplied by USAID/Washington as needed." If this technical monitoring had been effective from a financial and accounting point of view, the Project would very certainly have benefited in time from an accounting system enabling it to avoid the numerous accounting weaknesses revealed. According to the accountant himself, he was incapable of doing the work alone, and needed an assistant. He made a request for one many times, to no avail.

Finally, we think that good planning is always necessary from the beginning for projects of this type. Even if it is impossible to foresee everything in detail, certain basic principles governing administration and management must be observed if set-backs that could hinder normal

project operation are to be avoided. In a system of this type, the National Project Director and his foreign consultant counterpart must complement each other to form one directorship. In general, it will be easier for the foreign consultant to solve certain problems that occur with the donor agency, whereas the National Director will intervene more effectively in the case of issues of a purely local order. But the principle of a united directorship must remain, and there is absolutely no question of having one director for the technical or national staff and another director for another portion of the staff.

Our general impression is that although the technical side was well thought through, Project planning in the administration and management domaines was neglected. It was, therefore, often necessary to solve problems on an ad hoc basis as they arose.

D - ECONOMIC ANALYSIS

1 - Methodology and Findings

The main objective of the economic analysis performed upon Project Trarza was to determine the historical cost of each activity in which the project engaged over its three year life. In addition to this, specific information was gathered in the field to assist in evaluating the economic relationship between the health worker, the village, the Ministry of Health, USAID and the project itself. To accomplish this, the evaluation team relied on information furnished by all parties involved. Financial and accounting data was supplied by the USAID mission in Nouakchott, the USAID funded contractor (Dimpex Associates), the Ministry of Health and a team of statisticians from the Bureau of the Census who had just completed a comprehensive study of various aspects of the project. The economic analysis employed all of these inputs in an effort to identify the sources of support and the ultimate destination of all funds spent by the project in the course of its activities. In order to insure that the financial data collected was in fact meaningful, the team made an attempt to reconcile it to official project or mission records which could be demonstrated to be accurate.

Unfortunately, the technical achievements that made Project

Trarza a success in the field were not enjoyed by its accounting department. A review of the project's local currency revealed that the records are neither current nor well maintained and that internal controls are inadequate to insure proper recording of transactions and to safeguard project assets. As a result of these weaknesses, it was not possible for the evaluation team to isolate actual individual activity costs. This is attributable not only to the considerable disorder encountered in the accounting records and documentation, but also in other supporting areas, such as trip logs and vehicle reports, which were found to contain incomplete and inaccurate information. Therefore, the team was stymied from both directions, finding itself unable to quantify the amount of funds employed and at the same time unable to establish a reasonable basis for their allocation to the various project activities.

2 - Accounting Weaknesses and Recommendations

2.1 Projet Local Currency Records -

The Project does not maintain formal set of books. Instead, transactions are posted to a series of unbound worksheets. This makes them vulnerable to damage and loss.

Recommendation:

At the minimum, the Project should maintain two

separate cash receipts and disbursement journals, one for transactions paid by check and the other for petty cash payments.

2.2 Filing of Support Documents -

The Project does not have a system for filing documents either before or after they have been processed for payment. As a result, they are vulnerable to loss and are not easily located by either the accountant or persons wishing to examine documentation of project expenses.

Recommendation:

Paid invoices and receipts should be assigned a sequential voucher number and filed monthly by number. Unpaid obligations should be posted to an accounts payable listing and should be kept in an open file until paid.

2.3 Bank Reconciliations -

The Project does not reconcile its bank statements to its disbursement records. Therefore, it is not possible to verify the accuracy of transactions posted by the bank nor of the disbursements made by the Project.

Recommendation:

The Project should perform bank reconciliations monthly as soon as the statement is received from the bank. A

standard form should be designed for this purpose and should be signed by the person preparing it and also by the project director.

2.4 Reimbursement Requests -

The Project prepares its requests for reimbursement from AID based on invoices and other paid documents e.g. payroll listings, expense reports, etc.

Recommendation:

Reimbursement requests, although supported by invoices and other documents, should be prepared from the disbursement journals. This insures that all documents processed by the Project have been duly submitted for reimbursement.

2.5 Monthly Closings -

The Project does not close its books on a regular basis. Reimbursement requests are prepared sporadically whenever funds are required. As a result, it is impossible to determine the amount spent by month for each expense category.

Recommendation:

The Project should close its books on a monthly basis and process a reimbursement request at that time.

2.6 Timeliness of Entries -

Invoices paid are often not posted to the records for months, making attempts at reconciliation difficult and also causing period expenses to be misstated.

Recommendation:

All entries to project records should be posted on a timely basis. This includes both receipts of advances from AID and disbursements to suppliers or employees.

2.7 Advances to Employees -

The Project does not control advances to employees nor does there exist any follow up mechanism to insure that advances are properly closed out through the submission of receipts or unused cash. Instead, all advances are posted to a global accounts receivable listing which has never been reconciled in the history of the Project.

Recommendation:

An individual advance record should be maintained for each employee who receives expense advances. A control account should also be maintained containing all amounts outstanding and the names of the persons concerned. Any employee who has not justified an outstanding amount should not be advanced any additional funds.

2.8 Salary Advances -

Contrary to good managerial practices, the project makes

salary advances. There is no system in place to insure that the amounts advanced are deducted from the subsequent paycheck.

Recommendation:

The Project should discontinue the practice of making salary advances to employees.

2.9 Petty Cash -

The Project maintains an excessively high petty cash fund. On numerous instances the petty cash on hand was observed to exceed $17,000. This amount is far in excess of the Project's requirements for carrying out its daily activities.

Recommendation:

The Project should keep on hand only the funds that are needed to cover one week's transactions, at the most. A reasonable figure would not exceed $1000.

2.10 Payments to Suppliers -

The Project makes a substantial number of payments in cash to suppliers who could be paid by check.

Recommendation:

Payments should be made by check whenever possible.

2.11 Petty Cash Vouchers -

The Project does not record petty cash slips for items paid from the petty cash fund. In addition, the slips are not prenumbered, which contributes to the difficulty of performing reconciliations.

Recommendation:

The Project should make out prenumbered petty cash vouchers for all non-check transactions. These vouchers should be posted daily to a control sheet and reconciled every time the petty cash fund is reimbursed.

2.12 Petty Cash Limit -

The Project does not have prestablished limits on petty cash purchases. Large items are paid in cash.

Recommendation:

The Project should establish a ceiling on individual payments that can be made by petty cash. In general, petty cash payments should not exceed $100.

2.13 Purchase Orders -

The Project does not prepare a proper, formal purchase order for purchases that exceed a predetermined amount. As a result, it is not possible for anyone to determine whether or not merchandise received by the Project was in fact ordered and approved by management.

Recommendation:

Purchase orders should be prepared for all purchases that exceed the petty cash disbursement limit. The purchase orders should bear the signature of the person authorizing the purchase. The purchase orders should be on prenumbered multicopy forms and at a minimum, a copy should be sent to the supplier, the Project accountant and the person in charge of receiving the goods.

2.14 Approved Vendor Lists -

The Project does not maintain a list of suppliers that are approved to furnish goods and services. In the event of the absence of management or a change in management, the persons responsible for the Project are not able to identify reliable and economical suppliers with whom the Project has had satisfactory experience.

Recommendation:

The Project should prepare approved vendor listing which list the name of the suppliers, the items most frequently purchased and the most recent unit cost.

2.15 Receiving Reports -

Receiving reports are not made out when inventory or capital investment items are received by the Project. This results in a lack of control over project assets, since it is not possible to verify in the records

whether or not a given item was received and who was responsible for its custody.

Recommendation:

The Project should issue a receiving report for all items received from suppliers or other sources such as USAID. The receiving reports should be prenumbered and should be signed by the person responsible for the custody of the inventory owned by the Project.

2.16 Supplies Requisitions -

The Project does not have a proper system for recording supplies issued from inventory. The supplies requisitions are posted to an inventory journal, but are not recorded in a manner which allows management to control inventories by item.

Recommendation:

The Project should use printed supplies requisition forms which should be signed by the Project administrator before the warehouse is allowed to release items from stock.

2.17 Perpetual Inventory Records -

The Project does not maintain perpetual inventory cards. There is no way of identifying the actual number of units on hand at any one time.

Recommendation:

The Project should maintain a perpetual inventory card for each major item stored in the warehouse. This should include such things as vehicle spare parts, tires, health workers medical kits and pharmaceutical products. These items should be entered into inventory based on receiving reports and removed by means of supplies requisition slips.

2.18 Fixed Asset Listings -

The Project does not maintain a proper list of fixed assets. There is insufficient control over equipment and fixtures belonging to the project and the person responsible for each item cannot be identified in the records identified.

Recommendation:

The Project should prepare fixed asset cards for all items belonging to the Project. At a minimum, the cards should include a description of the item, its location, its historical cost and the person responsible for its custody.

2.19 Physical Inventories -

The Project does not reconcile its physical inventories of supplies and fixed assets to the Project records. Thus, management is unable to recognize and investigate

discrepancies on a timely basis.

Recommendation:

At a minimum, the Project should take one complete physical inventory of all supplies and fixed assets and this should be reconciled to the appropriate accounting records e.g. fixed asset listings, the general ledger, etc. Any discrepancies should be investigated and resolved on a timely basis.

2.20 Financial Reporting

The Project does not prepare monthly operating statements for its local currency accounts. Therefore, management cannot evaluate the financial status of the Project and is unable to identify and correct operating problems before they go out of control.

Recommendation:

At a minimum, the Project should prepare a monthly report listing expenses for the month and also year to date. It would be helpful to compare these figures to the same numbers for the previous year and also to the operating budget.

2.21 Budgeting -

The Project operates on a global budget which identifies only the total amount of funding available for its duration. This is insufficient for controlling Project

activities on an ongoing basis.

Recommendation:

The Project should establish a monthly budget by line item. At month end, a report of actual vs. budgeted expenditures should be prepared and reviewed by management. Corrective measures should be taken promptly in cases where serious unfavorable variances are observed.

2.22 Cash Flow Forecast -

The cash flow forecasting system presently employed by the Project is inadequate to identify Project obligations and liquidity requirements. There is no accurate basis for its preparation since there are no accounts payable listings and no documented records of recurrent costs. This may cause excessive delays in obtaining funds from USAID sources when unforseen expenditures result in urgent requests for additional advances, especially in light of the excessive delays the Project has experienced in obtaining reimbursement checks from AID.

Recommendation:

The Project should prepare a listing of monthly recurrent expense items and use this in conjunction with its accounts payable listings and its monthly budget in order to prepare a monthly cash flow requirements statement

which estimates liquidity requirements for at least the following three months.

2.23 Account Distribution -

The present chart of accounts used by the Project is inadequate for capturing the detailed financial and operational information required by management in order to keep track of expenditures by activity.

Recommendation:

The Project should create an expanded chart of accounts based on the USAID system. Each of the principal line items in the USAID chart of accounts should be broken down into sub-accounts which reflect a greater level of detail than that required to process reimbursement requests. At a minimum, the system should identify separate and discrete inputs such as salaries, per diems, fuel, spare parts, medical supplies and other items which make up as significant part of Project costs.

2.24 Vehicle use Records -

The vehicle mileage reports filled out by the users of Project vehicles are incomplete and inaccurate. In some cases, only about one third of the miles indicated on the odometer could be explained by the vehicle logs. Information on fuel and oil consumption is inaccurate and the locations visited are not always clearly indicated.

Recommendation:

Project management should stress the importance of filling out vehicle logs accurately and on a timely basis. If necessary, payment of per diems could be made conditional upon receipt of completed trip reports and vehicle logs.

2.25 Procedures Manual -

There is no manual of written procedures governing the Project's accounting policies. An employee must seek out the advice of the Project director or the expatriate advisor, neither of whom are trained in the area of accounting or financial management. This results in inconsisitent and often contradictory decisions.

Recommendation:

The Project should seek the assistance of USAID to prepare a comprehensive procedures manual that clearly sets out Project policy on all financial and accounting matters.

3 - Conclusions

The local currency accounting system at Project Trarza is out of control. Documentation is weak. Accounting procedures are nonexistant. Authority is poorly defined. Accounts are out of balance and reconciliations impossible. There is no audit trail. In short, there has never been a real accounting system at Project Trarza. This should not

come as a surprise to anyone, since there has never been an attempt to create a system in the first place.

The problem originated at the very beginning of the Project when USAID began to advance funds to the local currency account when there was no system installed to manage them. There was not even an accountant. The Project then began to make significant expenditures in order to get its activities under way. The USAID funded contractor, Dimpex Associates, was never responsible for managing the funds since this was outside the scope of the duties laid out in their contract. The expatriate advisor did make an attempt to regain control over the accounting, but was ineffective since this was well out of her area of professional expertise and in addition, made impossible demands on her time. Numerous requests for technical assistance were transmitted to AID, but there was no response. In May of 1981, the Project artist was assigned the task of keeping the books, but he left shortly thereafter, having done little to remedy the already snowballing chaos. This accountant was replaced by another Mauritanina in July, 1981 and he has remained for the duration of the Project. Unfortunately, he was also assigned numerous administrative duties which prevented him from dedicating all of his time to getting the system back under control. Maintaining a current and well operating system is a full time job, even on a smaller project.

However, cleaning up a system which has suffered from two years of neglect and maintaining a well operating system at the same time is clearly beyond the abilities of a single person, independent of that person's level of training. The accountant did make numerous attempts to reform several of the problem areas where the Project was experiencing serious deficiencies of internal control, but he was not supported by Project staff and the badly needed measures were never implemented. What controls did remain were resisted by Project personnel, who often refused to comply, causing large gaps in the records which cannot be reconciled. This includes vehicle mileage logs, trip reports, supplies requisitions, fuel ticket utilization, petty cash advances and other items which represent a considerable portion of the Project's operating expenses.

The lesson learned from Project Trarza is that it is absolutely essential that an accounting system be designed and set up before the Project begins any local acitivities. An accountant for a period of several months. Subsequently, periodic supervisory visits should be scheduled to monitor the Project's progress and to make whatever modifications or adjustments may be necessary in order to keep things functioning smoothly. USAID should insist on accurate, timely monthly reports and should refuse to make any new advances until the previous advance has been accounted for with the proper forms and support documents. USAID, however,

must also cooperate by processing the Project's reimbursement requests expediently and informing Project management promptly of any difficulties, such as disallowed items. Many of the problems encountered could have been avoided through simple communication.

Aside from providing essential management information, the value of a good accounting system as a source of statistical information is frequently overlooked. If an accounting system is properly conceived from the beginning and well managed during the duration of the Project, valuable data can be accumulated without having to commission expensive studies or consultations. The accounting system can be used to capture statistics on vehicle usage, fuel consumption, repair expenses, training costs, regional office overheads, personnel costs and many other items which are invaluable in managing Projects, comparing efficiency levels between projects and planning new projects for the future. It is important to note that any accounting system, however well conceived, will eventually break down if there is not a well defined line of authority in the organization. Management must collaborate with the accountant in setting Project policies and procedures. Once these have been agreed upon and have been documented in writing, the management undermines the accountant's authority granted by the procedures, the system is not going to last very long.

If the Project is to have a good accounting system, it must have also a qualified, full-time accountant. In larger projects with a significant number and variety of transactions, additional accounting clerks may be required. It is entirely unreasonable to think that a project technician can keep the books in his or her spare time. Attempting to save money in this fashion will only result in inaccurate records and ineffective controls and will ultimately increase the cost of the Project, compromising the quality of the technician's work in the process.

4 - The Costs of Project Trarza

It was unfortunate that the considerable disorder encountered in the accounting department did not permit the evaluation team to determine the actual costs of the project through the local currency account could not be quantified. This includes vehicle repairs, spare parts, per diems paid to nurses, drivers and health workers, fuel, oil and other operating expenses. In the opinion of the evaluation team, the potential margin of error was significant enough to cause a material mistatement in the estimate of local currency expenses and for that reason this report will not include an estimate of recurrent costs.

It was possible, however, to create a computer model of the supervision function. The model allows the manager to make

certain assumptions about a supervision trip e.g. number of days, number of villages to bevisited, kilometers to be driven, percentage of off-pavement driving, vehicle mileage and fuel cost, number of nurses travelling, per diems to be paid, etc. The cost is automatically calculated based on the assumptions entered. A sample of the cost of a typical supervision trip is shown on the next page.

PROJECT TRARZA

THEORETICAL COST OF AN ANIMATION OR SUPERVISION TRIP

DURATION OF TRIP IN DAYS:	15
NUMBER OF KILOMETERS TO BE TRAVELLED:	1500
NUMBER OF VILLAGES TO BE VISITED:	12
NUMBER OF VEHICLES TO BE USED:	1

	UM.	U.S.
VARIABLE COSTS:		
VEHICLE: FUEL	8625	157
FUEL PENALTY-SAND	1294	24
REPAIRS/OIL	6452	117
TOTAL VEHICLE:	16371	298
PER DIEMS:		
SUPERVIS. NURSES	6000	109
NURSES	4500	82
DRIVERS	3750	68
TOTAL PER DIEM	14250	259
		0
MISCELLANEOUS:	3300	60
		0
TOTAL VARIABLE	33921	617
FIXED COSTS:		
SALARIES:		
SUPERVIS. NURSES	8504	155
NURSES	7425	135
DRIVERS	5192	94
TOTAL SALARIES	21121	384
TOTAL MAJOR COSTS	55042	1001
VARIABLE COSTS:		
PER DAY:	2261	41
PER KM:	23	[illegible]
PER VILLAGE:	2827	51
TOTAL COSTS:		
PER DAY:	3669	67
PER KM:	37	1
PER VILLAGE:	4587	83

5 - The GRIM and its Ability to Pay -

a) Before the GRIM will be able to support the burden of maintaining a primary health care system, it will be necessary to transform the existing structure and consolidate many of the present activities. This must be done in order to reduce both general overhead and also variable costs associated with specific functional activities. The present Project required substantial inputs of technical assistance and commodities in order to get its activities under way. This can be clearly seen in the following summary of Project obligations cut off as of November 15, 1983.

DIMPEX - U.S. Contract	$	533,000
Direct Support - Housing	$	149,000
Operational Support -	$	762,000
Training	$	200,000
Unallocated Funds	$	18,000
Total Obligations	$	1.662.000

The first item represents a variety of organizational and operational costs. The second item is the total cost of providing housing for the expatriate advisor. Together, they make more than 40% of total Project funding.

Technical assistance is a very expensive component of any project. This is due to the cost of transporting and housing foreign experts whose compensation well exceeds local Mauritanian standards. Since the Project

is still emerging from a pilot phase, technical assistance will continue to be required, at least during the foreseeable future. This is especially true of the critical transition period at the beginning of the new project. The cost associated with providing continued and uninterrupted support are beyond the GRIM's ability to pay and will have to be underwritten by an international donor. Presumably, as the Mauritanian primary health care system picks up momentum over the years, there will be less demand for foreign technical assistance, because local experts will have been trained to replace their foreign counterparts. Eventually, technical assistance will cease to be a recurring cost item.

There are other areas which in their present state are too expensive to be absorbed by the GRIM. Vehicles and vehicle operating expense are very costly, and require scarce foreign exchange. By taking strict cost control measures, the fuel and repair bills may be kept to a tolerable level, but the vehicles themselves will probably have to be replaced every three years by an international donor. It is essential to have a motor pool in good working order since such a large part of the Project's activities take place in the field and require supervision on a regular basis. It might be advantageous for USAID to consider setting up a central garage for Project vehicles which could also double as a training center for mechanics.

Another significant recurring cost item is the per diem expense which is paid to teams that are sent into the field. In theory, the per diem payment is intended to reimburse the employee for out of pocket expenses incurred during official travel. However, it is widely considered to be a sort of supplemental compensation, much like a bonus - a reward for enduring the discomforts of extended travel in the field and a recognition that the government salaries are insufficient to provide for all of their needs. The nurses pay rates are indeed low. A supervising nurse makes less that $250 a month and ordinary nurses are paid only about $200 a month. With the present per diem system, they can nearly double their income by spending a continuous month in the field. This creates a distortion in the system which has two negative consequences. First, the nurse has an incentive to stay in the field as long as possible in order to maximize his per diem. This direct effect of this is to delay the work schedule and increase the support costs, such as fuel and vehicle wear. Secondly, the extended stays of the supervisory teams may put an additional strain on the host village, since it is the village who, according to custom, must house and feed all guests. The nurses, in reality, do not have much in the way of out of pocket expenses during their travel. The challenge to be faced in the new project will be to create a system which eliminates the incorrect incentives but

yet is fair to the nurses in recognizing that they are in fact, inadequately compensated in light of their responsibilities. One possible approach would be to reduce the per diem rate to a level where it is no longer an incentive to travel but at the same time provide some sort of additional compensation, perhaps in the form of a salary supplement. Another solution is to redefine the job grade presently held by the nurses and promote them to position that has a higher corresponding salary level. In any event, it is the general opinion of the team that the new project will experience serious difficulties in the implementation phase if the per diem issue is not resolved on an equitable basis.

The climate and geography of Mauritania makes travel difficult, expecially during certain times of the year. Surface travel is slow and expensive. The cost effectiveness of the Project has been hampered by a lack of long range planning of activities and a failure to calculate their respective costs. Well conceived planning efforts will be required to insure that all Project activities are consolidated to the largest degree possible. A training session that brings health agents together might be used to accomplish other tasks such as data gathering. A supervisory trip should be used similarly - perhaps to update the village census, or to visit another nearby village who has not yet designated a health agent. The cost of providing the health worker with Project

transportation to the training site should be calculated and compared to the alternative of simply reimbursing him or her in cash. Repeat trips to the same area are very expensive, and using scarce resources unwisely will simply mean that under a more austere budget, less field visits will be made due to economic constraints. The financial expertise available to USAID through the Sahel Regional Financial Management Team would be a good source of technical assistance to help the GRIM establish an operating budget consistent with these objectives.

The present system is also not cost effective as a result of the weaknesses discussed earlier in the economic analysis section of the report. The lack of internal control over most of the Project's activities has led to runaway costs. Fuel expenses are much higher than necessary because no attempt was ever made to relate fuel consumption to kilometers driven or villages visited. It is estimated that the monthly fuel bill may reach $2500. Vehicle repairs are even more difficult to estimate, but by the time the Project terminates in December 1983, the repair bill may well exceed the $131,000 original cost of the vehicles. Per diems are not controlled, since payment requests cannot be reconciled to trip reports or vehicle logs. Petty cash advances for trip expenses are not followed up and closed out. These are examples of the sort of small items that when added up, can contribute significantly towards increasing a project's

cost. The element of control becomes very important when the limited means available to the Government of Mauritania must cover a wide variety of needs in many sectors. A lapse in control could lead to a project falling short of its objectives. Thus, the personnel from Project Trarza who go on to become part of the future project will have to adjust and become accustomed to a new austerity, because the unlimited funding enjoyed by the first project will cease to exist once the integration with the Ministry of Health is completed.

The team reached the conclusion that the GRIM is not capable of supporting the Project in its present form. This is due to the high costs that have resulted from the poor control and planning presently exercised by the Project coupled with the burdensome charges for foreign technical assistance. However, with appropriate help from USAID in the establishment of a sound financial planning and control system and technical assistance from the United States and other foreign donors, the GRIM will probably be able to provide the support necessary to keep the primary health care system going.

b) The Local Financing Mechanism -

It is the task of the GRIM to keep the training and supervision efforts going. It is the ultimate responsibility of the community to provide the necessary local support to keep the system working. In order for it to

continue to function, the community must provide the funds necessary to replenish the health worker's medical supply kit and also furnish the worker with some means to support himself and his family and fulfill his basic needs. The field trips taken by the team revealed that the community frequently levies from every family a fixed periodic charge which gives them access to health care. In some cases, each person seeking treatment must pay a service fee. In other cases, a small profit is made on the resale of pharmaceuticals. A wealthy villager may take on the responsibility of paying for everyone himself. Whatever the method employed, the system appears to be working. The team observed numerous villages where the medical kit was incomplete, and in most cases the health worker claimed that it was not entirely resupplied because of lack of funds. In spite of this, the village is likely to continue to support the system as best as they can, given the importance attached to having basic health care services available locally.

It is impossible to place a monetary value on any specific service rendered to the community. People will pay what they can afford and will do whatever is necessary to obtain the money. It was clear that in general the villagers placed greater importance on replenishing the medical kit than paying the health worker.

There does not appear to be a significant relationship

between the financing mechanism and the health worker's activities. Even the desertion rate was poorly correlated with compensation in most groups. If the financing mechanism is not working, or if the village is simply too poor, then the lack of medical supplies will begin to deteriorate the quality of health care. This, together with a lack of monetary incentives may be a negative factor for a health worker's productivity. However, there is no data to suggest that his or her performance is proportional to whatever compensation received.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS THE FUTURE RURAL HEALTH PROJECT

The careful reading of chapter III of this report will have allowed the reader to see the evaluation team's conclusions and recommendations for the future of primary health care in the Islamic Republic of Mauritania. However, we think it necessary to summarize here the recommendations that could be proposed to the Ministry of Health of Mauritania and to USAID to further the successful implementation of on-going projects that attempt the integration and extension of primary health care in rural areas.

RECOMMENDATIONS

A. Technical Aspects

A.1 Village Selection

A.1.1. Retain the evidence of village interest as an important criterion for village selection.

A.1.2. Continue to accept villages of less than 200 people when larger villages have been already covered.

A.1.3. Enlist the help of other services to verify and up-date data on the region's

population and on the size of villages not covered by the Project, in order to have a clearer idea of the Project's real coverage.

A.2 Village Animation

A.2.1. Define with the Mauritanian Red Crescent the role that each organization should play in setting up a primary health care system, so as to avoid the duplication of efforts and the use of different approaches at village level.

A.2.2. Provide a common training experience for all people that will participate in the animation of villages for primary health care activities.

A.2.3. Prolong the village animation phase to make it more educational in nature and allow sufficient time for consultation among villages before they sign the Agreement Document.

A.2.4. Specify the activities that should make up the animation phase (weighing and consultation of children, study of village sanitation problems, discussions with villages about the information gathered, etc.).

A.2.5. Make every effort to ensure the participation of a maximum number of villages from different groups in the discussions held during the animation phase.

A.2.6. Design a more detailed questionnaire/guide to make sure that animators discuss certain specific points with villages before they sign the Agreement Document.

A.3 The role of Community Health Committees (CSC)

A.3.1. Encourage the CSC to be more active in mobilizing villages to take part in village hygiene and health education activities. The CSC should play a greater role in controlling the use and sale of drugs by the CHW. These two aspects of the role of the CSC should be discussed during the animation phase and mentioned in the Agreement Document.

A.3.2. Make use of supervision visits to help the CSC to mobilize villages to undertak specific health-related activities.

A.3.3. Work with the CSC so that they call on other people in the village that can help promote these activities (teachers, religious leaders, etc.), especially making sure that women are represented.

A.4 Health Agent (CHW) Selection

A.4.1. Try to lower the CHW drop out rate by working with villages to ensure the choice of married people, older people (35 or more), preferably literate people, and people who have some previous experience with modern or traditional health care.

A.4.2. Interview each CHW selected by the committees, discuss the choice with the CSC and if necessary, work with them to revise the choice that they have made.

A.4.3. Discuss with each CSC, the possibility of choosing and supporting two Health Agents, to assure the continuity of Primary Health Care in case of absence or drop out. If possible, one of the CHWs should be female.

A.4.4. Build into the planning of any future primary health care project, the training of health agents to replace possible drop outs.

A.5 The work of the Health Agents

A.5.1. Make a simple action plan with each Health Agent and committee that specifies the activities to be undertaken in the village. Keep a copy of the plan in the

village dossier and refer to it during supervision visits.

A.5.2. Define more clearly CHW's tasks, particularly in the areas of preventive health education.

A.5.3. Identify more precisely the activities that the CHW and the traditional midwife should carry out together.

A.5.4. Orient the Health Agents towards a more systematic approach to the prevention of dehydration from diarrhea.

A.5.5. Organize experimental activities for the nutritional surveillance and ambulatory treatment of malnourished children in the villages.

A.5.6. Make greater use of Health Agents in the treatment of respiratory disease, the identification of venereal disease, and the protection of target groups from malaria by the prophylactic use of Nivaquine.

A.5.7. Assist Health Agents to identify more systematically children that are not fully vaccinated, to better support the activities of the EPI program.

A.5.8. Assist Health Agents to better plan domiciliary visits in order to follow up the health problems of each family more effectively.

A.5.9. Develop a few simple visual aids for each health priority. These should serve as a guide for the Health Agents during group education sessions.

A.5.10. Assist health Agents to mobilize other people in the village as resources to reinforce health education activities (teachers, religious leaders, traditional midwives, etc.).

A.5.11. Consider the possibility of organizing educational "campaigns", organizing health personnel, health agents, traditional midwives, health committees, personnel from other sectors, radio, etc, in order to focus efforts on certain priority health problems.

A.6. Supervision of Health Agents

A.6.1. Adjust supervision norms so that each CHW receives one visit every two months for the first two visits and every four months after this initial period.

A.6.2. Make a quarterly plan of supervision visits to be carried out in each department according to the established norms.

A.6.3. Mark the supervision visits made to each village on a wall-chart in each department to better monitor the work done and also

to avoid long gaps between supervision visits.

A.6.4. Apply the post-test of health agent knowledge once during the second supervision visit and before re-training sessions, as necessary.

A.6.5. During supervision visits, pay more attention to the work done by the Health Agents and the health committee, the difficulties encountered and their possible solution.

A.6.6. Identify some key indicators to allow the follow-up of priority activities carried out by each Health Agent.

A.6.7. Develop a much more simple supervision form that includes the indicators and allows supervisors to comment on the problems found in the village, the Health Agents' problems, the activities carried out since the last supervision visit, the activities planned by the health committee and the CHW, and the activities carried out during the supervision visits.

A.6.8. Use supervision visits to support the Health Agent in some of his priority tasks; for example, health education, surveillance for young children, etc.

A.6.9. Encourage nurses from the Department Health

Center and from the health posts to participate as much as possible in supervision visits.

A.7 Health Agent Training

A.7.1. Insist on a minimum of 8 participants for a Health Agent training session.

A.7.2. Continue the practice of organizing re-training sessions for the Health Agents. These should be focussed on the specific activities that the CHWs are to carry out.

A.7.3. Specify the tasks that the Health Agent is to carry out in each area of his work and organize the training curriculum (the knowledge to be transmitted) around these tasks.

A.7.4. Develop instructional objectives from the tasks identified.

A.7.5. Present the course content separately and develop it in more detail.

A.7.6. Prepare memory aids for Health Agents based on the course content, after translating this into national languages and illustrating it appropriately.

A.7.7. Give these memory aids to all health personnel and others that have some working relationship with the health agents.

A.7.8. Start the Health Agent training with the preventive aspects of his work (sanitation, nutrition, etc.).

A.7.9. Organize more practical work in the villages during training, and shorten the time that the trainees spend in the dispensaries.

A.7.10. Organize more practice of group education techniques during health agent training.

A.7.11. Specify the activities that the Health Agents should carry out during training at the dispensary, and develop a monitoring list based on these activities to be signed by a nurse as each activity is carried out.

A.7.12. Refine the visual aids developed for training, choosing some key themes and improving some of the pictures so that they can be used both for CHW training and for health education sessions in the communities. Each image developed should transmit one clear message. Visual material should be tested and adopted to the perception of each ethnic group.

A.7.13. Reproduce these educational materials with the help of the Health Education

Section, taking into account the material already developed for the different activities of the Ministry of Health.

A.7.14. Systematize the information available on the beliefs and practices of different ethnic groups, and carry out whatever supplementary research is needed, in order to develop soundly-based education messages that can be used to orient health education sessions, as well as supporting visual aids.

A.8 Training of Community Health Committees

A.8.1. Make greater use of visits made for village animation and CHW supervision for the continual training of health committees.

A.8.2. Link the education of each health committee to the specific activities to be carried out in the village.

A.8.3. Group together the members of different health committees, if possible, when an education "campaign" is to be launched in a given geographical zone.

A.8.4. Make maximum use of the meetings organized by the Mass Education Structures (SEM) for the education of village representatives.

A.9. Training of Trainers

A.9.1. Continue to send Mauritanian technicians to Lome for short-term training.

A.9.2. Provide for the training at the highest level of technicians called upon to take on future responsibilities in the generalized development of PHC in the country.

A.9.3. Plan for the temporary assignment of nurses in groups of two or three so as to enable each one to overcome his particular weaknesses through a practical apprentis -ship experience.

A.9.4. Organize in-service training sessions in Mauritania to increase the knowledge of the PHC nurses in community development techniques, group animation techniques for health education, and scientific advances and the most recent approaches to the organization of oral rehydration and nutrition monitoring programs.

A.9.5. Develop basic and in-service training modules for regional and departmental staff that will be responsible for PHC programs.

A.9.6. Encourage visits to observe PHC programs, especially in West Africa.

A.9.7. Organize national colloquia to discuss certain points of the PHC strategy to be used in Mauritania as activities develop in various regions of the country.

A.10 Health Information System

A.10.1. Organize and structure the health information

system of the Ministry of Health.

A.10.2. Create a Statistics Bureau at the central level to be attached to the Planning and Research Department.

A.10.3. Organize satellite regional statistics sections, branches of the Central Statistics Bureau, in the main regional towns.

A.10.4. Train the staff (statisticians and assistant statisticians) needed for the Central Bureau and regional sections.

A.10.5. Rationally organize a practical system for collecting, gathering, tabulating and analyzing data.

A.10.6. From the masses of information available, select out all superfluous and unusable data and save only some basic data that can, in fact, be treated and used by the Ministry.

A.10.7. Appoint a statistician at Central level for any future projects, and keep him in very close contact with the Central Statistics Bureau.

A.10.8. Make adequate use of the information gathered in planning and decision-making for the smooth operation and improvement of services.

A.11 Referral System

A.11.1. Facilitate the best possible contacts between the CHWs and the other institutional levels

of the Ministry of Health.

A.11.2. Implement the "Service Note" requiring the various health institutions to give priority to cases referred by the CHW, ensuring strict application of these instructions.

A.11.3. Improve health care services in health facilities by supplying them adequately and regularly with materials and supplies, training their staff, and, if necessary, renovating their buildings.

A.12 Drug Supply System

A.12.1. Reconsider the list of pharmaceutical products authorized for the CHWs, adding oral rehydration packets to combat diarrhea.

A.12.2. Carry out the necessary studies to envisage also the addition of an oral antibiotic for the treatment of simple infections, (probably oral penicillin).

A.12.3. Discourage the CHWs' tendancy to use unauthorized medicines.

A.12.4. Study in detail the financial situation of PHARMARIM and identify the necessary measures so that the medicines can continue to be made available cheaply to the entire population (maintaining the 10% discount for CHWs).

A.12.5. Facilitate the accessibility of medicines by

encouraging the establishment of PHARMARIM sales outlets at the departmental, even *arrondissement* level.

A.13 Project Impact on the Community's Health Status -

A.13.1. Examine and establish a specific list of criteria that would make it possible, even if indirectly, to assess the Project's impact on the village's health status - these could include, for example:

-- the number of houses with wells;

-- the number of covered wells in the village;

-- the number of houses having adequate means to conserve drinking water;

-- the number of houses with latrines;

-- the percentage of mothers who know the causes of diarrhea and how to prepare oral serum; etc.

A.13.2. Provide for small surveys to be carried out periodically to assess changes over time based on these indicators.

B. Integration of the Supervision of CHWs and Other Primary Health Care activities.

B.1. Continue the motivation of all concerned departments of the Ministry of Health with a view to integrating primary health care services.

B.2. Officially create the Primary Health Care Coordinating

Commission by ministerial decree or other means and specify in detail its composition, functions and mandate.

B.3. Restructure, re-organize and strengthen the Department of Planning and Research, and re-define its mission and functions as an executive agency of the Primary Health Care Coordinating Committee.

B.4. Determine the process for integrating the annual plans of the various Ministerial departments into one co-ordinated whole, constituting the annual national health plan, taking into account all available resources.

B.5. Strengthen the authority of the Regional Health Directors and improve their training and technical/administrative capacities through study grants or other appropriate means.

B.6. Make a thorough study of the possible contribution of each institutional level of the Ministry to improving the supervision system of the integrated primary health care services, from both a quantitative and qualitative point of view.

B.7. At the department level, make Dispensary Head Nurse, or another person as the case may be, responsible for organizing supervision, taking into account all available resources, including the passage of the mobile team.

B.8. Provide the necessary training to the supervision teams

so as to diversify as much as possible the range of activities carried out by its members (multi-disciplinary team).

B.9. Make provision for fuel for supervision visits through external funding until the Mauritanian Government can absorb this cost.

B.10. With interested organizations (UNICEF in particular), envisage the strengthening of cold storage facilities to enable mobile teams to stay in the field for a longer period of time without diminishing the effectiveness of vaccines. Along these same lines, examine the possibility of using other types of vaccines that are more resistent to conditions of high temperature. (Certain vaccines of this type have already been developed).

B.11. In the budget of the Ministry of Health, provide for the allocations needed to cover per diems and other travel costs incurred by supervision staff.

B.12. Organize in-service training seminars for arrondissement health post heads, with a view to including them eventually in the primary health care supervision system.

B.13. Encourage and motivate all institutions and agencies, governmental and others, that work in the area of health to participate effectively in integrated primary health care by coordinating their efforts with those of the Ministry of Health.

B.14. Seek inter-sectoral cooperation for the development of primary health care, with a view to affecting the various elements of rural community development.

C. Administration and Management

C.1. Examine the technical and administrative organization of any future project in all its details, and represent this organization in a well-structured organigramme whose lines of authority follow good administrative logic.

C.2. Define the roles and responsibilities of various staff members, with job descriptions that are as clear and specific as possible.

C.3. As far as is possible, provide for all administrative and technical staff from the beginning of the Project to avoid a slow-down in, or even the non-implementation of, activities which are absolutely essential to normal project operation.

C.4. USAID/Nouakchott and AID/Washington should define their roles and their level of participation in the operation of projects of this type in order to avoid ambiguous situations. A less rigid system for procurements and fund disbursements should also be studied, taking local conditions into consideration.

D. Economics

D.1. Given the fundamental role of health in any development

process, the GRIM has every reason to make the efforts necessary in the coming years to invest a higher percentage of the Gross National Product and National Budget in the improvement of the population's health. It is generally agreed that the present percentage of 3.6% is much too low.

For other recommendations in the area of economics, see Chapter III, Section D, pp. 1 -1 .

2 - THE NEW RURAL HEALTH SERVICES PROJECT

CONCLUSIONS

When they began their work, the Evaluation Team for the Medical Assistance Project received, among other documents, the Project paper for the new rural health services project, which was already ratified and signed by GRIM and USAID authorities. The Team noticed that several recommendations formulated in the present report had already received the attention of the authors of the new Project. Those in charge of the new Project will surely consider these recommendations thoroughly, and will hopefully find ideas that can assist them in carrying out this important Project. It seems important to point out certain administrative aspects of the new Project that need to be clarified.

The tasks and responsibilities of the Project Director did not seem to be sufficiently clear to us; also his relationship

to the two planned long-term consultants.

On the one hand, it has been stated that at the national level, Project administration will be the responsibility of a full-time Director assisted by one of the two high-level counterparts assigned to his two technical consultants. From the Project's point of view, however, we know that these two technical consultants are not necessarily on the same level in the hierarchy as the Project Director. Therefore, we must admit that the Project Director will have as his counterpart a consultant who will, at the same time, be the counterpart of the Head of the Preventive Medicine Department. We wonder if this is the best way to proceed.

On the other hand, we must consider that even if the two consultants have different activities in the field, they will have only one counterpart in the office; that is, the Head of the Preventive Medicine Department, under which are both the EPI and Health Education Services.

Under the circumstances, we think that it would perhaps be preferable to simply assign a consultant directly to the Mauritanian Project Director. This consultant will be Chief of Party and, at the same time, could eventually represent USAID on the PHC Coordinating Commission, all the more since the Project Director will also be Secretary of this Commission himself.

Another long-term consultant could also be provided for education; as far as the EPI is concerned, we wonder if it would be better to provide short-term consultants instead of a long-term one.

The Evaluation Team, in proposing these various recommendations to the GRIM and USAID, has been guided solely by one concern; the harmonious development of primary health care services and their progressive and integrated extension to rural areas for the benefit of the Mauritanian people. The members of the Team had the privilege of visiting more than twenty villages, seeing the many serious health problems faced by these villagers, as well as the courage, goodwill and determination that the Health Committees and CHWs have shown in seeking to solve these problems. These villagers have earned the esteem and admiration of us all, and we repeat that the primary health care project is a necessity.

The important thing now is to make the best use of available resources and effectively channel energies at the village level to obtain the maximum benefit for the population of Mauritania.

ANNEXE I

LISTE DES PERSONNALITES RENCONTREES PAR L'EQUIPE D'EVALUATION

1 - Dr. Bâ Mamadou Lamine, Directeur de la Santé au Ministère de la Santé du GRIM.

2 - Dr. Mohamed Mahmoud Ould Hacen, Directeur du Projet du Trarza, Directeur du Projet des Services de Santé Rurale, Conseiller du Ministre de la Santé du GRIM.

3 - Dr. Kane Youssouf, Chef du Service de Médecine Préventive au Ministère de la Santé du GRIM.

4 - Dr. Bâ Oumar, Directeur de PHARMARIM.

5 - Dr. Traoré Hamid, Médecin-Chef de la Région du Trarza.

6 - Dr. Abdoulai Nem, Médecin-Chef à Boutilimit.

7 - M. Traoré Lassana, Secrétaire Général du Croissant Rouge Mauritanien.

8 - M. Moctar Ould Memah, Superviseur du Projet.

9 - M. Kane Sidi Baidy, Superviseur du Projet.

10 - M. Mika Fall, Formateur du Projet.

11 - M. Mahamouden Ould Hally, Formateur du Projet.

12 - M. Abdullai Sow, Formateur du Projet.

13 - M. M'Barek Ould Bilal, Formateur du Projet.

14 - M. Mohamed Ould Alew Alew, Formateur du Projet.

15 - M. Ramdan Ould Mohamed Ramdan, Formateur du Projet.

16 - M. Sghair Ould Mohamed El Abd, Formateur du Projet.

17 - M. Abdullai Diallo, Comptable du Projet.

18 - M. Moctar Ould Sidi, Dessinateur du Projet.

19 - M. Thiam Amadou, Chef de l'Equipe Mobile de la Région du Trarza.

20 - M. Peter Benedict, Directeur de l'USAID, Nouakchott.

21 - M. Richard Goldman, Assistant-Directeur de l'USAID, Nouakchott.

22 - M. Barry MacDonald, Officier d'Evaluation de l'USAID, Nouakchott.

23 - Mme. Vicki MacDonald, Officier Administratif, USAID, Nouakchott.

24 - Mme. Karen Woodbury, Officier de Santé, USAID, Nouakchott.

25 - Mme. Mona Grieser, Conseiller en Santé du Projet (DIMPEX).

26 - M. Stanly Baranson, Consultant Financier, USAID.

27 - M. Campbell McClusky, Officier de Programmation.

28 - M. Khurshid Khan, Comptable, USAID.

29 - Mme. Suzanne Larkin, Département des Achats, USAID.

30 - M. John Raleigh, du Groupe de Gestion Financière de la Région du Sahel.

31 - Mme. Heather Goldman, Nutritioniste, USAID.

32 - M. Omar N'diaye, Auditeur indépendant, contracté par l'USAID.

33 - M. Layes Sanoh, Consultant, MSH.

34 - M. Mead Over, Consultant, MSH.

35 - Mme. Christine Statisticienne du Bureau de Recensement.

36 - Statisticien du Bureau de Recensement.

37 - M. Richard Wall, Directeur du Corps de la Paix.

38 - Mme. Kathleen Healy, Assistant Directeur en Santé des Volontaires du Corps de la Paix.

ANNEXE II

LISTE DES DOCUMENTS LES PLUS IMPORTANTS
CONSULTES PAR LA MISSION D'EVALUATION

1 - Rapport d'Evaluation à mi-terme du Projet d'Assistance Médicale Rurale: Dr. Ramiro Delgado Garcia.

2 - Mémoire d'Entente du Projet d'Assistance Médicale Rurale.

3 - Mémoire d'Entente du Nouveau Projet des Services de Santé Rurale.

4 - Rapport Final du Projet de Développement Rural Intégré de Guidimaka.

5 - Séminaire sur l'Intégration des Activités du Projet d'Assistance Médicale Rurale à celles de la Région du Trarza - Janvier 1983.

6 - Projet RAMS: Aperçu sur le Secteur Santé de la Mauritanie.

7 - Projet RAMS: Profil Sociologique.

8 - Projet RAMS: Santé/Nutrition.

9 - Projet RAMS: Education Non-formelle.

10 - Rapport Statistique Annuel - 1982: Ministère de la Santé et des Affaires Sociales - Direction de la Santé - Service de Planification et d'Etudes.

11 - Evaluation en Santé - Etudes sur les Villages et les Logements: Mauritanie - Dimpex Associates Inc.

12 - Soins de Santé Primaires en Mauritanie - Thèse du Dr. Aboubekrine Sidibé - Université de Dakar...

13 - Supervision and Other Determinants of Community Health Worker Activity: a proposal for operation research:
- Mr. Mohamed Isselman: Director of Statistics
- Mrs. Heather Goldman: Nutrition/Health Advisor
- Mr. Mead Over Jr., Associate Professor of Economics - Boston University.

14 - First Annual Report - Mauritania: Rural Medical Assistance Project - Dimpex Associates Inc.

15 - Second Annual Report - Mauritania: Rural Medical Assistance Project - Dimpex Associates Inc.

16 - IVe Plan de Développement Economique et Social de la RIM: Ministère du Plan et de l'Aménagement du Territoire.

17 - Thèse sur le Projet d'Assistance Médicale Rurale par Kane Sidi Baidy: CESSI.

ANNEXE II

EVALUATION DU PROJET TRARZA NOUVEMBRE 1983

1. PERSONNEL SANITAIRE DE DEPARTEMENT

Nom du Chef de Centre ou Poste _____ Département

Profession _____ Temps de service dans ce poste __

Nombre d'ASC actifs dans le Département _____

1.1 Est-ce-que le personnel a reçu des orientations ou recyclages pour le programme de SSP ? Lesquels ?

_____

_____

_____

_____

1.2 Est-ce-que le personnel a participé dans les activités du programme ? Lesquelles ?

_____

_____

_____

_____

1.3 Est-ce-que les ASC fournissent un bon travail, selon votre opinion ? Quels sont les problèmes rencontrés avec les ASC ?

1.4 Quelles seraient les personnes les plus aptes à superviser les ASC, selon votre opinion ?

1.5 A quel rythme devrait se faire cette supervision ?

1.6 Combien de malade sont venus au dispensaire référés par les ASC pendant l'année ?

1.7 Quel est le type de malades le plus souvent référés par l'ASC ?

1.8 Combien de consultations par mois est-ce-qu'on fait au niveau fu dispensaire (en moyenne) ?

1.9 Observations générales de l'Equipe d'Evaluation

ZR

2. COMITE DE SANTE DE VILLAGE

2.1. - Nombre de personnes qui constituent le comité _____

- Leurs occupations _____
- A quel rhythme se réunit le CSC ? _____
- Date de la dernière rúnion du CSC _____

2.2 Quels sont les principaux problèmes de santé dans le village, selon l'opinion du CSC ?

2.3 Quel est le rôle du CSC, selon ses membres ?

2.4 Est-ce-que le CSC est satisfait du programme de santé ?

Oui _____ Non _____ Pourquoi _____

2.5 Est-ce-qu'on a noté des changements dans le village depuis le commencement du programme ?

Lesquels ? _____

_____

2.6 QUel est le rôle de l'ASC, selon le comité ?

2.7 Quelles sont les activités les plus importantes de l'ASC pour le village .

2.8 QUels sont les rapports du CSC avec l'ASC ?

2.9 QUels sont les problèmes du CSC vis-à-vis de l'ASC ?

2.10 Quelles sont les activités entreprises par le CSC ?

2.11 Quels sont été les difficultés rencontrés ?

2.12 Quels sont les projets du CSC pour le futur ?

2.13 Est-ce-qu'il serait a) bon et b) possible d'avoir une deuxième ASC dans le village ? (Si oui ,quel serait son rôle ?)

2.14 Observations générales d e l'Equipe d'Evaluation=

3 AGENT DE SANTE COMMUNAUTAIRE

Village _____ Département _____

Nom de l'ASC _____

Date d'installation _____ Nombre Supervisons reçues _____

Date dernière supervison _____ _____

3.1 Quels sont les principaux problèmes de santé dans le village, selon l'opinion de l'ASC ?

_____

_____

_____

3.2 Quel est le rôle de l'ASC, selon lui ?

3.3 Quels sont les sujets les plus importants à traiter au cours de l'éducation ?

3.4 Quand est-ce-que l'ASC a fait la dernière réunion pour l'éducation ?
Combien de personne était présentes ?
Quels type de personnes ? Quels était le sujet de la Réunion _____

_____

_____

3.5 Quels sont les difficultés de la réalisation de l'education pour la santé au niveau du village ?

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3.6 Combien de fois l'Equipe de Vaccination est-elle passée dans le village depuis que l'ASC a étè formé ?_____

_____

3.7 Que fait l'ASC connaître les enfants avec vaccination incomplete ? Combien y en a t-il dans le village actuellement ?

3.8 Quelles activités a fait L'ASC pour la vaccination ?

3.9 Que pense l'ASC des visites domiciliaires ? Que fait-il pendant les visites ?

3.10 Quand est-ce que l'ASC a fait sa denière visite domiciliaire ? QUel était le motif de la visite ?

3.11 Quel a étè le dernier cas de diarrhée vu par l'ASC quand ? Qu'est-ce-que l'ASC a fait ? (Est-ce-qu'il a préparé la solution de réhydratation sur place ? Quelles sont les difficultés rencontrées pour sa préparation ?).

3.12 Est-ce-que L'ASC a enseigné aux femmes du village comment mélange la solution de réhydration orale chez elles ? Difficultés rencontrées

_____

_____

_____

_____

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3.20 Est-ce-que les malades étaient bien reçus ? _____

_____

_____

3.21 Quels sont les cas les plus couramments référés ? _____

_____

_____

3.22 Est-ce-que l'ASC les a vus après ? _____

_____

_____

3.23 Est-ce-que l'ASC est bien reçu au dispensaire ou poste de santé ?

3.24 Est-ce-que la trousse de l'ASC est complète ? Si non, Pourquoi ? (Examiner la trousse avec l'ASC?

3.25 Comment l'ASC est-il rémunéré ? Est-il satisfait de sa rémunératic

3.26 Qu'est-ce-que l'ASC souhaite faire pour la sante du village dans le futur ?

3.27 Quels sont les aspects les plus difficules du travail, selon l'ASC ?

3.28 Est-ce-que l'ASC arrive à faire toutes les activités, qu'il voudrait ? Serait-il souhaitable d'avoir un deuxième ASC, selon lui ?

3.29 Est-ce-que les registres de l'ASC sont bientenus _____ passables _____ Mal tenus _____ ?

3.30 Observations générales de l'Equipe .

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4 VISITES DOMICILIAIRES

4.1 Quelle a étè la dernière maladie dans la famille ?
A qui s'est adressé ?

4.2 Est-ce-que la famille pense que l'ASC rend beaucoup de services dans le village ? Lesquels ?

4.3 Quelle est la dernière fois qu'un membre de la famille a étè chez l'ASC ? Pour quel motif ?

4.4 Qu'est-ce-qu'il faut donner à l'enfant qui à la diarrhée, selon la mère ?

_____

_____

4.5 Qu'est-ce-qui provoque la diarrhée, selon elle ?

_____

_____

4.6 Est-ce-qu'il y a eu un enfant avec la diarrhée dans les derniers e
Qu'est-ce-que la mère a fait ?

_____

_____

4.7 Est-ce-aue la mère a un petit enfant ? de quel âge ?_____

_____

4.8 Qu'est-ce-qu'elle pense qu'il faut donner à manger à cet enfant ?

_____

_____

4.9 Qu'est ce qu'elle lui a donné à manger hier ?

_____

_____

4.10 A quel âge il faut commencer à donner d'autres aliments à l'enfan en plus du sein ? _____

_____

4.11 Observation sur l'Hygiène générale de la maison / tente

_____

4.12 Observations générales Equipe

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5 VILLAGE _____ Nom _____

Population _____

5.1 Nombre puits bien amenagés et propres _____

Total puits utilisés dans le village _____

5.2 Nombre de familles qui utilisent un filtre _____

Total de familles dans le village _____

5.3 Nombre de latrines construites _____

Depuis _____

Total latrine dans le village _____

Est-ce-qu'elles sont bien entretenues ?

5.4 Aspect général de propreté du village

Bon _____ Satisfaisant _____ Mauvais _____

Est-cequ'il y a eu une amélioration depuis que l'ASC a été installé ?

Oui _____ Non _____ Manque de critères de jugement _____

5.5 Est-ce-qu'il y a de jardins maraichers dans le village ?

Oui _____ Non _____

Si non est-ce-qu'il serait possible d'en avoir ?

5.6 Observations générales de l'Equipe

6 VILLAGE QUI A ABANDONNE LE PROGRAMME

Nom _____

6.1 Raison de l'abandon

6.2 Est-ce-que le village souhaiterait recommencer le programme ?
Oui _____ Non _____
Si non, Pourquoi ?

6.3 Remarque de l'Equipe

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Kiffa le 13/7/82

N° 369 Kiffa
364

Le Medecin-chef de la Région du Trarza
Rosso

A Monsieur le Directeur de la Santé Publique
Nouakchott

Projet Trarza
pour Mr Ibrahim
25/7

Monsieur le Directeur

Ref. lettre 07/85 du 6/82.—

Ref. V. R. N° 207/85 en date du 15/6/82, j'ai l'honneur de vous adresser sous ce pli les listes de ventilation du Matériel Medical du projet Trarza.

A savoir l'expédition est faite au niveau des cinq departements:

- Boutilimit
- Maderdra
- Keur-Macene
- Oued-Naga
- R'Kiz

Veuillez Agréer Monsieur le Directeur recevoir l'expression de ma haute considération —

Dr. Jean Claude Brunet
Medecin-chef du Trarza

DIRECTION de la SANTE PUBLIQUE
de la MAURITANIE
ARRIVEE

BEST AVAILABLE

ROSSO, LE 4 JANVIER 1982

//)MONSIEUR LE MEDECIN CHEF
DE LA CIRCONSCRIPTION MEDICALE
DE TRARZA.

/-)

CHEF DE POSTE MEDICAL
DEPARTAMENTAL.

Honneur vous adresser la liste du materiel du projet TRARZA, à votre disposition à Rosso pour l'ensemble de votre departement.

Je vous demanderais de repartir ce materiel entre les differents postes de votre département et de m'envoyer copie de cette repartition.

Recevez Monsieur l'expression de mes sentiments devoués et respectueux.

LE MEDECIN CHEF

MR. PHILIPPE PREDREAU.

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DEPARTEMENT DE BOUTILIMITA.

DOTATION MATERIELS PROJET TRARZA

-o-o-o-o-o-o-o-

N°	DESIGNATION DES ARTICLES	NOMBRE
I	Haricot	6
2	Jerrican	I
3	Porte pince à servir	3
4	Gobelet gradué	3
5	Balai à frange + manche	6
6	Moule a aiguiser	2
7	Huile bidon	6
8	Poissonniére divers	8
9	Lancettes	300
10	Table roulants	3
II	Gobelet plat en plastique	20
12	Bands triangulaire	44
13	Tasse gradué en plastique	200
I4	Gobelet plastique avec couvercle	I00
15	Tasses	200
16	Bouteille anti-desinfectant	6
I7	Poissonniére long avec couvercle	36
18	Bandes autocollants GM et PM	250
19	Poubelle medicale	I
20	Sparadrap	I5
2I	Seaux en plastique avec couvercle	2
22	Abaisse langue	I.000
23	Vaseline	30
24	Bande gaze	25
25	Fil nature	50
26	Ciseaux	20
27	Brosse à bouteille	2
28	Seaux metallique	4
29	Entonoir en plastique	I00
30	Aiguille courbe	200
I	Tube à essai	200
32	Boite plastique avec couvercle	20
33	Verre recuéille urines	20
34	Cuillere plastique	I.000
35	Epingle de sureté	400
36	Autoclave	I
37	Pese-Bebé	2
38	Pese-Adulte	2
39	Rasoir en plastique	50
40	Thermometre	40
I	Echelle Ac.Visuelle	I
42	Otoscope	I
43	Seringue de Guillon	2

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DEPARTEMENT DE MEDERDRA

DOTATION MATERIELS PROJET TRARZA

-o-o-o-o-o-o-o-

N°.O	DESIGNATIONS DES ARTICLES	NOMBRE
I	Haricot	8
2	Jerrican	I
3	Porte pince a servir	5
4	Gobelet grdué metallique	3
5	Balai a frange + manche	2
6	Meule a aigriser	2
7	Huile filtrée en bidon	6
8	Poissonniére divers	8
9	Lancettes	300
IO	Table roulants	I
II	Gobelet plat en plastique	20
I2	Bandes triangulaire	44
I3	Tasses gradués plastique	200
I4	Gobelet plastique avec couvercle	ICO
I5	Tasse palstique avec couvercle	ICO
I6	Bouteille anti-desinfectant	6
I7	Poissonniére long avec couvercle	36
I8	Bande autocollante GM et PM	250
I9	Poubelle medicale	I
20	Sparadrap	I5
2I	Seaux plastique avec couvercle	3
22	Abaisse langue	I.000
23	Vaseline	20
24	Bande gaze	I5
25	Fil nature	50
26	Ciseaux	I5
27	Brosse a bouteille	2
28	Seaux metallique	3
29	Butorion en plastique	IC
30	Aiguille courbe	IO
3I	Cuillere en plastique	508
32	Epéngle de surete	240
33	Autoclave	I
34	Pese-Bebé	I
35	Pese-Adulte	I
36	Rasoir en plastique	IO
37	Thermometre	2[illegible]

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ROSSO, LE 12 JUILLET 1982

LE MEDECIN CHEF DE LA CSR DU TRARZA
-ROSSO-

6 A -

CHEF DE POSTE MEDICAL DEPARTEMENT DE

J'ai L'honneur de vous adresser dotation materiel projet Trarza pour votre département et je vous demande de repartir entre vos differents postes.

Recevez Monsieur l'expression de mes sentiments devoués

DR JEAN CLAUDE BEKETEL
MEDECIN CHEF DU TRARZA

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DEPARTEMENT DE OUAD -NAGA

DOTATION MATERIEL PROJET TRARZA

ORDRE	DESIGNATION DES ARTICLES	NOMBRE	ABS.
01	Table Roulante	1	
02	Fil chirugie	2	
03	Seau en fer	2	
04	Gobelte en fer avec couvercle	6	
05	Balai à frange	2	
06	Otoscope obstrétrial	2	
07	Seringue lavage Oreille	1	
08	Sparadrap	6	
09	Porte pince à servir	3	
10	Gobelet en fer sans couvercle	2	
11	Instrument stéril	23	
12	Tube à essaie	20	
13	Poissonnière longue avec couvercle	10	
14	Plateau métallique	3	
15	Haricot grand modèle	3	
16	" petit modèle	3	
17	Poubelle médical	1	
18	Pince à servir	3	
19	Autoclave	1	
20	Brosse de chirurgie	50	
21	Meule à aiguiser	1	
22	Aiguille courbe	6	
23	Verre recueil d'urine	3	
24	Gobelet ~~plat~~ en fer	1	
25	Gobelet plat avec couvercle	100	
26	Fosse gradué	500	
27	Gobelet plastique	125	
28	Balance Adulte	1	
29	Thermomètre	20	
30	Cuilleré plastique	150	
31	Pèse -Bébé	1	
32	Lot en plastique	2	
33	Poissonnière diverse	3	
34	Rasoir plastique	20	
35	Lame chirurgie	100	
36	Abuisse langue	25	
37	Entonoir plastique	6	
38	Bande autocolante	6	
39	Bande gaz	7	
40	Compresse stériles	3	
41	Bouteille antiseptique	4	
42	Boite de comprimés vide	50	
43	Bande triangulaire	5	

Rosso, le 12 Juillet 1982

LE Médecin chef du Trarza

Dr; Jean Claude Bodetel

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AU TRARZA

ORDEREAU D'ENVOI

N° 1 /P...

Le Medcin Chef Interim

Pièces adressées à Dr. Perdreau, Hopital de Rosso

NOMBRE	DESIGNATION	OBSERVATIONS
30	Bricuots	
5	Bricans en Plastique	
2	Echelles acuite visuelle	
3	Porte tube à essai	
20	Porte Pince à servir	
12	Gobelets gradués en metaille	
75	Drap blanc	
80	Couvertures blanc	
15	Plai à frange + manche	
10	Meules à aiguiser	
30	Huile filtrée en bidon	
30	Poissonières divers	
1200	Lancettes	
10	Table Roulantes	
80	Gobelets Plats en plastique	
576	Bandes triangulaires	
5000	Fioles graduées en plastique	
500	Gobelets plastique avec couvercle	
1000T	Fioles en plastique avec couvercle	
38	Bouteilles antiseptiques désinfectant	
144	Poissonieres longues avec couvercles	
500	Bandes autocollantes GM	
500	Bandes autocollantes PM	
27	Tubelles Medicales	
60	Paradraps (5boites x 12)	
9	Seaux en Plastique avec couvercles	
5000	Caisse langue	
108	Vaseline (9caissesx12)	
80	Bande Gaza (10 Caissesx8)	
240	Fils de suture (20 pqts;x12)	
100	Poires du ciseaux	
9	Bosses à bouteilles	
20	Seaux metalliques	
400	Potenoir en plastique	
80	Aiguilles courbes	
648	Tubes d'essai	

ARRETE LE PRESENT BORDEREAU A

Reçu le 16.10.71

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PROJET D'ASSISTANCE MEDICALE RURALE

AU TRARZA

ORDEREAU D'ENVOI

N° 2 /PAMRL.

Pièces adressées à Medecin Chef Interim à l'Hopital de Rosso,
Dr. Perdreau

NOMBRE	DESIGNATION	OBSERVATIONS
X 81	Piles pour otoscopes	
X 6	Seringues de Guillon	
X 40	Brosses chirurgicales	
X 3	Appareil Tensiometre Arterial	
X 30	Boites en Plastique avec couvercle	
X 60	Verres Receuils urines	
X 4000	Cuilleres en Plastique	
X 1240	Epingles edesurete	
X 9	Autoclave	
X 8	Balance Pese Bébé	
X 8	Balance Pèse Adulte	
X 200	Rasoirs en plastique	
X 156	Thermomèetres	
X 3	otoscopes.	

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ARRETE LE PRESENT BORDEREAU A_____

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DEPARTEMENT DE R'KIZ

DOTATION MATERIELS PROJET TRARZA

-o-o-o-o-o-

N°	DESIGNATIONS DES ARTICLES	NOMBRE
I	Haricot	8
2	Jerrican en plastique	I
3	Porte pinces a servir	5
4	Gobelet gradué	3
5	Huile filtrée en bidon	6
6	Poissonnière divers	8
7	Moule a aiguiser	2
8	Lancettes	300
9	Table roulante	I
I0	Gobelet plat en plastique	20
II	Bandes triangulaire	44
I2	Tasse gradués en plastique	250
I3	Gobelet plastique avec couvercle	I00
I4	Tasse plastique avec couvercle	I00
I5	Bouteille anti-desinfectant	6
I6	Poissonnière longue avec couvercle	36
I7	Bande autocollante GH et PM	250
I8	Poubelle medicale	I
I9	Sparadrap	I5
20	Seaux plastique avec couvercle	2
2I	Abaisse langue	I.000
22	Vaseline	20
23	Bande gaze	I5
24	Fil nature	50
25	Ciseaux	I5
26	Brosse à bouteille	2
27	Seaux metallique	3
28	Entorion en plastique	I0
29	Aiguille courbe	I0
30	Cuilleré en plastique	500
3I	Epingle de surete	I00
32	Autoclave	I
33	Pese-Bebé	I
34	Pese-Adulte	I
35	Rasoir en plastique	I0
36	Thermometre	20

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DEPARTEMENT DE KEUR-MACENE

N° D'Ordre.	Désignation des Articles	Nombre	Observations
1	Fil Chirurgie	6	
2	Seau en fer	6	
3	Gobelet en fer avec couvercle	18	
4	Balai à frange	4	
5	Tostoscope obstétrical	6	
6	Seringue levage oreille	2	Dotation
7	Sparadrap	18	
8	Porte pince à servir	9	Keur-Macène
9	Gobelet en fer sans couvercle	6	Biretto N'Diag
10	Instruments stériles	60	
11	Tube à essai	52	
12	Poissonière longue avec couvercle	36	
13	Plateau métallique	6	
14	Haricot grand modèle	3	
15	" petit modèle	3	
16	Roubaïlo Médical	2	
17	Pince à servir	7	
18	Autoclave	2	
19	Brosse de chirurgie	150	
20	Meule à Aipuiser	1	
21	Aiguille Courbe	100	
22	Verre receeil servir	9	
23	Gobelet en fer grand modèle	3	
24	Gobelet plat avec couvercle	200	
25	Fasse gradué	1500	
26	Gobelet plastique	375	
27	Balance adulte	1	
28	Thermomètre	38	
29	Cuillère plastique	450	
30	Bouteille antiseptique	9	
31	Echelle accuite viselle	1	
32	Bande triangulaire	12	
33	Rasoir Plastique	200	
34	Lame Chirurgie	200	
35	Abaisse langue	7 5	
36	Entonoir plastique	4	
37	Bande Autocolante	9	
38	Bande Gaze	30	
39	Compresse Stériles	9	
40	Poissonière diverse	8	
41	Pot en plastique avec couvercle	4	
42	Boite de comprimé vide	150	

Rosso, le 12 Juillet

Le Medecin Chef du Trarza

Dr: Jean Claude BOUETEL

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PROJET D'ASSISTANCE MEDICALE
RURALE AU TRARZA

682.0202

/)/° _____/PAMR

-o- BORDEREAU D'ENVOI -o-

Pièces adressées à Monsieur le Medecin chef du Centre Medical de Rosso

NOMBRE	DESIGNATION	OBSERVATIONS
1	Machine à Ecrire Clavier français type Hermes 44 N° 444 1398	Dr H. TRAORE

ARRETE LE PRESENT BORDEREAU A 1 (un) élément

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