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SINE SALOUM RURAL HEALTH PROJECT:
RESULTS OF EVALUATION SURVEY

A Report Prepared By:
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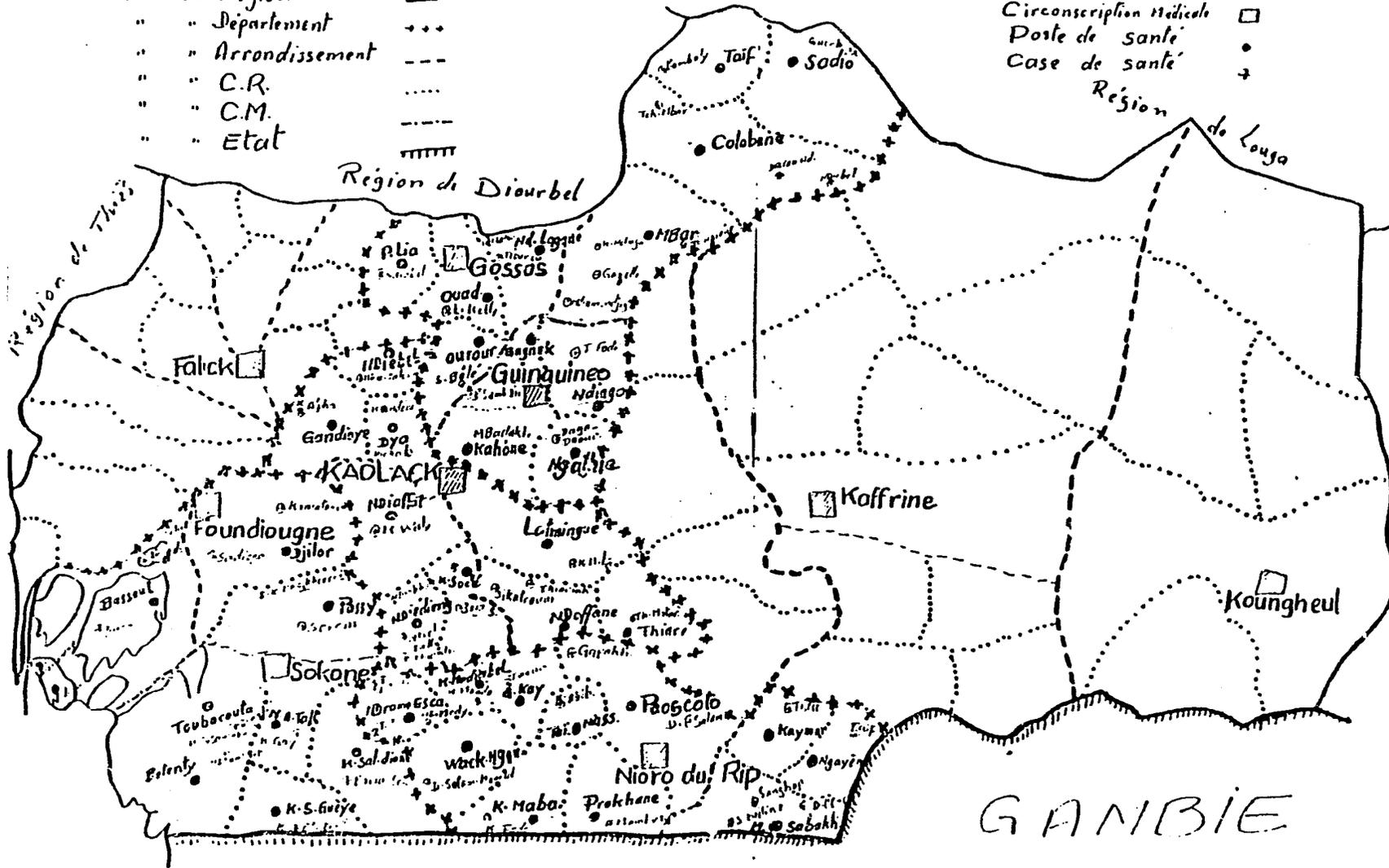
LIST OF ACRONYMS

CV	Central Village
EHT	Environmental health technician
HP	Human Promotion
NSH	Nonselected huts
NSRC	Nonselected rural communities
PHC	Primary health care
PV	Peripheral village
SH	Selected hut
SRC	Selected rural community
USAID/RHO	United States Agency for International Development/ Regional Office
VHW	Village health worker

Region Sanitaire du Fine-Jaloum.

- Limite de Région —
- " " Département + + +
- " " Arrondissement - - -
- " " C.R.
- " " C.M. - - - -
- " " Etat =====

- Circonscription médicale □
- Poste de santé ●
- Case de santé +



I. INTRODUCTION

I. INTRODUCTION

Project Description

The Senegal Rural Health Project (685-0210), begun in March 1978, had the following objectives:

- Improvement in the level of health among the rural population.
- Establishment of a prototype health care delivery system for preventive and curative medicine appropriate to the social and economic conditions of the rural population in Senegal.¹

During the first two years of project implementation, two departments of the Sine Saloum Region were chosen in which to train health post nurses as trainers who, in turn, trained three village health workers (VHWs) for each health hut. Health huts were built with financial aid from the project and stocked with an initial drug supply determined by village size. Supervision was carried out by health post nurses with the use of a horse and buggy. In conjunction with these activities, adult education was begun for rural council members. Renovation and construction of health posts was also begun.

In March 1980, an evaluation was carried out. Some of the problems identified were: hut location was determined politically rather than by distance, and so many were closed; VHW attrition; unrealistic drug prices; management committees nonrepresentative of local population; VHW remuneration inadequate, though they received 60 percent of drug sales; minimal supervision because the horse and buggy was too unwieldy; paucity of health impact information; project coordination was assigned to the regional governor, who had many other responsibilities; training of trainers focused on teaching methods and did not include animation, organization, or management; poorly organized drug supply system.²

In view of these problems, the redesign team recommended that the evaluation project staff:

- Concentrate on a sample of 60 huts instead of 378.
- Not extend activities to the other two remaining departments.
- Address major problems.

--Focus on three vital objectives for the next two years:

- financially viable huts
- adequate support and supervision
- drug supply system

--Use certain criteria in carrying out the November 1981 evaluation (see Annex 1 for criteria).³

Scope of Work

The consultant was requested to coordinate the data-gathering aspect of the Senegal Rural Health Project and the preparation of the preliminary report. Her scope of work was as follows:

1. Serve as the USAID representative to and coordinator of the supervision team for the data-gathering segment of the project evaluation. The supervision team, composed of five Senegalese members, would coordinate the work of six two-person data collection teams.
2. Prepare a preliminary report of the fieldwork to serve as the basis of discussion for a seminar to be held on the project the first week in July 1982.
3. Organize and participate in the seminar.
4. Act as a facilitator for the direct-hire evaluation team which would actually conduct the final evaluation.

Constraints encountered in carrying out this scope of work are described in the Recommendations section.

Certain changes were made as work progressed. The supervision team was expanded to eight people, two of whom were project personnel. Analysis of the collected data was done by the interministerial team, with periodic input from project staff. The seminar was originally scheduled for the first week of July. However, as this was during Ramadan, the national team suggested that it be held at the end of July. Other organizations involved in primary health care (PHC) (World Health Organization, UNICEF, the French Volunteer Association, and Peace Corps) indicated that most of their personnel would be away on holiday at that time. Thus, USAID/RHO (United States Agency for International Development/Regional Health Office) in Dakar decided to postpone the seminar until the fall.

The initial work period was to be from May 2 to July 10, 1982. However, because USAID/RHO was understaffed, the consultant was asked to remain until the end of July.

The first week in Senegal was spent in Dakar reviewing project documents and discussing the scope of work with USAID/RHO staff members. The consultant joined the national supervision team in Kaolack, where data gathering had started two weeks previously, to observe one interviewing team as they collected data. The whole team, except for project staff, returned to Dakar to rejoin their respective ministries. In Dakar, weekly meetings were held to tabulate and analyze data and prepare a preliminary report to be used by the direct-hire team as a basis for their evaluation.

With the arrival of the direct-hire team, small-group discussions were held for the national team to present their findings. Appropriate project documents were assembled and made available to them. The consultant went with the direct-hire team to Kaolack for one week to help them collect additional data. One member of the national team also participated in this second data collection, which was done by interviews followed by a daily discussion to review data. (See the evaluation report prepared by the direct-hire team for a description of methodology and findings.)

In the last two weeks of the assignment, the consultant worked with both teams. The national interministerial team wrote their final report. The consultant assisted the direct-hire team with the contents of their report and organized typing. Before leaving Senegal, the consultant discussed findings with USAID/RHO, noting such unfinished business as the final typing for the interministerial team's report.

Organization of the Report

This report describes the survey methodology used for data gathering and summarizes data analysis according to the evaluation criteria suggested by the redesign team. These two sections are followed by a discussion of recommendations. The evaluation criteria and a translation of the preliminary report prepared by the national team (with their recommendations) appears in the annexes. The translation was done by the consultant. All other pertinent information appears in the appendices.

II. SURVEY METHODOLOGY

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Area of Survey

The survey took place in the four departments covered by the Sine Saloum Health Project: Nioro, Kaolack, Gossas, and Foundiougne (see map of area). The total population of this area is estimated at 697,205 inhabitants (mid-April 1982).⁴ The persons contacted for the survey are as follows:

- Health hut beneficiaries
- Village health workers (VHWs)
- Health committee members responsible for managing hut activities
- Health post nurses and environmental health technicians (EHTs)
- Community representatives (presidents of rural councils)
- Administrative representatives (Governor, prefects, and under-prefects).

The health project covers 378 health huts, of which 60 were chosen for intensive followup based on the 1980 recommendations of the redesign team. The remaining 318 received project input for training and logistical support, but were not given priority.

Objectives

It must be noted that the following objectives were determined after the survey and preliminary analysis were completed.

1. Adequate information concerning the project has been given to villagers.
2. A management system is in place.
3. Supervision is occurring.
4. Information on health hut activities is collected, thus allowing adequate planning, control, and evaluation.
5. Beneficiaries are able to assume project costs.

Organization of Survey

Teams

Two teams were involved in the data collection and analysis. The supervision team was composed of representatives from the Ministries of Health, Interior, Plan, and Human Promotion. They supervised the interviewing team, tabulated and summarized incoming data, performed preliminary analysis, and produced a report. (See Appendix B for names and functions of team members.)

The interviewing team was divided into six smaller units, with a student from CESSI (Centre d'Enseignement Superieur en Soins Infirmiers) and an inspector from Human Promotion on each team. The CESSI students were responsible for interviewing VHWs, health committee members, nurses, and EHTs. The Human Promotion inspectors interviewed health hut beneficiaries.

Questionnaires

Six different types of questionnaires were used during the survey:

- Nurses and environmental health technicians
- Village health workers
- Village health committee members
- Beneficiaries
- Rural council presidents
- Administrative authorities (except for the Governor, who was interviewed).

The first three questionnaires were subdivided by theme in order to address the redesign evaluation criteria. The remaining three focused on various aspects of primary health care. Only the first four questionnaires were pretested and revised.

An instruction manual was prepared to guide interviewers on how to fill out the questionnaires. This was necessary, as problems arose when questions were translated from French to Ouoloff. As the interviewers used the questionnaires, other adjustments were made to facilitate interpretation. •

Training of Interviewers

Interviewers were not selected according to any preestablished criteria. A two-day training session was held for them. Each question was discussed, and the appropriate translation in Ouoloff was provided. This was done to minimize variations in interpreting questions.

Survey Sample

A list of 378 health huts and their population had been prepared by project staff. It was subdivided by department, county, and rural community. The sample drawn needed to meet the following specifications:

- 40 of the selected health huts
- 20 of the 318 nonselected huts
- Each rural community (for a total of 40 communities).

In each rural community, the selected huts were identified and two-thirds were chosen, using Kendall and Babington's tables of random numbers (1946). The nonselected huts were chosen by having team members call out numbers at random.

The sample automatically included each hut's health committee, VHWs, nurses and EHTs, and beneficiaries. If a nurse or EHT supervised several of the chosen huts, they were interviewed only once. The VHWs interviewed for each hut were the first aid worker, the hygiene worker, and village midwife. Each health committee was composed of a president, treasurer, and two members--one of either sex--and one of whom represented a peripheral village. (The village where the hut is located is the central village; surrounding villages using the huts are peripheral villages.)

For the beneficiaries, the same number of people were interviewed in the peripheral villages as in central ones, or 2 percent of the population in the central village. Thus, a total of 1,000 beneficiaries were to be interviewed, 40 percent men and 60 percent women (it was assumed that more women would use the hut services because of their children).

The rural council members and the administrative authorities were also asked to give their views on the project. All those available were interviewed. The sample is as follows:

- One Regional Governor
- Two out of four Departmental Prefects

--12 out of 20 Underprefects

--35 out of 40 Presidents of Rural Communities.

Positive Outcomes

The survey provided a fertile ground for learning about primary health care (PHC) and evaluation techniques. Of the national team members, only one person had theoretical training in PHC and none had field experience.

The interministerial team members were enthusiastic and continued to work on the analysis in spite of other responsibilities.

Project staff were very supportive in providing information about the project and setting up logistical support. They were able to give invaluable insight into some of the field situations which were identified as problem areas in analyzing the data.

Beneficiaries had been informed about the survey through radio messages and were available for interviews when the teams arrived. People at all levels were interviewed. Those at the village level were able to provide additional information which would not have been available if the evaluation team had limited its data to project extracts.

Involving several ministries in the evaluation provided varying viewpoints to analyze the data and also acquainted them with the project and its objectives.

Problems Encountered

Even though four questionnaires had been pretested, some questions were ambiguous, open to interpretation, and leading. Interviewers did not always follow instructions and would attempt to classify answers in the field. Certain questions did not provide an "other" category. The questionnaires for community representatives and administrative authorities were not pretested.

Since the survey's objectives were not clearly defined before preparing the questionnaires, certain types of information were not collected. Questions mainly elicited opinions rather than facts.

Data collected from the 20 nonselected huts cannot be considered representatives of the 318 huts, but rather as identifying trends.

Several of the national team members had not worked with data tabulation before and were reluctant to follow instructions. Data were not tabulated uniformly and several sections needed to be redone, thus slowing down the analysis.

The national team members felt that they could have used the three-week period when they were in the field more profitably. They had spent the time tabulating data and would have preferred using it to analyze data and prepare their preliminary report. Thus, they would have had fewer conflicts in schedules once they returned to their various ministries.

Data collected reflect only six months of supervisory activity as well as attempts to introduce a sanitation program, since health post personnel received their motorbikes in December 1981. So the analysis of the collected data is only tentative. No conclusions can be drawn.

III. ANALYSIS

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Methodology

After the data had been tabulated by department, the team divided into two-person work groups. Each group was given a specific questionnaire and its data to analyze (see Appendix B for a breakdown of small groups). As each preliminary analysis was completed, the findings were presented to the other team members. After group input, ambiguous statements and tables were revised. A final report was then written and used as the background document for a seminar.

Findings

The findings obtained by questionnaire are presented in detail in Annex 2. The preliminary analysis with its hypotheses and recommendations are also to be found in Annex 2.

Summary of Analysis

The evaluation criteria set down by the redesign team was used to elaborate three of the questionnaires. Criteria were divided into two categories, village level and health post level, and were focused on the 60 selected huts. Compliance indicators were determined by the redesign team and given in percentages. Whole numbers could not be used since they did not always apply; for example, 48 nurses were to have conducted training for VHWs, or 80 percent. But there is a maximum of 15 nurses involved in supervising these selected huts.

Forty of the 60 villages where there was a selected hut were included in the survey. Data are judged to be representative of the remaining 20.

At the village level, the redesign team identified eight criteria. There were data to completely analyze four; but for the remainder, three were analyzed partially and one not at all. The first four criteria were met.

All health and management committees were to be trained. This criterion was met. However in analyzing the data, it was decided that the committee as a unit had been trained if three out of four members replied affirmatively and, thus, some individuals were not trained.

Health and management committees were to be functioning (10 percent). This criterion had eight indicators, of which only three could be evaluated with the available data:

- Committees were to meet regularly; most met monthly (47.5 percent) and the others bimonthly (27.5 percent).
- Committees were to involve peripheral villages in hut activities. All health committees except one had members from peripheral villages, but three said that they did not attend meetings. The peripheral villages did contribute to VHW support, helped repair the hut, and participated in choosing the VHW.
- Committees were to understand project and committee responsibilities. The majority (92 percent) replied that the hut belonged to the entire village, and that they were responsible for motivating the VHW. All those who were trained replied that they were now able to manage the health hut. But whether they understood their other responsibilities was not ascertained.

The following indicators were not evaluated:

- Committees supervise VHWs and huts.
- They use the "cahier de gestion" and adequately control finances.
- They order drugs as needed.
- They initiate health education activities in village.
- Committee officers are fulfilling their responsibilities.

Huts were to be self-sufficient, i.e., receipts adequate to replenish medications (compliance 25 percent). As financial viability was not determined by looking at receipts, this criterion as stated was not evaluated. The team decided to compare the existing cash on hand plus the financial value of remaining drugs (minus expired drugs) with the initial drug supply provided by USAID. Based on these indicators, 26 out of the 40 (60 percent) were viable, i.e., had a positive cash balance.

At least two VHWs were to be cross-trained and working in 75 percent of the villages (midwives and first aid workers). In the 40 villages surveyed, 87 percent had been retrained and were working. This criterion was met.

A sanitarian and preventive health program was to be introduced in 50 percent of the villages. Data obtained from beneficiaries indicated what type of sanitation activities had been carried out. Most frequent answers were:

- Filtering water (94 percent)
- Village cleanup/community action (79 percent)
- Protecting wells (71 percent)
- Burning trash (62 percent)
- Building latrines (58 percent)
- Garbage pits (50 percent)
- Clay stoves (Lorena type) (20 percent)

Preventive measures mentioned were: taking Nivaquine to prevent malaria (86 percent) and measles vaccination (57 percent). This criterion was met; however, certain activities, such as filtering water, may have already been practiced before the project began.

No data were obtained to evaluate whether VHVs were keeping hut logs adequately. A general impression was that five different notebooks at the hut level is a very unwieldy information system. Notebooks can be filled out if the first aid worker is literate. Since many of cross-trained midwives are illiterate, they are unable to fill out the notebooks when they substitute for the first aid worker. A simpler system needs to be devised.

Compliance was set at 80 percent for the criterion that regular meetings are held between health post nurse or environmental health technician and village committees to review previous month's activities. Thirty-four of the 40 committees replied affirmatively (85 percent). Of these, 21 had met three times since January 1982 (end of the rains); and the others, twice. Subjects discussed during these meetings were not ascertained.

The last evaluation criterion for the village level stated that there would be an increased awareness of hut services and preventive health activities by village residents in 80 percent of the villages. The majority of beneficiaries (94 percent) replied that they used the hut, and 73 percent said that they had gone there for care at least three times since July 1981 (the beginning of the rains). They also gave examples of various preventive

health activities:

- Filtering water (94 percent)
- Taking Nivaquine against malaria (86 percent)
- Cleanliness (82 percent)
- Protection of wells (71 percent)
- Trash burning (62 percent)
- Measles vaccination (57 percent)

At the health post level, 10 evaluation criteria were identified, of which 7 were analyzed completely and the others partially.

All the health post nurses and EHTs were trained as trainers (compliance 100 percent). They were to conduct training sessions for health and management committees and VHWs in 80 percent of the selected villages. Ninety-five percent of the nurses and 85.7 percent of the EHTs replied that they had trained village health committees. Data were not obtained at this level about VHW training. The team had decided that the information provided by the VHWs was sufficient.

Seventy-five percent of health personnel were to develop a quarterly workplan. This compliance rate was not met: 72.5 percent prepared a quarterly plan, and 22.5 percent a monthly one. In the French translation of the redesign team's recommendations, another indicator was added: "plan put into effect." Survey data did not supply information for this indicator. A comparison of workplans and activity reports would have been necessary.

Monthly activity reports were to be completed by nurses and EHTs (compliance 50 percent). This criterion was overwhelmingly met, since 100 percent replied that they sent in activity reports. This trend is biased because health personnel cannot receive their monthly indemnities unless they send in a report.

Health post nurses and EHTs were to attend monthly departmental meetings (compliance 75 percent). The majority of the nurses (90 percent) attended, but only 26 percent of the EHTs did. The reason most frequently given for their absence was they were represented at the meetings by the nurse who was team leader.

Nurses were to summarize health hut logs individually and by rural community, and discuss them with VHWs and health committees. A copy was to be sent to the project office (compliance 50 percent). All the nurses said they summarized activities and sent in copies. No data were obtained

to evaluate whether they discussed these summaries with VHWs and committees. This appears to be a case of information collection but nonutilization.

Regular supervision and ongoing training to VHWs and village committees was to be carried out by 50 percent of health personnel. Two indicators were chosen:

--Nurse and EHT were to visit selected huts and committees twice a month.

--They were to visit nonselected villages once a month.

Nurses (87.5 percent) and EHTs (95 percent) visited selected huts twice a month and, in nonselected villages, they visited monthly (nurses 76 percent; EHTs 74 percent). This information was not corroborated by VHWs, who replied that 63 percent of the nurses came bimonthly (the question did not include the EHTs). In spite of this difference, the criterion is met for the frequency of supervisory visits. They were intended to carry out ongoing training. According to VHWs, nurses equally divided their time between checking and training activities (see Appendix 2). On comparing individual activities, nurses were seen as spending more time checking notebooks. Environmental health technicians on the other hand spent the greater part of their time in training activities (75 percent), with an emphasis on environmental health and health education. This criterion was met.

In order to insure supervision, nurses and EHTs were given motorbikes. They did not receive them until December 1981, a year after the initial recommendation. The criterion is that 50 percent of the motorbikes would be maintained in operating condition. Most of the nurses (95 percent) and 74 percent of the EHTs said that their motorbikes were in operating condition. This criterion is met, but the number of motorbikes not operating seems high since they have only been in use six months. In their suggestions for improving the support system, many replied they wanted gas. So it may be that motorbikes are not immobilized because of breakdowns, but because health personnel need to use part of their monthly indemnity to buy gas.

One of the EHTs' responsibilities was to introduce one sanitation/preventive health program into 50 percent of the selected villages. Data for this criterion were not uniformly collected--interviewers checked activities only rather than indicating the number of villages. The frequency

of activities introduced could be determined and the results are as follows:

	<u>Percent</u>
--Clay stoves (Lorena type)	84
--Community action/cleanup	79
--Well protection	63
--Filtering of water	53
--Trash burning	37
--Garbage pits	32

It appears that EHTs need training in how to determine priorities. Building clay stoves, while important, will have little impact on endemic diseases, as compared with well protection and water filtration. It is interesting to compare the responses given by beneficiaries, who placed more emphasis on water filtration.

In summary, of the 18 evaluation criteria suggested by the redesign team, half met the compliance rates. The others could be only partially evaluated. The criteria which were met are:

	<u>Rate (percent)</u>	<u>Result (percent)</u>
--Committees trained	100	100
--VHWs cross-trained and working	75	87
--Sanitation program introduced	50	50-94
--Regular village meetings	80	85
--Awareness of hut services	80	94
--Nurse trained as trainer	100	100
--EHT trained as trainer	100	100
--Monthly activity reports completed	50	100
--Regular supervision and training	50	74-95
--Motorbikes maintained	50	74-95

IV. RECOMMENDATIONS

IV. RECOMMENDATIONS

The evaluation criteria focused on project activities. If primary health care is seen as a means to stimulate local participation in decision-making, project activities do not give a complete picture of what has taken place. Primary health care is one of the means through which the development process can be initiated.

Recommendation: Develop new creative tools for measuring the impact of primary health care on local decision-making and auto-responsibilization.

The Senegal Rural Health Project is not integrated into a larger development program. This means that certain aspects of development cannot be addressed. For example, VHWs do not have a steady source of income during the dry season and will leave the village to seek employment elsewhere (see Annex 2 for a discussion of this problem).

Recommendation: Integrate the health program with other governmental development programs in the region or expand the actual program to include agriculture, literacy, women's development, cottage industries.

Group decision-making was a novel approach to many of the national team members. In most ministries, decisions are made for you, not with you. Since there was no designated team leader and no experience in group work, team members could not focus their discussions and decisions were not made. A lot of time was wasted.

Recommendation: Keep the concept of having interministerial teams participate in program evaluation. Set aside the first two days to teach them how to work as a group. This would greatly facilitate the process.

The national team members were frustrated because they said the analysis and report writing were taking too long, and their colleagues were asking whether they had become USAID employees.

Recommendation: Before calling in an interministerial team, have all data collected and tabulated. The team can then use the time more profitably when they are released from their full-time responsibilities.

Interviewers had had no experience in carrying out a survey and received minimal on-the-spot training. Data were incorrectly collected.

Recommendation: Select people who have had experience in data collecting to minimize errors.

Questionnaires had not been thoroughly pretested and two were not tested at all. Many questions were leading ones and were open to several interpretations since interviewers translated both the questions and the responses.

Recommendation: Translate all questions and then pretest them. Questionnaires should already be typed in the vernacular language, so that interviewers ask questions in the same way. This will minimize errors in interpretation.

The evaluation coordinator arrived two weeks after data gathering had begun. Certain national team members were very vocal in their reluctance to accept her as a coordinator, feeling that she was being imposed on the group by USAID. This was an expected reaction, since the group had had time to develop its own dynamics.

Recommendation: Get consultants in the field at the beginning of a process so that group harmony can be developed from the start.

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² Sine Saloum Project Staff. "Execution de la premiere tranche du projet," (presentation made for an administrative meeting), April 1982, p. 3 and 4.

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ANNEXES



Annex 1
EVALUATION CRITERIA

Annex 1

EVALUATION CRITERIA

The November 1981 evaluation will focus on the 60 villages in which project activities are concentrated. The criteria for the evaluation will be the following:

<u>Number</u>	<u>Compliance</u>	I. <u>At village level</u> for selected health huts.
60	100%	A. Health and management committees trained. B. Functioning* health and management committees.
6	10%	Meeting all criteria.
12	20%	Meeting 75% of criteria.
25	42%	Meeting 50% of criteria.
17	28%	Meeting 25% of criteria
		* Functioning defined by following criteria: 1. Meet regularly on monthly basis. 2. Supervising village health workers (VHWs) and huts. 3. Using "cahier de gestion" and adequately controlling finances. 4. Ordering drugs as needed. 5. Initiated health education activities in villages. 6. Involving peripheral villages in hut activities. 7. Understand project and committee responsibilities. 8. Committee officers are fulfilling their responsibilities.
15	25%	C. Self-sufficient hut; i.e., receipts are adequate to replenish medications.

<u>Number</u>	<u>Compliance</u>	
45	75%	D. At least two VHWs retrained and working at village level (matron and securiste).
30	50%	E. One sanitation/preventive health program introduced in village.
30	50%	F. VHWs keeping health hut logs adequately.
48	80%	G. Regular monthly meeting between health post nurse or sanitation technician and village committees to review previous months activities.
48	80%	H. Increased awareness of huts services and of preventive health activities by village residents.
II. <u>At Health Post level</u> (10-15 health posts that supervise selected villages).		
60	100%	A. Nurse trained as a trainer.
60	100%	B. Sanitation technician trained as trainer.
48	80%	C. Training conducted for health and management committees and VHWs of selected villages.
45	75%	D. Quarterly workplans developed by nurse and sanitation technician.
30	50%	E. Monthly activity reports completed by nurse and sanitation technician.
45	75%	F. Health post nurse and sanitation technician attended monthly departmental meeting.

<u>Number</u>	<u>Compliance</u>	
30	50%	G. Health hut logs summarized individually and by Communauté Rurale and discussed with VHWs and village committee members. Copy of CR summary is forwarded to project office.
30	50%	H. Regular supervision and ongoing training to VHWs and village committees. Nurse and technician - two visits per month each to selected huts and selected village committees; one visit per month each to other huts and committees.
30	50%	I. Mobylettes have been maintained in operating condition.
30	50%	J. Have introduced one sanitation/preventive health program into each of selected villages.

Annex 2
PRELIMINARY REPORT

Annex 2

PRELIMINARY REPORT

Village Health Committees

Introduction

Sixty health committees were included in the survey, 40 of which managed selected health huts and the other 20, nonselected huts. Four members of each committee were interviewed:

- The president of the health committee (or the president of the management subcommittee)
- The treasurer
- A male committee member (chosen at random)
- A female committee member (chosen at random).

When a question required an opinion of the committee as such, it was decided that a minimum of three identical answers were necessary to reflect the committee's point of view. This was mainly for yes/no questions. For the questions concerning the use of hut notebooks, the treasurer's answer was retained. Opinion answers were tabulated individually.

A total of 157 committee members were interviewed for the selected huts and 74 for the nonselected. It must be noted that, for certain huts, only three members were interviewed instead of four. In the department of Foundiougne, only one committee member for the Bassar hut was available, since the others had sought seasonal jobs elsewhere.

Results

Training. All the committees for selected huts (SH) had received training, but only 13 out of 20 for the nonselected ones (NSH). The team decided that a committee as a unit could be considered trained if three of its members had been trained. A total of three committees in Gossas and Foundiougne had had no trained members. Of those who had been trained, they all replied that their training enabled them to manage the health hut (SH 126; NSH 47).

However, this training should not only enable committee members to manage the hut, but also to evaluate health needs in their village, identify possible solutions, and play an active role in health education. The survey did not provide data to evaluate whether the health committees were active in all these functions. Certain questions did elicit their comprehension of the project, basic principles, and the management system. A possible comparison could be made between answers given by beneficiaries and those given by committee members to determine whether the training improved committee members' comprehension of the project.

Management. Of the 40 SH committees, 35 stated that they met regularly: 11 meet at least twice a month; and 19, once. The other five meet less than once a month. For the NSH, 15 out of 20 committees meet regularly: half at least once, and the other half twice a month. One committee did not state the frequency of meetings.

Meetings are also held between the committee, health post nurse, and village health workers (VHWs). Thirty-four of the 40 SHs replied affirmatively. Of these, 21 had met three times since January 1982 (end of the rains), and the other 14, twice. For the NSH, 15 out of 20 hold regular meetings: 9 had met three times; and 6, twice.

Participation of Peripheral Villages. Thirty-nine committees had members from the peripheral villages. Three of these stated that satellite village members did not attend meetings. For the NSH, 15 committees have peripheral village members who attend meetings (14 out of 15). The other five committees had no peripheral villages.

According to those interviewed, beneficiaries from peripheral villages do contribute to VHW support and help repair the health hut. It is only in the department of Kaolack (SH) that villagers are reticent.

Support Given by Committees to VHWs. In the 40 SH, six VHWs had left: three midwives and three first aid workers. The reasons given appear valid, except for one first aid worker in Foundiougne. According to the treasurer, this VHW had left because he did not like being supervised, but the president said it was because he was discouraged. The other two committee members did not know why the VHW had left.

The reasons given for the other five VHWs were that, of the three midwives, one had died, one was sick, and the other had moved. For the first aid workers, one had died and the other was doing his military service.

According to those interviewed, VHWs should be chosen by the central and peripheral villages (SH and NSH).

Encouragement Given to VHWs. Half of the SH committees had opted for an annual contribution as the method for encouraging VHWs. At times they also help the VHW with his fields and paid in kind (eight committees). Two others only help him with fieldwork and four others do nothing for their VHW (Kaolack). Of the remaining six, four give a monthly fee taken from drug sales, and the other two did not specify. Of the four departments, it is in Mioro that the majority of committees give an annual contribution (11/12). These results could be compared with the answers given by VHWs. Committees in the nonselected villages also replied that they gave an annual contribution (10), but seven do nothing (three are located in Kaolack).

It appears that, in general, an annual contribution is the method chosen to encourage VHWs.

Project Comprehension. Certain questions were asked of committee members and beneficiaries, such as "To whom does the health hut belong?" "Who should repair the hut?" "Who should be responsible for encouraging the VHW?" "Who is responsible for financing drugs?"

The majority of committee members in selected villages (92 percent) replied that the health hut belonged to the entire village. Only four in the Foundiougne said that the hut belonged to the government, but these same four replied that the village was responsible for repairing the hut, bringing the results to 95 percent.

In the nonselected huts, results obtained were similar. Certain committees who had no peripheral villages replied that the central village was responsible for the health hut. Once again, the majority (91 percent) said the the village was responsible for encouraging the VHWs. In the department of Gossas, 2 percent said it was the responsibility of USAID.

Financial Viability of Huts

Findings

One of the redesign objectives was to ensure hut viability, which was defined as being an autonomous and auto-managed entity which is financially independent and capable of maintaining its cash flow.

To determine financial viability, it was necessary to compare the following factors: the existing cash on hand plus the financial value of the remaining drugs with the initial drug supply donated by USAID. The financial value of expired drugs was deducted from the value of the initial supply before calculating viability. Huts that had a positive balance were considered viable.

The initial supply was determined by the size of the village, the larger ones receiving larger supplies. For the huts chosen for the survey, the smallest supply was valued at 26.370 FCFA (\$88; \$1=300F) and the largest at 183.119 FCFA (\$610), or seven times greater.

Based on these criteria, 26 of the 40 SH and nine of the 20 NSH are viable. Many of the huts will fail if measures are not taken. In all probability, drug receipts are misused in some huts. However, the major problems are expired drugs and drug flow.

Questions Raised

Drug Spoilage. A large quantity of drugs have expired, posing a problem which could compromise hut viability in the future. For the huts surveyed, 11 percent of the initial supply given to the SH or 242.524 FCFA (\$808) and 9.5 percent for the NSH or 100.980 FCFA (\$337) had spoiled or were out of date. The situation of Kaolack is crucial, since 44 percent (SH) and 15 percent (NSH) of the initial supplies could no longer be used. It is also surprising to note that drugs such as Chloroquine, which is much in demand, had also expired.

The place of purchase (the United States) does not seem to be the determining factor in drug spoilage, since certain huts did not have this problem. Other factors may influence drug life:

- Slow sale of drugs due to low purchasing power of villagers
- Other drug purchasing possibilities
- Initial drug supply too large
- Date of expiration too close to the shipping and arrival dates.

Hut Viability. It was expected that more huts would be financially viable because drug spoilage had been taken into account. The financial value of drugs was calculated with a fairly large profit margin:

	<u>Percent</u>		<u>Percent</u>
Aspirin	122	Piperazine	15
Chloroquine	21	Aureomycin (3%)	13
Iron	32	Aureomycin (1%)	36

The department of Gossas has the largest percentage of viable huts (73 percent). The results for the departments of Kaolack and Foundiougne are mediocre. In the NSH, results are also poor, except for the department of Gossas.

Initial Drug Supply. Huts that received the largest initial drug supply also had the largest deficits.

Recommendations

The initial drug supply should be reduced to a minimum, to determine turnaround time. Based on this rate and also the time for resupply, precisely determine a supply with a safety margin equivalent to the number of days necessary for resupplying the hut, and a precise quantity of drugs based on patient demand. A study should be done to ascertain the periods of increased demand (over one year). Train health committee members in drug supply management. Stimulate collective activities among villagers (e.g., collective planting and harvesting, or community fishing days). The proceeds could be made available for other health activities--vaccinations, well protection, etc.

Village Health Worker

A total of 87 VHWs were interviewed in the selected huts: 38 midwives and 49 first aid workers. In the NSH, there were 14 midwives and 22 first aid workers interviewed, for a total of 36.

Training

Most of the VHWs received cross-training (SH: 87 percent; NSH: 88 percent). Among the 11 percent who replied that they had not received cross-training, reasons given were that the health post nurse was busy or that the midwife was too old or had just been chosen. Other replies were incorrectly tabulated, or "not applicable" had been checked. Village health workers were satisfied with their cross-training (SH: 91 percent; NSH: 94 percent) because the subjects were interesting and the health post nurses were devoted. Others replied that the additional training gave them new knowledge and enabled them to help their villages. Among those who replied negatively, some said that the training session was given at an inappropriate time, that it was too short, or that they had not received a certificate.

The questionnaire for VHWs included a test. The first 18 questions concerned the cross-training, and midwives and first aid workers were asked to reply. The remaining seven questions were specifically for the midwives

and evaluated their knowledge of maternal and child care. To pass, a VHW needed to obtain 80 percent as a score.

In SH, midwives and first aid workers did equally well on the first 18 questions (midwives: 88 percent; first aid workers: 83 percent). However, in the nonselected huts, there was a greater difference between them (midwives: 71 percent; first aid workers: 86 percent). If each question is evaluated separately, the first aid workers seem weaker than the midwives. In the cross-training, midwives were given a complete course in first aid, while first aid workers were taught environmental health (table 1).

In comparing results for maternal and child care, midwives from the NSH had higher scores, possibly because they had just received their cross-training and had been able to review some of their care procedures at the rural maternity.

Recommendation: Retrain the VHWs in their basic course, i.e., if first aid workers, give them refresher courses in first aid.

Supervision

Most of the VHWs (SH: 93 percent; NSH: 83 percent) held regular meetings with their committees to discuss problems, but the frequency of these meetings was not determined. In the SH, VHWs hold regular monthly meetings with the health post nurse and the EHT (50 percent), but those in NSH hold meetings at least twice or more per month (58 percent). This difference may reflect a change in directives. Before the redesign, nurses had been asked to hold bimonthly meetings, but this had been changed to once a month after the redesign. Nurses supervising selected huts had changed their scheduling.

VHWs were then asked whether the nurse came regularly to visit the hut and how often (the question did not include EHTs). After the redesign, nurses were to visit each selected village twice a month, which they did according to the VHWs (63 percent). For the NSH, VHWs replied that the nurse came monthly (54 percent). It must be noted that 11 VHWs in the department of Gossas said that their health post nurse did not come regularly (28 percent) (table 2).

In analyzing the frequency of supervision visits, it was questioned whether there was any real difference between SH and NSH. If the norm of "at least once a month" were taken, there is no difference in the frequency of visits between SH and NSH (SH: 90 percent; NSH: 95 percent).

Even in comparing the type of activities carried out by the nurses or EHTs during their supervisory visits, there is very little difference between selected and nonselected huts.

Table 1
FREQUENCY OF INCORRECT ANSWERS ON TEST

Question	CS				CNS			
	Midwife		Secouriste		Midwife		Secouriste	
	No.	%	No.	%	No.	%	No.	%
3	4	6.8	3	5.4	3	15	3	11.5
4	4	6.8	11	19.3	1	5	3	11.5
8	1	1.7	9	15.8	1	5	0	0.0
9	5	8.4	1	1.8	2	10	5	19.2
10	2	3.4	8	14.0	3	15	1	3.8
11	4	6.8	5	8.8	1	5	1	3.8
14	0	0.0	7	12.3	0	0	4	15.4
17	8	13.5	2	3.5	3	15	1	3.8
18	12	20.3	8	35.0	4	20	3	11.5
TOTAL	59		57		20		26	

Table 2 FREQUENCY OF VISITS TO HEALTH HUTS BY NURSES				
Frequency	Visits			
	CS		CNS	
	No.	%	No.	%
1/month	24	27.5	12	36.0
2/month	21	25.0	7	21.0
More than 2	33	38.0	11	33.0
Fewer than 1	0	0.0	0	0.0
No reply	8	9.0	3	9.0
TOTAL	87		33	

Activities were subdivided into administration and training. Administrative activities included checking notebooks and inspecting the hut and drug supply. Training included technical help, management problems, relationships with villagers and health committees, environmental health, and health education. Nurses from SH divided their time equally between administration and training, but in the NSH, they spent more time on training (62 percent). This is to be expected, since cross-training of VHWs in NSH was completed in March/April 1982 (table 3). When individual activities are compared, nurses placed more emphasis on checking notebooks (table 5).

EHTs, on the other hand, were seen as spending more time in training (SH: 75 percent; NSH: 84 percent), since they emphasized environmental health and health education (tables 4 and 6).

Based on these observations, it was questioned whether the frequency of supervisory visits made any difference in the types of activities carried out by health personnel, or whether it was having someone come regularly that was important.

Hypothesis: A monthly supervisory visit is sufficient for carrying out checking and training activities at the hut level.

Recommendation: Revise supervision schedules to have monthly instead of bimonthly visits. Extra training could be done at the health post. Changing the frequency of visits will cut down on gas costs.

In general, VHWs stated that supervision contributed new skills, a better understanding of their own role (direction), and respect from villagers (table 7). There is a net difference between levels of perceived respect between VHWs from selected and nonselected villages. Respect is higher for selected villagers. This led to an initial hypothesis that respect from villagers was tied to the frequency of visits. Another observed difference is that village health committees have existed longer in selected than in nonselected villages.

Hypothesis: The respect given to the VHWs by villagers is related to the existence of village health committees rather than to the frequency of supervisory visits.

The VHW is supervised by two people: the health post nurse and the environmental health technician. The EHT was added to post personnel because it was thought that the PHC program was increasing the nurse's workload. The EHT was given the responsibility for the environmental health program and health education.

Is it really necessary to have two people supervising the VHWs? This is a heavy structure and in developing countries where there is a shortage of health personnel in rural areas, having two people seems a luxury.

Recommendation: Either the nurse or the EHT should be the village health worker's supervisor.

Table 3
APPRAISAL OF NURSES' SUPERVISION

Activities	SH		NSH	
	No.	%	No.	%
<u>Administration</u>				
Notebook checking	46	46.5	14	38.0
Hut inspection	33		8	
Drug Supply	14		7	
<u>Training</u>				
Technical	28	53.5	14	61.8
Management	26		10	
Relationship committee/villagers	32		13	
Environmental health	8		4	
Health education	13		6	
TOTAL	200		76	

Table 4
APPRAISAL OF EHTs' SUPERVISION

Activities	SH		NSH	
	No.	%	No.	%
<u>Administration</u>				
Notebook checking	17	25	4	15.7
Hut inspection	14		1	
Drug supply	8		3	
<u>Training</u>				
Technical	11	75	5	84.3
Management	8		1	
Relationship committee/villagers	6		3	
Environmental health	54		20	
Health education	38		14	
TOTAL	156		51	

Table 5
NURSES' ACTIVITIES DURING SUPERVISION

Activity	SH(87)		NSH(36)	
	No.	%	No.	%
<u>Administration</u>				
Notebook checking	46/87	53	14/36	39
Hut inspection	33	38	8	22
Drug supply	14	16	7	19
<u>Training</u>				
Technical	28	32	14	39
Management	26	30	10	28
Relationship committee/villagers	32	37	13	36
Environmental health	8	9	4	11
Health education	13	15	6	17

Table 6
EHTs' ACTIVITIES DURING SUPERVISION

Activity	SH(87)		NSH(36)	
	No.	%	No.	%
<u>Administration</u>				
Notebook checking	17/87	20	4/36	17
Hut inspection	4	6	1	3
Drug supply	8	9	3	8
<u>Training</u>				
Technical	11	13	5	14
Management	8	9	1	3
Relationship committee/villagers	6	7	3	8
Environmental health	54	62	20	56
Health education	38	44	14	39

Table 7 CONTRIBUTION TO VHW BY NURSES' AND EHTs' SUPERVISION (percentage)				
Contribution	Nurses		EHTs	
	SH	NSH	SH	NSH
Knowledge	33	50	42	37
Direction	36	32	33	35
Respect	21	12	22	15

There appears to be a decrease in post utilization which would free the post nurse to spend more time in the villages. Nurses are taught environmental health and health education as part of their basic training. Would it not be possible to give them refresher courses and thus enable them to supervise these two activities? The survey did not determine whether nurses are also doing consultations at the village level. If they are, this would be an additional reason in favor of their remaining supervisor.

On the other hand, the EHT could be the VHWs' supervisor, since he emphasizes environmental health and does health education. These two activities would appear to have a greater health impact than curative care. The EHT is not qualified to supervise first aid, since this was not part of his basic training. He could be trained in first aid and become qualified to supervise that activity. The administrative problem of to whom does the EHT report (Health or Public Works) needs to be solved.

When asked how their supervisor could help them, VHWs replied that they needed more help with motivating villagers (29 percent), their working conditions should be improved (27 percent), and they wanted additional technical skills (22 percent). In the nonselected villages, they mentioned additional technical skills as the most important aspect (31 percent).

VHWs' Remuneration

Almost all VHWs replied that they received some type of remuneration (88 percent), and the type most frequently paid by villagers was an annual contribution followed by payment in kind (table 8). Those who infrequently or rarely received remuneration were first aid workers in Kaolack.

Village midwives usually received payment after delivering the baby (SH: 74 percent; NSH: 66 percent). This reflects village custom. However, several midwives stated they received nothing (SH: 7 percent; NSH: 20 percent).

The majority of VHWs were satisfied with the moral support given by villagers and committees (SH: 95 percent; NSH: 89 percent). They wanted better working conditions (SH: 27 percent; NSH: 21 percent), financial support (SH: 23 percent; NSH: 20 percent), and more medicines (SH: 22.5 percent; NSH: 28.5 percent). It would appear that moral support, even though important, does not provide sufficient motivation for some VHWs.

Hypothesis: Having been trained, VHWs expect to be able to make a better living. For: This is a normal expectation, since further training usually improves one's earning ability. The evaluation done before the redesign showed that many VHWs had left because they weren't earning enough. Against: VHWs are living at the same rhythm as the other villagers and therefore should not expect to have more. Several answered that their training permitted them to help their village.

Table 8				
TYPES OF PAYMENT GIVEN BY BENEFICIARIES TO VHW				
Type of Payment	SH		NSH	
	No.	%	No.	%
Annual contribution	30	34	17	47
Contribution in kind	21	24	2	5
Monthly sum of money	6	7	2	5
Help with field work	3	3	2	5
Social & moral support	3	3	2	5
Collective field	1	1	0	0
Nothing	9	10	4	11
No reply	11	13	5	14
Other	3	3	2	5
TOTAL	87		36	

Availability

The VHW is asked to give care during the rains at moments when he is not free. Most of them replied that villagers come at any time to receive care, but that they are only free in the afternoon. After the rains, there is no conflict between availability and demand for services (tables 9 and 10).

Hypothesis: There is a conflict between supply and demand because there is a seasonal increase in illness.

Hypothesis: Villagers do not wait to be bedridden during the farming season before requesting care, since they do not want to delay field work.

Hypothesis: The village midwife who has been cross-trained will be more in demand during the farming season, since the first aid worker is busy with his fields.

Most of the male VHWs work as farmers during the rains (SH: 96 percent; NSH: 75 percent). Four did not--one was a fisherman and the other three did nothing during the rains. However, the majority do nothing in the dry season (SH: 38 percent; NSH 83 percent). Those who did have another occupation (SH: 38 percent) replied that they did small vegetable gardening, housework, were peddlers or masons, or taught a Koranic school.

Hypothesis: Since a large percentage of male VHWs have no means of earning money during the dry season, they will go elsewhere to find jobs.
Corollary: There will be an increased demand for the services of cross-trained midwives in huts where the male VHWs have no other livelihood except for farming.

Hypothesis: The problem of volunteerism can best be solved when a primary health care program is part of a total development program. This would provide VHWs with alternative means of earning their living.

Recommendation: Expand the program to include other development aspects. Provide VHWs with income-generating activities (small businesses, vegetable gardening, chicken or rabbit raising).

Availability of Cross-trained Midwives

Most of the male VHWs stated that the midwife was available to replace them in giving first aid care, either during or after the rains. Those who replied that she was not available explained that she had not been cross-trained. Only one male VHW replied that the midwife was unavailable because she lacked confidence. These results are similar to the number of midwives who replied that they had not been cross-trained (Nioro 6; Kaolack 3; Gossas 1).

Table 9
COMPARISON OF AVAILABILITY AND DEMAND OF VHW SERVICES (SH)

Time	Rains				Dry Season			
	Availability		Demand		Availability		Demand	
	No.	%	No.	%	No.	%	No.	%
Morning	11	11.0	15	17.6	14	16.4	13	15.0
Afternoon	32	37.6	23	27.0	8	9.4	13	15.0
Night	9	10.5	13	15.0	3	3.5	5	6.0
Always	28	33.0	28	33.0	58	68.0	47	55.0
No reply	3	3.5	6	7	2	2.3	7	8.0
Other	2	2.3	0		0		0	
TOTAL	85		85		85		85	

Table 10
COMPARISON OF AVAILABILITY AND DEMAND OF VHW SERVICES (NSH)

Time	Rains				Dry Season			
	Availability		Demand		Availability		Demand	
	No.	%	No.	%	No.	%	No.	%
Morning	5	13.8	10	27.7	5	13.8	19	52.7
Afternoon	19	52.7	11	30.5	4	11.1	1	2.7
Night	1	2.7	4	11.1	1	2.7	4	11.1
Always	10	27.7	11	30.5	26	72.2	12	33.3
No reply	0		0		0		0	
Other								
TOTAL	36		36		36		36	

Responses given by the village midwives are similar to those given by the first aid workers. They also replied that they were less available to give care during the rains (SH: 49 percent; NSH: 57 percent). Only one midwife said she was unavailable to give care because she did not want to substitute for the first aid worker.

Certain questions can be raised when evaluating the availability of the cross-trained midwife. Do villagers request her services as frequently as the first aid worker? Is there an attitudinal block which inhibits villagers to seek out the midwife, i.e., since she is a woman, do they only see her in a mother/child care role?

Results from the test were compared with answers on cross-training and availability. There is concordance. Half of the Nioro midwives had not been trained, a large number had obtained less than 80 percent on their test (five out of eight), and it is in this department that there were the most negative replies concerning availability. Why is there such a marked difference for this department which was the first area to be included in the project? (tables 11, 12, and 13).

Role Satisfaction

Most VHWs were satisfied with their role (SH: 80 percent; NSH: 86 percent). Those who were dissatisfied were located in the departments of Nioro (four) and Foundiougne (two). There seems to be no relationship between those who are dissatisfied and those who receive no remuneration (the latter are located in Kaolack). The majority of VHWs who have no other income other than health care are located in Nioro (35 percent) and Foundiougne (33 percent).

Hypothesis: Role satisfaction is not dependent on the contribution (financial or in kind) given by the villagers to the health workers.

Hypothesis: Role satisfaction depends on whether the VHW has another source of income during the dry season.

Village midwives were asked about the demand for their delivery and prenatal services. They replied that most of the women in central villages called them to help with deliveries (SH: 86 percent; NSH: 71 percent), and they visit each new mother. But fewer women called them for prenatal care and they visit them less often. This may be because village midwives do not understand their role in prenatal care (table 14).

Recommendation: Emphasize prenatal care in the followup training given to village midwives.

Table 11 COMPARISON OF RESULTS FROM KNOWLEDGE TEST WITH AVAILABILITY OF VILLAGE MIDWIFE TO DO FIRST AID				
Score on test (percent)	SH		NSH	
	Number with score	Never available	Number with score	Never available
Nioro	-50	3	0	0
	50-80	2	1	
	80+	6	3	
		5	1	
		6		
Kaolack	-50	1	1	2
	50-80	1	1	
	80+	6	2	
		2	2	
Found.	-50	0	0	0
	50-80	0	1	
	80+	7	2	
		0	1	
		2		
Gossas	-50	0	0	0
	50-80	1	0	
	80+	10	3	
		1	0	
		1		

Table 12						
AVAILABILITY OF VILLAGE MIDWIVES FOR HOME DELIVERIES AND FIRST AID (SH)						
Time	Availability for home deliveries				Availability for first aid	
	Before rains		After rains			
	No.	%	No.	%	No.	%
Morning	6	16	6	16		
Afternoon	10	27	4	11		
Night	3	8	3	8		
Always	18	49	24	65	27	73
Other	0	0	0		10	27
TOTAL	37		37		37	

Table 13						
AVAILABILITY OF VILLAGE MIDWIVES FOR HOME DELIVERIES AND FIRST AID (NSH)						
Time	Availability for home deliveries				Availability for first aid	
	Before rains		After rains			
	No.	%	No.	%	No.	%
Morning	0	0	1	7		
Afternoon	6	43	2	14		
Night	0	0	0	0		
Always	8	57	11	78.5	11	78.5
Other	0	0	0	0	3	21.4
TOTAL	14		14		14	

Table 14								
COMPARISON OF USE OF SERVICES OF VILLAGE MIDWIFE BY WOMEN IN CENTRAL AND SATELLITE VILLAGES								
Village midwife's role	Central village				Satellite villages			
	Deliveries		Prenatal		Deliveries		Prenatal	
	No.	%	No.	%	No.	%	No.	%
Selected villages' demand for services	32/37	86	28/37	75	23/38	60	26/38	68
Home visits	38/38	100	37/38	97				
Nonselected villages' demand for services	10/14	71	7/13	54	7/14	50	9/14	64
Home visits	14/14	100	9/13	69				

Midwives said they were called by women from peripheral villages less frequently to help with deliveries or for prenatal care. Unfortunately, the question Why? was not asked. This decrease in demand may be due to the presence of traditional midwives in the peripheral villages.

Recommendation: Train traditional midwives from peripheral villages in care of the umbilical cord, fever, and diarrhea. The village midwife could do this training under the supervision of the health post nurse when he visits the hut.

Most VHWs had suggestions for increasing their role satisfaction. In the SH, they wanted financial support (23 percent) and more medicines (22.5 percent). In the NSH, the same concerns were expressed, but medicines were given priority. Others said they wanted working conditions improved and more consideration from villagers. The underlying concern seems to be the fact that they are considered volunteers.

Recommendation: Discuss with health committees and villagers how best to encourage the VHWs and also facilitate their learning other means of employment.

Nurses and Environmental Health Technicians

A total of 36 nurses and 34 EHTs were surveyed. They work out of health posts which cover the populations of rural communities. There were 20 selected and 20 nonselected rural communities, but not all of them have a health post. In selected communities, not all huts were chosen to receive intensive supervision.

Training of Health Personnel

All the nurses were trained as trainers, and only two EHTs were not. One EHT was sick the day of the survey and the other did not reply.

Of the nurses surveyed, 18 replied that the training had been helpful because they learned new techniques and ideas. The training permitted them to carry out their activities more effectively. Others were less satisfied with their training. Half suggested holding other training sessions and made suggestions as to how the program could be improved. For example, the content on management and animation could be increased, more time could be spent practicing techniques, background documents should be distributed before holding the training sessions, training needs should be assessed by having participants fill out a questionnaire, post-training followup could be improved, and the length of the session could be longer.

The EHTs gave similar answers. They said that the training gave them new work methods and knowledge (18/32). Ten others judged that their training had been useful and permitted them to perform better. Those who felt

the training was inadequate (4/32) explained that the trainers were not qualified, that the content was not adapted to field realities, and that the training was too concentrated. Many of the EHTs expressed the need for more training sessions. They suggested that the program be lengthened and the content be more practical and better adapted to field realities and training needs. Others expressed the need to learn how to use audio-visual materials. Observation: This is a commonly expressed need among health personnel who think that health education can only be done using sophisticated materials.

Village-level Training and Supervision

It was estimated by project staff that each nurse and EHT would have 10 villages (health huts and committees) to supervise and train. In selected rural communities (SRC), half of the nurses replied that they had 10 or more (53 percent), but less than half in the nonselected rural communities (NSRC) (table 15). The EHTs who supervise the same villages gave different information: in SRC, 65 percent had 10 or more committees; and in NSRC, 31 percent (table 16).

The majority of the nurses replied that they had trained all their committees (95 percent), whether they had three or 10 committees. But in NSRC, fewer committees had been trained, and certain nurses replied that they had not trained any: Foundiougne (two) and Gossas (one) (table 17). Among the EHTs, the same trend can be noted (table 18). Those who had done no training were located in Foundiougne (two), Gossas (one), and Kaolack (one).

There is a net difference between SRC and NSRC. This information can be used to shed light on the question of VHWs' feelings of respect from villagers. The analysis of data from the VHW questionnaire had raised the possibility that it was the presence of committees which influenced how VHWs perceived villagers' consideration (see discussion Annex 2, p.31). In NSRC, fewer committees received training, and it is also in these villages that health workers rarely mention that the health post nurses' visits contribute to the consideration given them by villagers.

Hypothesis: VHW consideration by villagers is not linked primarily to the existence of a village health committee, but more to whether the committee has been trained.

Nurses and EHTs received their motorbikes in December 1981 (a year after the redesign) in order to facilitate village supervision. They had been instructed to visit selected huts twice a month. Most said they had followed these instructions. However, EHTs went more frequently (95 percent) than nurses (81 percent). In the SRC, there were also nonselected huts. Health personnel were instructed to visit them once a month, which

Table 15				
NUMBER OF EXISTING COMMITTEES AND NUMBER TRAINED BY NURSES (Frequency of Replies)				
Number of Committees	SRC		NSRC	
	Existing	Trained	Existing	Trained
0	0	0	0	3
1-3	1	1	0	3
4-6	2	2	2	4
7-9	6	5	7	3
10-12	8	9	6	1
13-15	2	2	0	0
No reply	--	--	--	1
TOTAL	19	19	15	15

Table 16 NUMBER OF EXISTING COMMITTEES AND NUMBER TRAINED BY EHTs (Frequency of Replies)				
Number of Committees	SRC		NSRC	
	Existing	Trained	Existing	Trained
0	0	0	0	4
1-3	0	0	0	2
4-6	2	2	4	4
7-9	5	5	6	2
10-12	11	10	5	2
13-15	2	2	0	0
No reply	--	1	1	2
TOTAL	20	20	16	16

Table 17
EXISTING COMMITTEES TRAINED BY NURSES

Percent of Committees Trained	SRC		NSRC	
	No.	%	No.	%
100	19	95	5	35.7
>80	1	5	2	14.3
70-80	0	--	1	7.0
50-70	0	--	1	7.0
<50	0	--	2	14.3
0	0	--	3	21.4
No reply	0	--	0	--
TOTAL	<u>20</u>		<u>14</u>	

Table 18
EXISTING COMMITTEES TRAINED BY EHTs

Percent of Committees Trained	SRC		NSRC	
	No.	%	No.	%
100	18	85.7	6	37.5
>80	1	4.7	0	--
70-80	0		2	12.5
50-70	0		1	6.0
<50	0		1	6.0
0	0		4	25.0
No reply	2	9.5	2	12.5
TOTAL	21		16	

they did: nurses (56 percent) and EHTs (60 percent). Some did go more frequently. There is a difference in number of visits to selected and nonselected huts (tables 19 and 20).

The information given by the health personnel does not agree with that given by VHWs, who stated that 63 percent of their supervisors came twice a month, instead of 87.5 percent. Because the percentages given by health personnel are greater than those given by the VHWs, this question may be a leading one. Nurses and EHTs know what their instructions were and would tend to answer with these in mind rather than giving an accurate answer. The information given by VHWs is judged to be more reliable.

Motorbike Usage

The majority of nurses (SRC and NSRC) stated that their motorbike was in operating condition. Only three out of 36 replied negatively. But among the EHTs, there were more negative answers (9 out of 32). The question did not ask them to specify whether it was not operating because of lack of gas or because it needed repairs. In their suggestions for improving supervision, many of the EHTs asked that they be given gas for their motorbikes. They do receive monthly indemnities for supervising villages and are to use them to purchase and repair their motorbikes. Project staff stated that 20 EHTs were assigned to the health post a year ago and have not yet received their salaries. So they may be using the indemnities to live on.

It seems that, in spite of this problem, nurses and EHTs carried out their village visits. However, if one accepts VHW information about the frequency of visits, the nonoperating motorbikes did influence the rate of visits.

Management System

All the nurses (SRC and NSRC) draw up a work plan. In the SRC, most prepare a trimester plan (72 percent); and the rest, a monthly plan (27 percent). Half of the nurses in NSRC prepare a trimester work plan, and the others, a monthly one. Of the EHTs, only one replied that he did not prepare a work plan. The majority prepared a trimester plan (SRC: 74 percent; NSRC: 80 percent); and the remainder, by month (table 21).

They were asked whether they had sent their monthly activity reports to the project office. All except for two replied affirmatively. One would expect this high rate, since health post nurses and EHTs do not receive their indemnities unless they send in their activity report. This raises the question about the type of motivation used to

Table 19
 FREQUENCY OF SUPERVISORY VISITS TO
 VILLAGES BY NURSES (SRC and NSRC)

Frequency	SRC				NSRC	
	SH		NSH		No.	%
	No.	%	No.	%		
1/month	3	14.2	16	76	9	56
2/month	14	66.0	4	19	5	31
More than 2	3	14.2	1	5	1	6
Fewer than 1	0	0.0	0	0	1	6
No reply	1	5.0	0	0	0	0
TOTAL	21		21		16	

Table 20 FREQUENCY OF SUPERVISORY VISITS TO VILLAGES BY EHTs (SRC AND NSRC)						
Frequency	SRC				NSRC	
	SH		NSH		No.	%
	No.	%	No.	%		
1/month	1	5	14	74	9	60
2/month	12	63	5	26	5	33
More than 2	6	32	0	0	1	6
Fewer than 1	0	0	0	0	0	0
No reply	0	0	0	0	0	0
TOTAL	19		19		15	

Table 21 TYPE OF WORK PLAN PREPARED BY NURSES AND EHTs								
Type of Work Plan	Nurses				EHTs			
	SRC		NSRC		SRC		NSRC	
	No.	%	No.	%	No.	%	No.	%
Trimester	15	72	7	47	14	74	12	80
Monthly	5	24	8	53	5	26	2	13
Other	1	4	0	0	0	0	0	0
No reply	0	0	0	0	0	0	1	6
TOTAL	21		15		19		15	

ensure village supervision and the management information system. Will not the whole program be jeopardized when payment of indemnities is stopped? This type of motivation was justified on the grounds that the PHC program was increasing the health personnel's workload. But if preliminary indications are correct, post utilization will decrease since more and more villagers are using their health hut. Thus, the previous justification for paying indemnities no longer holds. There needs to be an evaluation of health post personnel's present use of time and a new job description elaborated.

Hypothesis: Health post utilization has decreased because of health hut activities.

Recommendation: Review job descriptions in light of nurses' and EHTs' timetable.

Only nurses were asked whether they sent in a summary report on hut activities (not to be confused with activity reports). All the SRC nurses sent in their summary, but only 60 percent of NSRC nurses did. When asked to explain why, they replied that those reports were only to be filled out for selected huts, and they had none in their sector.

Contact at Department Level

Regular Meetings. The majority of nurses knew that there were monthly meetings with their departmental supervisor (the doctor in charge of the health center or project supervisors). But not all attended the meetings regularly (SRC: 90 percent; NSRC: 66 percent). By department, those who did not attend regularly are located in: Nioro (two), Gossas (three) and Foundiougne (two). Among the EHTs, the majority also knew that there were monthly supervisory meetings, but fewer attended (SRC: 26 percent; NSRC: 33 percent). Those who did not attend are located in Nioro (eight), Kaolack (six), Gossas (five) and Foundiougne (four). The major reason given for their absence was that the health post nurse represents the EHT since he is team leader (33 percent) or that they alternate (23 percent). Other reasons given included:

- No means of transportation/motorbike not operating (three)
- Illness (two)
- Problems related to work (four)
- Financial problems (two) (table 22).

Many EHTs expressed the desire to participate in these meetings.

Table 22						
REASONS GIVEN FOR NONPARTICIPATION IN MONTHLY DEPARTMENTAL MEETINGS (NURSES AND EHTs)						
Reason	Nioro	Kaolack	Found.	Gossas	Total	%
Represented by nurse who is team leader	4	5	0	1	10	33
Nurse and EHT take turns	4	1	0	2	7	23
Logistical problem (breakdowns, etc.)	0	0	3	0	3	10
Work constraints (training, etc.)	1	0	0	3	4	13
Illness	0	0	1	1	2	6
Financial problems	0	0	0	2	2	6
No reply	1	0	1	0	2	6
TOTAL	10	6	5	9	30	

Several questions were raised concerning these meetings.

- Are meetings only for health post nurses? Project staff said yes, because he is the team leader.
- Could the post be closed one day a month to allow both to participate? When there was no EHT, nurses would close the post to go take care of administrative problems. Clearly, closing the post is not an ideal situation, but having the EHT who has not been trained in curative care substitute for the nurse is not ideal either.
- Since EHTs do not participate in decision-making, will they not feel that decisions are imposed on them? Project staff said that many of the EHTs were questioning their hierarchical position.

Recommendation: To improve coordination, communication, and team spirit, it is important to allow EHTs to participate in these monthly meetings.

Supervision provided by Departmental Personnel. The majority of nurses and EHTs said that their health supervisor visited them regularly (62.5 percent), but the one from Human Promotion (HP) not as regularly (40 percent). If one takes the norm--at least once a month--the health supervisor comes more frequently (75 percent) than the HP one. The irregularity of both supervisors is marked in the department of Kaolack: the health supervisor comes once every two months; and the one from HP, infrequently. There were three people who stated that both supervisors came infrequently: Nioro (two) and Gossas (one).

In the NSRC, the difference between the supervisors is much larger. Using the norm--at least once a month--the health supervisor comes regularly (80 percent); and the HP, infrequently (40 percent). As in the SRC, the infrequent visits of the Kaolack HP supervisor is marked, but the HP supervisors in the other departments are also irregular.

There seems to be little difference between selected and nonselected rural communities. Rather, the difference is between the supervisors themselves, since the health supervisor visits posts regularly. This difference can be partially explained by the fact that the HP supervisor is also responsible for village information and motivation programs for other services besides health: agriculture, adult education, public works, etc., while the health supervisor is only responsible for health. On the other hand, logistical and coordination problems and personality conflicts may also influence the regularity of visits (table 23).

Table 23								
FREQUENCY OF DEPARTMENTAL SUPERVISORY VISITS TO POST (HEALTH AND HP)								
Frequency	SRC				NSRC			
	Health		HP		Health		HP	
	No.	%	No.	%	No.	%	No.	%
1/month	25	62.5	16	40.0	24	80	12	40
2/month	4	12.5	5	15.0	0	0	1	2
More than 2x	1		1		0	0	0	
Fewer than 1x	5	12.5	9	22.5	3	10	5	16
Other	5	12.5	9	22.5	3	10	12	40
TOTAL	40		40		30		30	

Almost all the SRC personnel stated they had appealed to their supervisors for help in solving problems (nurses: 100 percent; EHTs: 89 percent), and they usually received help (nurses: 90 percent; EHTs: 89 percent). But in the NSRC, they asked for assistance from the departmental supervisors less frequently (nurses: 80 percent; EHTs: 73 percent), either because they had had no major problems or because they preferred to solve them themselves. When they did request assistance, only 60 percent of the nurses and 66 percent of the EHTs received help from their supervisors.

This difference in the support given by departmental supervisors may have been influenced by the fact that the NSRC personnel had no selected huts. Project staff had emphasized the need for increased support of selected huts. So, departmental supervisors may have given priority to posts with selected huts. If so, post personnel should not be penalized because they were not in selected rural communities.

Recommendation: All health post personnel, SRC and NSRC, should receive regular support and visits from their departmental supervisors.

The types of support given by supervisors were, by order of frequency: technical (40 percent), moral (38 percent), and logistical (SRC: 12 percent; NSRC: 2.5 percent). The HP supervisor provided the same type of support (table 24). A large proportion of health personnel in NSRC stated that they received no support from either supervisor (38 percent) or did not reply to the question (19 percent). This corroborates the information given on the frequency of supervisory visits.

Logistical support was less frequently mentioned, perhaps because they had received motorbikes. Personnel in SRC did mention it more frequently, which may reflect the fact that the departmental supervisor may give post personnel a lift.

Nurses and EHTs made suggestions for improving the supervision they receive. These include (table 25):

- Scheduled visits, once planned, should not be changed.
- Supervisors should come more often.
- Supervisors should also visit health huts.
- Supervisors should respond to their requests for assistance.
- Logistical means should be improved (repairs or gas).

Table 24
 TYPES OF CONTRIBUTION GIVEN BY DEPARTMENTAL SUPERVISORS
 AS SEEN BY NURSES AND EHTs

Type of Contribution	SRC				NSRC			
	Health		HP		Health		HP	
	No.	%	No.	%	No.	%	No.	%
Moral support	22	37.9	19	36.5	15	37.5	7	21.8
Logistical support	7	12.0	5	9.6	1	2.5	0	0.0
Technical support	23	39.6	15	28.8	16	40.0	7	21.8
Other	6	10.3	6	11.5	2	5.0	0	0.0
Nothing	0		6	11.5	4	10.0	12	37.5
No reply	0		1	1.9	2	5.0	6	18.7
TOTAL	58		52		40		32	

Table 25								
SUGGESTIONS FOR IMPROVING DEPARTMENTAL SUPERVISION GIVEN BY NURSES AND EHTs								
Suggestions	Nurses				EHTs			
	CRS	CRNS	Tot.	%	CRS	CRNS	Tot.	%
Indemnities	2	0	2		1	0	1	
Logistical means	7	2	9	24	7	3	10	22
Regular visits	3	6	9	24	6	2	8	17
More visits	6	1	7	19	5	5	10	22
Visit health huts	0	1	1		0	4	4	8
Available when needed	1	0	1		3	0	3	6
Other	4	4	8	22	5	4	9	20
TOTAL			37				45	

Environmental Health Program

Data collection for this question was not uniform. Some interviewers only checked an activity instead of giving the number of villages where the EHTs had begun their program (Nioro and Gossas). Where data were correctly collected, the mode was used to establish the number of villages where there was a sanitation/preventive health program.

In SRC, each technician had introduced an environmental health program in three selected villages and eight nonselected ones, and, in NSRC, the mode was seven villages (tables 26, 27, and 28).

The frequency of each activity mentioned was also used--each activity being counted once even if the technician had worked in eight villages. In SRC, the following activities were carried out:

	<u>Percent</u>
--Clay stoves (Lorena type)	84
--Community action/village cleanup	79
--Well protection	63
--Filtering of water	53
--Trash burning	37
--Garbage pits	31

In NSRC, the EHTs gave priority to other activities:

	<u>Percent</u>
--Filtering of water	80
--Well protection	73
--Clay stoves	60
--Community action/village cleanup	60
--Trash burning	40
--Garbage pits	33

It is thought that very little was done with garbage and trash disposal because composting had been introduced initially. Villagers had not accepted the idea, due to lack of water.

Table 26 TYPES OF ACTIVITIES IN ENVIRONMENTAL HEALTH PROGRAM ORGANIZED BY EHTs				
Activities	SH		NSH	
	No.	%	No.	%
Well protection	12/19	63	11/15	73
Separation of well from animal watering troughs	0	0	2	13
Distancing of animals from well	0	0	2	13
Filtering of water	10	53	12	80
Garbage pits	6	32	5	33
Clay stoves	16	84	9	60
Community action	15	79	9	60
Refuse burning	7	37	6	40

Table 27
 MODE AND MEAN OF NUMBER OF SELECTED VILLAGES IN WHICH
 ENVIRONMENTAL HEALTH PROGRAM WAS BEGUN (SRC)

R	Department				Mode	Global Mode	Mean
	Found.	Kaolack	Gossas	Nioro			
a	3,3,8	4,2,3,3	3	3,2,5,3	3	3	3.5
b	8	--	3	3	3		4.6
c	8	1,2	3	3	3		3.4
d	3,8	4,3,4	3	3	3		4
e	3,8	4,3,3,3,1	3,1	3,1	3		3
f	8	4,2,2	4,2	10,2,2	2		4
g	3,3,8	3,4,3,2,2	4,1	3,3	3		3.2
h	3,8	4,5,3,2,2,	--	3,3	3		3.6
i		4,3,2	--	3	3		3

Table 28							
MODE AND MEAN OF NUMBER OF NONSELECTED VILLAGES IN WHICH ENVIRONMENTAL HEALTH PROGRAM WAS BEGUN (SRC)							
R	Department				Mode	Global Mode	Mean
	Found.	Kaolack	Gossas	Nioro			
a	8,8,8	8,7,4	2	9,1,4	8	8	5.9
b	8	1	2	9	--		5
c	8	1	1	9	--		4.7
d	8	8,7,5	2	9,1	8		6
e	8,8	8,3,7,4	2	9,1	8		5.8
f	3,8	8	1	9,5	8		6
g	2,6,8	2,1,7,1	2	9,7	2		4.3
h	8	7,4,7,1	8	--	--		5.8
i	8,8	8,7	--	--	8		7.7

Table 29							
MODE AND MEAN OF NUMBER OF NONSELECTED VILLAGES IN WHICH ENVIRONMENTAL HEALTH PROGRAM WAS BEGUN (NSRC)							
R	Department				Mode	Global Mode	Mean
	Found.	Kaolack	Gossas	Nioro			
a	7,7		x	x	7	7	7
b	7				7		7
c	7				7		7
d	7,7	10			7		8
e	7,7	2,1			7		4.2
f	7,7	2,6			7		5.5
g	7	10,2			--		6.3
h	7,7	8			7		7.3
i	7,7				7		7

EHTs in NSRC seem to have a better grasp of the priorities in an environmental health program. There will be a greater impact on endemic diseases by providing safe water than in building clay stoves.

Recommendation: Train EHTs to plan their activities in light of health priorities.

Beneficiaries

Appreciation of Quality of Care

Central Villages (CV). In the selected villages, of the 383 people surveyed for the four departments, 98.5 percent said that they were satisfied with the care received at the health hut. The others did not visit the hut. In general, there is no major difference between departments, except in Kaolack, where 95 percent of the men, and in Gossas, 96 percent of the women, were satisfied. In the other two departments, it was 100 percent.

Concerning the availability of drugs at the hut, 95 percent of the men and 97 percent of the women said that they had found the drugs they needed. The others said that the drugs were not available, either because the supply had run out or that type of drug was not stocked. Even though most beneficiaries replied that they had received the needed drugs, the fact that supplies do run out raises the problem of the drug supply system and the turnaround time needed so that drugs are always available. It would be important to determine the barriers to resupplying drugs.

Certain beneficiaries stated that certain drugs were not available because they were not stocked. This raises several questions:

--Does the essential drug list for PHC correspond to the real needs of rural areas?

--Is the essential drug list too restricted? If so, it could be expanded.

These two questions seem justified by the answers given concerning whether they wanted additional drugs and what kinds. Men (95 percent) and women (87 percent) replied affirmatively and stated that they wanted snakebite serum, rubbing liniment for tiredness, cough syrup, and antitetanus serum.

In general, most of those surveyed were satisfied with the type of care given by the village midwife (men: 93 percent; women: 95 percent). The majority of women (81 percent) said that they used her services. However, it is important to emphasize that some villagers expressed a lack of confidence in the village midwife, either because she was too young or because they did not judge her training to be adequate. Certain women still

preferred to go to the rural maternity or to ask for help from the traditional midwife (Mioro: 3 percent).

In nonselected huts, the majority of those surveyed (96 percent) were satisfied with the care received and the availability of drugs. The use of the village midwife's services is lower (74 percent versus 81 percent).

Peripheral Villages (PV). For the four departments, 95 percent of the men and 81 percent of the women were satisfied with the care received from selected health huts. (N.B.: Central villages are those which have a hut and peripheral villages are those that are on the outskirts but use the health hut.) The others did not use the health hut.

For these villagers, there is a higher percentage of women who do not use the hut (16 percent), with most in Kaolack (12 out of 46). The main reasons given for this nonutilization is that they preferred to go to the health post, either because it was closer or because the nurse was more competent.

Concerning the availability of drugs, 91 percent of the men and 79 percent of the women surveyed said they had found what they needed at the hut. Those who replied negatively gave similar reasons as beneficiaries of central villages:

- Drug supply had run out
- Hut did not stock that drug.

The majority replied that they wanted additional drugs made available (men: 87 percent; women: 74 percent).

The care given by the village midwife was satisfactory according to 80 percent of the men and 69 percent of the women. Only 60 percent of the women use her services. This low percentage can be explained by those who prefer the traditional midwife (5 percent) or go to the rural maternity (7 percent), and by the sample. Women who were menopausal or were too young to require the midwife's services were not separated out before beginning the analysis.

The peripheral villages of nonselected huts use their services less frequently than those of selected huts:

- Satisfied with the care (71 percent versus 88 percent)
- Drugs are available (70 percent versus 85 percent)
- Women satisfied with village midwife (48 percent versus 69 percent)
- Village midwife consulted (41 percent versus 60 percent).

Understanding of Hut Management
by Beneficiaries

The following criterion was chosen: There is good comprehension if at least 80 percent of the replies are in the category--all the village. This was patterned after those given by the redesign team.

Central Villages. In Kaolack (SH and NSH), men and women understood that the hut belonged to all the village as well as its maintenance. They also said they were responsible for choosing the VHW and health committee. Results were not as satisfactory for the questions concerning the VHWs' remuneration and drug financing. Only 70 percent of the men and 67 percent of the women said that the village was responsible for encouraging the VHWs. For financing drugs, 50 percent of the men and 60 percent of the women replied "all the village." These low results are reflected by other answers given: 2 percent said that the government should remunerate the VHW and purchase drugs, while 40 percent of the men and 21 percent of the women replied that the committee was responsible for purchasing drugs. This last answer could be considered acceptable since members are chosen by the villagers and are responsible for managing the hut.

In nonselected villages, 9 out of 38 replied correctly for the VHW remuneration and, for drug financing, 10 replied that it was the responsibility of the village, and 18 (of 38) said that it was the committee's role.

Thus, people surveyed from the selected and nonselected huts do not have a good comprehension of who should motivate the VHWs and finance drugs.

In Gossas, the same trends were observed. Beneficiaries said that the huts and their maintenance was their responsibility. For VHW remuneration, men surveyed replied that it was the responsibility of all the village (72 percent), but 9 percent said it was the government's, 9 percent the committee's, and 3 percent USAID's responsibility. Of the women, 9 percent said that the hut should be repaired by the committee and that it was responsible for choosing the VHW.

Drug financing was poorly understood. Only 12 percent of the men and 14 percent of the women said that it was all the village's responsibility. However, 78 percent (men) and 67 percent (women) said that the committee was responsible for purchasing drugs.

In Niore, results show a good comprehension of hut management. But certain people did answer that it was the government (2 to 9 percent), depending on the question. Only 2 percent of those surveyed mentioned USAID.

In Foundiougne, there seems to also be a good comprehension, with scattered references to the government (2 to 9 percent).

In summary, beneficiaries seemed to have a good grasp of hut management. However, two aspects--VHW remuneration and auto-financing of drugs--need to be strengthened. This lack of comprehension may be due to the fact that villagers have not been motivated/informed, or that they are reticent to take on this financial obligation. They may agree to having a hut, but prefer that all costs be subsidized by another agency (government or other).

Peripheral Villages. The slightly anarchical distribution of results obtained from beneficiaries in peripheral villages leaves one in doubt as to their comprehension. But for the question concerning hut ownership, the men of all four departments replied correctly. Women did not. Concerning the choice of the VHWs and health committees, men in Kaolack and Gossas understood that it was their responsibility. Responses from women were low (46 percent to 70 percent), and the difference with central villages was more pronounced. Of the women surveyed, 15 percent (Kaolack) said that it was the government who should choose the VHWs and health committees.

Results for VHW remuneration and auto-financing of drugs are equally low for peripheral villages as for the central ones, except for the men in Nioro and Foundiougne who had more than 80 percent as a compliance rate.

In general for SH, there is no difference between central and peripheral villages. This is because either they have not been informed or they feel less involved since the hut is not in their villages. For NSH, except for the men of Nioro, results are poor and references to the government are more frequent.

Participation of Beneficiaries in Hut Activities

Here as well, the compliance rate of 80 percent is chosen to indicate whether there is good participation in hut activities.

Central Villages. Physical participation in hut activities (meetings, labor, etc.) is satisfactory for both selected and nonselected huts (SH: 97 percent; NSH: 91.5 percent). Less than 80 percent of beneficiaries (SH) contributed to VHW remuneration, except in Foundiougne where 90 percent of the men and 89 percent of the women gave something to the first aid worker and the midwife. In Nioro (NSH), 95 percent of those surveyed replied that they had contributed. These results reflect those obtained for hut management comprehension: participation and comprehension of beneficiary responsibility for VHW encouragement is low.

Peripheral Villages. Male beneficiaries of selected huts participated actively in physical activities (85 percent). This is a bit lower than the result obtained from central villages, but still meets the compliance level. Women participate much less (58 percent versus 98 percent). The reason most often given for their nonparticipation is that they were not informed because the hut is in another village.

Contributions to VHWs are lower than in central villages, except for Foundiougne (men: 88 percent; women: 70 percent). A much larger proportion replied that they contributed nothing for the first aid worker (26.5 percent) and the village midwife (22 percent).

Recommendation: More emphasis needs to be put on informing and motivating peripheral villages.

For nonselected huts, beneficiary participation is low, both for physical activities (47.5 percent) and contributions to VHWs (25 percent). For this last question, 33 percent replied that they did nothing, and 39 percent had not yet given a contribution but were going to.

Recommendation: Given the poor results concerning VHW remuneration, it would be important to ascertain whether the method suggested (annual contribution) is the most convenient to the villagers.

Hut Utilization

In selected huts, 94 percent of beneficiaries go to the hut for care (n=756). Of these, more men (98 percent) than women (92 percent) go. In central villages, the result is 99 percent for both sexes, and in peripheral villages, 83 percent (men: 96 percent; women: 84 percent). There is no difference between men and women in central villages, but one does exist in peripheral ones. This difference may reflect the fact that only 58 percent of the women from peripheral villages request the village midwife's services. Either because they lack confidence in her, prefer another midwife, or would rather go to the rural maternity.

For nonselected huts, 97 percent of the central villagers and 67 percent of those from the periphery use hut facilities. Once again, there are few women who use the midwife's services.

More men than women from peripheral villages use the hut, which may reflect the distance that needs to be covered to obtain care or buy drugs.

Recommendation: Open small drug supply outlets and train the traditional midwives in peripheral villages.

The average number of visits per beneficiary is four times for central villages and 3.5 times for peripheral ones. In selected huts, less than 73 percent of those surveyed had gone to the hut more than three

times, while 55 percent from peripheral villages had. There is very little variation between departments. Peripheral villages of Nioro had the lowest number of visits (three), while central villages of Gossas had the highest (five). None of those surveyed judged that drug prices were too high, and only three women (PV) of Gossas and Kaolack said that they did not go to the hut because it was too far away.

Other reasons given for nonutilization of the hut were:

- Lack of illness (1)
- Prefer going to the post (15)
- Another hut is closer (2)
- Other (2)
- No reply (5).

Prices seem reasonable since no one gave that as a reason for not using hut services. Only villagers from peripheral villages said they preferred to go to the health post, while none from central villages gave that reply. It is therefore important to consider the proximity of other health facilities--no matter how small--when implementing a primary health care program.

In spite of these high utilization rates, 13 percent of villagers from central villages and 18 percent from peripheral ones stated that they went to the health post as frequently now as before having the hut. This is especially noticeable in Nioro and Kaolack, where results range from 20 to 31 percent.

N.B.: There may have been an interpretation difficulty with this question. It would be necessary to determine health post density by department, since there is a difference between villages (CV: 18 percent; PV: 14 percent) for those who answered that they went to the health post. What is also important is that only one person stated that drugs were cheaper at the post than at the hut (1 of 148, or 0.7 percent), and that few gave the lack of drugs as a reason (CV: 1 percent; PV: 2 percent).

Beneficiaries were asked what illness they had had treated at the hut. Most frequent answers were:

- Malaria
- Conjunctivitis
- Wounds
- Diarrhea
- Headaches (related to malaria)
- Stomach aches (related to diarrhea).

They stated that they went to the health post for illness which the VHMs cannot treat. Many women replied that they went to the post for prenatal care.

Remark: Hut implantation permits illness to be treated before complications occur and at a lower cost. Posts consequently should have fewer patients (need to verify with statistics), and means put at their disposal can be used for other activities.

Participation-Sensibilization

In general, only 2 percent replied that the hut and its preventive program had brought them nothing. These villagers were in Gossas and Kaolack. Those who said that it had improved their lives gave as examples:

	<u>Percent</u>
--Less disease	67
--Less time lost	74
--Less costly care	42
--Increased community spirit	29

The greater emphasis on "less time lost" shows how important it is to be able to receive care close to home.

Beneficiaries were asked whether they had received advice from the VHW. The majority had (81 percent), and almost all had followed it (99 percent). There is a difference between villages (CV: 93 percent; PV: 68 percent), which is due to incorrect answers given on how to prevent certain diseases or what to do if a child has diarrhea. Most knew that it is important to take Nivaquine to prevent malaria (CV: 90 percent; PV: 83 percent) and to vaccinate against measles (CV: 73 percent; PV: 67 percent). However, in Nioro the reverse situation occurs on what to do for malaria (CV: 84 percent; PV: 87 percent).

Concerning sanitation, the activities which had been carried out by villagers are distributed as follows for selected villages:

	<u>Percent</u>
--Well protection	71
--Water filtering	94
--Construction of latrines	58
--Garbage pits	50

--Clay stoves	20
--Community action	79
--Trash burning	62

The only activities for which there was a variation for CV and PV were the construction of latrines and burning trash (lower than for CV). As can be noted, most aspects of sanitation have been undertaken by villagers. They have put priority on filtering water, followed by community action and well protection. The same trends were noted for the nonselected huts.

Presidents of Rural Councils and Administrative Authorities

Project Organization

All administrators stated unanimously that there was good project organization and implementation. However, they mentioned certain aspects which need to be improved. They felt that there was insufficient coordination between the three parties concerned with project activities: beneficiaries, project staff, and administrative authorities (8/15, or 53 percent). They also stated that there were drug shortages in certain huts. It is possible that, because project staff have attempted to decentralize responsibilities, there is a problem of lack of information.

Asked to give their opinion on hut location, two out of 15 stated that certain huts were implanted without taking into account certain criteria; for example, the relationship post/hut and central village/peripheral village.

All of the rural council presidents said that they had participated in making the decision of where to place huts and also in informing the villagers about the project.

Project Impact

The majority of the administrators (93 percent) stated that the project has had a real impact, especially at the socioeconomic level. This impact is seen in that less time is needed to obtain care and in increased physical strength and productivity since care is available locally. Rural councilors said that the project had improved health care, prevention, and sanitation.

Councilors expressed the need for additional care to be made available at huts:

--Injections (24/32 or 75 percent)

--Consultations (18 percent)

--Drugs for meningitis, measles, and whooping cough (15 percent).

To have other kinds of care available at huts would necessitate extra training for the VHWs and additional health equipment. The rural councilors also stated that more huts were needed (34 percent).

Improvement of Care, of Program

To improve care, one-third of the administrators felt that the level of training given to VHWs needs to be increased and that trainees should be from their village of origin. They suggested that this training be done periodically. They also said that health committees need more training because some huts have closed. This additional training should be for the president and treasurer of the health committee. Rural councilors did not express the same concerns, since the majority stated that they were satisfied because they could manage their own activities now (97 percent).

Areas of Contribution by Rural Councils to the Project

Less than half of the administrators (7/15) said that rural councils and villagers need to take more responsibility for the implementation of the project. Most of the councilors, on the other hand, wanted the population to have a greater and more active participation (94 percent). Administrators may have tempered their suggestions because present legislation does not allow any contributions other than funds for building dispensaries.

Concerning VHW remuneration, four out of 15 (27 percent) administrators suggested that villagers give contributions in kind or money, or have collective fields. Councilors infrequently stated that something could be done for VHWs (13 percent). These low results could be caused by a lack of information concerning project needs and the administrative reform, or by their thinking that this aspect should be the responsibility of USAID as the funding agency, or the government, which is responsible for all sectors.

A third of the administrators think that villagers can participate in purchasing drugs. If one adds to this category all those who mentioned supplies, the majority answered that they could (9/15). Very few administrators suggested that the population could be responsible for construction

and maintenance of huts/posts. Rural councilors made other suggestions, such as drug purchasing (50 percent) and logistics (motorbike purchase, repairs, gas--25 percent). The high result for drugs shows how important this aspect is.

Observation: Sensibilization needs to be strengthened, since one of the project goals is to eventually have villagers assume complete financial responsibility.

Areas of Contribution by Administrators to the Project

Most of the administrators gave priority to improving cooperation between themselves and the project staff. It is only as they are kept informed that they can give support to the project (12/15). Very few mentioned the financial aspects, such as the purchase of the initial drug supply with rural taxes. This can be explained by the current ruling on budget use. It does not allow for recurrent costs or personnel costs. However, this ruling is expected to be changed to allow a maximum of 8 percent to be used for purchasing initial drug supplies.

N.B.: The rural community's budget managed by administrators with the advice of councilors. Its funds come from annual rural taxes. This budget is not to be confused with the Ministry of Health budget or with the funds from health care delivery. The latter is autonomous and is managed by a rural health council with advisory input from the health post nurse. These funds could be an additional source for the eventual auto-financing of the project.

APPENDICES

Appendix A
LIST OF PERSONS CONTACTED

Appendix A

LIST OF PERSONS CONTACTED

CESSI

Miles. Pellegrin and Perron (first and second-year students)

French Volunteer Association

M. Didier-Laurent

Peace Corps

Ms. Celestine Diallo

USAID/Dakar

Dr. Michael White

Ms. Mary Diop

Ms. Pat Daly

Ms. Carolyn Horn

Mr. Moussa N'diaye

Ms. Dawn Liberi

Mr. Bill Anderson

USAID/Kaolack

Mme. Aida Lo

M. Sangone Mboup

Mr. Peter Halpert

UNICEF

M. Bachizi

WHO

Dr. Ellom

Direct-hire Team

Dr. George Jones, RDSO/Abidjan
Ms. Turra Bethune, USAID/Washington
Mr. Richard Osmanski, intern, USAID/Washington

National Team

Mme. Aissatou Diagne, Ministry of Plan
Mme. Rosalyn Murray, Ministry of Plan
M. Elhadj Diame, Ministry of Health
M. Idrissa Diop, Ministry of Health
M. Ousmane, Samb, Human Promotion
M. Samba Diakhate, Ministry of Interior

Sine Saloum Region

Regional Governor
Dr. Kahn, Regional Medical Officer
Mr. Mamadou Camara, Regional Pharmacist
M. Ndjeje, Regional Human Promotion

Department of Gossas:

M. Faye, Pharmacist
Mme. Mariamma N'diaye, nurse, Ouadiour Health Post
M. Abdou Dieng, Ndiene Lagane Health Post
M. Camara, nurse, M'bar Health Post
M. Ngom, EHT, M'bar Health Post
M. Bara Samb, Rural Councilor, M'bar Health Post
M. Dieng, Health Supervisor
Health huts: Teorou Mbaye, Darou Sacor, Keur M'baye, Darou Mbaire

Department of Kaolack:

Dr. Niang, Supervisor

M. Sarr, Supervisor

Mme. Ndao, Supervisor

Villages observed during survey: Dioukoul and its peripheral villages

Appendix B
EVALUATION TEAM MEMBERS

Appendix B
EVALUATION TEAM MEMBERS

Ministry of Health

ElHadj Diame, Statistician, Direction for Research, Planification,
and Training

Idrissa Diop, Economist, Direction for Research, Planification,
and Training

Ministry of Plan

Mrs. Astou Diagne, Economist, Direction for Research, Planification,
and Training

Mrs. Rosaline Murray, Economist, Direction for Research, Planification,
and Training

Ministry of Promotion Humaine

Mr. Ousmane Samb, Director for Urban & Rural Sectors

Ministry of Interieur

Mr. Samba Diakhate, Civil Administrator for local collectivities

Kaolack AID Team

Mme. Aïda Lo, Project Coordinator

Mr. Sangoné Mboup, Training Coordinator

Mr. ElHadj Cisse, Promotion Humaine

Work Groups for Data Analysis

Population	Diame and Diagne
Health Committees	Diop and Murray
VLHW	Mboup and Chaponniere
Nurses/Tech.	Samb and Chaponniere
Administrative Authorities	Diakhate and Chaponniere