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**RURAL HEALTH PROJECT EVALUATION**

**SOCIOLOGIST'S REPORT**

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by

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## Introduction

This report represents the sociologist's report for the final evaluation of the first phase of the Rural Health Project (PSR).

This evaluation takes place after three years of PSR activities in the cercles of Koro and Yelimané: the PSR, established by the Contract Agreement between the GRM and HIID signed 16 June 1978, did not effectively begin until January and March 1979.

The PSR objectives as defined in the Project Agreement between AID and the GRM are as follows.

The specific purpose of this project is to design, implement, and evaluate a demonstration rural health system which the GRM can adopt as the basis for a national rural health system. At the conclusion of the four year project, the following end of project conditions are expected:

- A. A health delivery system installed and operating in 120 selected villages. The system will be characterized by:
  1. An emphasis on preventive health activities and programs with provision of only basic curative services.
  2. Statistically validated decreases in mortality and morbidity in the target population.
  3. Integrated efforts with new and ongoing agricultural and development activities.
  4. An annual operating budget not to exceed U.S. \$3 per person.
  5. Trained Malian personnel supporting the system at the regional, cercle, arrondissement, and village levels.
- B. GRM acceptance of the demonstration program as the basis for a national rural health system evidenced by:
  1. Formalized and GRM approved plans for expansion of the system to reach all arrondissements over a 10-15 year period.
  2. Approved budget and personnel positions to support the existing program and to implement the systematic expansion.
  3. Manpower training plans designed and installed in existing institutions.

This evaluator participated in the first evaluation of the PSR, which took place in April 1980. The terms of reference for that evaluation remain valid for this one. They are as follows:

1. Evaluation of the PSR in terms of the needs of the population concerned, including:

- a. The degree of penetration of the village health workers' (VHWs) activities.
  - b. The selection criteria of the VHWs.
  - c. The VHWs' activities.
  - d. The degree, importance, and cause of VHW attrition.
  - e. The degree of village participation in PSR activities.
  - f. The extent of collaboration with traditional healers.
2. Evaluation of the extent of participation by the MOH personnel in PSR activities, including:
    - a. Attitude to PSR and motivation to participate in PSR activities.
    - b. Extent of participation in PSR activities.
    - c. Integration of HIID team into the existing health structure.
    - d. Collaboration between PSR and other organizations, including USAID and Peace Corps.
  3. Major problem areas defined.
  4. Recommendations.

This evaluation will take up where the first evaluation left off, in systematically reviewing the problems and PSR activities studied in 1980. In many areas, things have changed little and the basic structures have remained the same.

Also, without going too much beyond the letter of my scope of work, I plan to concentrate more on certain PSR activities while treating more briefly certain others. Thus, particular attention was devoted to the VHW activities and the degree of PSR penetration into village life. Other questions, such as collaboration with other organizations, USAID, Peace Corps, were treated more briefly.

In general, I have re-examined those areas where I had identified major problems and for which I had made several recommendations.

Training of the VHW is not part of my terms of reference. However, the issue of training VHWs and training their trainers will be raised several times in this report. The nature and quality of VHW services depends in large measure on training and support by MOH personnel at the cercle and arrondissement levels. It is not surprising, consequently, if numerous weaknesses which have been identified in PSR operations are related to the double issue of training the VHW and training his trainers. The evaluation of VHW activities and, in a more general way, an assessment of his performance in response to the health problems of his village is, therefore, related to his training and his follow-up once he begins his work. Because VHW training was not expressly included in my terms of reference, it is difficult for me to make precise recommendations in this area.

This report contains three parts: the first will review what the PSR has achieved at the end of three years of activity; the second will treat the profile of the VHW and his activities in the villages; I will try to indicate to what extent certain gaps in VHW activities, beyond the training and supervision issues, are due to their profiles and the place the VHW occupies in the village hierarchy; the third part will examine the relation between the PSR and the population concerned, the degree of penetration of PSR activities and village level support to the project.

Before presenting these parts, the methodology used in this evaluation will be discussed as well as a summary of problem areas and recommendations in the event the project will be extended.

### Summary and Recommendations

Created by the agreement of 16 June 1978 between the GRM and HIID, the PSR activities began respectively in January and March 1979 in the two demonstrative centers of Yelimané and Koro.

In the course of its first three years of existence, the PSR activities consisted primarily of training VHWs, i.e., hygiénistes-secouristes (HS) and accoucheuses traditionnelles (AT)<sup>1</sup>, and setting up village pharmacies.

In Koro 86 HSs and 35 ATs have been trained. PSR activities there now cover 46 villages of which 30 have only HSs, 14 have HSs and ATs, and 2 have only ATs. The population covered by the 86 HSs is estimated at 62,590.

A village pharmacy is open in each of the 44 villages where there is an HS. During this same period, the PSR has trained in the cercle of Yelimané 44 HSs and 12 ATs. The number of villages covered by PSR activities has reached 14, of which 6 have HSs and ATs together.

Obviously, the objective to cover 120 villages within the life of the project has not been met. The difficulties encountered by the PSR in the cercle of Yelimané are responsible in large part for this failure.

Oriented essentially toward curative health care, the PSR accomplishments in other areas, such as health promotion and community development, are much more modest.

In the area of disease prevention, a chloroquinization campaign for children under 5 was organized January 1981 in 16 villages in Koro and in all the villages covered by the PSR in the cercle of Yelimané. The success of the campaign varied a great deal by village.

In the area of community development, a certain number of actions were taken to assure supplies of drinking water. A dam was constructed in Yoro in the cercle of Koro and two wells were dug at Bondo-Téna and at Goursindé. Also in Koro, four vegetable cooperatives were created. In addition to village participation, these CD activities benefited from financial support from CARE/Mali (dam and wells) and from the U.S. Embassy (vegetable cooperatives).

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<sup>1</sup> traditional birth attendant

In Yelimané, a well project is being financed by USAID (Tambacara Wells).

The basic principle of the PSR is the training and support of VHWs who have the task of delivering primary health care in their villages. The viability and effectiveness of the system depends primarily on the quality of these VHWs and on their training.

The only explicit criteria for the recruitment of VHWs was their permanent settlement in their villages and their personal qualities of commitment to the welfare of the village. To the extent that new cycles of VHWs were recruited, however, villagers were suggested to choose candidates relatively young (25 to 35 years old) and, to the extent possible, literate. The experience has shown that literate VHWs have performed better than illiterate.

It seems, however, that what one gains in technical capacity (better diagnosis and treatment of disease), one loses in influence and credibility. Young, literate HSs are less influential in the village and often lack the authority necessary to persuade villagers to participate in village hygiene and other disease preventive activities.

This lack of authority and to a certain extent the nature of the training he receives leads the HS to adopt an essentially passive attitude. They are content to examine patients who come to see them, to prescribe and to sell them drugs. It is only a small minority of HS who do the work of prevention, health education, and environmental sanitation.

The possibility of receiving at the village level a certain number of curative measures is an accomplishment which is highly appreciated by the villagers covered by the PSR. In the villages I visited, people underlined with emphasis the improvement in conditions of life in general, and of their health status in particular, thanks to the PSR. The wish the most often expressed was to see the PSR further extend its activities while increasing the range of drugs available in the village pharmacies.

In spite of the fact that the PSR responds to their most important needs, the villagers have not yet shown by their actions any real support to PSR activities. They have never agreed to remunerate in any way the VHW although they know he works voluntarily and does not benefit personally from his work.

If until now no HS has abandoned his work because he has not gained material benefit from it, it won't be long before it will be necessary to find a solution to the question of VHW remuneration. Otherwise, we will eventually see the level of his service decline. The failure of the chloroquinization campaign in certain villages is attributable to this problem.

The following is recommended:

1. Although the objective to cover 120 villages in 4 years will not be achieved, a horizontal extension of the PSR should not take place as long as the health personnel at the arrondissement and cercle levels are not reinforced.

2. As long as the question of VHW remuneration is unresolved, it will be risky to increase the tasks of a VHW by a verticle extension of PSR activities.
3. Taking into consideration the small degree of PSR activities reaching women, and the principal role of mothers in preventive measures, hygiene, and child nutrition, I think that MCH activities need to be particularly strengthened. The ATs mustn't be the only members of the village health team who have MCH responsibilities. The strengthening of MCH activities requires more of a role for women in the PSR staff.

If the strengthening of the health teams by female health personnel can't be brought about by the MOH, it may be possible to make use of rural matrones. This would require their being well trained in supervision and follow-up of project activities.

4. From its basic principles, the PSR must place a particularly important priority on disease prevention and health promotion. Until now, PSR activities have been essentially limited to curative health care. There are several reasons for this: the profile of the HS and kind of training he has received; the attitude of health personnel towards health problems and the way in which supervision and support are conducted; and finally the attitudes of villagers themselves towards their health problems.

Of all these factors, the ones which are the most easily changed in order to strengthen the PSR's preventive measures are VHW training and supervision.

In the area of training, this change can take place by modifying the training curriculum to include more emphasis on prevention. There must also be better use of cultural information on the populations concerned. This curriculum revision must be done in such a way that it is not only accessible to those VHWs who have had some schooling.

In the area of VHW support, the supervision must not concern itself only with a review of technical knowledge and an accounting control of the village pharmacies. Supervisory visits should also be opportunities to make contact with the villagers, to sensitize them to the health problems of the village. This, of course, supposes that the health personnel responsible for supervision are themselves sensitive to the question of prevention and health education.

5. Despite the difficulties encountered in establishing PSR activities in Yelimané, I think that activities should be continued there. The first action to take is to provide molyettes to the new health personnel assigned to the cercle health center. In addition, it would be desirable to strengthen the health teams at both the arrondissement and cercle levels.

Finally, I think particular attention should be paid to the Tambacara Wells project because it takes an approach other than purely medical

to health problems. In this sense, it may provide the most fruitful long-term experience of the PSR.

### Methodology

The study of the points assigned to us for investigation consisted of:

1. The gathering of documents on PSR activities, in particular of reports on the activities of the teams in Yelimané and Koro;
2. Interviews with health personnel involved in the project at the national, regional, and cercle levels, as well as with people living in villages where there are VHWs.

The studies in the field took place between the 6th and the 14th of November 19 in the cercle of Koro, and from the 19th to the 23rd in the cercle of Yelimané.

#### A. Selection of Villages Visited

The time allotted to us did not permit visits to all the villages covered by the project, which number 46 at Koro, 14 at Yelimané. Using data provided by the project teams at each site, we proceeded to the selection of villages according to the following criteria:

- a. The date the VHWs were trained;
  - b. The location of the village;
  - c. The size of the village;
  - d. The principal ethnic group in the village.
1. The duration of activity by the VHWs. From March 1979 to March 1981, the Koro team organized 6 training sessions (cohorts 1 through 6); in the same period, the Yelimané team organized 3 (cohorts 1 through 3). In any given village, the project has been active for a period of anywhere from 8 months to 3 years.

We settled on sample villages from three groups: those villages in which the project has been active for three years (cohorts 1, 2 and 3); those in which project activity dates from 12 to 18 months ago (cohorts 4 and 5); and a few in which activities began less than a year ago (cohort 6).

2. Village location. In the cercle of Koro, project activities cover the Toroli, Madougou and central arrondissements. The VHWs in each arrondissement are supervised by the arrondissement health personnel or, in the case of the central arrondissement, by personnel from the health center in Koro. Given this decentralization of supervision, we decided to visit villages in each of the three arrondissements.

In the cercle of Yelimané, all project villages are in a single arrondissement--Tambacara--and the arrondissement health personnel

are responsible for the supervision of all the VHWs. Thus in Yelimané, village location does not bring with it the bias of different teams responsible for supervision as is the case in Koro. Yet there are in Yelimané two distinct zones: the West, where project activities began three years ago; and the South, where training began only 18 months ago. So in Yelimané the criteria of location and duration of activity meld into one, whereas in Koro they are related, but do not coincide.

3. Village size. The 1980 evaluation showed us the importance of this factor in VHW activities. We found that in villages where several VHWs were present, more often than not, only one--he who ran the village pharmacy--was truly active. In addition, the manner in which the population perceived the VHWs varied with village size: the tendency to see them as mere drug salesmen was predominant in the larger Soninké villages of the Yelimané cercle.
4. Ethnic group. In Koro we find both Dogon and Peulh villages, the former being far more numerous than the latter. In Yelimané, too, one finds a few Peulh villages scattered among the far more numerous Soninké villages. In each site we agreed to visit villages of both the dominant ethnic group and the minority Peulh: one could expect project impact to vary according to the ethnic, political, and cultural characteristics of the target population.

On the basis of these criteria, and given the time available to us, we selected 10 villages in Koro (out of a total of 46) and 5 in Yelimané (out of 14 covered by the project).

#### B. The Koro Cercle

The villages visited in the cercle of Koro are divided according to the above criteria, as follows:

##### a. Duration of VHW activity

- 6 villages of cohorts 1 and 2 (3 years of activity).
- 2 villages of cohorts 4 and 5 (roughly 18 months of activity).
- 2 villages of cohort 6 (8 months of activity).

##### b. Village location

- 5 villages in the arrondissement of Toroli.
- 3 villages in the central arrondissement.
- 2 villages in the arrondissement of Madougou.

##### c. Village size

With the exceptions of the villages of Dana (population 1213) and Andiana (185), all the villages selected have populations of average size: 600 to 800 inhabitants.

1. Ethnic group

-- 8 Dogon villages.

-- 1 Peulh village.

-- 1 Peulh and Dogon village.

Table I details the distribution of visited villages according to these criteria

TABLE I

Villages Visited in the Cercle of Koro

<u>Village</u>	<u>Location</u>	<u>Duration of Activity</u>	<u>Population</u> <sup>1</sup>		<u>Ethnic Group</u>
			<u>a</u> <sup>2</sup>	<u>b</u>	
Bono	Central A.	3 yrs.			Dogon
Dana	Central A.	8 mos.	1213	3681	Dogon
Sana	Central A.	8 mos.	700	1081	Dogon
Birga-Dogon	Toroli	3 yrs.	862	-	Dogon
Birga-Peulh	Toroli	3 yrs.	872	-	Peulh
Anakaga-Dogon	Toroli	3 yrs.	606		Dogon
Andiana-Téna	Toroli	3 yrs.	185	1213	Dogon
Déméro	Toroli	3 yrs.	567	712	Dogon
Doma	Madougou	18 mos.	868	957	Peulh-Dogon
Ogoténé	Madougou	18 mos.	611	3030	Dogon

N.B.: <sup>1</sup>a: village population - b: population living within a 5 km radius of the village, therefore considered "covered" by the PSR.

<sup>2</sup>The figures for village population (a) are from the 1976 census.

C. The Yelimané Cercle

The 5 villages in the cercle of Yelimané that were visited are grouped as follows:

a. Duration of activity; the PSR has been active in

-- 3 villages for 3 years.

-- 2 villages for 18 months.

b. Location

— 3 villages in the west.

-- 2 villages in the south.

c. Populations:

— 2 villages have populations greater than 1000.

— 3 villages have 500 or less.

d. Ethnic groups

-- 4 villages are Soninké.

-- 1 village is Peulh.

Table II details these characteristics.

TABLE II

Villages Visited in the Cercle of Yelimané

<u>Village</u>	<u>Location (Zone)</u>	<u>Duration of Activity</u>	<u>Population</u>	<u>Ethnic Group</u>
Diongaga	West	3 yrs.	2955	Soninké
Dogoféry	West	3 yrs.	1279	Soninké
Diabougou	West	3 yrs.	364	Soninké
Guiffi	South	18 mos.	291	Soninké
Mougna	South	18 mos.	554	Peulh

D. The Interviews

The interviews were conducted at three levels:

1. With the VHWs.
2. With villagers.
3. With health personnel at the cercle and arrondissement levels

1. Interviews with the VHWs

In each of the villages visited, at least one active VHW was interviewed.  
The interviews covered:

- a. The activities he carries out under the PSR: specifically, curative care, health education, and prevention. From this information, we tried to determine the VHW's perception of the PSR and of his own role as a VHW.
- b. The people who most call upon the VHW for curative services: our attempt is to determine the degree of penetration of PSR activities in the village. This information will be regrouped with that obtained from the villagers themselves and from the supervision teams.
- c. Difficulties and constraints encountered in their activities. This level of the interview allowed us to bring up the problem of VHW remuneration and, more generally, the support provided to the PSR by the villagers.

## 2. Interviews with the Villagers

In each village visited, we held a group interview with the village chief, his advisors and all adults present at the time of our visit. The groups consisted generally of only 15 to 20 people. Because the study took place during harvest time, it was not possible to meet with a larger number of participants. In addition, those who did take part in the interviews cannot be considered representative of the adult male populations of the villages: in effect, we most often found ourselves before a large majority of "inactives," elderly persons who did not participate in the work in the fields. It is only in the villages where interviews were held in the late afternoon or evening that we encountered a larger part of the active population.

Generally, these interviews covered the same themes that we discussed with the VHWs:

- a. Activities carried out by the VHWs and how the villagers benefited.
- b. Support provided to PSR activities, especially the problem of remuneration of VHWs.
- c. New PSR activities which might be undertaken in the village to better contribute to the resolution of village health problems.

## 3. Interviews with Health Personnel

The interviews with health personnel took place at the end of our stay, after our visits to the villages. These interviews covered both the activities of personnel in the cercle and arrondissement health centers and the specific problems we encountered in the villages. We particularly tried to have each person interviewed define the activities he carried out in the villages during supervision trips.

During the interviews with the medecins-chefs of Koro and Yelimané, we tried to clearly define the status of the PSR in their respective centers and to examine with them the possibilities for the future which might exist at the end of the first phase of the project.

With the same perspective, the interviews with expatriate personnel in Koro and Sévaré were held.

Accoucheuses traditionnelles (AT) were not encountered in any of the villages visited which was partly because evaluation of their activities is not expressly included in our terms of reference, and partly because our time in each village did not permit additional interviews. For the same reasons we did not have interviews with the women, except in the villages of Bono and Dana. These interviews could be useful only if they were conducted by female interviewers, and so I decided to discard them.

### The Accomplishments of the PSR

The accomplishments of the PSR can be grouped into four categories: VHW training, village pharmacies, community development activities, and support to the cercle health centers.

#### 1. VHW Training

The basic principle of the PSR, as defined in the GRM-USAID Project Agreement, is to train, support and supervise VHWs. In this way, the PSR brings primary health care to the village.

It therefore follows that the first evaluation criteria for the PSR is the number of trained VHWs and the number of villages covered by the primary health care system. The results vary a great deal between Koro and Yelimané.

- a. Koro. From March 1979 to March 1981, the PSR in Koro organized six training sessions. In the course of these six sessions, 84 HSs were trained, providing primary health care coverage in 44 villages. Three of six arrondissements in Koro are covered by PSR activities. The total number of people covered by primary health care is approximately 62,590, coverage being defined as anyone living within 5 km of a VHW.

During this same period, PSR/Koro organized two AT training sessions in which a total of 35 ATs were trained and are working in 16 villages.

Throughout the three years of its existence, the PSR has maintained a high level of activity in Koro:

- 1979: 43 HSs trained.
- 1980: 33 HSs and 17 ATs trained.
- 1981: 23 HSs and 16 ATs trained.

In addition, the PSR trained 12 rural matrones in 1980 and another 6 are currently being trained.

- b. Yelimané. In three years of activity, PSR/Yelimané has organized three training sessions in which 44 HSs were trained and placed in 14 villages. During the same period, 12 ATs were trained and are working in 6 villages. The population of the 14 villages, all in the arrondissement of Tambacara covered by the PSR, is approximately 5,443.

The last HS training session took place in June 1980 and even if the last AT training session took place in January 1981, one can say that PSR/Yelimané has gone 18 months without any increase in primary health care coverage.

## 2. Village Pharmacies

The placement of an HS in a village is always accompanied by the opening of a village pharmacy. It consists of placing at the disposition of the HS a range of drugs responsive to the diseases which he has been trained to diagnose and treat. These drugs are: aspirin, penicillin, chloroquine, and ophthalmic solution. There are 44 pharmacies in Koro and 14 in Yelimané. The setting up of these pharmacies constitutes the most spectacular activity of the PSR for the village concerned. In numerous villages, the PSR becomes in effect the village pharmacy and the HS is designated the drug salesman.

It wasn't possible for me to evaluate the activities of the village pharmacies during the last three years. For the period January to September 1980, the sale of drugs recorded in 25 villages of Koro was the following:

- penicillin: 4,702 pills
- chloroquine: 9,838 pills
- ophthalmic solution: 505 vials
- aspirin: 19,746 pills

As can be seen, aspirin is by far the most used in the village pharmacies. Its low price (25 MF/pill) in relation to penicillin and to ophthalmic solution and its capacity to relieve a range of symptoms from aches and pains, rheumatism to headaches explains its wide use in the villages. The low sale of chloroquine, sold at the same price as aspirin, is surprising. For 2,794 diagnoses of fever or malaria, chloroquine was prescribed 2,414 times.

## 3. Community Development Activities

It should be noted that the Project Agreement stipulates that the PSR should be integrated with other CD activities in the two zones. This is the reason why the PSR benefited during its two first years from the services of a CD consultant and that in each of the two cercles there is a GRM CD technician.

- a. Koro. The first CD activities concerned the problem of water supply. Two wells financed by CARE/Mali have been dug at Bondo-Téna and at Coursindé. The villagers furnished the labor and provided the room

and board of the well-diggers during the time of the work. The wells were completed in April 1981.

Also financed by CARE/Mali was a dam constructed in Yoro in 1980. Four vegetable cooperatives were financed by the U.S. Embassy Self-Help fund, which paid for agricultural equipment and seeds. These cooperatives were organized by the CD agent and the Peace Corps volunteer based in Koro. None of these cooperatives is associated with the national cooperative movement nor do they benefit from any assistance from the CAC in Koro.

- b. Yelimané. Until April 1980 at the time of my first trip to the cercle, the PSR had not accomplished anything in the area of CD. A project which consisted of establishing in each village a CD Action Committee was not successful.

A much more ambitious project, however, the Yelimané-Tambacara Wells Project, has been approved. It consists of digging 21 wells and deepening/improving 8 others in 24 villages of Tambacara Arrondissement. These wells will be 50% financed by the villagers and 50% by USAID. The implementation of this project should present the opportunity of setting up in each village a village health committee and the project could coordinate its activities with other related projects in the area, such as Opération Puits and the Kayes-Nord Project.

A second project underway in Yelimané is the digging of a well and the furnishing of equipment for a school garden in Tambacara. This is a U.S. Embassy Self-Help project.

#### 4. Support to the Health Centers in Koro and Yelimané

Among the recommendations that I made during the PSR mid-term evaluation was that there be more equipment assistance provided to the two health centers. To the extent that the expansion of primary health care at the village level produces an increase in demand for secondary health care through referrals, it is completely logical that the PSR assist the health centers respond to this demand. It serves no purpose to train HSs to refer complicated cases to the health centers or dispensaries if there are no means to take care of these cases at the higher levels.

To provide this support, the PSR has furnished the two health centers with laboratory equipment worth \$6,154 and surgical kits worth \$1,675. In addition, the PSR has made available \$5,000 to the construction of the maternité in Koro.

It should be pointed out, however, that an electrical generator and a well for the health center have not been provided. Drs. Sissoko and Kelly both strongly advocated the need for these things when they were posted to Koro. The improvement of the Koro operating room, promised to Drs. Sissoko and Hamar, has also not yet been accomplished.

## 5. Conclusion

As has been stated above, during the three years of its operations, the PSR has been oriented to curative health care services. The clearest evidence of this is in the VHW training and in the setting up of the village pharmacies.

The objective to cover 120 villages within the life of the project has not been reached. This failure is attributable in large part to the difficulties encountered in developing the PSR in Yelimané, where, after three years, the primary health care system reaches only 14 villages. The causes of this failure are numerous and have been sufficiently analyzed in other documents so I won't go into it here. It should be noted simply that none of the HIID advisors was able to adapt to this area: Dr. Pesole stayed more in Kayes than in Yelimané and Dr. Dulaire remained in Yelimané for only a few months. The Yelimané health center, in addition, was without a medical chief for 8 months, from October 1980 to May 1981.

By providing health coverage to 46 villages (44 with HSs and 2 with ATs only), the Koro/PSR has largely fulfilled its contract, at least in the area of providing curative health care. The results are much less convincing in other areas, such as prevention and community development.

In neither Koro nor Yelimané has a real program of health education giving priority to prevention over cure been developed. As will be seen later, the VHW activities are primarily centered around curative health care.

It would be unfair to attribute the poor results in community development to the PSR. The project agreement clearly states that PSR community development activities are to be integrated with other CD activities in the zone. This explains the complete absence of a CD budget in the PSR.

As I stated in my mid-term evaluation report in April 1980, real collaboration between the PSR and Opération Mils, Opération de Developpement de l'Élevage, and with other services in the Koro Cercle has never been established. It should be recognized, however, that this sub-activity of the PSR has never benefited from the support of the health team, particularly at the local level. The only staff of the local teams really involved in CD activities are the two CD agents.

I am convinced that it is through CD activities that an effective program of disease prevention can be developed. Preventive measures can't be done without the mobilization and organization of villagers. The example of the village organization within the CMDT (in Sikasso) is instructive on this subject.

I remain skeptical about the effectiveness of village health committees as long as they are not involved with economic development activities. On the other hand, if the Yelimané/Tambacara Wells project becomes

successful, it is certain that it would constitute the point of departure for a real program of disease prevention in mobilizing the populations around an objective which not only corresponds to a real need, water supply, but whose economic implications are directly and immediately evident to them.

## VHW Profile and Activities

### 1. Selection Criteria

In the choice of people to be trained to become VHWs, a good deal of latitude was left to the villagers, at least at the beginning. Thus, the only explicit criteria that were expressed during the sensitization visits were fixed settlement and personality; that is, the villagers were advised to select candidates who were permanently living in the village, less susceptible to urban migration, and who were trustworthy and serious.

In my report of April 1980, I had already underscored the relevance of these two criteria. If trained VHWs were to leave the village and if it were necessary to continually select and train replacements, the system would hardly be viable. Additionally, the volunteer nature of the VHW which was a basic principle of the PSR could be realized only to the extent that the villagers selected candidates who were interested in and committed to the village's well-being. Other criteria were literacy and to be between the ages of 25 and 35. I have the impression that with each new training cycle, pressure increased to select candidates who were literate and relatively young.

At first glance, these last two criteria appear to be less relevant than the first two. Besides, the criteria of age between 25-35 is not always compatible with that of being sedentary. Finally, the criteria of literacy tends to reduce the range of possible choices.

### 2. VHW Profile

Generally speaking, the villagers have respected the selection criteria suggested to them. Judging by the small number of VHWs who abandoned their functions, one can say that the villagers effectively selected those with little incentive to leave. In Koro, of 86 trained HSs, only 3 left their villages for extended periods of time. Unfortunately, it wasn't possible to obtain information from Yelimané on the VHW attrition rate. One had the impression that in villages which had several HSs, there was only one who was functional, the one who ran the village pharmacy.

If the respect for the sedentary criteria was translated into a very low rate of attrition, it led to the choice of older HSs, particularly in Yelimané. Rural exodus is so important in the Kayes Region that men between the ages of 25 and 35, even 40, are rarely found.

This exodus generally consists of several years spent abroad in Europe or in countries such as Gabon, Zaire or Libya but not seasonal migration

of young people to urban centers or to neighboring countries. The average age of HSs in Yelimané is about 53 while in Koro it is about 33. The youngest of the Yelimané HSs often engage in commerce as a secondary activity if not a primary activity which leads them to travel to Bamako or Kayes. When it is these HSs who manage the village pharmacies, all health activity ceases during their absence.

The tendency to recruit relatively young HSs from the beginning in Koro has continued and at the present time, of 86 HSs in the cercle, 66 are between 20 and 40 years old (77%) and only one is over 50.

In Yelimané, if as we have just said the sedentary criteria resulted in the recruitment of relatively old HSs at the beginning, at the time of the most recent training cycle, relatively younger HSs were recruited: of 16, 5 were less than 40 years old, 10 were between 40 and 50, and only one was more than 50. It also seemed that each time a choice was possible, it was for literate HSs. In the cercle of Koro, 48 or 56% are literate in French and 10 can read and write in Dogon. Among the 16 HSs of the last Yelimané training cycle, 9 or 56% can read and write in French (5) or in Arabic (4).

It would seem that from the point of view of sedentarism, age, and educational level, the villagers selected HSs according to the criteria that were recommended to them, one can ask to what extent these criteria were detrimental to other qualities which might have been desirable in a VHW. These qualities are those of authority, credibility, and influence in the village. It needs to be pointed out that I rarely had the impression of finding myself in the presence of someone possessing these qualities. It was thus that of all the HSs that I met in Koro, only two had positions of responsibility in their villages: one was a member of the village council and the other a member of the national youth union. In Yelimané, I met one HS who replaced his father as village chief, this being the only HS who had a position of responsibility.

Additionally, in suggesting the selection of HSs who are relatively young and literate, there is little chance of recruiting any traditional healers, which has been an expressed desire of the PSR since the beginning. At the time of the April 1980 evaluation, only two HSs in Yelimané were at the same time traditional healers. It's unclear whether these two are still functional. In Koro, no HS is a traditional healer.

### 3. VHW Activities: Curative Care and Referrals

Curative services are by far the most important HS activity, the activity in which he spends the most time. The HS sees himself before anything else as being charged with curing those in his village who are sick. Whenever I asked an HS to explain his work he would invariably cite the treatment of patients and the sale of drugs as his principal activities.

During the period January to September 1980, the average number of consultations per month per village was recorded at about 41. This rate varied enormously from village to village among the 25 from which

the data was collected. It ranged from 86 in one village to 9 in another. (This rate of 41/mo/village is much lower than what was identified during the previous evaluation in April 1980: 56.) One can safely assume that the work load of the HS is greater than what can be determined from the consultation records. These records are not always kept up to date, especially by the illiterate HSs.

In Yelimané, there are no records or data on consultations provided by the HSs. In April 1980, I was able to estimate, based on interviews, that approximately 22 consultations per month per HS were provided. But even if one assumes this estimate is close to reality, the rate is a poor indicator of effective work load which varies a great deal from one HS to another. In other words, some HSs during certain times of the year may well have 10 or even more consultations per day, while others may go several days or even weeks without seeing a single patient. In effect, in the villages which have several HSs, the only one who is functional is the one who manages the village pharmacy. Patients show a preference in these villages to go directly to the village pharmacist with their problems, rather than consulting the HSs thus rendering them non-functional.

In neither Koro nor Yelimané is there data on referrals as a result of VHW activity. As a result, it's difficult to comment on how well it's working. It still seems that referrals do not constitute a large work load for the HS. Usually it consists of advising the patient to go to the arrondissement dispensary or to the cercle health center. Only under exceptional circumstances (snake bite, serious wounds) does an HS accompany the patient. The practice at the beginning of giving a note to the patient to pass to the medical center seems to have been more or less abandoned.

As I indicated in my report of April 1980, these referred cases signify an increase in the patient load for the dispensary and health center.

#### 4. VHW Activities: Preventive Measures

During my last visit to Koro, I met with 12 HSs working in 10 villages. Among them, only 4 indicated that prevention was included in their health activities when the question was put to them. The others mentioned prevention only when the discussion was oriented in that direction. No HS in Yelimané who I met mentioned prevention as an activity. All this is to say that HSs did not attach much importance to this activity.

Generally, the VHW, at the completion of his training, organizes a meeting of his villagers in order to brief them on his training. These meetings are an occasion to talk about personal hygiene, environmental sanitation, and water filtration. Not only village leaders come to these meetings, but all the adults as well, particularly the heads of family. All the VHWS have mentioned, however, that few women attend these meetings and that the most often the women are represented by committees of the national women's union. Some HSs have used the occasion of this village meeting to urge the village council to organize village

sanitation efforts and other preventive measures. Others, much less frequently, have organized discussions on the health problems of the village. One HS in Déméro assured me that he had organized three of these discussions this year. He admitted, however, that the women in the village, on whom the personal hygiene and proper feeding of children essentially depends, rarely come to these meetings. Finally, two HSs, one of those at Déméro and one at Birga Peuh, told me that they make regular visits to the village households to follow up the sanitation discussions to see if water containers are protected and the area is kept clean, etc.

Another preventive measure is the chloroquinization campaign being carried out since January 1981 in 16 villages of Koro and in 14 villages in Yelimané. The target group of the campaign is children between 0-5. The HSs are responsible for the daily distribution of chloroquine tablets. It's difficult to say much about the regularity with which this campaign is being carried out in the different villages. Suffice it to say that according to some members of the Yelimané team, the campaign is successful only in Tambacara itself and in the village of Kersignané, and to a lesser extent in Woléguéla. In the other villages, the parents who were supposed to pay each week for the required tablets have stopped doing this at the end of a few weeks. Some HSs with whom I spoke said they had stopped visiting the families for chloroquine distribution not only because it took too much of their time but also because the parents usually refuse to buy the chloroquine tablets.

5. VHW Activities: Recordkeeping

This activity is carried out with various results according to village and to VHW. In villages with ATs, they are responsible for informing the HS on each birth attended. For deaths, no mechanism has been set up. According to the HSs I met, no death would occur unrecognized in a village and from this fact there is no need for him to be specially informed in order to include it in his record book.

From a study of several of these record books, I have the very clear impression that recordings of vital events are done very irregularly and that the data collected are not viable. For example, the birth rate is noticeably lower than one would expect using the national rate as a reference point. Some members of the PSR team speculate that this low birth rate recorded by the HSs could be explained by the parents' reluctance to declare a birth for reasons of tax liability. This explanation does not seem well founded to me. Children do not pay taxes until they reach 14 years of age and from the point of view of tax liability, heads of families have an interest in declaring each live birth because mothers with 4 children are tax-exempt. It's my belief that if the HSs do not systematically record births, it's simply because they don't see the sense in it or because they are not always informed, particularly in the larger villages. For me, this activity is sufficiently important for the supervision teams to insist that the recording of vital events be done correctly by the HSs. It is by this recording of births and deaths that it will be possible, certainly in the long run, to evaluate the PSR impact on mortality

rates in the demonstration zones. The reduction of certain mortality factors can be made available in the short run. In this way the effect of the chloroquinization campaign on infant mortality between 0-3 can be evaluated at the end of 2 or 3 years if recordkeeping is done correctly.

6. VHW Constraints and Difficulties: The Problem of Remuneration

From conversations that I've had with villagers as well as with HSs, it's quite evident that the HS has made himself available at all hours of the day and night to give treatment, consultations, and to sell drugs. An exact evaluation of the work load this represents can't be done. As I indicated earlier, the real number of consultations and the sale of drugs is certainly much greater than the figures in the record books would lead one to believe. Besides, this work load varies a great deal among the HSs. For those who are truly active, it represents a heavy investment of their time. Every HS I met emphasized that their health activities hindered their work in their own fields. The period of intense agricultural activity coincides with the time when aches and pains and other incapacitating health problems are the most numerous, although this phenomenon is not yet demonstrated in the data. It is not uncommon that a HS is called on while he is working in his fields for consultations and drug sales.

In my evaluation report of April 1980, I mentioned that a voluntary VHW system was not viable in the long run and that a study on the modality of VHW remuneration was necessary. Several possibilities had been envisaged, notably in-kind contributions of labor in the fields as well as repairs to the VHW homes. The villagers had been sensitized in this area by the PSR teams. At the end of three years, in effect, nothing has been done. In each of the 10 villages I visited in Koro, only the villagers of Bono helped one of their HSs (once) with his harvest by providing him with a cart.

Later in the report I'll analyze in more detail this passivity, this reluctance to help the VHW.

It needs to be pointed out that the VHW is extremely reluctant to bring this problem of remuneration to the attention of the village council. It is considered unbecoming to ask one's peers compensation for services rendered. The VHWs prefer the PSR team to bring up the problem. Some HSs told me that they had had the opportunity to bring up this problem at village meetings and that the resulting discussions had quickly degenerated and thus they had not brought the matter up again.

At first glance, one is surprised that at the end of three years so many VHWs continue to work in the project, that no HS has left his post because of lack of remuneration. I already indicated in 1980 that it was the fear of disappointing those who had selected them which caused the VHW to persevere. I'll even say the VHW is being in a sense morally blackmailed, that he is prisoner in a situation which he thinks he can't escape from. It is not to be excluded that the obligation to play a role in village life, to accept some

responsibilities, also contributes to the perseverance of some, particularly the older ones. It should be pointed out that often the older HSs no longer directly participate in production activities and that the work they do for the PSR does not constitute a great sacrifice.

Although it's true that no VHW has abandoned his post because of non-remuneration, I met a number of them who displayed lassitude and I rarely encountered the same enthusiasm that I saw in April 1980. The failure of the chloroquinization campaign in numerous villages is a sign of this latent dissatisfaction, even if the failures are not always attributable to the HS. Another sign of latent dissatisfaction is that in 2 of 5 villages I saw in Yelimané, drug stocks were used up a long time ago. Normally drug stocks are replenished during supervision visits. In the absence of supervision, as has been the case in Yelimané since June 1981, not one HS has bothered to come to Tambacara to replenish his stocks. Not even the HSs at Diongonga who aren't more than 4 kilometers from Tambacara! The HSs and the village pharmacist told me very frankly that they didn't have the time. Under these conditions, I believe it risky to add to the work load of the VHW by a verticle extension of the project.

The only extension that one can consider is, in my opinion, an increase in the range of available drugs in the village pharmacies. This wish was expressed by every HS I met. It's quite evident this extension can't be done without retraining every HS. HSs, however, seem to be aware of the need for this retraining; only two expressed the wish to know more about health.

#### 7. VHW Profile and Activities: Conclusions

Concerning VHW selection criteria, it seems the PSR teams are placing increasing emphasis on age and literacy. Villagers are being strongly urged to nominate relatively young (25-35 years) and literate HSs. Dr. Fougrouse indicated the Koro team intends in the next training cycle to train only those HS candidates who are literate. The experience of three years of activity has shown them clearly that the most competent HSs are those who are literate. In relation to illiterate HSs, they demonstrate greater knowledge, their diagnostic and treatment skills are better, and obviously they keep better records. (A system of recordkeeping for illiterate HSs has been developed.)

The question can be posed to what extent would the PSR be viable if only literate HSs were recruited, and especially what would be the possibilities of national expansion? One mustn't forget that 90% of the population of Mali is illiterate and that school enrollment is less than 25%. In such a context, it's not certain that in any village 2 or 3 literate people will be found. Moreover, urban migration is much more tempting to the literate youth. If the problem does not seem insoluble in Koro, it's almost certainly because of the long presence of Catholic and Protestant missions which has probably resulted in greater school enrollment and importance attached to education than in the rest of the country.

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On the other hand, Dr. LeTarte informed me that the HSs trained under the Dogon functional literacy program were not better performers than the ones who are illiterate. This makes fruitless, for the needs of the PSR at least, the urgent development of a program of functional literacy. Such a program could have been developed as a sub-project of the PSR and carried out in collaboration with Opération Mills-Mopti in Koro and with Opération Kayes-Nord in Yelimané. Without disputing in any way this point of view, which is based on assessment of the technical knowledge of the HS by doctors who are in a position to know, I think that instead of a systematic orientation to the recruitment of literate HSs, it would be better to review the form if not the content of the training programs in order to adapt them to those who are illiterate. I am convinced that if the literate HSs are better performers than the others, it's quite certainly because the training is assimilated much easier by those who are used to certain ways of thinking, i.e., memorization acquired at school. Similarly, the tasks which are required, the keeping of the record books, the registration of births and deaths, are at the outset within the scope of those already accustomed to a kind of organization, to a certain respect for procedures, the kinds of things that a well-developed curriculum can easily make available to anyone. The training is not only to expose the HS to some technical notions but as well to teach him to be more efficient, to organize himself.

One can only deplore the absence in the PSR teams at the local, regional, and national levels of specialists in adult education. Contact with DNAFLA on this matter has been purely formal and administrative. To my knowledge, training specialists from DNAFLA have never participated in the development of training curriculums, of adapting a training methodology for adults who have never been to school nor participated in any other training programs. (At the beginning of the project, there was some collaboration between the Koro PSR team and DNAFA/OMM. It consisted of training some HSs who were at the same functional literacy trainers and the translation of some training materials in Dogon. But this collaboration ended very rapidly.)

One can say, without question, that the qualities most appreciated by the PSR team, notably the expatriate team members, are those that one would find in an average nurse, capable of running a clinic or dispensary. Under these conditions, it's not surprising that the activities in which the HS spends the most time, if not all his time, are those of curative care. One can't blame the HS for not doing much in the areas of disease prevention and health education. Moreover, the most appreciated qualities of the HS are in fact inadequate if one expects them to be not only capable of correctly providing some curative services but also to act as a health promoter in the village and as a health educator and disease preventor.

In reality, the HSs adapt a passive attitude, waiting for patients to come to them, copying, it needs to be said once again, the attitudes of the health personnel at the secondary levels. This passive attitude leads to a type of HS who is no more than a drug seller, as is often the case in Yelimané.

The manner in which the HS performs his tasks and the activities he gives priority to are naturally related to his profile, the kind of training he received, and the constraints under which he operates.

Concerning their profile, the HSs are not very capable of playing a health promoter role in their villages. Neither their age nor their authority or influence allow them to play such a role in a village context where advice, teachings, and directives can't come from just anyone but rather are the prerogatives of only a few. As Dr. Hamar told me, he doesn't see how a young HS could ask his own father to build a latrine, much less the other heads of family in the village; that he would be gently told to mind his own business if he were to ask a mother about the health of her children. It's quite likely the HS would be firmly asked not to involve himself in questions that are not his concern. On the other hand, these same people would quite willingly accept the instructions of this same HS on the taking of medicines that he sells them because they know he was trained to do that. It's clear that it would be otherwise if these HSs were important figures in the villages, having the authority to become involved in village problems.

Although it's somewhat outside my scope of work, I would like to make the point that the training program has the effect of valorizing curative care over prevention and health education. The valorizing and concentration on curative care are reinforced by the way supervision is carried out. Supervisory visits consist most often of reviewing rapidly technical competence in diagnosis, treatment, prescription of drugs, eventually leading to retraining those who are deficient. Often supervision amounts to simply checking and resupplying drug stocks before going on to the next village.

Finally, the attitude of the villagers tends to contribute as well to passivity on the part of the HS. It is when one is sought out that one takes care of health problems. In this sense, the HS is simply conforming to what everyone expects of him.

It is not because not one HS has yet to abandon his post for reasons of non-remuneration that one should conclude that the voluntary VHW system is viable. Although no activities have ceased, a certain amount of lassitude is already perceptible among a number of them. The failures of the chloroquinization campaign in several villages and the running out of drug stocks in some village pharmacies without causing the HSs to react are plentiful signs of latent HS dissatisfaction.

### The PSR and the Villagers

This section is divided into three parts: village perception of the PSR and its usefulness; the extent to which PSR activities have penetrated into village life; and on village support for PSR activities.

It should be recalled that the conversations I had with the villagers were collective, that grouped together were from 15 to 20 people, that the conversations took place in early November during harvest, and that it wasn't possible to bring together larger groups of people. It should also be pointed out that the

people I talked to cannot be considered a representative sample of the villagers from a statistical point of view. On the other hand, considering that present at these meetings were the chiefs and members of the council of elders, the points of view expressed can be thought of having some weight.

#### 1. Village Perception of the PSR: Curative Care

The PSR represents for the villagers and as well as for the HS the provision above all of curative health care. Thanks to the PSR, a certain number of diseases can now be treated in the village which before had to be taken care of at the arrondissement or cercle level, or by traditional healers. In my report of April 1980, I have sufficiently underlined the importance villagers attach to being able to treat diseases at the village level not to dwell on it in this report. The PSR responds effectively to felt needs by providing curative care and drugs to villagers.

It's not possible to evaluate quantitatively the satisfaction of health needs. The available data from different studies on the number of consultations and the amounts of drugs sold don't translate very well the value of these services.

The drug the most used is by far aspirin. In 25 villages surveyed in Koro, 19,746 pills were sold between January and September 1980. According to the project doctors, this massive distribution of aspirin presents no health risk, even in the long run. Penicillin, eye solution, and sodium sulfamide, on the other hand, are asked for much less. In the same villages for the same period, 4,702 tablets of penicillin and 505 vials of eye solution were sold. The question can be asked: to what extent is the relatively low demand for these drugs the result of low disease prevalence or of high prices (much higher than aspirin or chloroquine)? Aspirin and chloroquine are sold at 25 FM while penicillin tablets cost 100 FM each and a vial of eye solution costs 700 FM. A complete adult treatment of penicillin costs 2,000-FM.

In general, villagers don't think that these prices are too high, with the exception of penicillin and eye solution. At the same time, feelings are ambiguous: "Considering their effectiveness, we can't say the drugs are too expensive," is a statement I've often heard. Or again: "Health has not price; we don't think we pay too much for the drugs we need." Villagers, however, don't always buy the amount of drugs that are prescribed for them, even for aspirin and chloroquine. The rate of incomplete treatments is very high: of a total of 2,445 chloroquine treatments between January and September 1980 in 25 villages in Koro, 1,756 (72%) were incomplete; for penicillin and eye solution for the same period and in the same villages, the percentages of incomplete treatments were 83% and 78%, respectively. In the vast majority of cases, patients are stopping their treatment when they begin to feel better. More precisely, the sick person or his parents buy the amount of drugs which corresponds to the money they have available without worrying about whether it's sufficient for a complete cure.

At the time of supervisory visits, the health personnel make a point of reminding the HS not to sell incomplete doses, particularly for penicillin.

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But the large number of incomplete treatments recorded in the books shows that these instructions are not followed very well. (We'll see later in the section on degree of penetration that data drawn from the record books kept by the HSS should be interpreted with lots of caution.)

Unfortunately, there is little or no data on the number of consultations in Yelimané, neither on the proportion of incomplete treatments nor on the total of prescribed treatments. A comparison between the two centers would have been very interesting in that the villagers of Yelimané are wealthier than in Koro because of the remittance payments resulting from rural exodus. According to statements made to me, the price of drugs does not seem a heavier burden for people in Koro than for Yelimané.

## 2. Health Education

The villagers are no more inclined than their VHWs to spontaneously mention this activity. With a little prodding, they tell how, after the end of training, their VHWs brought together all the villagers to offer them information on prevention, ways of protecting themselves from certain illnesses. Everyone I asked recognizes that the preventive measures suggested have nothing unreasonable about them; it's just that it's hard to depart from certain habits. Building latrines, for example: "It's something that has never been done here, and it's difficult to initiate," we were told. In Yelimané the situation in this particular regard is a bit different: home improvements having been initiated by the returning emigrants, many concessions in the larger villages have latrines.

Upon being asked what should be done to insure greater application of sanitary measures; the men--only men were interviewed in these discussions--answered that these problems concern above all the women on whom depend the proper nourishment and personal hygiene of the children. Women's responsibilities also include the cleanliness of concessions, the purity of the water--its filtration through a cloth and its storage in clay jars that are regularly washed and kept closed.

The villagers believe that the reinforcement of these lessons by health personnel from the city can only help, by prodding them to change certain ways, to renounce certain practices harmful to their health: the stranger, invested with a certain power and credited with certain knowledge, is more influential in certain domains than are the VHWs, whose competence and authority are more easily challenged.

Such a step presupposes a change in the manner in which supervision rounds by the health personnel are actually carried out: these visits must necessarily include contacts, exchanges with the village populations; they cannot be limited to a meeting with the VHWs and the control of the village pharmacy. We are convinced that noticeable changes in the domain of prevention cannot be obtained without a sustained effort in sanitary education, and that this work cannot be left to the sole initiative of the VHW.

### 3. Degree of Penetration of PSR Activities

One must try to establish the extent to which the different categories of populations in the villages covered by PSR are affected by its actions, in particular by the curative health care activities.

The only figures on this question that I was able to obtain concern the distribution for consultations among men, women and children (0 to 5 years) during the first part of 1981 in the cercle of Koro. These consultations, 4,864 in all, represent the activities of VHWS in 160 village-months out of a potential of 234 village-months for the same period.

The distribution is as follows:

<u>Men</u>	<u>Women</u>	<u>Children</u>	<u>Total</u>
2,852	1,480	532	4,864
58.65%	30.42%	10.93%	100%

It would appear that men consult VHWS twice as often as women; and that children five and under represent only 10.93% of all consultations, yet according to Dr. LeTarte, who compiled these figures, they should represent at least 30%.

These figures must be interpreted with a good deal of caution: first, because (as noted above) they bear on only 160 out of a potential of 234 village-months; second, because their source is the VHWS' notebooks, which do not necessarily identify the persons actually treated with the medicines purchased. In fact, it is not uncommon for medicines purchased by men to end up being used by their wives or children. The VHWS confirm this: when an adult seeks medicines for a child, the VHW is often content simply to ask the child's age, so as to prescribe the appropriate dose, but it is the visit by an adult that is recorded in the VHW's notebook.<sup>2</sup>

Nevertheless, even taking into account the necessary corrections, women consult the VHWS less often than men. All the VHWS we spoke to confirm that their male clients are more numerous than their female clients.

In the various reports emerging from the April 1980 evaluation, a number of hypotheses were put forward to explain the low representation of women in consultations. Interviews with village women in the Yelimané

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<sup>2</sup>Dr. Hamar said that he has observed the same practice at the Koro health center and that he has tried to discourage it by insisting that parents bring in the sick person. It should be noted that this practice also falsifies the proportions of incomplete treatments furnished above: a dose of penicillin or chloroquine considered insufficient when prescribed for an adult may be, when given to a child, a complete treatment.

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Cercle that were carried out by Mes. Corrèze and Keita notably revealed that this was because the VHWs were men, and "we can't talk to them about all illnesses." (A. Corrèze, Evaluation of PSR, May 1980.)

In the course of our interviews this year with VHWs and with the women of Bono and Dana, this argument was rarely mentioned: VHWs told us they are often consulted by women with menstrual pains to whom they prescribe aspirin.

A second hypothesis put forward is economic in nature: women visit VHWs less often than men because they have less money to spend on medicines. That women have smaller incomes is true of both Koro and Yelimané; it would even seem that the disparity between men's and women's incomes is greater in these two cercles than in other regions of Mali. In the cercle of Koro, in Dogon country, agriculture is the principal productive activity, and men and women are equally present in the fields during the growing season. Mainly grains are produced, and millet is far more important than any other cereal. It is used primarily for the subsistence of the family and is grown on family plots that are worked by every active family member, women as well as men. Other crops, grown on individual plots, some of which are cultivated by women, are far less developed. The gathering activities of women are monetarily unimportant, being limited mainly to the harvesting of monkey bread and baobab leaves, which are economically insignificant compared to the production of shea butter and soubala (a spice obtained from the néré tree) that one encounters in other parts of Mali. The upshot is that women have less disposable income than men.

In the Yelimané cercle the principal source of income is that of paid labor or commerce in other countries. The sums involved, often very large for families with members in France or in countries such as Gabon, the Congo, or Zaïre, are above all at the disposition of men, the heads of family. The women have, as in Koro, much smaller incomes, though for different reasons.

This difference in income, admitted and recognized by all, explains why men must carry the burden of health costs for women and children--and the men did not hide this. One is much more inclined, much more prompt, to pay such costs when it is one's own health that is concerned rather than that of one's wife, even one's child. Many heads of family are ready to send a person to the VHW--and spend money--only when the illness appears serious and the person is bedridden.

I believe that women will seldom consult VHWs so long as they have so little financial autonomy. An increase in their monetary incomes can only come through the development of secondary productive activities, and I believe that it is only through strengthening the community development component of PSR that such activities can be created and developed, or that the women's domestic drudgery (drawing and carrying water, cutting and carrying wood, pounding grain) can be alleviated, freeing up time that could be used for productive activities.

In the effort to explain the limited penetration of PSR into the lives of women, men often advance the argument that the women, being less widely experienced than they, are slower to adopt modern ways and are more inclined than men to call on traditional healers and magical practices. This hypothesis shouldn't be rejected: it reinforces our conviction of the necessity of stronger sensitization and sanitary education for women. This cannot be done without strengthening female personnel in the cercle and arrondissement medical teams.

#### 4. Village Support for PSR Activities

It is unanimous in all the villages I visited that PSR, through the spread of health care and the presence of medicines in the villages, is doing them a great service and contributing to the improvement of their standard of living. All those we spoke with hope not only that the project will continue its present activities in their villages, but equally that it will extend them by expanding the range of drugs available in the village pharmacies. Yet, despite PSR's filling a real health need, one cannot give the village populations credit for any support whatsoever of the project.

The most obvious evidence of this lack of support is the refusal, up to now, to provide any kind of remuneration to the VHWs. The villagers, in particular the village leaders, know that the VHWs are not paid by the PSR, that they receive nothing from the state or any other organism. This was clearly stated in the course of the sensitization campaigns that preceded the recruiting of the VHWs. In addition, the project personnel have emphasized many times, in the course of their visits to the villages, that the volunteer system is not viable in the long run and that it is up to the villages to find some means of compensating their VHWs for the time they've given to consultations and the sale of drugs.

These appeals have had no response. In the entire cercle of Koro, where PSR covers 46 villages, we know of but one case where a VHW has been helped in his field by fellow villagers. In Yelimané we know of not even one such case. Each time the problem is brought up the villagers say they understand well the necessity of rewarding the VHWs; they make promises and then do nothing.

In a few villages in Koro, the problem was discussed out of the presence of any strangers to the village: these discussions apparently degenerated quickly and ended without a decision being made. At each of these meetings, certain villagers came out against the idea of any collective aid to the VHWs, protesting it wasn't everybody who used their services.

The vast majority of the people I spoke to were convinced of the necessity of doing something. Yet some pointed out that the VHWs were not the only persons to perform some task of general interest without personal reward. The chief of Ogoténé, for example, claimed that his burden (as village chief) is a heavy one and brings with it no reward.<sup>3</sup>

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<sup>3</sup>In fact, village chiefs receive a percentage of the taxes they collect, as well as finding material advantages in certain of their tasks: arbitration of financial litigations, penalties inflicted on raisers of livestock for damage done by their animals, etc.

In the absence of any collective action on the part of the village, payment of VHWs per consultation has been considered: each patient would pay the VHW a modest fee, just as he pays a traditional healer. The villagers are reluctant to extend the traditional practice to payment of the VHW, however, because the patient feels free of all obligation after paying for the medicine prescribed for him.

Payment per consultation would also amount to penalizing the rural population as opposed to the urban populations, for neither in the arrondissement or cercle medical centers, nor in those of the large towns, are consultations paid. It is normal that a villager should find it hard to understand why a consultation in the health center of Koro or Yelimané should be free and one in his own village paid. (He does not consider that the health personnel in the medical centers are civil servants, paid by the state, whereas the VHW is a volunteer who receives nothing.)

My feeling is that it is through analogy to the health personnel in the medical centers that the villagers derive their refusal to pay the VHWs, collectively and individually. Many of those we spoke to are convinced that sooner or later the project will end up paying the VHWs. Some even believe that the VHWs already benefit from free medicines for them and their families.

The possibility of turning over to the VHWs the 15% return on sales of medicines has also been considered. We were unable to determine the actual destination of this profit: neither village leaders nor VHWs knew of its existence. Project team members gave us to believe that the profit is used for the renewal of stocks in the village pharmacies. This solution (of handing the profit to the VHWs) would effectively solve the problem but would be a breach in the basic principles of the PSK, and would only increase the passive attitude of the villagers with regard to their health problems.

Whatever the solution, the problem must be resolved lest it be aggravated: the VHWs probably would not openly renounce their work, out of fear of village disapproval; they would more likely do their work with less and less enthusiasm, and the passivity for which they are already reproached would only increase. In the absence of any solution, the notion of a verticle extension of PSR activities should be renounced, if that extension would translate into an increase of the task load of the VHWs.

## j. Conclusions

- a. The PSR is perceived by the villagers covered by activities as a system of curative health care; in this, it successfully addresses a real need of people until now untouched by any medical action. On the other hand, the preventive health component, which according to the original conception of PSR, should have been the most important, has little impact for the simple reason that practically nothing has been done: if villagers see PSR as concerned with curative health care, it's because this is the only domain in which concrete activities are carried out-- that is, the training of VHWs capable of diagnosing a certain number of illnesses and of treating them with medicines available in village pharmacies.

- b. In the absence of any statistical survey, it is difficult to measure the degree of penetration of the project into the various categories of village populations: the consultations notebooks give an incomplete idea and are difficult to interpret accurately: 10 visits recorded in the notebooks could refer to the same 2 or 3 people who come regularly to see the VHW, or they could refer to 10 different people. One thing is certain, that women and children are under-represented.

The under-representation of women would seem to be for economic reasons--the disparity of income between men and women mentioned above. All too often the head of family is ready to spend money on a sick woman or child only when the illness is so serious as to force him to recognize his duty to that person. There is also the set of sociocultural factors that lead women more often to seek the help of traditional healers or even to magical practices, such as ritual alms-giving.

- c. Though quite aware of the service PSR provides to them, and while concerned for the continuation and even the extension of those services, the populations provide no support to the project, and to date it has been impossible to bring them around to some manner of compensating their VHWs. This attitude seems due to their notion that since a patient pays for medicines, he is free from any other obligation. PSR seems to them an action brought by the state to improve their standard of living, therefore it is for the state to do its utmost by paying the VHWs, just as it pays the health personnel in other medical centers.