

POBAG 253

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9. SECONDARY TECHNICAL CODES (MAXIMUM SIX CODES OF THREE POSITIONS EACH)

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10. ESTIMATED TOTAL COST (\$000 OR EQUIVALENT, \$1 = 490--)

A. PROGRAM FINANCING	FIRST YEAR			ALL YEARS		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	460	-	460	3890		3890
(GRANT)	(460)	(-)	(460)	(3890)	(-)	(3890)
(LOAN)	()	()	()	()	()	()
OTHER 1.						
U.S. 2.						
HOST GOVERNMENT		88	88		870.5	870.5
OTHER DONOR(S)		-	-			
TOTALS	460	88	548	3890	870.5	4760.5

11. ESTIMATED COSTS/AID APPROPRIATED FUNDS (\$000)

A. APPRO- PRIATION (ALPHA CODE)	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE	FY 77		FY 78		FY 79		ALL YEARS	
			D. GRANT	E. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN	J. GRANT	K. LOAN
PH	420	510	460		1126		1415		3890	
TOTALS			460		1126		1415			
12. ESTIMATED EXPENDITURES			400		1125		1325			

13. PROJECT PURPOSE(S) (STAY WITHIN BRACKETS) CHECK IF DIFFERENT FROM PID/PRP

[To design, implement, and evaluate a demonstration rural health system, and to achieve GOM adoption of the demonstration project as the basis for a national rural health system.]

14. WERE CHANGES MADE IN THE PID/PRP FACESHEET DATA NOT INCLUDED ABOVE? IF YES, ATTACH CHANGED PID AND/OR PRP FACESHEET.

Yes No

15. ORIGINATING OFFICE CLEARANCE SIGNATURE TITLE Country Development Officer	16. DATE RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION DATE SIGNED MO. DAY YR. MO. DAY YR. 0 9 8 16 7 6
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PROJECT PAPER: MALI RURAL HEALTH SERVICES DEVELOPMENT

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August 16, 1976

Section Ib

PROCUREMENT SOURCE WAIVER

1. Waiver required: A procurement source waiver from AID Geographic Code 000 (U.S.) to Geographic Code 935 is required for motor vehicles and mobilettes. As discussed below, the primary basis for the waiver is that U.S. vehicles cannot be used effectively in Mali because of the unavailability of spare and repair parts and the lack of experience in the use and maintenance of U.S. motor vehicles.

The total amount of the waiver will not exceed \$90,500 which will be apportioned as follows for the Mali Rural Health Services Development Project:

7 Landrovers (incl. 10% for spare parts)	\$ 77,000
30 Mobilettes	<u>13,500</u>
Total	\$ 90,500

2. Justification: Mali, like the other Sahelian States, faces a situation in which imports emanate almost entirely from France and other EEC countries. This trade pattern, which has developed over many years of close association between Mali and Europe, has resulted in Malians being trained in the use and maintenance of European-made goods and in the establishment of European distribution and service facilities in Mali. American manufacturers and American distribution and service firms are only recently beginning to take a tentative and still insignificant look at the Malian market. As a result, special parts for U.S. made equipment are not available in Mali, and Malians are not trained in the basics of its maintenance. In the past, audits and inspections of AID projects in

the Sahelian area have been sharply critical of the difficulties of host governments in maintaining U.S. motor vehicles after project phase-out.

We believe that motor vehicles and mibilettes, which are essential to the successful implementation of the project, are, in effect, not available from eligible sources. The concept of availability from eligible sources means effective availability. For motor vehicles and mibilettes to be truly available from an eligible source, they must not only be of a type that theoretically could be used for the project, but they must also be of a type that the host country can use effectively over a normal useful life in the light of the availability of spare parts and the ability to service and maintain the motor vehicles and mibilettes.

We also believe that compelling political considerations support this waiver. It is necessary for the United States to provide motor vehicles that can be maintained effectively in Mali and for which spare parts are locally available. Otherwise, the political benefits to be obtained from providing the proposed assistance will be frustrated and the image of effectiveness of the United States will be impaired, if the motor vehicles and mibilettes financed by the United States are of a sort that cannot be used effectively by Mali over a normal useful life.

These motor vehicles and mibilettes are essential to the success of the project and the Government of Mali (GOM) does not have the foreign exchange necessary to procure them. Other donors are not interested in providing funding because of their heavy involvement in other sectors or other geographic areas in Mali.

For these reasons it is necessary, in order to carry out the purposes of the FAA, to waive the requirement of Section 636 (1) of the FAA that motor vehicles and mobilettes procured for the project be manufactured in the United States. In addition, it is necessary to authorize procurement of the above described motor vehicles and mobilettes from Geographic Code 935 countries because the exclusion of procurement from these sources would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Section 1b

WAIVER FOR 25% HOST COUNTRY CONTRIBUTION

The present project is funded for a life-of-project cost of \$ 4,760,500. The U.S. contribution to this total is \$3,890,000 constituting 82% while the Malian contribution totals \$870,500 or 18%. As the host country contribution is not equal to the 25% required, it is requested that a waiver be granted to permit the project to proceed.

The justification for this waiver lies in the fact that Mali is, by 1974 IBRD statistics, the poorest country in the world, with extremely limited financial resources to meet the health needs of its citizens. In fact, the projected contribution of 18% represents a very considerable effort on the part of the GOM to allocate what resources it can to the accomplishment of the project. When it is considered that the GOM contribution must be matched against U.S. technician salary costs averaging twenty times those paid Malians, it is clear to what extent the contribution of 18% is already very substantial. In addition, this project, based on an innovative technique of obtaining a small amount of revenue from the beneficiary population, has within its scope the capacity to maintain and replicate itself after the withdrawal of the expatriate technicians.

I c. Summary Project Description

In this project, the Government of Mali, with financial assistance from USAID and technical assistance from a U.S. contractor, will design, operate and evaluate a demonstration rural health system which includes the following elements:

1. Effective distribution of basic health services (emphasizing health promotion and disease prevention) at the most peripheral level of social organization, i.e. the village, and with improved supervisory levels of activities and organization to support these services at the Arrondissement, Cercle, Regional, and National levels.

2. Integration of rural health activities with rural community development activities taking place in other sectors (especially those in agricultural production and basic education).

3. Demonstration that such health services can be operated at an annual per capita operational cost of \$3, of which \$1 would be retrieved by the Government of Mali from revenue derived from the sale of medicines at the village level.

In the villages of the demonstration areas, the project will develop a system of simple basic health services, emphasizing those health promotive and disease preventive activities and simple diagnostic and curative activities that can be undertaken by a person of the village, who remains of the village and who receives rudimentary training followed by continuing education and supervision. However, development of adequate support for these basic services involves the provision within the project of basic medicines and equipment to the Arrondissement and Cercle fixed

health facilities in the demonstration areas and the upgrading of health personnel capabilities at these levels.

This project paper describes the nature of the required baseline and continuing evaluation of health status and health services, the specific functions for which the health workers are to be trained, the nature and content of the training, and key functional aspects of the demonstration health services to be developed.

II a. Project Background:

Mali is located in the center of Africa's western bulge. The country's 1.2 million square kilometers stretch from the Sahara in the north, across the Sahel, to rocky hill country, dry and wet savannah, and even some tropical forest in the south.

Bounded by Algeria, Mauritania, Senegal, Guinea, Ivory Coast, Upper Volta, and Niger (moving counter-clockwise from North), the country is land-locked; however, the Niger and Senegal Rivers provide important waterways and also are major sources of fish, which is dried and traded across the country and also exported.

Most of Mali's 5-6 million people live in the southern half of the country. Only an estimated 250,000, mostly nomads, live in the desert north of the bend of the Niger River; this land area is almost half of Mali's total. More than eighty percent of the population lives a subsistence village agricultural or semi-nomadic pastoral existence, with little access to the basic social services of the modern sector.

Mali, formerly part of the French Sudan, has been independent since 1960. The present military government came to power in 1968 and has demonstrated an interest in rural community development, including the extension of basic health and social services to rural village populations. Since the severe drought (La Secheresse) of 1971-74, government development policy has concentrated on increasing national agricultural production, largely through major crop improvement, agricultural extension and marketing programs, known as "Opérations".

Currently ranked among the very poorest of the world's developing countries (per capita GNP less than U.S.\$70 annually), Mali's national

budget for 1975 was approximately \$17 per capita. The nation's development efforts rely upon international assistance from various bilateral and multilateral sources. USAID currently supports projects in highway maintenance, agriculture and livestock production, and the central veterinary research and vaccine production laboratory; drought relief and rehabilitation was emphasized in the recent several years. Direct U.S. economic assistance to Mali totalled 35.5 million dollars between 1961 and 1973 and increased to 35.8 million dollars in 1974 and 1975.

Previous U.S. assistance to Mali in the health sector has consisted of inclusion of Mali in the 21-country immunization campaign for smallpox eradication and measles control (1966-1974). Several additional possibilities for U.S. involvement in health sector assistance have been suggested in recent years, including building and equipping rural maternity and maternal-child health centers, purchasing of medicines and medical supplies, and upgrading and training of present categories of rural health personnel. This led to the assignment of a consultant team to Mali in January-February 1976 to review the rural health situation and the status of rural health services with the objective of modifying preceding proposals for health sector assistance in light of their findings and in accordance with the health sector plans and policies of the Government of Mali.

The February 1976 consultant team found that the Government of Mali has a policy of extending health services to rural areas, but is constrained by limited planning and management capabilities, scarce

financial resources (\$1.70 per capita in 1975 MOH budget), scarce and inadequate physical infrastructure and personnel, an established imbalance in health sector efforts (emphasizing fixed facilities and curative services for the minority of the population living in the larger population clusters) and training programs inappropriate to the needs of a poor and overwhelmingly rural people. Less than 10% of the rural population has reasonable access to any kind of "modern" health services, and those services which are available are quite inadequate to meet rural needs for health promotion, disease prevention and even simple curative care. The team developed a proposal (PRP No. 688-11-590-208) emphasizing the provision and support of basic health services at the village level, which included the major elements of the present document and which provided the basis upon which the July-August 1976 consultant team revisited Mali to develop this project paper.

The proposed project is in keeping with the Government of Mali's development objectives, as stated in the 1974-1978 national five year plan, and has the support of key national and regional MOH and development officials. During project planning, consultants and AID staff have taken advantage of experience gained in other development and relief/rehabilitation projects in Mali and have laid the groundwork for cooperation with other Malian rural development projects, so as to make the activities of this project part of an integrated rural development effort.

Project planners have also attempted to incorporate lessons learned in other AID-supported rural health programs in Africa (e.g. Ghana, Cameroon, Ethiopia) and elsewhere (e.g. Guatemala, Bolivia, Colombia,

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In each of the Regions selected, full demonstration project services (i.e., training and supervision of Village Health Workers) will be developed in all villages within one Arrondissement. However, medicines and supplies will also be provided to all of the other Arrondissements within the same Cercle. The Cercles proposed as demonstration areas are:

Region V (Mopti) - Cercle of Koro (alternate: Douentza)

Region III (Sikasso) - Cercle of Niele

Region I (Kayes) - Cercle of Kenieba (alternate: a cercle readily accessible from Kayes)

Specific demonstration Arrondissements within these Cercles will be chosen by MOH and U.S. technical assistance personnel as part of the process of the definition of a detailed plan of work under the project T.A. contract.

Among the other Regions visited by the consultant team, the following seem to be possible sites for project implementation if a fourth area is added later:

Region II (Bamako) - Cercle of Nara in northern area

Region VI (Gao) - Cercle of Timbuctu

Region IV (Segou) - one of the outlying cercles.

The health problems of Mali are typical of those of Sahelian West Africa; high levels of morbidity and mortality from infectious and parasitic diseases, especially in combination with early childhood under- and mal-nutrition, are reflected in the most recent estimates of infant

mortality rate of 188 , and a crude death rate of 25.9.

In addition to nation-wide major disease burdens from gastrointestinal, respiratory and skin infections, childhood communicable diseases (especially measles and pertussis), malaria, tetanus, schistosomiasis and leprosy, some of Mali's most potentially productive, better watered areas (including areas in Regions III and I proposed for this project) are major foci of onchocerciasis (river blindness); a disease with significant economic implications because of population out-migration and increased dependency ratios resulting from blindness; studies in some high-prevalence onchocerciasis areas have demonstrated the proportion of blind persons in affected populations to be higher than 10%, including many working-age adults).

The current Malian population growth rate of 2.5%/year in the face of high mortality rates is typical of pre-demographic transition societies. The Government of Mali has undertaken (with IDRC and UNFPA assistance) an experimental urban family planning project in Bamako, and is currently considering whether to extend this activity to a few selected other population cluster areas. The Government of Mali does not currently consider high fertility to be among its most significant rural health problems.

The nature and organization of the health care resources which the Government of Mali has available to deal with these problems and the proposed modifications of the health delivery systems that comprise this project are described in some detail in the following section, the Project Description.

IIb. Detailed Project Description

Overview:

This rural health services development project contributes to the GOM's health sector goal of providing basic health services to the rural poor who comprise more than 80% of Mali's population (see National Five Year Plan 1974-1978). The project's contribution to the GOM's achievement of this goal will consist of the accomplishment of two purposes, as stated in the Logical Framework (see Annex J):

1. To design, implement and evaluate a demonstration rural health system which will:
 - a) bring health services to the village level, emphasizing health promotive and disease preventive activities;
 - b) be integrated with other community and economic development activities, especially agricultural production and education;
 - c) have annual operational costs of US\$2 or less per capita (in order to make GOM expansion and replication of such services financially feasible).
2. To achieve GOM adoption of the demonstration project as the basis for a national rural health system, and to assist the MOH in preparing to implement such a system on a nationwide basis.

The health services organizational structure of the MOH is typical of Francophone Africa, with health facilities and personnel at levels corresponding to levels of general public administration (see Fig. 1, page 3f) and makes essentially no provision for services at the village level except for rare contacts with categorical preventive programs to combat certain endemic

diseases (Service de Grandes Endemies), The Malian pattern of facilities, personnel and services is shown in Schema 1 and Fig. 2 (pages 32 & 33).

The total GOM budget for 1975 amounted to U.S.\$ 95 million or approximately US\$ 17 per capita; of this amount, approximately 10% or US\$1.70 per capita was spent on MOH health services. However, concentration of facilities, personnel and services in urban and population cluster areas is so great that only approximately US\$ 0.50 ^{per capita} was spent on health services in rural areas. This lack of financial resources dedicated to rural health services contributes to the lack of adequate health personnel, medicines, facilities and supplies throughout rural Mali; inappropriate selection and use of resources and inadequate planning further decrease any health benefits which current resources might otherwise provide.

As discussed in the project analysis section, most health services in rural Mali are provided by traditional practitioners; this project will attempt to gain their cooperation and make use of their services as much as possible.

Increased investment in the present health services system would do little to increase rural coverage or to improve rural health, because the centralized, fixed-facility-based system has no means of increasing effective coverage, and its curative focus offers little possibility of real changes in community health status. This project, in order to demonstrate and test a system which could bring health services and improved health to the poor rural majority, will include the following general categories of activities

- 1) The recruitment, selection and training of public health workers (including Village Health Workers) at various levels within the demonstration zones.
- 2) The process of community diagnosis, a data profile of health and related information which defines the health problems and resources of a community, and which will produce initial and follow-up information in both the demonstration and comparison areas.
- 3) The implementation of supervised health promotive, disease preventive and simple diagnostic/curative health services in the demonstration areas.
- 4) The provision of medicines and equipment necessary for the functioning of the low-cost rural health services system; and
- 5) Preparations at all levels of the MOH for the acceptance and expansion of project activities as the basis of a future nationwide rural health services system.

These activities, as shown in the Implementation Plan and CPI Network will follow the same sequence within each demonstration Region, but will be initiated at different times in the various Regions, to make more efficient use of project and MOH personnel and to allow modifications of project activities based on prior experience in other Regions. Project activities, once initiated with a Region, will continue in that Region until the end of the project, at which time their continuation will be a GOM responsibility and subject to GOM decision. Activities within Regions will begin according to the following planned schedule: (See CPI, Section IVb)

Region V -- Month 10 of project

Region III ~ Month 15 of project

Region I ~ Month 29 of project

Additional Regions - to be decided.

Within each Region, the activities will be initiated in the following sequence:

- 1) Arrival at their work sites within the Region of MOH workers and U.S. technical assistance workers assigned to Region, following completion of training of Arrondissement level TA workers and preparatory activities within Region by National level advisor and National and Regional MOH officials (including liaison with other development activities within the Region).
- 2) Establishment of counterpart and administrative arrangements within the Region.
- 3) Arrangements for receipt, storage, control and assignment of medicines, supplies, and equipment for project and for Demonstration Cercle (actual date of need and arrival to be agreed upon at this time).
- 4) Gathering of initial community diagnosis information by MOH and TA workers.
- 5) Recruitment, selection and initial training of Village Health Workers and initiation of in-service orientation/training for health workers at other levels within or directly supporting services in the Demonstration Arrondissement.
- 6) Completion of initial community diagnosis by VHW's supported by MOH and TA workers, as their first post-training activity in their villages.

7) Initiation of supervised health services at the village level by VHW's, with continuing education, logistical support, technical back-up and referral services provided by MOH and TA workers and modified progressively as indicated by local experience.

8) Ongoing collection, by VHW's at village level and by MOH and TA workers at other levels, of information needed for health services planning and operations at all levels within Region, and for project operations and evaluation.

9) Analysis of information gathered and feedback of results to all levels through written summary reports, meetings and discussions, and (especially for VHW's) the supervisory/continuing education systems.

10) Final analysis and summary of experience with and results of demonstration project within Region.

1) Preparations for transition from project activities within region to post-project status decided upon by MOH.

In order to carry out these activities, evaluate them, and prepare the MOH for post-project expansion of rural health services, the project will include the following components, which are described in detail in later sections of this Project Paper:

A. Technical assistance in the development, realization, and evaluation of community health services in Demonstration Areas in diverse Regions of Mali.

B. Supply of equipment, drugs, and material for use in the Demonstration Areas and elsewhere, at an annual per capita cost within the constraints of the proposed model.

C. Participant training (see Annex H) and technical assistance in

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local training of key personnel for effective rural health services delivery. This will include, in the local Demonstration Area, the Village Health Worker and also the various levels of supervisory workers at Arrondissement, Cercle, and Regional levels. At the National level, participant training and technical assistance for training will be focused upon improvement of administrative, supply and logistic capabilities. As the project proceeds, the experience and preliminary results from the Demonstration Areas will be fed into National health planning and health manpower training activities as a stimulus and aid to wider replication of the rural health services model.

Selection and Training of Health Workers for the Rural Health System:

The successful implementation of this project depends upon the selection, appropriate training and support of Malian health workers at various levels, including:

- 1) The Village Health Worker* (Animatrice de Santé de Village - two or more per active village).
- 2) The Arrondissement level worker (Agent de Santé Rurale - three per active Arrondissement, so as to allow for two "permanent" workers, plus one trainer who will move on to the development of the next Arrondissement).
- 3) The Cercle level worker (Agent de Santé de Cercle - one per active Cercle).
- 4) The Regional public health supervisor (Adjoint de Santé Publique Regionale - one per active Region).

* Since the Village Health Worker may be the sole source of medicines for general distribution (both "free" and "for purchase") to villagers, the village may well select the Village Health Worker and periodically review job performance. It may be that the traditional medical practitioner at the village level will often be or assist, the Village Health Worker, thereby combining traditional and newly introduced approaches to curative and preventive health care.

Annex F presents a description of some of the major tasks and functions proposed for health workers at each of these levels. Further refinement and specification of the lists of tasks at each level will be carried out in the earliest phase of project implementation.

The training of health workers at each level will be based on an analysis of the functions to be performed at that level, combined with knowledge of local conditions derived from the community diagnosis.

Another operational issue concerns the problems of training Village Health Workers (who will often be illiterate or semi-literate) to carry out their rural health service functions. It will be important to have technical assistance from persons experienced with this level of training who also understand the cultural factors bearing upon the roles which Village Health Workers are expected to perform. Further, they must have competence in the health content of the areas in which training will be provided. (See Annex G for detailed treatment of the development and implementation/evaluation/redesign of effective rural health training programs. The selection and training of Village Health Workers is also discussed in the Technical Description, Section IIIa 2.).

A major innovation introduced in Mali by the project will be the training of Regional, Cercle and Arrondissement personnel to be trainers and supervisors of Village Health Workers.

In addition to the initial training of all of the new workers introduced by the project, in-service training and orientation will need to be

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provided for existing health workers and continuing education for all will be essential to maintaining the forward movement, flexibility and standards of the system as it develops.

These modifications of conventional Malian rural health manpower roles will, as experience is gained, be fed into existing national training programs for health professionals. This will enable the GOM to begin producing, by the end of this project, the types of rural health workers necessary for expansion of rural health services based on a village and Village Health Worker approach. The GOM is currently seeking ways to expand and modify its intermediate-level health manpower training to be more responsive to local and rural needs.

Supervision of Village Health Workers:

Supervision of VHW's will be critical to the attainment of the project's objectives and will need to incorporate both educational and quality-control functions in order to make possible the use of illiterate or semi-literate workers and to test the efficacy of their work. Reference materials for VHW use will have to rely on pictorial representations, rather than on the written word; their supervisors will need to be adept at providing spoken explanations, demonstrations, and reviews of information needed by VHW/s in the languages used by the supervisees and within their own conceptual frameworks. The positive and encouragement-providing functions of supervisors will have to be maximized if VHW's are to feel free to ask for help which they feel they need.

Systems Required for Back-up and Support of Rural Health Workers:

Existing logistical systems for the provision of medicines and supplies to rural health facilities have not succeeded, as is evident from visits to such facilities and conversations with their personnel. The project will attempt to overcome some of the most crucial problems of the limited existing system and will also have to meet the challenge of developing ways of maintaining and controlling stocks of basic medicines and supplies at the village level. Figure 4, in the Technical Analysis Section (IIIa 3), depicts the expected flows of medicines, for instance, within the project and after the project, along with the flows of money (receipts from drug sales at various levels) into the rotating drug purchase accounts which will be established. Informants at all levels of the MOH, in various development projects, and in regional governments all indicated that the demand for medicines is great and that they had no doubt that US\$ 1 per capita per year could be recovered through local sales of drugs. Their impressions are reinforced by the frequent requests for medicines which Europeans encounter in villages, and by the pervasive presence of diverse medicines and old medicine containers in market bartering in towns and villages.

Establishment of effective inventory control systems will be difficult within the MOH, due to the present lack of control within the existing system, but such control will need to be achieved, because medicines and supplies will need to flow through the existing channels on their way from central purchasing and supply areas to VHW's at the very periphery of the system. The development, operation, and fiscal and inventory control aspects of the medicinal supply portion of this project are critical to

the project's success or failure. These activities will encompass the most difficult aspects of the Country Project Director's job, and will require significant changes in the operational patterns of the MOH. Detailed review of the functioning of this part of the project activities should be part of the preliminary project evaluation planned for month 19; CDO/Bamako and AID/W will insist on effective performance in this area; major project modifications or even termination of project activities in mid-stream could result if the MOH cannot develop an adequate logistic system. Maintenance of adequate supplies at the village level will be linked to the supervisory system; types and amounts of medicines and supplies to be kept in the villages will be determined with due consideration to the periods during which many villages are cut off from existing fixed health facilities.

Effective use of VHW's will also require that a two-way system for referral of patients be established. The referral of patients by VHW's for care by other personnel should be in accordance with clear and simple criteria and procedures. An attempt will be made to use the problems, treatments and results of patient referrals in the supervision-linked continuing education program for VHW's.

Information System:

Information related to health, nutritional, demographic, cultural, economic and development characteristics of project areas will be gathered by the project for several purposes, and it is important to distinguish among them, although they overlap. Certain information will be gathered which will be needed in order to plan and develop the project's demonstration

health services delivery systems; some of that information will be needed for the continued operation of such systems, and some (but probably not all) will be needed for the development of such services in other areas of Mali after the basic system design has been developed and tested. Other (additional) information will be gathered in order to provide bases for choices which will need to be made among alternatives within the project's activities (probably not requiring repetition later) and for project and health services system evaluation. It will be important to maintain these distinctions during project implementation, in order to make it possible to use project experience to design an information system for the GOM's future national rural health system which will include only information necessary for the purposes of the system. These distinctions and the ability to separate the costs of gathering and processing each kind of information from the costs of the others, will also be important in determining the costs of establishing and operating the demonstration health services system and the estimated costs of establishing and operating such services on a wide scale.

Careful records should also be kept of the costs of information collected in the comparison areas (see Section IIIa 6 for a discussion of the need for comparison areas), to allow estimation of the project costs attributable to the comparison design (useful in designing future projects) and also to permit estimation of the costs of similar initial data-gathering operations which might be carried out in other areas as an initial step in expansion of rural health services. Availability of such information from the comparison areas, together with relationships established in those areas

during the project, will greatly facilitate post-project expansion of the demonstration health services into those areas, a possibility raised by the Director of the Cabinet of the Ministry of Health.

Central Level Project Activities

The main focus of project activities will be on the rural areas where the demonstration rural health system will actually be developed and tested. However, Central level activities will be necessary for the development and testing of adequate support services for the demonstration areas, preparation of the MOH for latter acceptance of and administrative and logistical support of expanded rural health services, and development (late in the project but requiring information to be assembled earlier) of a plan for the expansion of such services. Participant training will strengthen MOH capacities in logistics and health services planning and administration. The experience gained within the project by MOH personnel at all levels will also augment these capacities in the MOH. Central level activities are discussed in the Technical Analysis Section (IIIa 4) and are included in the job descriptions for technical assistance personnel (Annex E).

Information and experience arising out of the logistic, system organization and health worker training activities in the demonstration (together with "comparison" area information) will be fed into the National MOH structure on a progressive, continuing basis as part of annual project reviews and through more frequent formal reports to the MOH. Also, early experience in the initial test areas will modify activities in successively developed Demonstration Areas, an early demonstration to the MOH of flexible planning and the appropriate use of feedback. The Bamako-based Country

Project Director will provide the key channel for integrating this information into the planning, administrative, and training functions of the MOH.

By the latter stages of the project, sufficient experience and data should have been amassed to provide the GOM with convincing and usable information with which to extend the rural public health system to a broad National basis. It is here that the demonstration of the low-cost, low-technology-dependent, auxiliary-personnel features of the proposed program become critical, providing the MOH with a tested rural health services system at an expenditure level that the GOM can undertake on a nationwide basis.

MOH officials have already expressed an interest in utilizing the demonstration zones (as they develop) for a field-training base for their national health manpower training institutions.

Personnel Requirements of Project:

The chart on page 34 (Figure 3) indicates the Malian and technical assistance personnel who will be required for project implementation. Job descriptions and qualifications for the "new" positions indicated on the chart are outlined in Annexes E and F, in the Technical Analysis (IIIa) and in earlier sections of this Project Description.

Integration of Project Activities with Rural Development Activities:

As discussed in earlier sections, many rural development activities in Mali are organized into Grandes Opérations which have relatively similar structures, but each of which focuses on various specific development problems (e.g., increasing production and commercialization of livestock; specific grain crops such as millet and rice; peanuts; cotton; or fish).

The Government of Mali is beginning to coordinate such activities with other local rural development programs (in veterinary health, basic education, etc.) in order to minimize national, regional, and local duplication of efforts and to maximize benefits derived from available resources and from experience gained in various projects and programs. The administrative and other arrangements through which this project will institute and support this approach to development are described in the Technical Analysis (IIIa 1).

Evaluation and Measurement of Project Effects:

Because one of the basic objectives of this project is to demonstrate the effectiveness of an alternative approach to improving health conditions in rural areas, it is essential to gather accurate basic information on the initial and evolving health status of the concerned population, on the project inputs and other key factors affecting that status, and also to obtain similar information on initially similar "comparison" groups in an attempt to measure changes in health status which might reasonably be attributed to the project.

The first stage of project activities in each of the demonstration zones should involve collection of accurate demographic information on the inhabitants of all the villages in two Arrondissements. In each demonstration Cercle, one of these Arrondissements would be the test zone and the other the "comparison" area. The initial surveys would be carried out by the Arrondissement health workers under the supervision of the Cercle public health agent and the expatriate technicians. During the surveys, potential Village Health Workers could also be identified.

Once the village health program gets underway, the Village Health Workers will keep records of all births, deaths, and migrations of persons within their villages. They will also keep regular weight and arm circumference charts on all infants and young children, and will record vaccination and other significant actions affecting the health of infants and children under five. The health workers will also record information on apparent causes of disease and death. Whether additional information can be collected by the Village Health Workers, and how it can be done effectively, will have to be tested during the initial stage of project implementation.

The medicines supplied to the village health worker will be recorded and an attempt made to record treatment of persons from the demonstration area villages in the nearby dispensaries and maternities. Again, how much can be done with a largely illiterate populace will have to be tested, and methods developed for making record-keeping very simple. Particular attention should be given to recording information concerning birth rates and fertility behavior.

The comparison villages should be surveyed on an annual basis to obtain information on births, deaths, and migrations, and also to assess whether there have been any significant changes in health status or practices. The records of the local curative health services will be reviewed periodically to see if there is any change in the utilization of such facilities by persons from demonstration, comparison, and other villages. Also, the flow of medicines through the curative facilities and other distribution channels will be monitored. Because one aspect of the project is to assess the effective demand for various types of medicines, some studies may be

conducted of the elasticity of demand for various types of medicines, with due attention being given to the ease of access to alternative sources of medicine.

Finally, some records will be kept on the production, availability and prices of the main agricultural crops and on the available water supply, as these factors are likely to have significant effects on health conditions.

The objective of gathering this data is to try to obtain statistically respectable estimates of the effects of various factors, especially the projected health interventions, on the health status of the target population. A first major evaluation of progress in the initial Arrondissement villages will have to be made shortly after the new health interventions have been introduced. While this is expected to be too early to discern any significant impact on birth or death rates, it still may provide some indication of the acceptance and effectiveness of the services provided. Evaluations later in the life of the project have a greater probability of detecting health status changes. However, if the activities initially undertaken by the project are continued, further evaluations could be made after five or even ten years to assess the longer-run impact of changing health services and economic conditions on health status. Personnel of the Ministry of Health will be trained to carry out these possible later evaluations during the project's evaluation efforts and through participant training, if this seems appropriate.

Another dimension of evaluation will be in terms of the relative effectiveness of organizing the village health activities through the production operations - such as Opération Mills or Pêche in Region V, and

Mali Livestock in Region II, or through the regular health services in Region III. Other factors to be addressed include:

- a. the relative effectiveness of traditional healers, traditional birth attendants, and newly-recruited women or men as Village Health Workers;
- b. what approaches to training and supervision are most effective;
- c. whether compensation of village health workers must come from outside and to what extent it can be provided adequately within the village context (see Section IIIa 3 for further discussion of this important point);
- d. how different cultural and tribal groups respond to various health interventions, including those relating to fertility; and
- e. how rural health interventions should be modified to best serve nomadic, semi-nomadic, river dwelling and/or sedentary farming populations.

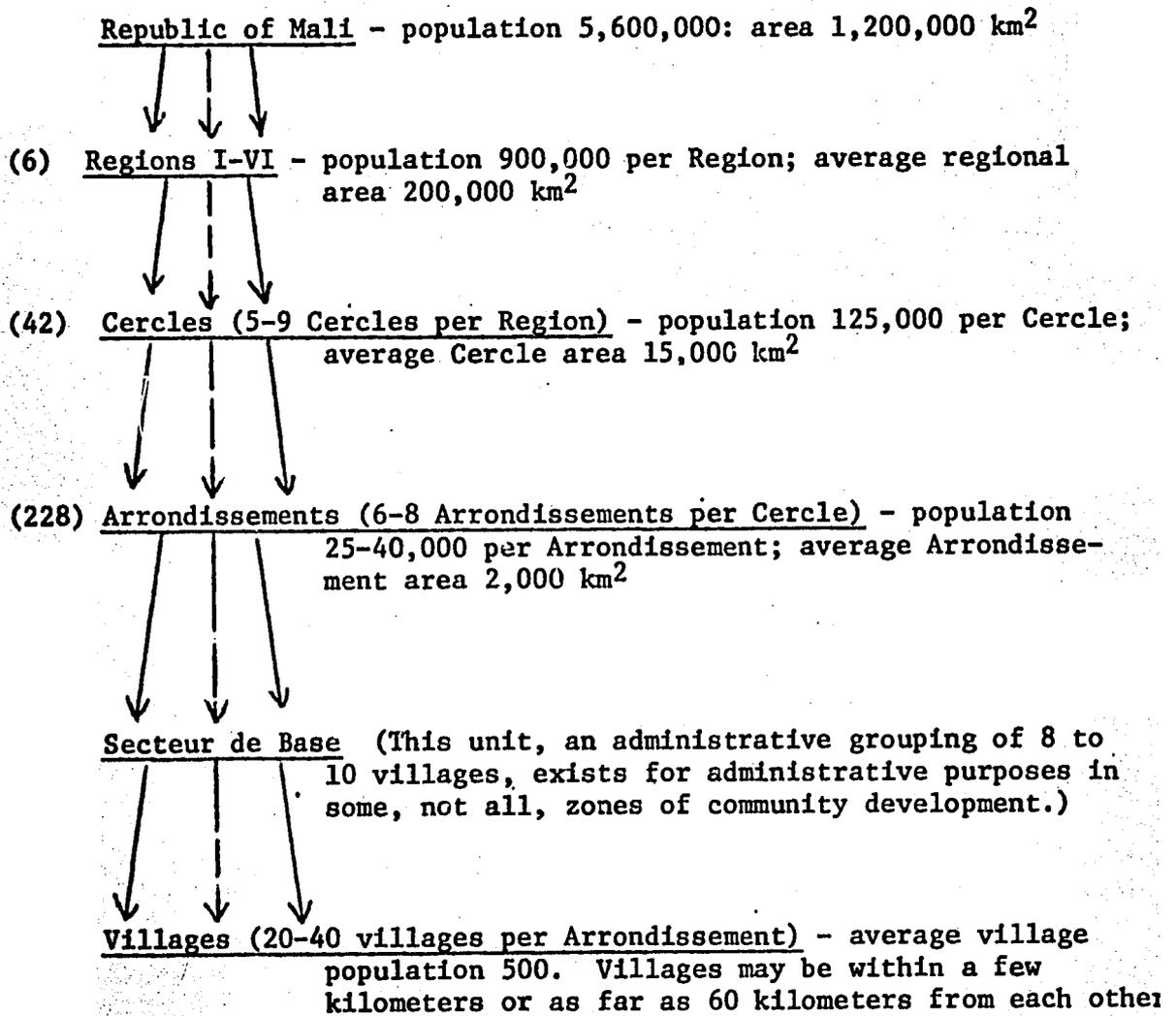
Feasibility of Nationwide Expansion:

Although the project is designed to provide the basis for a nationwide low-cost rural health services delivery system, many questions will need to be answered before Government of Mali decisions are made regarding nationwide implementation of such services, and for these the demonstration projects will supply key information. Key issues which are involved include:

1. estimated costs of development and operation of nationwide system (including multiplier effects at other levels)
2. manpower requirements (a national health manpower development plan will be drafted during the last project year)

3. facilities required (although the system will minimize requirements for fixed facilities)
4. logistical requirements
5. MOH management and planning capabilities.

FIGURE 1 MALI - SCHEMA OF GEOGRAPHIC ADMINISTRATIVE ORGANIZATION
(All figures rough approximations)



GEOGRAPHIC SCHEMA 1: EXISTING RURAL HEALTH SERVICES IN MALI (1)

Regional Level: Hospital of 150-200 beds, with maternity and Maternal and Child Health Clinics (PMI's). One to 3 physicians; nurses at various levels of qualifications. Center of Grand Endemic Disease Service (SGE) activities.

Cercle Level: Dispensary with 8-10 beds plus maternity with 6-10 "hospital" beds. PMI may or may not be functioning. Possibly one physician - usually not. Person in charge is usually "Infirmier d'Etat" (Registered Nurse-level), assisted by approximately 3-5 "Infirmières Auxilliaires" (Practical Nurses) or occasionally by a full "Infirmière d'Etat" and 1 Midwife. SGE may reach this level once or more yearly.

Arrondissement Level: Dispensary staffed by single "Infirmière Auxilliaire". In some Regions (notably II and III), rural maternities staffed by "matrone rurale" (midwife/medical practitioner - basic literacy plus 6-12 months training). SGE usually does not reach yearly.

Village Level: No effective sustained contact with government health system. Infirmière Auxilliaire or midwife or matrone may visit occasionally, especially for obstetric emergency. SGE seldom reaches.

(1) Severe transport and communications gaps exist between all vertical levels of health administration.

FIG. 2 TYPICAL PATTERN OF MALIAN HEALTH FACILITIES AND PERSONNEL

	Facilities	Service de Grandes Endemies	MD	Infirmière d'Etat	Infirmière Auxilliaire	Midwife	Matrone
R E G I O N	Hospital 150-200 beds Maternity and PMI clinics	Center	1-3	yes	yes	yes	no
C E R C L E	Dispensaries 8-10 beds 6-10 Maternity beds PMI??	Yearly Visit	usually not	one(some have two)	3-5	(some have one)	no
A R R O N D.	Dispensary/ Rural Maternity (in Regions III & II)	Less than yearly visit	no	Usually not	one	no	One at each Rural Mater- nity
V I L L A G E	NONE	Rare Visits	no	no	One may visit occasionally.		

FIG. 3 - PERSONNEL STRUCTURE FOR MALIAN RURAL HEALTH SERVICES PROJECT

LEVEL	Existing Malian Health Workers	"New" Malian Public Health Workers	U.S. Technicians During Pilot Phase	Total Public Health "New" Personnel (Mali: US) All Regions
National	Minister & Directeur de Cabinet	Director of Health Services as counterpart to U.S. Project Director	1	1/1
Regional (in 3 Regions)	see Fig. 2	1 Regional Pub. Health Supervisor/Region	1 Regional Pub. Health Advisor/Region	3/2
Cercle (1 per active Region)	1 Inf. d'Etat Several Inf. Aux. 1 midwife	1 Agent de Santé Publique de Cercle/Cercle	1 Field Operations Advisor/Cercle	3/3
Arrondissement (1 per active Cercle)	1 Inf. Auxilliaire 1 Matrone Rurale	2 Agents de Santé Rurale/ demonstration zone 1 Agent/"comparison" zone	Possible PCVs or similar workers to extend reach of T.A. personnel. 2-3/Arrondissement	9 ^x /6-9
Village (20-40/ active Arrondissement)	No Govt. health workers at present	2 or more Animatrice de Santé/ active village	0	240 ^x /0

^x may increase, depending on number of "active" Arrondissements.

III Project Analysis

IIIa Technical Description

As a more detailed supplement to the project description provided in Section IIb, in this section (IIIa) a number of key project issues and elements are selected for further description. These elements are:

- 1) personnel structure and administrative relationships within the project,
- 2) selection and training of village health workers, 3) structure and function of the revolving fund for purchase and distribution of medicines,
- 4) central MOH planning and management capabilities, 5) research and evaluation data generated in the project, and 6) the purposes and use of comparison zones. In addition, 7) environmental impact is discussed.

1. Personnel Structure and Administrative Relationships:

The U.S. technical assistance personnel, operating at National, Regional, Cercle, and Arrondissement levels, will each have a Malian counterpart within the MOH system.

At the National level, the U.S. Country Project Director will have a direct working relationship with the Director of Health Services, who will either serve himself as a (part-time) counterpart, or assign this function to one of his deputies. In addition, the Country Project Director will be involved in training and collaborative relationships with other officials in the central ministry, especially those concerned with the logistics of equipment and supply and those concerned with long-range planning of manpower and rural health services.

At the Regional, Cercle, and Arrondissement levels, the U.S. technicians will have counterpart relationships with MOH workers specifically

assigned for rural health functions. This involves the commitment of GOM/MOH to assign new and additional personnel to the demonstration zones.

Position Descriptions of U.S. Technical Assistance Personnel are included as Annex E.

The direct technical chain of command of project activities will pass through MOH lines. However, provisions need to be made for administrative integration with other (i.e. non-health) development activities at the Central and Regional levels. In appropriate Regions, the administrative liaison will be with the Director of Rural Development or Director of (the appropriate) Opération, to whom the Regional Public Health Advisor will report in a staff capacity. At the Central level, the Country Project Director, working through MOH channels, will assure liaison with other Ministries, especially the Ministry of Rural Development. This combined vertical (technical) and horizontal (integrated) administrative structure is congruent with the administration of other development activities in Mali. An additional important point of administrative liaison for project personnel (Country Project Director and Regional Public Health Advisor) is the Regional Governor, who exercises considerable regional executive autonomy in the Malian system; the PRP and PP teams have discussed the project in depth with the Governors of Regions I, II, III, and V.

2. Selection and Training of Village Health Workers:

In each village in the Demonstration Arrondissement, project personnel will work with local community organizations in the selection of VHW trainees. In almost all Malian communities, the Village Council is a body

that is composed exclusively of male elders. However, the Government of Mali has stimulated formation of Village Committees, which are composed of the Council plus a representative of the village women and a representative of the village youths. It is probable that the formal selection of the VHW trainees will be accomplished by the Village Committee, but at least two additional sources of input should be involved. These are 1) the village chief (or chiefs, where administrative and traditional authority remain separate) and 2) the village women's organizations (both traditional age/sex groupings and modern sector organizations). In areas where male VHW trainees are to be selected, male age/sex groups should also be consulted.

In this PP, the VHW has been designated by the feminine "animatrice", since most will probably be female; however, there will most certainly be communities in which male "animateurs" will be useful. Detailed criteria for age/sex and other criteria for selection of VHW's will be developed as part of project implementation and may well vary from Region to Region, or even from village to village. With regard to VHW selection (probably 2 VHW's per village), the best female pairing in each village would probably be one younger woman with one older woman. The former can be selected because of functional literacy, flexibility, adaptability, and personal relationships with young mothers, while the latter is necessary for prestige, respect (extremely important as an age-related factor in Malian village societies), and prior useful experience and knowledge. Many villages contain a number of young males and females who have had some primary education and exposure to the modern sector; these people are good sources of VHW recruits. In

addition, older traditional health practitioners of various kinds should be considered as sources of VHW recruits (either themselves or their family members). This would assist the development of liaison between traditional and modern health services at the village base.

There is considerable evidence from a variety of programs (see Section IIIc - Social Analysis) that a semi-voluntary system of VHW's which combines community services, small revenues from the sale of selected medicines, and community (village) payment and support in cash or kind, will function effectively. Project personnel should emphasize to village leaders and committees that the VHW will not be a MOH civil servant, but that a variety of payment and support mechanisms at the local village level will be worked out, preferably under the supervision of the village bodies themselves.

As with the details of selection characteristics of VHW trainees, the detailed local compensation mechanisms for VHW's form part of the development/implementation/demonstration issues of this project. Locally adapted mechanisms will need to be worked out via which an equitable and accountable system of rewards for the VHW's activities is assured, while at the same time preventing abuses of the system by the VHW for undue personal gain. It is quite possible that the best mechanism will involve local supervision/responsibility by the village council, elders, or chief; with the MOH and TA representatives' involvement confined to inventory and cash-flow control and arbitration of problems that cannot be resolved at the village level. Again, specific mechanisms may vary from Region to Region and from village to village.

Training of the VHW's will be at the village, "Secteur de Base",

and Arrondissement levels. Specific training methods and curricula for illiterate and semi-literate workers will be developed as part of project activities. Annex F provides a tentative illustrative list of job functions of VHW's. This will certainly be modified (by selective expansion and contraction) as experience is gained in the project. It is quite clear from experience elsewhere that a VHW of the level described here can be trained to effectively carry out many promotive, preventive, and curative health functions. Specific functions (for example, accurate weighing and growth charting) may present specific problems that project personnel will have to cope with in an innovative fashion. These innovations and the experience and knowledge gained from them will provide an important part of project outputs.

Different Regions (and perhaps different communities within the same Region) may well place different emphases among VHW functions. For example, one area may wish to stress environmental actions (especially improved water supplies and/or home/market gardens), while another may stress child-care actions. The VHW training programs must be flexible enough to allow for variation in emphasis according to local community decisions.

As important as the initial training of the VHW's will be the development of a system of continuous education, supervision, and encouragement provided by MOH workers (and Technical Assistance Personnel during the life of the project) at the Arrondissement and Cercle levels. The development of these training and supervisory capacities on the part of MOH rural public health personnel will be among the most important functions of Arrondissement, Cercle, and Regional level U.S. Technical Assistance Personnel.

3. Structure and Function of Revolving Fund for Purchase and Distribution of Medicines

As described earlier, in Section IIb, the development and operation of the revolving fund is an important element of logistics in the rural health services system to be demonstrated in this project. During the life-of-project, AID-supplied medicines and equipment will be provided to the entire Cercles in which the Demonstration Arrondissements are located (at a level of 40¢/capita/year in the non-demonstration Arrondissements, and \$2/capita/year in the Demonstration Arrondissements) in order to: a) demonstrate the feasibility and utility of the revolving fund mechanism as a means of making medicines available to the rural periphery, b) operate the fund in progressively expanding demonstration areas, and c) develop a capital base for expansion of this system during the national replication phase.

A broad list of medicines and equipment for distribution in Mali at the Cercle level was developed as part of the Health Commodities and MCH Clinics PID's of June, 1975. This list was refined and contracted to one of supplying more basic requirements as part of the PRP discussions with the MOH in January, 1976. Final selection of the first contingent of medicines and equipment for Cercle-level distribution, and selection of specific medicines to be supplied to the VHW's, will be one of the initial activities of the U.S. contractor.

At the village level, the initial decisions as to which medicines will be distributed free and which sold to generate revolving fund revenue will have to evolve during the development of the community diagnosis and VHW training in the first Demonstration Arrondissement. The U.S. Technical Assistance Personnel and MOH officials will make these decisions jointly.

The attached diagram schematizes the flow in the revolving fund system during the life of the project in the demonstration zones (right side of diagram) and in other areas after the project enters the replication phase (left side of diagram),

For the demonstration zones, project funds and commodities will pass through the MOH to Regional and Cercle levels. The development of adequate and reliable logistic systems to assure this flow, and the tracking of the commodities, are among the most important tasks of the Country Project Director and the Regional Public Health Advisors. MOH officials have assured the PRP and PP teams that, for the basic drugs to be supplied, the problems of U.S. generic names and dosage forms are not significant obstacles. If necessary, relabeling can be done in Bamako; the project should also consider the development of local (i.e. Bamako) pre-packing of bulk-purchased supplies before shipment to Regional levels and beyond. At the Cercle levels, commodities are to be apportioned (under the supervision of Regional and Cercle personnel) as shown on the right side of the diagram. At the Arrondissement level, a further apportionment will take place between drugs to be held centrally in the Arrondissement and drugs to be distributed locally in the villages by the VHW's. This system will be facilitated by liaison with existing Arrondissement-based "cooperatives" which employ a similar community sales system for necessities such as rope, salt, matches, soap, sugar, and some grain. At the village level, some basic drugs may be provided to villagers free of charge by the VHW; the rest will be sold to generate revolving fund revenue. All informants assured the PRP and PP teams that the estimated figure of local purchase of \$1/capita/year in demonstration areas was realistic, especially if health services were available to back

up drug purchases. (Informants include Government of Mali health, development, and administrative officials at National, Regional, and local levels; international agencies; medical missionaries.)

During the life of the project, from the Demonstration Areas, the revenue generated in the revolving fund should be returned to the National level, into a specifically numbered account. This is necessary not only to build up a small capital reserve for the later replication phase, but even more importantly to maintain effective fiscal control during the development phase and to allow for careful calculation and evaluation of the system's dynamics and to demonstrate its effectiveness.

Cash generated at the local (i.e. village level) from the sale of medicines will be collected and accounted for on a regular (e.g. perhaps quarterly) basis by Cercle-level TA personnel (in the process of training their MOH counterparts to carry out this same function), and transmitted to the National level (perhaps via the intermediary of the Regional Health Advisor) semi-annually. The cash will then be placed in a special account, a joint account of the MOH and USAID, where it will remain during the life of the project (if possible, an interest-generating account should be used). At the end of the project, the acquired reserve will be available for start-up capital for medicine procurement for the expanded rural health system. If the GOM does not replicate the demonstration rural health system, the GOM and USAID will jointly decide upon another health sector use for the accumulated reserve.

As shown on the left side of the diagram, once the revolving fund enters into a national replication phase (after demonstration activities terminate), it is probable that a more efficient system of local

(Regional, Cercle, perhaps Arrondissement) revolving funds can be utilized, especially as local public health personnel can be trained in the necessary fiscal control mechanisms.

4. Central MOH Planning and Management Capabilities:

In addition to assistance in the upgrading of logistic and administrative capabilities of the MOH concerning the procurement, distribution, and control of drugs and equipment discussed in the preceding section, the demonstration activities of this project will assist in improving the planning and management capabilities of the MOH in two ways: a) by the information and knowledge gained via the community diagnosis, health services development, and health manpower development aspects of the demonstration zone activities, and b) by the process of the development of the central MOH mechanisms necessary to plan, operate, and evaluate the demonstration zones and to plan for broader national replication.

There is clear interest in the MOH, and an expressed policy in its planning documents, in integrating health services with other aspects of rural and community development. The demonstration zones provide a practical opportunity to carry out these plans in a context in which the results will be carefully evaluated. Similarly, the health manpower implications of the VHW system and the supporting MOH rural public health structure will be of significant assistance to the Government of Mali in the development of its broader national health manpower planning activities.

A critical function of the Country Project Director, using information generated by, and results of, experience gained in the demonstration zones,

will be to stimulate and assist the MOH's executive and staff planning and management capabilities. At the Regional level a similar process should take place, catalyzed by the Regional Public Health Advisor.

5. Research and Evaluation Data Generated in the Project:

The importance of careful assessment of baseline status (community diagnosis), activities within and utilization of the health services, changes in the rural population's health, development, and nutritional status, and as far as possible the relationships between these changes and costs and inputs of the project, becomes clear when it is realized that the primary objective of this project is the demonstration of an effective low-cost rural health system that can then be replicated by the Government of Mali over a much broader national area than that covered by the demonstration project itself. The techniques for measuring change and the information systems designed to provide these measurements to MOH planners must be of sufficient clarity and accuracy to enable decisions to be made concerning the design of the broader national system and the National training of health workers at all levels to staff it. The elements of the project's data gathering system have been described in Section IIb - Project Description. They include the upgrading of the existing health information systems, the base-line community diagnosis (see Annex F for illustrative elements of the community diagnosis that can be collected by properly-supervised VHW's and Arrondissement-level MOH personnel), the on-going collection of relevant data at the community level, and the assessment of the economic aspects (both costs and benefits) of these health activities as part of a development program. While the current MOH health information system is fragmentary,

inaccurate, and does not operate at the village level, there is an existing base for its further development. However, the development of systems for tracking health-related economic indicators and economic implications of health indicators will have to be constructed de novo without existing MOH precedents to build upon. This data will be of extreme importance in evaluating the effectiveness and utility of the project's activities and in assisting the Government of Mali to make program decisions concerning replication.

6. The Purposes and Uses of Comparison Zones:

Despite the collection of detailed health, demographic, and development data in the Demonstration Arrondissements, a single comparison of "before and after" status in these areas is not likely to be sufficient for the decision needs concerning project effectiveness described in the preceding section. The short time horizon of project activities (not greater than three years) will make trends difficult to predict, and the magnitude of changes in some cases may be relatively small. Further, the marginal aspects of health and life in rural Mali make project outcomes vulnerable to external circumstances. (Example: one, or a series of, dry year(s) with consequent effects on already marginal food production and availability). Therefore, it is advisable to undertake assessment of demographic, health, nutritional, and developmental data in areas that can be used as comparisons to the Demonstration Arrondissements. These areas should be selected to be as similar as possible to the Demonstration Arrondissements in each Region for geographic, climatic, socio-cultural, and development activity characteristics. They should, however, be sufficiently distant or separated by natural barriers to discourage cross-over of populations for health services in the

Demonstration Arrondissements, while at the same time being reasonably accessible to demonstration area project and MOH personnel for purposes of data collection. On balance, the probable best choices for comparison areas will be other Arrondissements located in the same Cercles as the Demonstration Arrondissements (and thus representing a similar spectrum of diversity between the Regions involved in the project). In these Arrondissements, the population will be receiving the benefits of the additional AJD-supplied medicines and equipment through the existing MOH system and participating in the same development programs of the "Opérations", but they would not be affected by VHW services or village-distribution of medicines.

These comparison areas will not be adequate to serve as scientific controls of the Demonstration Arrondissements. However, the comparative data that can be obtained will be nonetheless important in assessing project effectiveness and will provide a certain safeguard against clouding of project impact by external events.

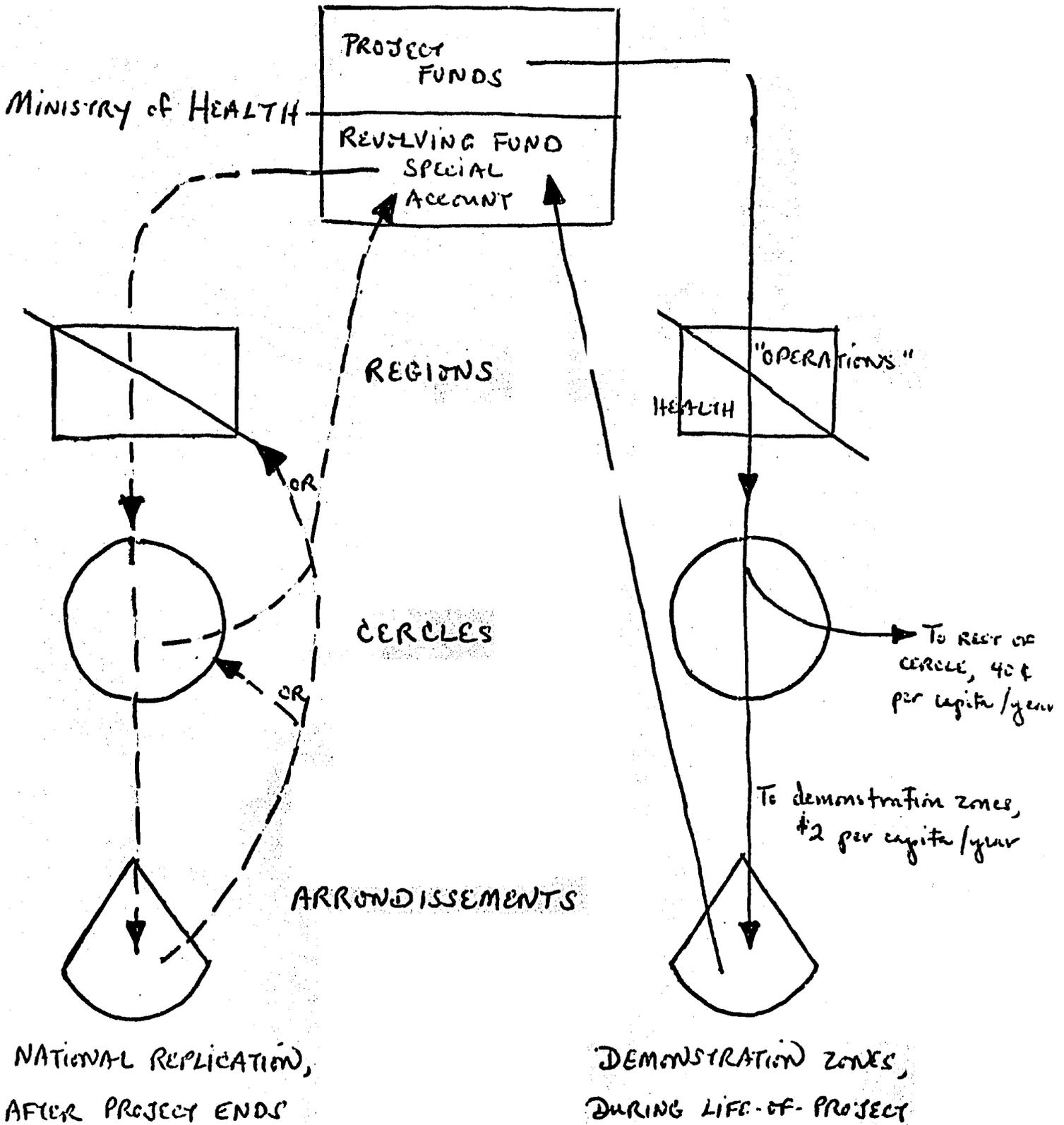
This concept was discussed at length with the MOH by both the PRP and PP teams in order to insure no misunderstanding of exploitation for "research" purposes. The MOH expressed strong support of the concept and added the idea that the comparison areas could well be in the best position for early activation as the rural health program moved into replication phase.

7. Environmental Impact:

This project is not expected to have large-scale environmental impact. No facilities construction is envisaged. The project may contribute

to the improvement of the village micro-environment in several ways. A significant portion of village-level health activities will concern the improved use of available village water supplies, and the community organization aspects of this project and its liaison with other development activities may well lead to environmental improvement of existing water resources (safe wells, small local water storage devices for human or agricultural use, etc.), and/or the development of new water sources at the village level, as well as improved practices of excreta and garbage disposal. The close liaison between health, nutritional and agricultural production activities may lead to local agricultural modifications such as home and/or village gardens.

SCHEMATIC FLOW of MEDICINES and REVOLVING FUND



IIIb. Financial Plan

Mali's national budget for 1975 amounted to 38 billion MF, which is equal to US\$95 million, or approximately \$17 per inhabitant. (Population in 1975 was approximately 5.6 million.) In recent years, the health portion of the total budget has accounted for approximately 10 percent, or \$1.70 per capita. The predominant share of these expenditures is concentrated on fixed facilities and personnel in the national capital and other population clusters, so that the portion reaching the rural areas is probably no more than 50 cents per capita; most does not reach beyond the main town of the Cercle or Arrondissement.

A figure of \$2 per capita has been used in this project as a reasonable amount for planning health services that can be supplied to the rural population. To provide this amount for the operation of rural health services on a nationwide scale in Mali, a major reorientation of current expenditures away from high cost curative facilities would be required; while it is unreasonable to expect such a dramatic change in a few years, the ultimate success of this project will depend on the demonstration to the Ministry of Health and the GOM of the efficacy of a rural-oriented health program and a steady increase over the next 10 to 20 years of the share of expenditures devoted to this type of activity. Within twenty years, it is not unreasonable to expect a 50 percent increase in the real per capita budget levels and health expenditures, with a major increase in the proportion of the expenditures actually reaching the rural poor.

The following assumptions have been used for estimating the per capita costs of the demonstration program:

- a. That the costs of medicines supplied free to the population will

be \$ 1 (490 MF) per capita.

- b. That the salary costs of the regional and district health officials directly involved in the program will be prorated in proportion to the share of the demonstration zone population in the total population under their jurisdiction.
- c. That the Arrondissement worker's salary will be counted in full, while the Village Health Worker would either be a volunteer, be supported in kind by the village, or realize a small income from local fees for services provided (some combination of such mechanisms for Village Health Worker support will probably be used, after testing various possibilities).
- d. That equipment costs will be prorated over the expected life of the equipment and population served.
- e. That operating costs are estimated on an annual basis.

Annual Cost Estimates for Operating Demonstration Program in

One Arrondissement of 40 Villages and 20,000 Population:

- Agent de Santé Rural; one per Arrondissement	<u>MF</u>
at MF 300,000 p.a.	300,000
- Agent de Santé Publique de Cercle; one-sixth of	
time per Arrondissement at MF 480,000 p.a.	80,000
- Adjoint de Santé Publique Régional: 1/36 of time	
per Arrondissement at MF 600,000 p.a.	16,600
- Animatrice de Santé de Village; 80 per Arrondissement	
at no MOH salary	<u>-0-</u>
	<u>396,600 MF</u>

.../...

..../...

Transportation:

- Mobilette for Agent de Santé Rurale; one per Arrondissement at MF 120,000;	
Depreciation over 3 years	73,500 MF
- Operations & repairs at MF 20/mile for 5,000 miles	100,000
- Mobilette for Agent de Santé Publique de Cercle, one-sixth per Arrondissement;	
Depreciation, operation, repairs	52,000
- Four-wheel drive vehicle (including spare parts) for Adjoint de Santé Publique Regionale; 1/36 portion of four year depreciation of 5,390,000 MF	38,000
- Operation, repairs 900,000 MF ÷ 36 at MF 150/mile for 6,000 miles (30¢/mile)	<u>26,000</u>
	288,000 MF

Equipment and Supplies:

- Scales, one per village (50 villages) at MF 20,000 - Depreciation over 5 years	200,000 MF
- weight charts and other record-keeping materials at MF 40 per capita x 20,000	800,000
- Promotional materials and supplies at MF 40 per capita x 20,000	<u>800,000</u>
	,800,000 MF

Medicines:

- Medicines supplies through local demonstration zone free distribution at 490 MF per capita x 20,000	9,800,000 MF
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Estimate of current value of health services supplied
through existing health facilities at 80 MF per capita 3,600,000 MF

Per capita expenditures are MF 13.8 million/20,000 population, or
about MF 700 per capita (\$1.43 per capita).

While this per capita cost estimate for the proposed program (when
fully operational) is estimated at US\$2.00 , the costs during the demonstra-
tion period will be higher because of higher personnel costs during the
demonstration period, which involves a larger complement of subordinate
workers.

The attached summary budget indicates an initial AID four-year cost
of \$3,890,000 with a GOM local currency contribution for project and
project-related (part-time services of regularly salaried MOH personnel)
costs. Given GOM acceptance of the feasibility of the project's approach
to rural health services, GOM replication costs in following years would
carry the project extension on to a broader national basis.

To assure GOM local currency contributions and the continuity of
donor assisted health sector projects, the GOM in its "Five Year Plan for
Economic and Social Development (1974-78)" proposed the creation of a National
Health Fund similar to the already established National Road Fund. Contri-
butions to the fund would come from: (1) the national budget; (2) local and
regional budgets; (3) a health tax; (4) profits from state owned enterprises;
(5) receipts from health units; (6) receipts from MOH institutes and labora-
tories; (7) subsidies from the National Lottery, National Institute of
Social Insurance, and the National Insurance and Reinsurance Fund; and
(8) financial gifts.

Project Funding (both AID direct costs and contract funded PY 01 and 02 costs) can be met by an FY 1977 obligation of \$ 1,586,000 and an FY 1979 obligation of \$ 2,304,000 to provide sufficient funding for the 4-year cost of \$ 3,890,000.

MALI RURAL HEALTH PROJECT; SUMMARY BUDGET

Part One: USAID Contribution

(US \$ Cost Estimates for 4 Years - FY 77 - 80)

1. CONTRACT PERSONNEL

A. Long term (14 person/years at \$70,000)	980,000
- one senior health advisor/team leader	
- two regional health advisors; 1 at 3 p/yrs; 1 at 2 p/yrs.	
- two Cercle field operations specialists 1 at 3 p/yrs, 1 at 2 p/yrs	
B. Short term consultants	
- 28 p/months at \$5,000 (expenses and travel)	140,000
C. U.S. Campus Coordinator	
- 1/4 time for 4 years	60,000
D. Travel to Mali for Campus Coordinator	
- 1 trip/year at \$2500	10,000
E. Campus Project Secretary	
- 1/2 time for 4 years	20,000
F. U.S. Recruiting Costs	15,000
G. Peace Corps Volunteers* or Assistant Field Operations Specialists	
- 18 p/years at \$20,000	<u>360,000</u>
	<u>1,585,000</u>

2. PARTICIPANT TRAINING

5 long term, at \$15,000 75,000

3. COMMODITIES

Equipment

Vehicles:

4 wheel drive (7 at \$11,000 including 10% for
spare parts) 77,000
Region V - 2
Region I - 2
Region III - 2
Team leader - 1

Mobilettes for Cercle and Arrondissements workers
(30 at \$450) 13,500

.. / ...

* If contract personnel must be secured for these positions,
item "G" will increase to \$810,000.

Scales for village health workers (150 at \$50)	7,500
Equipment for dispensaries and maternities in demonstration Cercles	100,000
Training Materials	20,000
Medicines (see budget annex for calculation)	
- For demonstration zones	320,000
- for Cercles in which demonstration zones located	<u>428,000</u>
	966,000

4. OTHER COSTS

A. Local hire secretaries, typists, drivers \$20,000/yr x 4 yrs	80,000
B. Office supplies and communications	40,000
C. Local travel, gasoline, repairs, spare parts	<u>200,000</u>
	320,000

5. SUMMARY

1. Contract Personnel	1,585,000
2. Participants	75,000
3. Commodities	966,000
4. Other Costs	<u>320,000</u>
	2,946,000
5. Inflation (20% over 4 years)	<u>590,000</u>
	3,536,000
6. Contingency (10%)	<u>354,000</u>
	3,890,000
TOTAL	<u>3,890,000</u>

SUMMARY BUDGET ANNEX

Basis for Estimating Expenditures on Medicines

- Assumptions:**
1. That \$2 worth of medicines will be supplied for each inhabitant in the demonstration zone for each year of the active project period.
 2. That 40¢ worth of medicines will be supplied for all other inhabitants in the Cercle in which the demonstration zone is located for each year of the active project period. National budget expenditures on medicine in 1974-75 averaged 40¢ per capita.

Region in which demonstration zone is located:

1. Region V for 3 years

Cercle Population	125,000		
Demonstration Zone population	20,000 x \$2.00 x 3 years	=	\$ 120,000
Population outside zone	105,000 x .40 x 3 years	=	<u>126,000</u>
			\$ 246,000

2. Region III for 2 years

Cercle population	245,000		
Demonstration zone population	20,000 x \$2.00 x 2 years	=	\$ 80,000
Population outside zone	225,000 x .40 x 2 years	=	<u>180,000</u>
			\$ 260,000

3. Region I for 1 year

Cercle population	120,000		
Demonstration zone population	20,000 x \$2.00 x 2	=	\$ 80,000
Population outside zone	100,000 x .40 x 2	=	<u>80,000</u>
			\$ 160,000

4. Region IV (possible) for 1 year

Cercle population	125,000		
Demonstration zone population	20,000 x \$2.00 x 1	=	\$ 40,000
Population outside zone	105,000 x .40 x 1 year	=	<u>42,000</u>
			\$ 82,000

TOTAL (Medicines). \$ 748,000

SUMMARY BUDGET

MALI RURAL HEALTH SERVICES PROJECT

Part Two: Host Country Contribution

ITEM	PY 01	PY 02	PY 03	PY 04	TOTAL
I. Estimated Rural Health Expenditures in Active Cercles *	63	125	188	250	626
II. PERSONNEL:					
New MOH Workers in Demo. Activities					
1. <u>National</u> (1/4 p/yr & 4 yrs)	0.5	0.5	0.5	0.5	2
2. <u>Regional</u> (1 p/yr/active project year)	1.25	2.5	3.75	5	12.5
3. <u>Cercle</u>	1	2	3	4	10
4. <u>Arrondissement</u>	2	4	6	9	20
					<u>44.5</u>
III. ESTIMATED value of community contribution (i.e. Village Health Workers equivalent of 120,000 MF/yr)	20	40	60	80	200
TOTALS	87.75	174.0	261.25	347.5	870.5

* Estimated actual expenditure of 50¢/person/year

SUMMARY BUDGET

MALI RURAL HEALTH SERVICES PROJECT

COSTING OF PROJECT OUTPUTS/INPUTS

Project Inputs	Project Outputs*					TOTAL**
	1 & 2	3	4	5	6	
<u>AID-Appropriated</u>						
1. Contract Personnel	795	0	317	316	157	1,585
2. Participant Training	0	75	0	0	0	75
3. Commodities	727.3	0	143.1	95.6	0	966
4. Other Costs	180	0	60	50	50	320
						<u>2,946</u>
<u>Host - Country</u>						
I. Rural Health Expenditure	490	0	37	37	62	626
II. New Rural Health Workers	30.5	0	6	6	2	44.5
III. Village Health Workers	150	0	30	10	10	200
						<u>870.5</u>
TOTALS	2372.8	75	593.1	494.6	281	3,816.5

* Project outputs - see log frame for further details --

1. Establish Demonstration Zones
2. Training of Health Workers
3. Participant Training
4. Community Diagnosis
5. Curriculum and Teaching Materials
6. Reports and Evaluation of Project Progress

** Excludes \$944,000 inflation and contingency costs - see Summary Budget for these items.

SUMMARY BUDGET

(\$ in 000's)

Category	PY-01	PY-02	PY-03	PY-04	TOTAL PY 01 thru 04
1. <u>Contract Personnel</u>					
A. Long term T.Adv.	70	210	350	350	980
B. Short term Consult.	40	40	30	30	140
C-E. U.S. Campus Costs	32	22.5	27	22.5	105
F. PCV's	--	60	120	180	360
2. <u>Participant Training</u>	--	45	30	--	75
3. <u>Commodities</u>					
A. Vehicles (Landrovers and Mobilettes)	37.5	48.5	4.5	--	90.5
B. Equipment for dispen- saries/maternities & scales	36.5	35.5	35.5	--	107.5
C. Training Materials	5	10	5	--	20
D. Medicines	82	292	374	--	748
4. <u>Other Costs</u>					
A. Local hire	20	20	20	20	80
B. Office supplies & communications	5	10	15	10	40
C. Local travel, gas, parts	20	60	60	60	200
5. <u>Inflation</u> (20% over 4 yrs.)	69.5	170.5	214.5	135.5	590
6. <u>Contingency</u> (10%)	42	102	129	81	354
TOTAL	460	1,126	1,415	889	3,890

IIIc. Social Analysis:

The rural poor of Mali live as close to the margin of minimal nutritional, health and economic well-being as does the rural population of any developing country. Previous national and international attempts to increase the growth and distribution of social benefits to such rural populations by the "top-down" spread of health and social services have ~~been~~ notably unsuccessfull, with increasing disparity between urban and rural areas serving as an added pressure for rural-to-urban migration and further accentuation of rural poverty. Recently, the development policy of the Government of Mali has stressed the need for an integrated approach to rural development which 1) places the emphasis on local community organization and action and 2) attempts to integrate technical resources for development along multisectoral lines. (Example: proposed multi-disciplinary teams at the Cercle level, including agricultural extension, veterinary and human health, and community organization workers). The social focus of this project of Rural Health Services Development is congruent with this policy:

- a) by placing the emphasis of project activities at the village level,
- b) by training local people to take responsibility for health services in their own communities,
- c) by linking these health activities with the community development/agricultural production activities of the "Grandes Opérations", and
- d) by placing these activities within a cost context feasible of subsequent wider replication by the Government of Mali.

If successful and implemented nationwide, the integrated approach to improved and more broadly distributed health, nutrition and economic well-being and to avoidance of excess/unwanted fertility proposed in this

project could have an impact on the most critical problems of social, economic and political equity and "quality of life" in the development of Mali. Thus, the thrust of this project is entirely consistent with the AID Congressional Mandate of emphasizing assistance to the rural poor.

The policy of the Government of Mali regarding family planning is to endorse it as a health promotive measure for mothers and children. The Government of Mali is in the process of moving from a Bamako urban planning activity to seeking the ways and means for making family planning services available in rural areas. The design of this project provides a mechanism for supporting the implementation and progressive spread of this policy.

The ultimate beneficiaries of this project, if it is successfully implemented and replicated, will be the total population of Mali, especially the 80 percent living in rural areas, who are now largely untouched by the existing health services and facilities. Attempts to expand the existing system by providing more supplies, equipment and training would be likely to have only minimal impact, because the existing system is unable to reach the bulk of the population effectively. The alternative proposed in this project is to develop a different approach that will break through to the village level in a manner that will have a significant impact on village health conditions at a cost that will permit replication.

Initially, the main beneficiaries will be the 60-80,000 persons in the 120-160 villages of the demonstration zones. They should begin to experience improved health conditions - lower mortality and morbidity rates, better nutrition and, possibly, reduced fertility rates - within

several years of initiation of the health services in the demonstration zones. Secondary beneficiaries will be the other residents of the Cercles in which the demonstration zones are located, because of the increased supplies of medicines and equipment provided to the maternities and dispensaries throughout those Cercles; this population is approximately 375-500,000 people in 800-1200 villages.

As the system is replicated throughout the other parts of the country, the number of beneficiaries will increase accordingly. In addition, as the health conditions of the population improve, the productivity of the population is also expected to rise, and as productivity increases as a result of the various rural production programs, health conditions should also improve. The two gains are therefore mutually reinforcing, and this project, by tying them together at the local level, attempts to strengthen that synergism.

The role of women will be significantly enhanced by this project because village women will be drawn into an active role of promoting village health, both as village level health workers and as "consumers" of services. Their burdens of ill health will be reduced, and the availability of family planning information and resources will give them and their families greater control over their own lives. In rural areas such as the ones involved in this project, it is the women and young children who are most affected by conditions of ill-health, and who suffer most from the lack of the basic health services that can be provided at the village level.

Thus the underlying social issues addressed by the project include the following:

1. Distribution "equity" in health and community development services between the urban and rural village populations.
2. "Self-care" and local responsibility by rural populations.
3. Integration of traditional rural modes of individual and collective behavior (especially regarding health care) with modern techniques of developing and delivering health services.
4. The utility of health services at the community level as a catalyst for other development activities, and vice versa.
5. The alteration of existing inappropriate health professional roles and functions to roles and functions appropriate to the needs and settings of the rural population.

As important assessments of the feasibility and impact of the proposed rural health system, the following social variables will be assessed as part of this project:

Social Indicators

In addition to the demographic and health status, economic status, and other variables assessed by this rural health project, the following social variables will be assessed:

1. The role of village-based health services as an integral part of local and regional community development, and
2. the interactions between health, nutrition, family planning, and improved agricultural production as stimuli to the demographic transition (from high birth and high death rates to low birth and low death rates).

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Included in the assessment of these important social variables will be the following qualitative and quantitative assessments:

I. Qualitative

- Integration of various levels of health workers (village, Arrondissement, Cercle, Region) into broader community development programs.
- Recruitment of village level workers and effective liaison with traditional (i.e. non-western) health systems.
- Utilization of literate and semi-literate women in the village-based health services.
- Improved health and nutritional status at the village level, especially of infants, children, and child-bearing women.
- Increased agricultural productivity of working age males and females.
- Replicability of demonstration system in other zones of the country.

II. Quantitative

- Numbers of workers trained and operating and results of task and performance analyses.
- Health (mortality and morbidity) and nutritional indices. Fertility rates and birth intervals.
- Agricultural production.
- Numbers and distribution of persons served by the system.
- Costs of operating wider system: efficiency of cost-recovery via sale of drugs.
- Efficiency and effectiveness of Village Health Workers; numbers, task analysis.

(Many of these indices will require longer term follow-up evaluation i.e., 5, 10, 15, even 20 years.)

In addition to the broader social issues discussed above, several more "micro", village level social issues of great importance are dealt with in this project.

Foremost among the local level issues is the concept of semi-volunteerism and local village remuneration of the village health worker. There are several strong indicators that this approach, which is being tried in similar forms in many sectors by the Government of Mali, is feasible. Examples include a) the "paysan pilote" approach of the Grandes Opérations, b) the "matrone rurale" activities in most Regions, c) the community organization (including health) approach of the medical school's rural demonstration zone at Massatala, d) the rural development activities (including education, health, and women's crafts) in the Segou Region, and others. Of great importance is the concept that this approach is consistent with traditional forms of village organization and collective action and, if successful, will assist in preserving effective traditional social forms as transition into a modern economy takes place.

Another important local social question involves the potential benefits of integrating traditional medicine and traditional health practitioners into the spectrum of modern health services. The local (i.e. village) approach offers the best opportunity to begin integration of traditional and modern health sectors.

Most of the services intended to deal with health problems in rural Mali are provided by traditional indigenous medical practitioners who are members of the communities that they serve. In the modern sector, little is known about who these practitioners are and what methods they use. The few modern medical workers in Mali (especially at the Institute of Traditional Medicine) who have taken an active interest in traditional medicine feel that the presence and activities of traditional workers could be important determinants of the success or failure of village health workers. It may be possible to actually train some of the traditional practitioners as VHW's and should be possible to incorporate some of their methods, if they prove efficacious, into the training of VHW's. Traditional workers might also be encouraged to use simple modern health care practices (e.g. oral rehydration, clean cutting and dressing of umbilical cord, washing of animal bites) and to make appropriate referrals of patients to the MOH system. The director of the Government of Mali's Institute of Traditional Medicine, Dr. Koumare, has expressed interest in these aspects of the project and in learning more about traditional practices in the project areas.

Possible resistance to the project might be expected to be found among those (health workers and others) who have a vested interest in the maintenance of the present centralized, urban focused and high-technology dependent system; recognizing that system change is the goal of the project, such persons would not be expected to welcome it. However, health and development officials contacted during the project's planning phase, who are powerful agents within the present system, see the need for such change. They welcome the project as an agent of change and development.

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IIIId. Economic Analysis:

The analysis of cost factors within the project, the basis of calculating requirements and expenditures for medicine and equipment to be distributed under this project, and the reasons for and techniques of cost and cost-effectiveness analysis to be included in project activities and evaluation have been discussed above in the sections concerning Project Description, Project Technical Analysis, and Financial Analysis.

Selection of the general approach and specific techniques to be used in the project was done on a least-cost basis, focusing on the need to provide basic health services to a dispersed rural population with only minimal financial and personnel resources available. This section will focus on the reasons for choosing these types of project objectives and activities rather than other forms of health sector assistance.

Both cost-effectiveness and cost-benefit approaches to valuing health activities are notoriously difficult and unsatisfactory. Problems of placing a dollar value on human life, health, and subjective sense of well-being vis-à-vis economic productivity are further complicated by the difficulty of attributing changes in health status to specific health services, environmental, nutritional and social factors.

Despite the difficulties presented in this area of analysis, some estimation (even if approximate) of effectiveness and benefits derived by village-based health services in the context of rural economic development would be extremely useful to the Government of Mali in planning wider expansion of such services, given the extreme resource scarcity of the health

sector in Mali. It is for these reasons that careful attention has been paid to tracking cost elements in the design of the project (see Section IIIa), and for collecting community diagnosis and on-going data on health status and changes as an important part of project activities.

The low-cost, low-technology-dependent approach chosen for the design of this rural health system represents a deliberate attempt to avoid the over-centralized, high-cost health systems that cripple the abilities of most developing countries (including Mali) to attain effective distribution of basic health services to their dispersed rural populations.

The development of a rural health system based on the selection, training, and supervision of village health workers who remain outside the administrative cadre of the MOH represents not only a least-cost approach, but the only feasible approach to mass rural health coverage for the foreseeable future in Mali, given the country's scarcity of fiscal and manpower resources and the logistic obstacles separating its 44,000 villages. Besides their out-of-scale cost factors, traditional mobile rural health services (i.e., S.G.E.) cannot maintain continuous contact with a population for promotive, preventive, and curative activities; the spread of fixed conventional health services dependent upon conventional professional health workers is also clearly not economically feasible.

Thus the project entails a demonstration of fundamental system change in the way rural health services are organized, administered and delivered. It is for this reason that the project does not emphasize broad national-level training activities at the outset. The contention implied

in the project design is that several local demonstrations are necessary in diverse areas of the country, including careful assessment of technical and economic advantages and (perhaps in some cases) disadvantages of the activities undertaken, in order to: a) create and foster a climate of acceptance for national training of health workers (both MOH personnel and village workers) and to b) develop in detail the content and methods appropriate/necessary for such training.

Though the demonstration approach is not as swift as direct embarkation on a broad national program of training of health services, it is a necessary and in the long-run more economical approach, for the reasons given above.

A similar chain of reasoning underlies the project design with respect to donation of medicines and equipment. Mali is indeed critically short of even basic medicine and equipment. However, much of what is available is wasted because of inappropriate selection and purchase, inefficient administration and logistic control at all levels, and poor maintenance and conservation. To broadly distribute a quantity of medicines and equipment without focusing on these as accessories of system change would almost certainly have virtually zero impact on the health status of the rural population once the donated supplies were exhausted. Alternatively, the use of these materials as part of a process of rural health services system change and technical assistance to the MOH in improving its planning, managerial and logistic capabilities can lead to benefits beyond the direct use of the medicines and equipment themselves, especially within the context of cost-containment and careful selection appropriate to future GOM resources.

IV. IMPLEMENTATION ARRANGEMENTS

IVa. Analysis of the Recipient's and AID's Administrative Arrangements

IVa 1) Recipient's Administrative Arrangements

The key Government of Mali organization involved in the project is the Ministry of Health, which will sign the Project Agreement and be the recipient agency for the entire project. The Ministry of Rural Development (agricultural and livestock production) and the Grandes Opérations will also play important roles, the former having greater importance at the central level and the latter within the individual Regions in which they operate.

The MOH official who will be ultimately responsible for MOH direction and support of the project is the Ministry's Director of Cabinet, a physician and civil servant who has participated in the project's development. Day-to-day responsibility for project activities will be vested in the Director of Health Services. Assignment of the project to such high level officials indicates the degree of MOH interest in and support of the project, and a willingness to back up project activities and recommendations with powerful intraministerial support.

The Integration of project activities with other development activities (e.g., Ministry of Rural Development and Grandes Opérations) is explained in earlier sections of this paper. Exact details of such integration remain to be worked out early in Regional project implementation, but discussions with Central and Regional level development officials have already laid the foundation for this and, as noted earlier, produced preliminary agreements as to such matters as the Regional Health Advisors' staff

Relationship to the local Grande Opération in appropriate Regions.

The structure of the MOH health services organization is discussed in Section IIb, the Detailed Project Description; structural and functional administrative problems in the MOH are also reviewed in several other sections, as are arrangements to reach and involve the target population. One objective of the project is to help the MOH reduce or overcome these problems so that by the end of the project sufficient planning and management capacity will be internally available to support a nationwide rural health program.

IVa 2) AID Administrative Arrangements

This project presents AID/W and CDO/Bamako with no unusual administrative problems or demands. The mission's FY 1976 approved staffing plan included a Public Health Advisor position (chargeable as mission operating expenses, not to project funds), which has not yet been filled, pending the nomination of a candidate by AID/W. This advisor will have primary mission responsibility for the sizable AID portion of project implementation, i.e. commodity procurement, participant selection, and monitoring of contractor performance and project implementation. In addition to the advisor's responsibilities for contract management and project evaluations, the incumbent will provide vital liaison among all parties involved in project implementation: the contract team, the Ministries of Health, Education, Plan, Finance, and Rural Development, the separate Opérations and MOH regional health directors, and Peace Corps/Mali and project PCV's (if, as expected, Peace Corps volunteers participate in the project).

AID/W personnel or AID/W consultants are expected to participate in project evaluations as requested by the mission.

Procurement of vehicles, equipment and medicines will be accomplished by the CDO/Bamako which will establish appropriate PIO/C's based on lists negotiated with the project team and the GOM. The vehicles will be bought locally whereas all other major equipment and medicines will be procured by a designated procurement agent in the U.S., in this case the USPHS. Control of arrival and accountability of commodities will be monitored by the CDO/Bamako.

Training will be accomplished under the standard PIO/P format following AID regulations. Participant selection will be jointly undertaken by the GOM and the project team and approved by CDO/Bamako.

IVb. Implementation Plan

The CPI network and detailed CPI list presented on the following pages indicate the time phasing of critical project activities. To avoid repetition, the CPI list gives both critical and planned dates for each CPI.

Responsibilities and relationships of all parties bearing major project implementation responsibilities (including village leaders and village organizations) are discussed in various sections (see especially I Ib, IIIa).

Responsibility for project monitoring will rest primarily with CDO/Bamako, with technical support to be provided as needed by AID/W (possibly using REDSO personnel, including the Regional Health Advisor). Arrangements for the evaluation of project implementation in accordance with the indicators and means of verification shown in the Logical Framework (Annex J) are outlined in the next section. Evaluation of the demonstration rural health services system which will be developed by the project, and of other project activities, is an integral part of the project itself, as indicated in the Logical Framework and discussed in several earlier sections of this Project Paper. CDO/Bamako and consultants involved in planning the project view the two levels of evaluation (of the project, and within the project) as mutually reinforcing and as a means of cross-checking the results of each.

Following approval of the Project Paper, the next critical step in the project will be the award of a contract by AID/W for project implementation. The institution awarded the contract will need to have the

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following characteristics and capabilities;

- 1) Demonstrated institutional capability to implement, manage, and evaluate development projects, with emphases on integrated rural development and rural health services.
- 2) Experience in the training of paramedical workers at all of the levels involved in the project.
- 3) Ability to develop curricula and training materials suitable for use at all required levels (including training of illiterate or or semi-literate villagers with no language common to all).
- 4) Presence of, and ability to assign personnel with understanding of and experience in health services development and management in rural Francophone Africa and similar systems elsewhere.
- 5) Presence of and ability to assign (without excessive delay) and to retain technical assistance workers to fill project T.A. positions.
- 6) Ability to recruit (without excessive delay) and to retain any additional technical assistance workers necessary to complete the project terms, but not currently located within the contractor's Institution).
- 7) Ability to provide or obtain cultural orientation and language training.

MALI RURAL HEALTH
SERVICES DEVELOPMENT PROJECT

<u>No.</u>	<u>Time in Months</u> <u>("Planned/Critical")</u>	<u>CPI LIST</u>	<u>Critical Performance Indicator</u>
	PRIOR ACTIONS		
1	ProAg, PIO/T's & PIO/C's signed "0/0" CDO/Bamako		ProAg; PIO/T's and PIO/C's signed
2	TA contract signed "3/3" AID/W		Technical Assistance contract signed
3	1st cohort U.S. T.A.'s arrive "7/9" Contractor		First group of U.S. Technical Assistance Workers arrive in Mali; 1 Project Director; 1 Regional Advisor; 1 Cercle Advisor. (Minimum of 1 Project Director and 1 of other two).
4	1st cohort vehicles & equipment arrive "7/10" AID/W		Two vehicles & equipment for Bamako and first Arrondissement operations arrive in Bamako. (Minimum of 1 of 2 vehicles).
5	Arrondissement advisors' training begins "9/11" Contractor or Peace Corps		Three Arrondissement advisors are in-country and their in-country training begins. (Minimum of 2 of 3 Arrondissement advisors).
6	First financial review "12/12" AID		First financial review is completed.
7	First medicines & supplies arrive Bamako "11/13" AID/W		Medicines and supplies for first demonstration Cercle arrive in Bamako
8	Advisors at work sites "10/15" Contractor (or Contractor/Peace Corps)		First cohort of technical assistance workers at work sites and ready to carry out their project functions. (Planned: 1 Regional & 1 Cercle advisor by mo.10. Minimum: one of two by mo. 15.) (Planned: 3 Arrondissement advisors by mo. 10; minimum 2 of 3 by mo.15.)
9	First cohort of MOH workers on site "10/16" GOM		Ministry of Health assigns first cohort of workers for project, and workers arrive at work sites. (Planned: 1 Regional, 1 Cercle, 3 Arrondissement. Minimum: 1 Regional, 0 Cercle, 2 Arrondissement).
10	First medicines & supplies arrive Cercle "10/16" Contractor/GOM		Medicines and supplies for first demonstration Cercle arrive at Cercle.

No.

- | | | |
|----|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11 | VHW's recruited and training begun
"12/17" Contractor/GOM | Village Health Workers for 1st Arrondissement villages recruited (2-3 per village) and training program initiated. (Minimum: 50% of villages in Arrondissement). |
| 12 | VHW's operational in 1st Arrond.
"13/18" Contractor/GOM | Village Health Workers in 1st Arrondissement have finished initial training and begin working in villages. (Planned: 100% of village Minimum: 50%.) |
| 13 | 2nd cohort U.S. TA's arrives
"14/19" Contractor | 2nd cohort of U.S. technical assistance workers arrives in Mali. (Planned: 1 Regional, 1 Cercle. Minimum: 1 of 2). |
| 14 | 2nd cohort vehicle & equipment arrive
"14/20" Contractor | One vehicle & equipment for 2nd Arrondissement arrive in Bamako. |
| 15 | Evaluation of 1st Arrondissement community diagnosis & training completed
"14/21" Contractor | Evaluation of 1st Arrondissement community diagnosis and training completed. |
| 16 | 2nd Arrondissement advisors' training begins
"15/21" Contractor (or Peace Corps) | Three Arrondissement advisors for 2nd Arrondissement are in-country and their in-country training begins. (Minimum: 2 of 3.) |
| 17 | Second medicines and supplies arrive Bamako
"18/25" Contractor (or Cont./Peace Corps) | Medicines and supplies for second Demonstration Cercle arrive in Bamako |
| 18 | 2nd cohort U.S. T.A.'s at work sites
"18/25" Contractor (or Contractor/Peace Corps) | Second cohort of technical assistance workers is at work sites and ready to carry out their project functions. (Planned: 1 Regional and/or 1 Cercle advisor by mo. 18. Minimum: 1 by mo. 21. (Planned: 3 Arrondissement advisors by mo. 18. Minimum: 2 of 3 by mo. 25). |
| 19 | Second cohort of MOH workers on site
"20/26" GOM | Ministry of Health assigns second cohort of workers for project, and workers arrive at work sites. (Planned: 1 Regional, 1 Cercle, 3 Arrondissement. Minimum: 1 Regional, 0 Cercle, 2 Arrondissement). |
| 20 | Second medicines & supplies arrive Cercle
"22/26" Contractor/GOM | Medicines & supplies for second Demonstration Cercle arrive at Cercle. |

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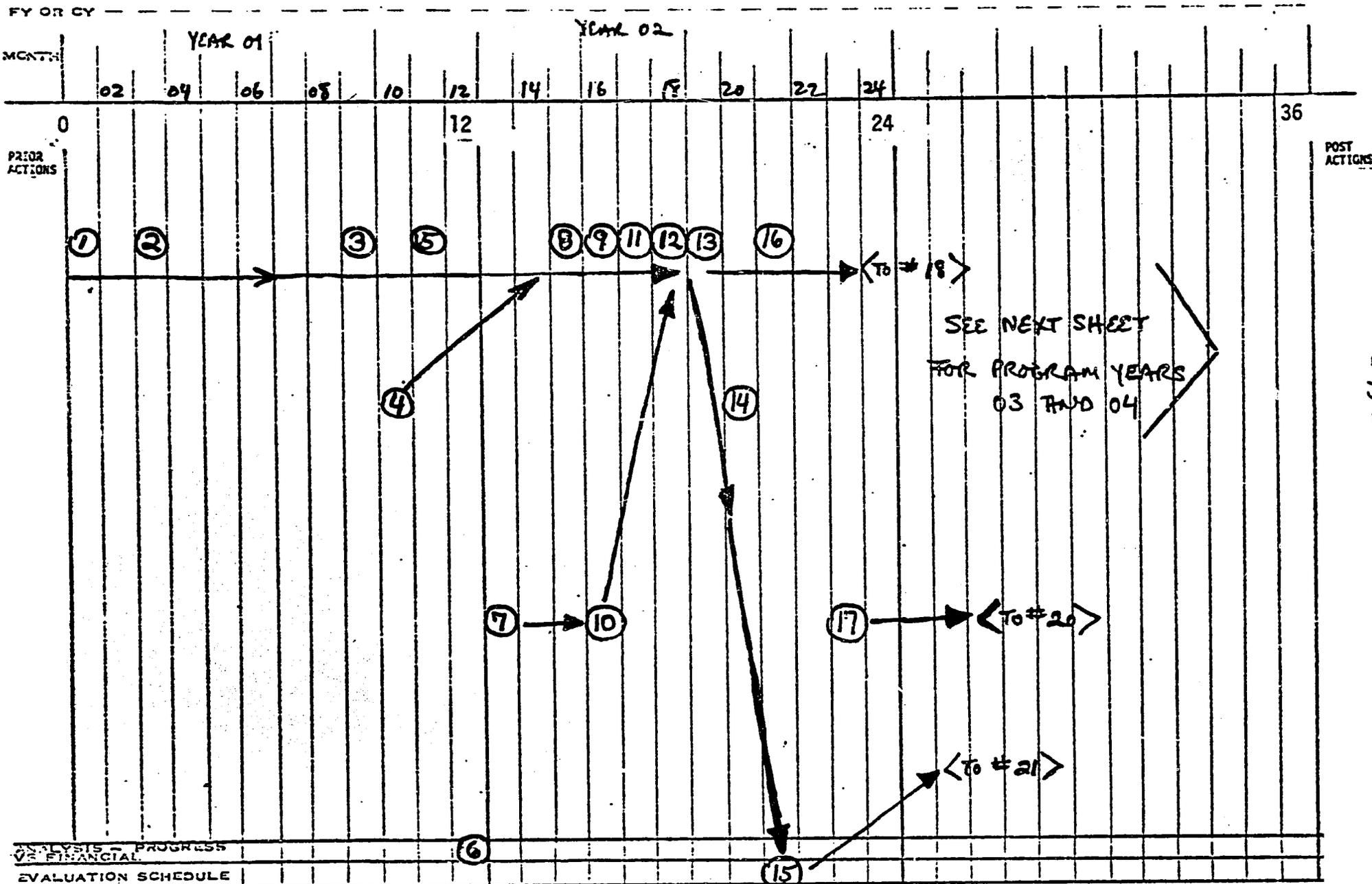
- | | |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21 2nd cohort of VHW's recruited and training begun
"21/27" Contractor/GOM | Village Health Workers for 2nd Arrondissement villages recruited (1-2 per village) and training program initiated. (Planned: 100% of villages in Arrondissement. Minimum: 50% of villages.) |
| 22 T.A. contract renewed
"27/27" AID/W | Technical assistance contract renewed (if 2 year initial contract was signed at mo. 3). |
| 23 2nd cohort of VHW's operational
"22/28" Contractor/GOM | Village Health Workers in 2nd Arrondissement villages have finished initial training and begin working in villages. (Planned: 100% of villages in Arrondissement. Minimum: 50%.) |
| 24 3rd cohort U.S. T.A.'s arrives
"23/29" Contractor | 3rd cohort of U.S. technical assistance workers arrives in Mali. (Planned: 1 Regional & 1 Cercle. Minimum: 1 of 2.) |
| 25 3rd cohort vehicle and equipment arrive
"23/30" Contractor | One vehicle and equipment, for 3rd Arrondissement, arrive in Bamako. |
| 26 3rd Arrondissement advisors' training begins
"25/31" Contractor (or Peace Corps) | Three Arrondissement advisors for third Arrondissement are in-country and their in-country training begins. (Minimum: 2 of 3). |
| 27 Third medicines and supplies arrive Bamako
"29/33" Contractor/GOM | Medicines and supplies for third Demonstration Cercle arrive in Bamako |
| 28 3rd cohort of U.S. T.A.'s on site
"29/35" Contractor (or Cont./ Peace Corps) | 3rd cohort of technical assistance workers is at work sites and ready to carry out their project functions. (Planned: 1 Regional and/or 1 Cercle advisor by mo. 29. Minimum: 1 by mo. 35.) (Planned: 3 Arrondissement advisors by mo. 29. Minimum: 2 of 3 by mo. 35). |
| 29 3rd cohort of MOH workers on site
"30/36" GOM | Ministry of Health assigns third cohort of workers for project and workers arrive at work sites. (Planned: 1 Regional, 1 Cercle, 3 Arrondissement. Minimum: 1 Regional, 0 Cercle, 2 Arrondissement). |
| 30 Third medicines and supplies arrive Cercle
"31/36" Contractor/GOM | Medicines and supplies for third Demonstration Cercle arrive at Cercle |
| 31 3rd cohort of VHW's recruited and training begun.
"31/37" Contractor/GOM | Village Health Workers for third Arrondissement villages (1-2 per village) recruited and training program initiated. (Planned: 100% of villages in Arrondissement. Minimum: 50%.) |

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No.

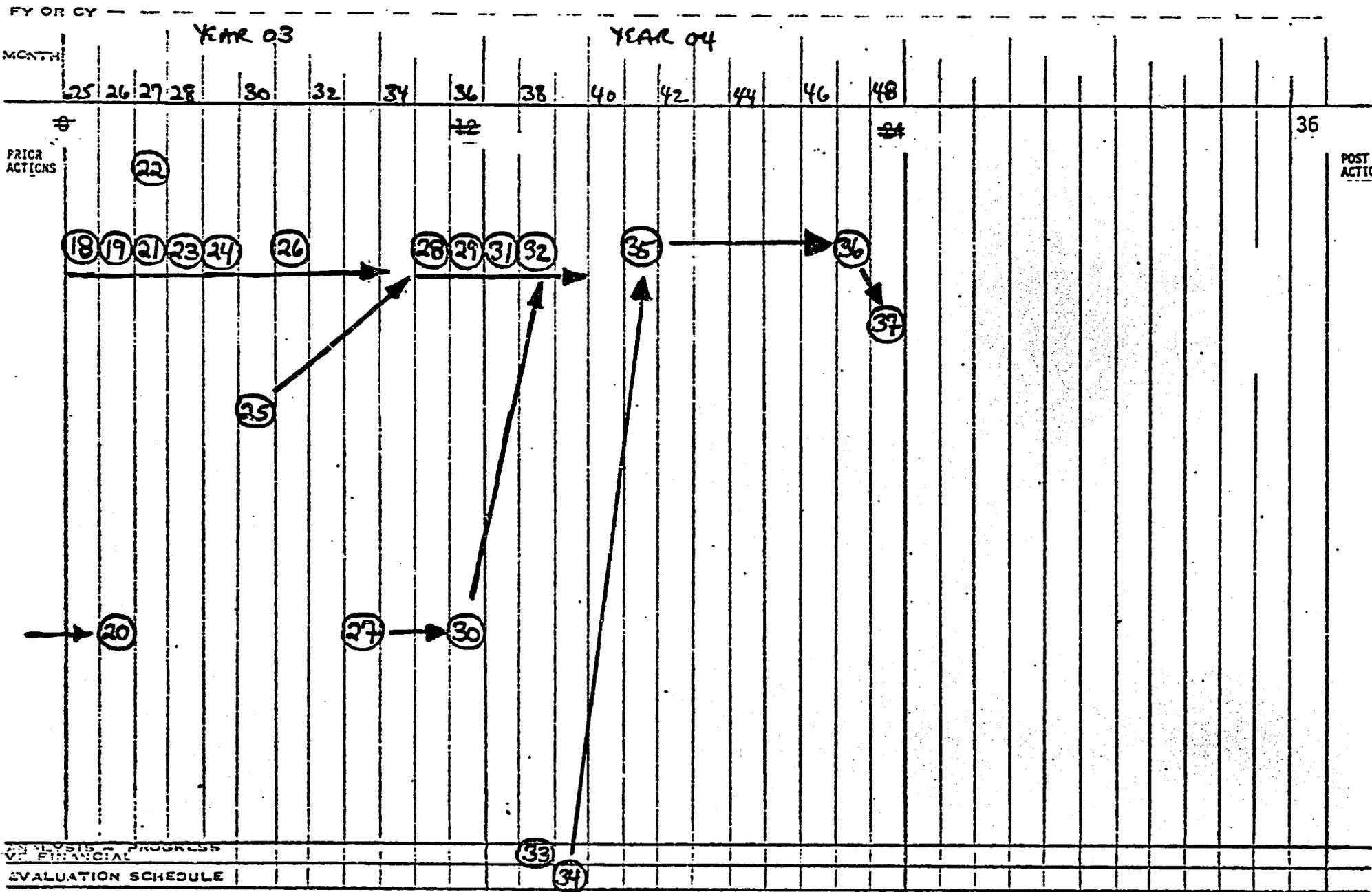
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| 32 | 3rd cohort of VHW's operational
"32/38" Contractor/GOM | Village Health Workers in third Arrondissement villages have finished initial training and begin working in villages. (Planned: 100% of villages. Minimum: 50% of villages.) |
| 33 | Financial review No. 2. completed
"32/38" AID | Second financial review completed. |
| 34 | Overall evaluation of field activities completed.
"33/39" Contractor/AID/GOM | Overall evaluation of field activities completed. |
| 35 | Replication proposal completed.
"35/41" Contractor/GOM | Proposal completed for replication/extension of project activities as a national program. |
| 36 | MOH program approved
"36/47" GOM | GOM approves Ministry of Health program for rural health services. |
| 37 | (EOPS)
"48/48" | All End of Project Status indicators achieved and verified. |

COUNTRY MALI	PROJECT NO.	PROJECT TITLE RURAL HEALTH SERVICES DEVELOPMENT	DATE 8/76	<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> REVISION #	APPROVED
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CRITICAL PERFORMANCE INDICATOR (CPI) NETWORK

COUNTRY MALI	PROJECT NO.	PROJECT TITLE RURAL HEALTH SERVICES DEVELOPMENT	DATE 8/76	<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> REVISION #	APPROVED
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IVc. Evaluation:

This section concerns the formal evaluations of project effectiveness and cost, which are planned to take place at two points within the 4-year life of the project: at month 14 (preliminary evaluation), and at month 33 ("final" evaluation). The community diagnosis, continuing collection of field data, and continuing monitoring of VHW and MOH personnel training and function described in Sections IIb and IIIa will provide a large part of the basic data for the project evaluations. Similarly, the results of the project evaluations should be important to GOM officials for the decision process concerning the expansion/replication of the demonstration program. These relationships are shown in the CPI (see Implementation Plan, IVb).

The preliminary evaluation (planned for month 14, CPI critical date month 21) will take place shortly after the first Demonstration Arrondissement becomes operational. Thus, it will mainly focus on: 1) selection and training of TA and MOH personnel; 2) process of community diagnosis; 3) selection, curriculum and process of formation of VHW's; 4) early development of the logistic system for drug and equipment distribution from the central MOH outwards; and 5) the cost-effectiveness of these activities and processes. A prior financial review scheduled for month 12 will assist in this evaluation.

The information gained through the preliminary evaluation will be fed back into on-going project activities and used to modify subsequent activities in the first Demonstration Region and new activities in the 2nd, 3rd, and perhaps 4th Demonstration Regions.

SH

By the time of the "final" evaluation (planned for month 33, CPI critical date month 39), considerable experience with the operation and results of health services in the 1st and 2nd Demonstration Arrondissements will have been gained. Thus, in addition to the issues of the preliminary evaluation, increased stress will be placed on: 6) the processes and outcomes of village health services delivered by the VHW's; and 7) the supervising and continuing education linkages from village health worker back through Arrondissement, Cercle, Regional and National levels. Changes in community members' health, nutritional and development status and the cost-effectiveness (and possibly cost-benefit ratios) of the rural health system will also be assessed at this time.

Results of the "final" evaluation will be fed into the MOH for its use in developing the replication plan. In addition, the remaining months of project activity will provide an opportunity for short-term testing of project modifications based on the results of the "final" evaluation.

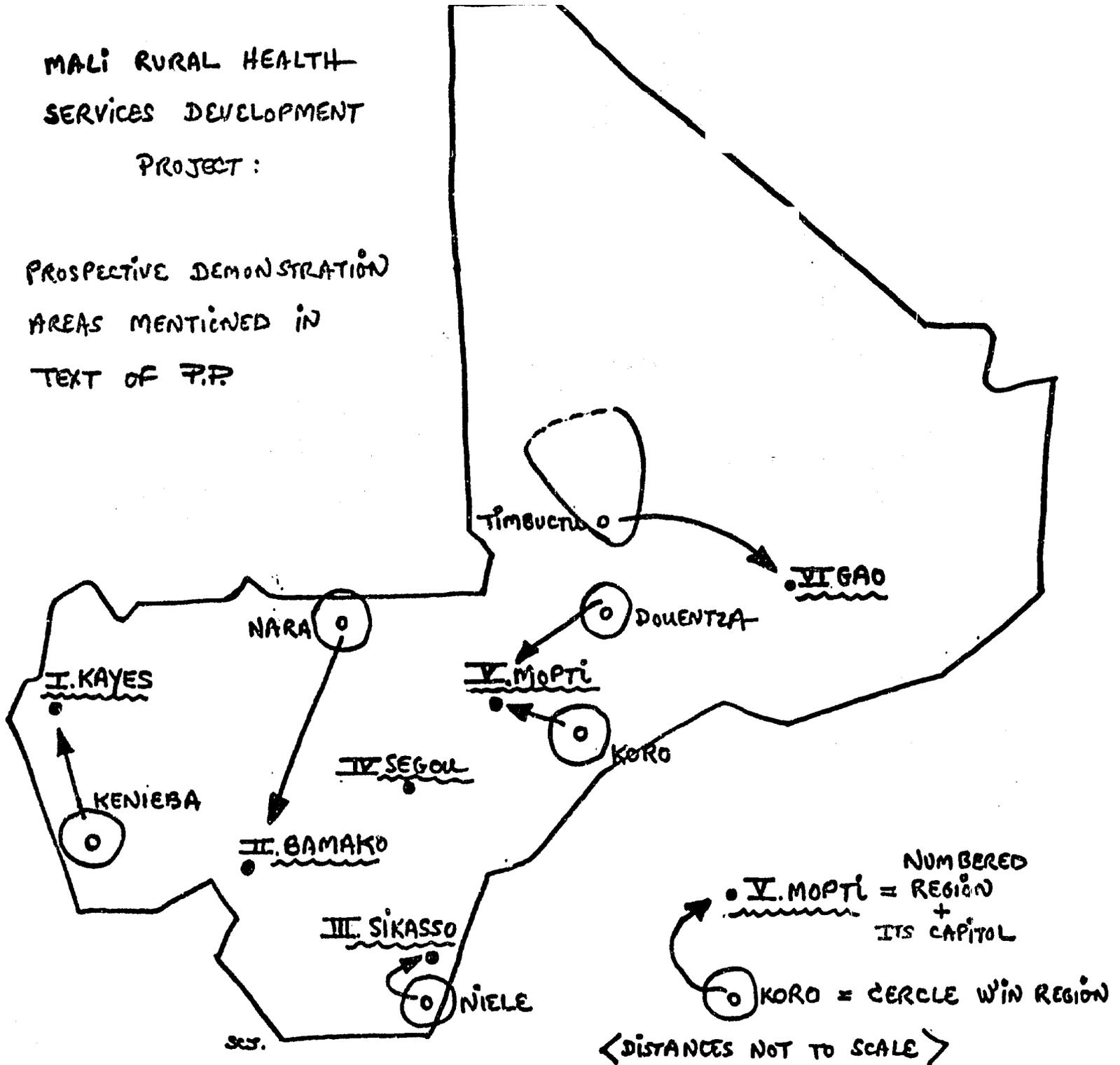
Thus, the project evaluations will feed into and support what is perhaps the acid test of this project's effectiveness: the development and implementation by the GOM of a plan for national expansion/replication of the Village Health Worker-based rural health services system. Because of this, it is proposed that the evaluation teams have a tripartite composition: AID technical and administrative evaluators (or "outside" evaluators selected by AID), technical representatives of the contracting university, and technical representatives of the Government of Mali.

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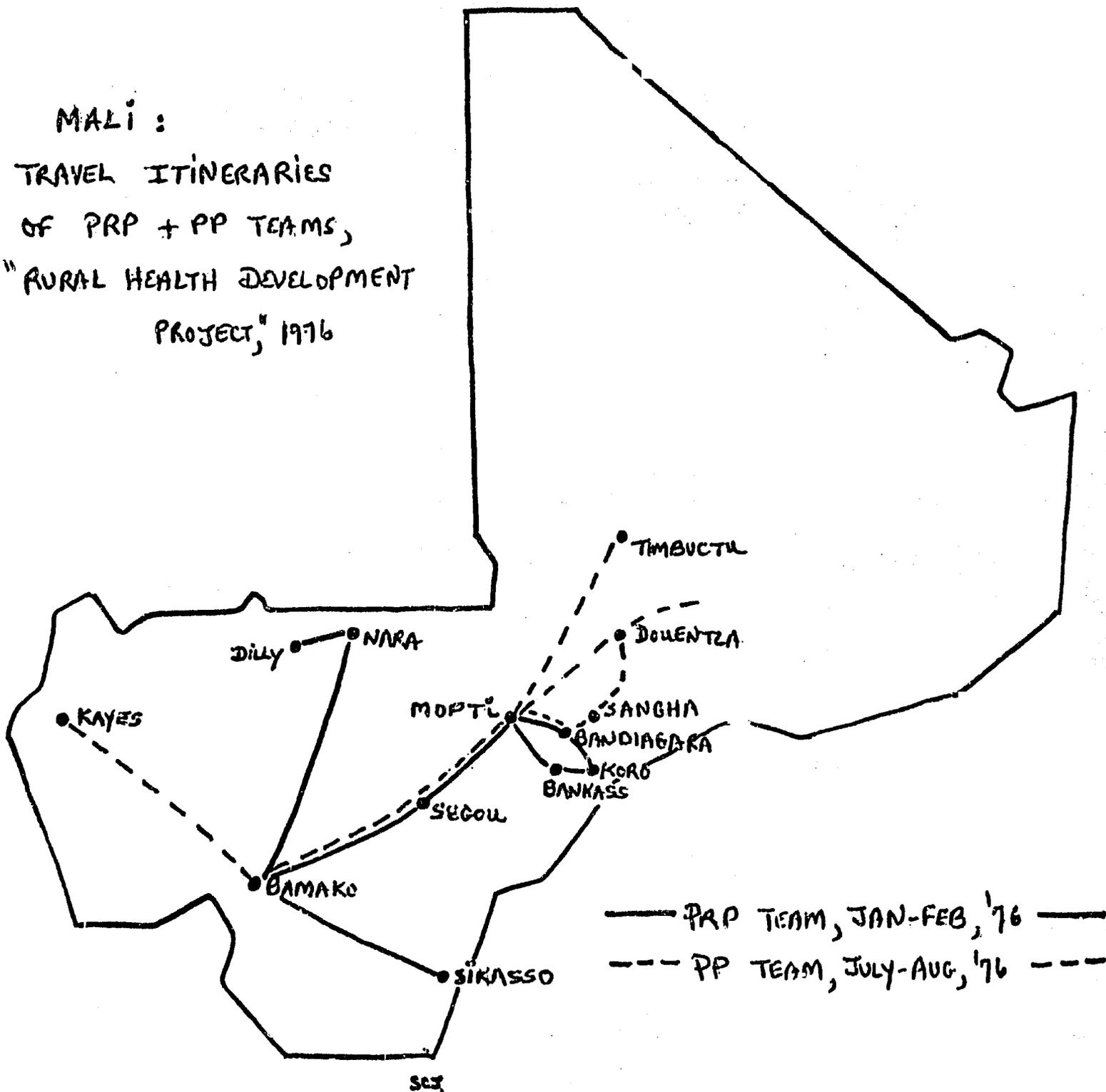
In view of the long time horizon necessary to adequately assess health, demographic and development change, it is recommended that AID and the Government of Mali develop a mechanism for longer term follow-up and evaluation of this project's effectiveness at 5,10, and perhaps 20 years after the initiation demonstration project activities.

MALI RURAL HEALTH SERVICES DEVELOPMENT PROJECT:

PROSPECTIVE DEMONSTRATION AREAS MENTIONED IN TEXT OF P.P.



MALI :
TRAVEL ITINERARIES
OF PRP + PP TEAMS,
"RURAL HEALTH DEVELOPMENT
PROJECT," 1976



CAPSULE FEATURES OF REGIONS CONSIDERED
FOR POSSIBLE DEMONSTRATION
ZONE SELECTION

- Region 1 (Kayes): In support of possible AID-supported and other agriculture production projects.
- Region 2 (Bamako): In northern half, where AID Mali Livestock Project is to be implemented.
- Region 3 (Sikasso): In the Sikasso or other Cercle, where the Health Service has been trying to build a village health program based on the training and supervising of rural midwives and Village Health Workers.
- Region 4 (Segou): In collaboration with an existing community development activity (part of Opération Riz).
- Region 5 (Mopti): In the Koro, Bankass, Douentza or Bandiagara Cercles, where "Opération Mils" is already functioning and its Director and his assistants have expressed a strong willingness to cooperate, in conjunction with the regional health services, in implementing a system for extending health services to the village level. In the Mopti and possibly other Cercles, in conjunction with "Opération Pêche" (Fishing), which has already organized a limited health service in coordination with the Opération's community development activities with limited funding being provided by FED (European Development Fund).

Region 6 (Gao): Where AID will be supporting a rice and sorghum project in an area of extremely scarce food production and major nutrition-related health problems.

Some major characteristics of the different zones which make them attractive as sufficiently diverse and representative sites for demonstration areas are:

In Nara (Region II) and Timbuctu (Region VI) in the Sahel zones, livestock raising is the main activity and the sparse population is semi-nomadic.

The eastern part of Region 5 is an arid zone with a predominantly Dogon population and some evidence of potentially serious overpopulation. Current efforts to increase water supplies and raise agricultural productivity provide an opportunity to achieve a demographic transition from high to low birth and death rates. Thus it would be a good region for testing health services-related approaches to reduced fertility in a rural setting. "Opération Pêche", based in Mopti, is focused on a river-oriented population that lives predominantly on boats and along the banks of the inland delta and has a high incidence of malaria and other parasitic and infectious diseases. This "Opération" on the river offers a means for rapid information dissemination (and for "demonstration/spread effects") given the mobile nature of the population.

Region 3 has somewhat more water and more favorable agricultural production conditions than other Regions, but onchocerciasis (river blindness) has contributed to low population density and limited productivity. In addition, there is concern among health authorities in the region that trypanosomiasis (sleeping sickness) is resurgent in the area.

In Region 3 the main emphasis of the health project would be to assist the existing regional health service to extend its programs beyond

ANNEX C₃

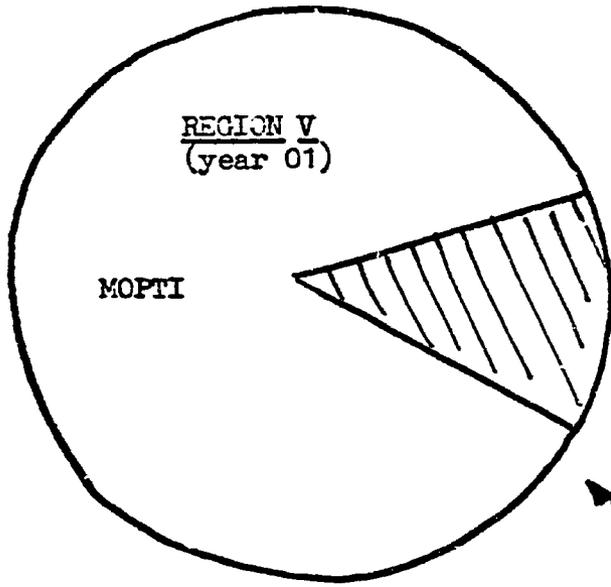
the village-grouping (Secteur de Base) level down to the village level. In all the other Regions, the health project would be working with the community development and production "Opérations" and the existing health services to expand and extend their services to the village level. The PRP & PP teams agreed with GOM officials that within each Region a single Arrondissement will be designated as the demonstration zone and that a similar Arrondissement in the same Cercle will serve as a comparison zone. Definitive selection of these areas will be made as one of the first steps in project implementation. The choice and sequence of Regions and Cercles listed in the body of the PP was a result of the PP team's discussions with Malian officials..

SCHEMA FOR RURAL HEALTH DELIVERY SYSTEM

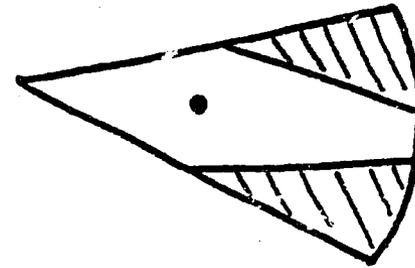
SHOWING LOCATION OF U.S. TECHNICIANS

ANNEX D

REGIONAL PUBLIC HEALTH ADVISOR (U.S.) to
Regional Health Director
and
Director of Rural Development



CERCLE OF
KORO
OR
DOUENTZA



DEMONSTRATION
ARRONDISSEMENT
(all villages)

5-6 ARRONDISSEMENT-LEVEL
T.A. WORKERS
(? P.C.V.'s)

COMPARISON
ARRONDISSEMENT

FIELD OPERATIONS ADVISOR (U.S.)

BAMAHO

FIELD DIRECTOR (U.S.)

Counterpart to Director for Health Services

Similar Scheme For: Region III - Year 2
Region I - Year 2 or 3
?Region VI or II - Year 4

MALI RURAL HEALTH SERVICES DEVELOPMENTPOSITION DESCRIPTIONS: U.S. Technical Assistance Personnel1. Country Project Director (Contract-Funded)

- A. Based in Bamako at Ministry of Health; Counterpart to Director of Health Services or his Deputy.
- B. Coordinates all aspects of project development, including planning, implementation and evaluation, and project administration in Mali.
- C. Provides liaison among contract team in Mali, contract University in U.S., USAID-Mali, Ministry of Health, Ministry of Rural Development, Ministry of Education and other Malian entities.
- D. Supervises and monitors channeling of USAID and GOM central resources into project demonstration Regions, as appropriate, including funds, personnel, training, equipment, and medicines.
- E. Works to achieve integration into national level programs of "results" of demonstration zone activities for replication/expansion elsewhere in Mali.
- F. Acts as back-up and supervisor for other contract technicians (based in demonstration zones) who will have primary responsibility for technical supervision and administration of Arrondissement-level and village-level personnel and operations.
- G. Ensures development of viable and reliable commodity (medicines, etc.) management system extending from MOH to demonstration and comparison zones.

2. Regional Public Health Advisor(s) (Contract-Funded; two for life of project)

- A. Based in capital of Region.

ANNEX E₂

- B. Coordinates all aspects of project in Region, extending out to the village-level.
 - C. Provides liaison among Region's project personnel, Regional Director of Rural Development, and Regional Director of Public Health (counterpart).
 - D. Ensures timely distribution of project equipment, supplies, and medicines.
 - E. Coordinates and designs implementation and evaluation of training programs, community diagnosis study and health education programs for demonstration zones within Region.
3. Field Operation Advisor(s) (Contract-Funded; three for life of project)
- A. Resides in Cercle capital in demonstration zone, with much time spent in Arrondissement villages.
 - B. Responsible for design and implementation of project within demonstration zone at Cercle, Arrondissement, and village levels.
 - C. Supervises Arrondissement-level workers (U.S. Technicians and Malian personnel) at Arrondissement and village levels.
 - D. Assists in conducting health worker training programs and in designing, conducting and evaluating community diagnosis studies.
 - E. Ensures appropriate distribution and control of equipment, supplies and medicines throughout Cercle, with particular emphasis on Demonstration Arrondissement.
 - F. Works to achieve coordination of project activities with activities of Opération and/or other directly production-oriented economic development activities in the demonstration zone.
 - G. MOH Counterpart at Cercle level.

4. Arrondissement Level Technical Assistance Workers

The Mali Rural Health Services Development project will require Arrondissement level technical assistance workers according to the following schedule:

Region V (possibly moving to Regions II or VI in final project year):

mo's 9-48 — 39 mo X 3 persons = 117p/mo.

Region III: mo's 15-48 — 33 mo X 3 persons = 99p/mo.

Region I: mo's 25-48 — 23 mo X 3 persons = 69p/mo.

TOTAL 285p/mo.

A minimum of nine individuals will thus be required for the project, or a maximum of 15 if two year contracts are used and initial workers leave after initial contracts expire.

All of the positions will require that the workers be fluent in French and that they attain a working capacity in at least one indigenous Malian language (Bambara in most cases). All workers will live in relatively isolated villages (probably in the main village of the Arrondissement) and will subsist mainly on the limited local economy.

Arrondissement worker functions

- teach VHW's
- supervise VHW's
- OJT and counterpart work with Arrondissement and Cercle level workers
- data gathering, supervision of data gathering, and data editing
- community motivation
- assist community leaders and community organizations in VHW selection
- serve as logistical system link between village, Arrondissement, and Cercle levels

- monitor distribution and use of equipment, medicines and supplies at Arrondissement and village levels.

Thus, these positions will require personnel who, in addition to a) possessing basic level competence in community health skills (example - a level of technical competence that could be acquired by a B.A. generalist with three months intensive training; areas of training should include all competencies required to carry out the job functions stated above), must have b) high language aptitude and c) be capable of living and working in isolated bush settings under conditions of significant material privation.

Because of the characteristics required, and because of the requisite training program (technical skills, languages, area and cultural studies), the preferred source of Arrondissement-level health workers is the Peace Corps or other volunteer organization such as the International Voluntary Services. Ideally, at least some of these workers could be recruited among former or current PCV's with Francophone Sahelian/West African, or even Malian, experience.

For purposes of this PP, the estimated cost per person/year of these workers has been set at \$20,000. Should PCV's not become available, so that these workers would need to be recruited and trained by the U.S. contractor, the estimated cost per person/year rises to \$45,000, which increases the total project cost by approximately one-half million dollars.

Continuing technical supervision and continuing education of the PCV/Arrondissement health workers will be provided by health professional contract personnel at the Cercle, Regional, National levels and by the Malian counterparts.

967

Health Educa-
tion and
Stimuli for
Community
Action

(7. Village hygiene (water and excreta, vector control)
(
(8. Vaccination - logistic link for Service de Grandes Endemies
(
(9. Improved food production (home and village gardens,
(
(eggs?, etc.)

Direct
Preventive
Actions

(10. "Nivaquinization" of infants, young children, and pregnant
(
(women (malaria suppression)
(
(11. Iron supplements in pregnancy
(
(12. Tetanus vaccination of pregnant women in 3rd trimester
(
(13. Sterile razor blades and cord ties for village midwives.

14. Referrals to Arrondissement or Cercle level of:

- A. Abnormal pregnancies
- B. Failure to thrive infants (severe)
- C. Kwashiorkor and marasmus
- D. Severe and acute and chronic illness
- E. Trauma (severe)
- F. Contraception

i.e. - makes referrals to Arrondissement level, or "lines up"
villagers for next visit to village of Arrondissement health worker;
also can monitor follow-up, diagnosis and treatment at the village
level.

c. Direct Diagnosis and Treatment (also includes health education)

1. Simple early oral treatment of diarrhea (water, salt, sugar solutions by finger-pinch; needs sugar and salt; uses standard local containers)
2. Home treatment of early malnutrition, using locally made foods

3. Simple treatment of respiratory infections (cough mixture, antibiotics, criteria)
 4. Simple treatment of skin infections (soap, antibiotics)
 5. Malaria (oral treatment feasible in most cases)
 6. First aid (soap and antiseptic, bandages, immobilization, local heat)
 7. Follow-up and assure treatment of chronic disease (e.g. tb, leprosy). Follow-up contraceptive supply
 8. Distribution of appropriate medicines (both free and purchased medicines).
2. Arrondissement-Level Public Health Worker (Agent de Santé Rurale)
- Carries out initial community diagnosis
 - Monitors continuous evaluation (see 1 A above)
 - Participates in development or training program for "animatrices"
 - Trains "animatrices"
 - Supervises animatrice functions
 - Acts as administrative and logistic link between Cercle and village levels.
3. Cercle-Level Public Health Worker (Agent de Santé de Cercle)
- Supervises functions of Arrondissement-level agents within Cercle
 - Participates in development of training program for Arrondissement-level workers (and village-level workers)
 - Trains Arrondissement-level workers (and village-level workers)
 - Assists Arrondissement-level workers in expanding village-level activities
 - Acts as administrative and logistic link between Regional and Arrondissement-levels.
- 96

4. Regional-Level Public Health Worker (Adjoint de Santé Publique Rurale)

- Acts as deputy to either the Regional Medical Officer or Director of Rural Development for purposes of training, supervision, administration, supply flow, and evaluation activities at all levels within the Region.

(See Appendix E for more detailed description of proposed training methods.)

NOTES ON A TRAINING PROGRAM FOR REGIONAL, CERCLE, ARRONDISSEMENT AND VILLAGE HEALTH WORKERS.

In addition to the primary on-site apprenticeship training of public health workers at the various levels described, this appendix presents a preliminary outline of more formal educational methods to be utilized in achieving project manpower objectives.

The Problem

Achieving the primary goals and objectives of the project necessitates changing the attitudes, habits and behaviour of villagers with reference to such areas as child nutrition, weaning practices, family planning, sanitation and other health promotive and disease preventive activities.

Effecting behaviour change in such basic areas is difficult. The difficulty is compounded by the fact that AID knows little about the cultural patterns of the diverse Malian communities. Further, training of Village Health Workers has to be conducted in a local language to a group of illiterate or semi-literate people. This poses problems of how to transmit basic skills, knowledge and attitudes without strong reliance on the written word.

To approach a problem of such magnitude, the following are essential:

- cultural sensitivities and knowledge;
- selection of individuals as trainers and trainees with sensitivity and demonstrated skill in working with people;
- assessment of present behaviour patterns of villagers relating to health and disease and of reinforcements operating in the society;
- assessment of the state of the art in training illiterate populations in health matters. Existing bibliographic materials include:

1. literature on training illiterate populations in health matters;
2. manuals and audio-visual materials for training such populations;
3. methods for evaluating education programs including illiterates.

Goals

The overall goals of the training program are to train project personnel in the development/design, implementation and evaluation of village level health workers.

Population to be Trained

The population to be trained include:

1. a cadre of public health workers who also operate as trainers: Regional, Cercle, and Arrondissement health workers, nurses, midwives and auxiliary nurses, with approximately 6-9 years of elementary education and 3 years of health training.
2. Village Health Workers: a group of illiterate or semi-literate workers to serve as health educators and providers of simple primary and preventive medicine to their village communities.

Instructional Situation

Trainers, 7-10, will receive training at the Regional or Cercle levels. Facilities will be simple. Electricity may or may not be available. Training will be carried out in French or in a local language.

Trainees, 50, will be trained at the Arrondissement level in a simple village setting. No electricity is available. Training will be conducted primarily in a local language and in part in French.

Responsibilities

Health Workers with Training Responsibilities:

1. Plan and implement a community diagnosis, including health status

assessment and assessment of social, cultural and behavioural patterns of the community;

2. Evaluate data from the community diagnosis;
3. Plan, implement and evaluate a course of studies (initial and continuing) for Village Health Workers;
4. Assist in selection of Village Health Workers trainees;
5. Supervise and monitor Village Health Workers;
6. Evaluate changes in health status and in Village Health Worker performance as well as changes in Village Health Worker knowledge, skills and attitude before and after instruction;
7. Revise instructional program on basis of teaching experience; devise a replicable instruction program for future use.

Village Health Workers:

1. Deliver health education to villagers in areas of nutrition, maternal and child health, family planning, and disease prevention;
2. Implement preventive programs;
3. Perform simple clinical procedures (see list of tasks and functions of village level workers in ANNEX F).

Terminal Competencies (End of First Formal Instruction Period) - will be followed by programs of on-site continuing education.

Health Workers/Trainers:

1. Community Diagnosis: Given a case study is able to perform diagnosis as in responsibility No. 1 above.
2. Evaluation: Given same case history is able to select, implement and analyse evaluation data from community diagnosis.
3. Plan, implement and evaluate course: Given data from his Arrondissement, is able to plan course of studies relevant to the

health needs of villagers, especially mothers and children.

4. Student Selection: Given data from his Arrondissement, is able to select and defend selection procedures.
5. Monitors Village Health Workers: Given a case study is able to plan and implement a method for monitoring a health project involving villagers in a rural setting.
6. Evaluate changes in health status and trainee performance over time: Given a case study is able to plan such an evaluation.

Village Health Workers Terminal Competencies (end of first formal instruction period) - will be followed by programs of on-site continuing education: same as Responsibilities (see p.3).

Design of Training Program

Health Workers/Trainers:

1. Community Diagnosis: Techniques for performing a community diagnosis are taught via discussion and problem solving methods, both written and verbal.
Participants construct instruments to be used in diagnosing their own communities and assist with community diagnosis in villages.
2. Evaluate data from community diagnosis: Given written and visual materials, case studies and "canned data", participants analyze and evaluate data; they decide whether training is or is not a solution to problems encountered. In cases where training is contra-indicated, they select alternatives to training which may involve administrative solutions or solutions involving planning ways of establishing or maintaining behaviours through rewards or withholding of rewards. They then evaluate data from their own community diagnosis.

3. Plan course of studies for Village Health Workers: Given data analysis from community survey involving their own Arrondissements, participants devise training program for Village Health Workers. They utilize non-formal methods of instruction including group discussion, pictures, diagrams, cassettes, flannel boards, cuisinaire rods (or equivalent), rhymes, games and role plays, etc.
4. Selection of candidates: Students as a group design instruments and procedures for selecting candidates. They test their instruments and procedures on "fake" applicants who have been instructed to play a given role. They refine their methodology. Then they select candidates for their own Arrondissement.
5. Monitoring health workers: Students learn procedures for monitoring. They develop monitoring plans for their own sets of villages.
6. Evaluate changes in health status, performance of workers and knowledge, skills, and attitudes: Learns evaluation skills as they relate to the program. Given a set of dummy data, participants prepare and interpret a report on changes in health status and in other variables.
7. Revise training programs for Village Health Workers on basis of evaluation data and design a replicable instruction program.

Trainees:

1. Health Education: Given set of health education skills, instructor demonstrates ways of delivering such an education program by teaching the animatrices in the same manner as he would ask them to teach the villagers. The instructor observes the students teaching each other and later teaching villagers under supervision.

2. Implement preventive program: Given a set of preventive skills, students discuss ways of performing and implementing these. In cases where skills (i.e. inoculation, preparation of weaning foods, etc.) are involved, students practice performing the skills.
3. Simple clinical procedures: Students learn to perform these skills by watching the instructor, then performing each procedure under supervision.

Continuing On-site Education for Rural Health Personnel

The health personnel (from Infirmiers d'Etat through Auxiliaires, Midwives and Matrones Rurales) working in demonstration zone (Cercle and Arrondissement levels) will be given continuing/periodic retraining in areas of health promotion, disease prevention and basic curative medicine and in the planning and administration of local health programs. Such training is important to the integration of these workers into the rural public health system activities.

Use of the demonstration areas as sites for continuing education under field conditions will permit:

- a) on-going re-cycling of demonstration zone personnel at periodic intervals;
- b) field bases for more appropriate education for the national health training institutions;
- c) generation of information and experience to feed into the formal curriculum at national-level training institutions.

In addition to the "continuous" apprenticeship training of demonstration workers, especially Village Health Workers, as they implement and

refine the project activities, the project envisages annual or biennial refresher courses of approximately 1 week in duration. These courses will also serve as an evaluation of the training process itself; this knowledge can then be fed back into the succeeding training programs.

It must be emphasized, however, that the most important (qualitatively and quantitatively) training of the Village Health Workers will involve practical, on-site (village) apprenticeship activities with adequate supervision and back-up by technical assistance workers and Ministry of Health personnel.

TRAINING OF HEALTH PERSONNEL IN THE UNITED STATES
OR OTHER THIRD COUNTRIES

<u>Degree/Subject</u>	<u>Qualification level</u>
1. MPH in Health Planning and Administration	(MD or R.N.)
2. MPH in Biostatistics/Epidemiology	(MD or R.N.)
3. MSc or MBA in Health Services Administration	(Pharmacist)
4. MSc in Health Education	(R.N.)
5. "MSc" in Health Services Pedagogy	(R.N. or MD)

All of the above are one-year degree programs for implementation during years 02-03 of the project. Trained personnel would return to key MOH positions directly relevant to rural health planning and administration.

Short-term training will be determined according to needs analysis as the project progresses. Likely two to three-month non-degree programs in the United States for senior-level MOH officials are:

Health Policy and Management (Harvard)

Health Planning (John Hopkins)

AIDE-MEMOIRE CONCERNING PP ISSUES
(DISCUSSED WITH DIRECTEUR DE CABINER/MOH)

20 Juillet 1976

A : Dr. SANGARE
DE : Dr. Stephen Joseph et Dr. Eugene Boostrom, Consultants de l'USAID
SUJET : Projet de Santé Rurale

Nous vous présentons ci-dessous un profil des problèmes et des sujets à discuter concernant le projet des services de santé rurale sur lequel, l'AID à Washington aimerait davantage de détails avant de procéder à l'approbation du financement de ce projet.

Nous aimerions discuter chacun de ces sujets avec vous, afin de planifier nos activités du mois prochain à Bamako et dans les régions.

I. LOCATION DES ACTIVITES DU PROJET

1. Les zones de démonstration devraient inclure au moins un arrondissement dans chacune des trois régions durant les quatre années du Projet;
2. Chaque arrondissement de démonstration devrait avoir au moins un arrondissement de "comparaison" dans le même cercle. (Comme précédemment dit lors de la discussion, l'équipement et les médicaments fournis par l'AID seraient pour le cercle en entier, et non pas uniquement l'arrondissement de démonstration).
3. Pendant cette visite que nous menons, nous voulons en accord avec vous déterminer les régions et cercles dans lesquels le projet sera implanté ainsi que l'ordre et la durée de ces activités. (La sélection l'un arrondissement spécifique peut être portée en second lieu.)
4. Au fur et à mesure que le projet se développe, on peut étendre les services de formation et supervision à d'autres arrondissements.

II. RAPPORTS ENTRE LE PROJET AID/MINISTÈRE DE LA SANTÉ

1. Rapports administratifs entre le Directeur du Projet AID et les autorités du Ministère de la Santé responsables pour le Projet.
2. Rapports administratifs entre les activités du Projet et les autres Ministères.
3. Rapports entre ce projet et les autres projets de formation en Santé Rurale.
4. Etablissement et administration d'un "fonds de roulement" central pour le ravitaillement en stocks de médicaments locaux destinés pour la vente dans les villages (système similaire à celui de la Pharmacie Populaire).
5. Rapports du budget total du Projet et des budgets présents et futurs du Ministère de la Santé et implications des coûts du projet à tous les niveaux pour une plus large extension de système de santé rurale.
6. L'AID demande que la contribution Malienne durant les quatre années du Projet soit égale à 25% du coût total du projet.

III. RAPPORTS ADMINISTRATIFS ENTRE LE PERSONNEL DU PROJET au niveau de la région, du cercle et celui de l'arrondissement (Voir Tableau 5, page 10 du document du projet traduit en français).

1. Personnel expatrié
2. Contre-partie Malienne
3. Volontaires du Corps de la Paix

IV. LES ACTIVITES DU PROJET

1. Détails sur la sélection du villageois devant travailler dans le projet Santé Rurale, la formation et la supervision.
2. Détails des rapports entre les activités du villageois opérant

pour la Santé Rurale et le personnel du Ministère de la Santé, au niveau des arrondissements, des cercles et des régions.

3. Contributions potentielles du projet pour résoudre le ravitaillement du village en eau et les problèmes sanitaires.

4. Evaluation du Projet

a) - Décision afin de trouver un fondement et de rassembler les données régulières (diagnostic de la communauté et continuation).

b) - Evaluation du Projet à la fin de la troisième année comprenant des évaluations extérieures telles que des membres d'une équipe conjointe (Gouvernement des U.S. et Gouvernement du Mali) en rapport avec des décisions telles que l'extension des activités du Projet (Gouvernement du Mali) et la continuation du financement du Projet au delà de la 4ème année (Gouvernement des U.S.A.).

LOGICAL FRAMEWORK

Mali Rural Health Services
Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Sector Goal:</p> <p>1. To provide improved health services to the rural poor, who comprise over 80% of the Malian population.</p>	<p>Measures of Goal Achievement:</p> <p>1. Adoption by the GOM of a low-cost health delivery system which focuses on developing health services at the village level.</p> <p>2. Continuous expansion of rural health delivery system on a time-phased basis as part of GOM long-range health development plan.</p> <p>3. Decreased morbidity & mortality, in the population served by the rural health system.</p>	<p>1. National Five-Year Development Plans, 1979-83, 1984-88, etc.</p> <p>2. Annual budgetary and personnel allocations in GOM health plans.</p> <p>3. MOH records of health system utilization.</p> <p>4. Demographic, morbidity and mortality indicators in the rural population.</p>	<p>Assumptions for achieving goal targets:</p> <p>1. Actual GOM long-term commitment to rural health delivery system.</p> <p>2. GOM institutional capability for data collection, tabulation, analysis, etc.</p> <p>3. Adequate GOM and external donor resources to develop and operate a national rural health system with operating costs of approximately \$2/capita/year.</p>

LOGICAL FRAMEWORK

Mali Rural Health Services Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>1. To design, implement and evaluate a demonstration rural health system which will:</p> <p>a) bring health services to the village level, emphasizing health promotive and disease preventive activities;</p> <p>b) be integrated with other community and economic development activities, especially agricultural production and education;</p> <p>c) have annual operational costs of US\$2 or less per capita (in order to make GOM expansion and replication of such services financially feasible).</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status.</p> <p>1. Establishment of demonstration programs serving:</p> <p>a) 40 villages (about 20,000 persons) by end of year 1;</p> <p>b) 80 villages (about 40,000 persons) by end of year 2;</p> <p>c) 120 villages (about 60,000 persons) by end of year 3.</p> <p>2. Achieve coordination with agricultural production operations and educational programs in the test areas at the village, arrondissement, cercle, and regional levels.</p> <p>3. Conduct of training programs for village volunteers and arrondissement, cercle and regional health professionals associated with the demonstration areas.</p> <p>4. Establishment of an information system for determining initial health and living condition in demonstration and comparison areas, measuring changes in mortality, morbidity and fertility over the life of</p>	<p>1. Reports regarding, and regular visits, to the demonstration villages.</p> <p>2. Periodic reports on program implementation and final analysis of results.</p> <p>3.a) Field evaluation of working relationships between health and other workers at various levels, and reports on joint operations such as conduct of health courses in rural schools.</p> <p>3.b) Technical participation in preparation, conduct and supervision of training courses.</p> <p>4. Reports flowing from the information system plus frequent field checks of the reliability of reporting.</p> <p>5.a) Reports from pilot zones and visits to rural health stations and regional and national supply centers.</p> <p>5.b) Monitoring of distribution reports from the</p>	<p>Assumptions for achieving:</p> <p>1. Actual GOM commitment to distribution or rural health services emphasizing health promotion, disease prevention and simple diagnosis and treatment.</p> <p>2. GOM will assign adequate field personnel to carry out the project.</p> <p>3. GOM capabilities to achieve functional collaboration between the MOH and Ministry of Rural Development and the "Grandes Operations".</p> <p>4. Sufficient field personnel including arrondissement level extension workers (Peace Corps or other), to make checks on accuracy of reports.</p> <p>5.a) The rate of expansion of the demonstration zones will be controlled so as not to outstrip the information system's effectiveness.</p> <p>5.b) Development of adequate logistic capabilities in MOH (with U.S. T.A.)</p>

LOGICAL FRAMEWORK

Mali Rural Health Services Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	<p>Conditions that will indicate purpose has been achieved: End-of-Project status.</p> <p>the project and thereafter, and assessing costs and benefits of the project.</p> <p>5. Achievement of an adequate flow of appropriate medicines and supplies to the dem. areas and surrounding cercle, within the cost constraints of a system of rural health services that the GOM can afford to replicate.</p> <p>6. Evaluation of the dem. program and analysis of results.</p>	<p>health supply agencies.</p> <p>6. Analysis of project data, reports, and special evaluation studies.</p>	Assumptions for achieving purpose:

LOGICAL FRAMEWORK

Mali Rural Health Services Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>2. To achieve GOM adoption of the demonstration project as the basis for a national rural health system, and to assist the MOH in preparing to implement such a system on a nationwide basis.</p>	<p>1. GOM review of dem. program and adoption of it as the basis of a national program.</p> <p>2. Reorientation of the existing health system to adopt the beneficial aspects of the demonstration program.</p> <p>3. Reorientation of local and national training programs to support the new system.</p> <p>4. GOM preparation of manpower training and other plans necessary for implementation over a 10-15 year period.</p> <p>5. Strengthening of health planning and management to support the new system.</p>	<p>1. Plans and policy statements of GOM, legislation and budget allocations.</p> <p>2. Curriculum and reports from training institutions.</p> <p>3. Manpower sections of GOM national health plan.</p> <p>4. Quality of planning and management of the GOM health system.</p>	

LOGICAL FRAMEWORK

Mali Rural Health Services Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Outputs:</p> <ol style="list-style-type: none"> 1. Establishment of dem. projects. 2. Training of Health Workers for: Village (V) Arrondissement (A) Cercle (C) Region (R) 3. Five persons trained and returned to key MOH positions, training in U.S. for one year each at MSc and MPH levels. 4. Community Diagnosis Reports for project zones (dem. and comparison areas). 5. Replicable initial and continuing courses of studies (including teaching aids, A-V material, etc.) for health trainees and MOH workers. 6. Reports of project progress. 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> 1. Dem. projects established in one arrondissement (40 villages, 20,000 people) in each of these selected regions. During years Cum. No. of dem. 01 1 02 2 03 3 04 subject to evaluation & GOM acceptance for replication. 2. V - 2/village A - 3/sub-district C - 1/district R - 1/region 3-yr total V - 240 A - 9 C - 3 R - 3 3. Project reports and most personnel records. 4. 1 report for each area. 5. Syllabi refined from materials generated from socio-culturally different test 	<ol style="list-style-type: none"> 1. Dem. projects in place and operating according to project design schedule. (See C.P.I.) 2. Health workers trained and in place. 3. Project reports and MOH personnel records. 4. Available six-eight months after start-up of technical assistance in each area. 5. Syllabi and curricula. 6. Reports based on community diagnosis and project and contract documentation. 	<ol style="list-style-type: none"> 1. GOM Provision of full administrative cooperation and ament of requisite GOM perso and support for project working zones. Arrival and placement of technical assistance personnel, vehicles and commodities during year 01. 2. Personnel are made available through MOH and at village level for training and duty assignment. 3. Appropriate individuals identified and made available for U.S. training directly relevant to project purpose and project port systems. 4. Appropriate survey techniques yield reliable and valid data on Malian health conditions and behaviour. 5. Basic curric. and training can be adjusted to be appropriate to various socio-cultural areas.

LOGICAL FRAMEWORK

Mali Rural Health Services Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs:	Magnitude of Outputs: zones (multi-language). 6. Annual reports for each year of project implementation. Summary evaluation report at end of three years.		

DIRECTION GÉNÉRALE DE
LA COOPÉRATION
INTERNATIONALE

11/59/MAEC/DGCI/DCCS/S3

- **NOTE** - **VERBALE** -

Le Ministère des Affaires Étrangères et de la Coopération présente ses compliments à l'Ambassade des États-Unis d'AMÉRIQUE et a l'honneur de lui faire parvenir pour transmission aux Autorités compétentes de son pays la lettre n° 0019/MSP-AS du 6 janvier 1975 du Ministre de la Santé Publique et des Affaires Sociales.

Le Ministère des Affaires Étrangères et de la Coopération prie l'Ambassade de bien vouloir trouver en annexe la requête du Gouvernement du Mali, en vue de promouvoir la Santé Publique en milieu rural.

Le Ministère des Affaires Étrangères et de la Coopération remercie vivement l'Ambassade des États-Unis d'AMÉRIQUE pour son aimable entremise et saisit cette occasion pour lui renouveler les assurances de sa haute considération. /

KOULOUBA, le 15 JAN 1975

AMBASSADE DES ÉTATS-UNIS D'AMÉRIQUE

--- B A M A K O ---



N° 0019 / MSP-AS

Koulouba, le 6 JAN. 1975

Le Ministre de la Santé Publique
et des Affaires Sociales

A Monsieur l'Ambassadeur des Etats Unis d'Amérique à

BAMAKO

S/C de Monsieur le Ministre des Affaires Etrangères
et de la Coopération à

KOULOUBA

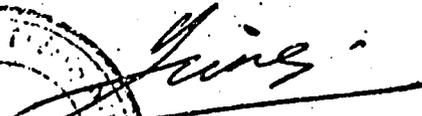
Monsieur l'Ambassadeur,

J'ai l'honneur de vous adresser la requête ci-jointe en vous priant de bien vouloir la transmettre aux autorités compétentes de votre Pays, au nom du Gouvernement de la République du Mali.

Cette requête fait suite à la séance de travail que mon Département a eue avec une mission de l'US-AID le 7 Novembre 1974. Elle vise exclusivement à promouvoir la santé publique en milieu rural, notamment dans les domaines de

- la lutte contre les maladies transmissibles
- la protection maternelle et infantile
- l'hygiène scolaire
- l'éducation sanitaire et nutritionnelle
- la planification familiale.

Veillez agréer, Monsieur l'Ambassadeur, les assurances de ma très haute considération.


Le Ministre
ALY CISSE
OFFICIER DE L'ORDRE NATIONAL.

Ampliations

- Présidence Gt CR
- DNPS
- DGCI } pour information.