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SECOND INTERIM EVALUATION
NIGER RURAL HEALTH IMPROVEMENT PROJECT
(683-0208)

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00137

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LIST OF ABBREVIATIONS

1. **AFN:** Association of Nigerien Women
2. **BDRN:** Development Bank of the Republic of Niger
3. **CLD:** Local Development Council
4. **CN:** Certified Nurse
5. **CNDS:** National Council for the Development Society
6. **CRD:** Regional Development Council
7. **CSRD:** Sub-Regional Development Council
8. **CVD:** Village Development Council
9. **DAF:** Directorate of Administrative and Financial Affairs
10. **DAS/PMI:** Directorate of Social Affairs and Maternal and Child Protection
11. **DDS:** Department Health Directorate and/or Director
12. **DEESN:** Directorate of Training and Health and Nutritional Education
13. **DES:** Directorate of Health Facilities
14. **DHA:** Division of Hygiene and Sanitation
15. **DHMM:** Directorate of Hygiene and Mobile Medicine
16. **DIS:** Division of Infrastructure and Statistics
17. **EHMM:** Hygiene and Mobile Medicine Teams
18. **ENICAS:** National School of Nursing and Social Action
19. **ENSP:** National School of Public Health
20. **FCFA:** CFA francs
21. **FNI:** Niger Investment Fund
22. **GDP:** Gross Domestic Product
23. **GON:** Government of Niger
24. **ICP:** Interim Consolidation Program
25. **MC:** Medical Circumscription
26. **MOH/SA:** Ministry of Health and Social Affairs
27. **MOP:** Ministry of Plan

28. MP: Medical Post
29. OMNES: Nigerien Organization of Mobile Medicine and Health Education
30. ONERSOL: National Office of Solar Energy
31. ONPPC: National Office of Pharmaceutical and Chemical Products
32. PACD: Project Assistance Completion Date
33. PCMS: President of the Supreme Military Council
34. PHC: Primary Health Care
35. PMI: Maternal and Child Health Center
36. RD: Rural Dispensary
37. RHIP: Rural Health Improvement Project
38. RIP: Revised Implementation Plan
39. SERAM: Bio-medical equipment maintenance and repair service
40. SERMEX: Physical plant maintenance and repair service
41. SERPA: Vehicle fleet maintenance and repair service
42. SMW: State mid-wife
43. SN: State Nurse
44. STNC: Superior Technician of Nursing Care
45. STOC: Superior Technician of Obstetrical Care
46. TBA: Traditional Birth Attendant
47. USAID/N: USAID mission in Niger
48. USAID: United States Agency for International Development
49. VHA: Village Health Agent (TBA or VHW)
50. VHT: Village Health Team
51. VHW: Village Health Worker
52. WHO: World Health Organization

EXECUTIVE SUMMARY

Coming 18 months before the end of the project, this Second Interim Evaluation had two objectives:

1. Assess progress towards the goals stated in the original Project Paper and modified in the Revised Implementation Plan,
2. Begin analysis of relevant issues in Niger in general and the health system in particular for the purpose of developing a strategy to guide the planning of follow-up USAID assistance to the health sector beginning in 1987.

Originally conceived as a 5 year project, the Rural Health Improvement Project has now been in existence for 7 years. Its aim has been to assist the GON in improving, at low cost, the quality of life and working capacity of the rural population by means of a system of village-based health teams. The three major components of the project include the following:

1. Human Resources Development

This has included training of village health teams, short term in-country and long term third-country training.

2. Institutional Support

This has included the provision of vehicles, equipment and medicines and the construction and renovation of health facilities.

3. Technical Assistance

AFRICARE has provided mechanics, technicians, and sanitary, engineers for training at SERPA, SERAM and ENICAS.

The School of Public Health of Tulane University is setting up computerized management information/planning unit in the MOH/SA. Since the unit has only been in operation for 8 months, it was not included in the evaluation's scope of work.

In spite of major socio-economic problems in Niger during the life of the project, including the fall of world uranium prices in 1981 and continuation of the drought, the RHIP will have achieved or exceeded most of its planned outputs by the end of the project in December 1986.

1. As noted in the first interim evaluation, project management problems, resulting in the delay of release of needed funds, continue to be a major constraint to the implementation of the RHIP.

2. U.S. and other third-country, in-country and VHT training objectives have been met or exceeded. The RHIP has provided continuing scholarships to the training programs at ENSP and ENICAS, although the support to the sanitation division of the latter school has not been as strong as planned.

3. Now that the rural health system has been very successful quantitatively in terms of coverage (45% of the rural population) more attention is being paid to the problems that need to be solved for qualitative improvement. The major ones include village supervision, community participation and reliable distribution networks for medicines and other supplies. The RHIP supplied less medicines equipment and supplies than planned and support to the national immunization program was minimal due to the fact that the MOH/SA has only recently defined an Expanded Program on Immunization.

4. The construction of the planned 7 dispensaries and warehouse is complete and the DDS complexes at Agadez and Zinder only require water and electricity hook-ups to be finished. The achievement of renovation of health facilities and sanitation improvements (including latrines and water filters) was less than planned.

5. MOH/SA garages are now in good working order in Niamey, Tahoua and Zinder departments, fair in Agadez and Maradi and weak in Diffa, the last three departments being less well equipped. 87% of the ministry's vehicle fleet in 4 departments was judged to be in functional condition, with 50% in good to excellent condition. The mopeds provided by the project did not prove to be suitable vehicles for rural travel.

6. Long and short term technical assistance provided by Africare and Tulane University has generally been excellent. Continuing assistance to the end of the project is indicated for mechanic training at Diffa and Zinder, bio-medical equipment repair training, and sanitation training at ENICAS, and refrigeration training at SERMEX.

The major recommendations for the remainder of the project, discussed jointly with the MOH/SA and USAID/N, are presented in the following section.

The evaluation team believes that Niger's health system requires further external support in view of continuing human, economic and environmental constraints. A partial list of possible studies is attached which may help answer some of the questions the MOH/SA and USAID will be examining as they work together to prepare the next phase of the strengthening of Niger's health sector.

RHIP EVALUATION RECOMMENDATIONS
June 17 - July 31, 1985

TRAINING

I. U.S. and Third-Country

- A. The RHIP currently supports 45% of long-term, third-country training for MOH/SA personnel and should continue this level of support for the duration of the current project. Given the high cost-of-living in some of the host countries, compared to that in Niger, the possibility should be examined of raising the amount of scholarship money awarded to recipients.
- B. USAID and the MOH/SA should review and agree upon the categories of specialties that are priorities for Niger's health system in determining candidates for RHIP acholarship support.

II. In-country Training

- A. RHIP provides scholarship support for 145 students at ENICAS (33% of the 1984/5 student body) and for 75 students at ENSP (19% of the 1983/4 student body). Continuation of this level of scholarship support for the additional year of the project is recommended.
- B. In order to ensure a high level of training for village health agents, ENICAS and ENSP should strengthen the pedagogic training that nursing and midwifery students receive regarding the training and supervision of VHAs.
- C. The MOH/SA is to be commended for the 18 national seminars it has organized with RHIP sponsorship. In addition, 37 departmental seminars and quarterly staff meetings have been sponsored since 1982. RHIP support for these seminars should continue for the duration of the project.
- D. The GOR is to be commended for its policy of encouraging assignments to rural areas. In view of this policy, the evaluation team suggests that the percentage of USAID/RHIP acholarship recipients at ENICAS and ENSP receiving assignments to rural areas should be calculated after assignments are made in August. This information should then be sent by the MOH/SA to USAID/N along with the definition of "rural area".

III. VHT training

Since the beginning of the project, 10,759 VHAs have been trained, the RHIP having supported about 80% of this total. The Ministry of Plan's Analysis of the VHT Training Program (GON, March 1985) suggests slowing down the rate of training of new VHTs. The evaluation team agrees with this objective and recommends that the number of new VHAs trained during the rest of the RHIP be reduced to 1000 per year or less (250 VHTs).

VHT SUPERVISION

The RHIP supports VHT supervision through the provision of per diems, gasoline, vehicles, and training for the nursing and midwifery personnel who do the supervision. Still the supervision of VHTs, a key element of the rural health system, is less frequent and thorough than prescribed in MOH/SA policy. The problems include inadequate logistics, insufficient personnel and a lack of clearly defined supervision objectives. Operational research is needed to define feasible supervision schedules, standardize guidelines for visit procedures and identify cost-effective means of transportation.

TECHNICAL ASSISTANCE

I. Africare

- A. Technical assistance will be necessary to the end of the project for mechanic training at Diffa and Zinder to bring garage operations up to the level of the rest of the national system. Continuation of technical assistance at Tahoua is not needed.
- B. Further technical assistance to provide sanitation training at ENICAS is recommended to the end of the project. It is recommended that the RHIP assist the MOH/SA in its search for rational and effective placement of sanitation graduates.
- C. Continuation of assistance in bio-medical equipment repair training is recommended to the end of the project. An expert in cold chain maintenance is recommended for SERMEX.

II. Tulane University

The health information/planning unit is currently processing and analyzing data from the National Morbidity and Mortality Study recently done. The unit is also preparing guidelines for operational research in response to the MOH/SA's determination to strengthen its capability to do needed studies. The Planning Unit should be encouraged to decentralize its activities to other parts of the Ministry and to the departmental level.

CONSTRUCTION

I. DDS Complexes

Efforts should be made to undertake the tasks required to complete (installation of water and electricity), inspect, and accept the complexes at Agadez and Zinder. This will allow purchased tools and spare parts for vehicles to be delivered so that the garages can become fully operational.

II. New Construction

- A. Given that the construction goals of the project have been achieved, no new construction projects are recommended for the rest of the RHIP.
- B. If new construction is to be included in the follow-up project, careful attention should be given to the identification of ways to facilitate the flow of funds, find lower-cost contractors and ensure that USAID/N and the Ministry of Public Works agree that construction plans meet functional as well as structural requirements.

III. Renovation of Dispensaries

The current level of RHIP support for the renovation of dispensaries should continue to the end of the project.

COMMODITIES

I. VHA Medical kit Resupply

A. RHIP funds have supported the provision of initial kits of drugs and medical supplies to newly trained VHWs and TBAs. Although VHWs were to replenish their kits through the sale of the first supply of medicines, in many cases this has not happened and the kits are now empty or missing essential items. The MOH/SA, with USAID funding, should conduct a study to investigate the constraints and possible solutions to developing reliable systems of resupply. Possible alternatives which could be examined include:

1. MOH/SA provision of financing for stocks of VHA drugs and supplies at MCs, to be distributed through sales at the centers or on supervisory trips;
2. Depots of VHA drugs at the cantonal level (for example, as in Maradi);
3. Having medicine depots give a 10% discount to VHAs, so that depot managers and VHAs both receive a reduction on 10% of Popular Pharmacy prices;
4. Placement of responsibility for resupply on the CVDs or cooperatives.

B. The MOH/SA, with USAID financing, should undertake a study of the current drug charge schedule recommended to VHWs. Important questions would include the adequacy of such a schedule to cover the costs (drugs, transportation and VHWs time) of drug resupply and the actual pricing and fee collection practices of the VHWs. Findings from the study would lead to recommendations about VHA training needs in drug sales and resupply, the involvement of the CVDs and changes required in the prices of VHA medications.

C. VHW drugs are distributed without charge in the department of Agadez and the Tchintabaraden arrondissement of Tahoua. Recommended charges for VHW drugs should be applied to all departments, with local administrations deciding if and how they will assist poorer sub-populations to acquire these drugs.

PROJECT FINANCIAL MANAGEMENT

I. FOR MOH/SA AND USAID/N

A. The RHIP has experienced chronic problems in implementing the timely flow of project funds. The MOH/SA and USAID/N should jointly set up a system for the planning, programming and budgeting of project activities, particularly those conducted at the departmental level. Resources under the Sahel Regional Financial Management Project and the Sahel Manpower Development Project should be utilized to provide the training and technical assistance necessary to develop an effective system for the project.

- B. Financial management procedures between the MOH/SA and the Ministry of Plan need to be reexamined and clarified so that the RHIP has a better understanding of the status of its accounts.
- C. The team recommends that procedures be established for setting up bank accounts in third-country training sites where there are no Nigerian embassies in order that funds can be transferred on a quarterly basis. Also the problem of providing funds to students in countries with soft currencies could be facilitated by the use of travellers checks.

II. FOR USAID/N

- A. USAID should require that RHIP submit quarterly reports which not only review the achievement of the previous quarter's program, but also plan the program for the subsequent quarter, accompanied by an estimate of the required budget and necessary advances. This quarterly report should relate to the activities described in the project's prospective annual plan.
- B. Recognizing that the cycle between the receipt of monthly advances for project activities (including periodic major activities at the departmental level) and the return of vouchers from the departments usually requires more than 30 days, USAID/N should consider setting up two project accounts: one for ongoing departmental VHT activities and the other for all other project activities.

RECOMMENDATIONS FOR STUDIES FOR FOLLOW-UP PROJECT DESIGN

During the evaluation, priority areas were identified where complex problems exist and intensive studies are needed to provide guidelines to the MOH/SA and USAID for the planning of future support to the Nigerian health sector. These major categories include the following:

1. Manpower Planning
 - A. USAID/N and the MOH/SA should review and analyze together the MOH/SA "Besoins en Personnel" projections and other donors' anticipated support in order to identify training needs that USAID might support in the future.
2. Strengthening of the Health System
 - A. Supervision of VHTs - See recommendations
 - B. integrations of health with other development activities from the national to the village level. The role of the Society of Development is of particular importance.
3. Financial Issues
 - A. The questions of recurrent costs and the implementation of the cost recovery schemes desired by the MOH/SA are very important. The evaluation team supports the recent decision of the MOH/SA to delay finalization and institution of charges for oral rehydration packets until it is determined how the pricing for this and other essential medicines fits into a rational system of charges throughout the entire health sector.

4. Drug Distribution Systems

A. The lack of dependable supply systems for the VHTs is a major obstacle to the goal of reducing morbidity and mortality levels in the villages. Studies should be undertaken in collaboration with the MOH/SA and the ONPPC to look at various questions including the following:

- 1.** The needs of the ONPPC in terms of production, quality control, distribution networks and transportation.
- 2.** The constraints limiting the opening of more new pharmaceutical depots by private entrepreneurs and/or cooperatives. The possibility of establishing a fund to provide loans to approved applicants should be investigated.
- 3.** The resolution of the conflicting goals which require the ONPPC to provide drugs throughout the country at the lowest possible cost and at the same time earn adequate profits to be entirely self-financing.
- 4.** The possibility of further revisions in the lists of essential medicines at all levels of the health system and identification of the training needs of the prescribers.

CHAPTER I
SCOPE OF WORK AND METHODOLOGY

Terms of Reference

Four consultants came to Niger from June 17 to 31 July 1985 to assist the Government of Niger and USAID/N in an evaluation of the Rural Health Improvement Project (Project No. C33-0208). Following the first interim evaluation in 1981, the objectives of this one included the assessment of project performance in meeting stated goals, impact analysis of the rural health system and recommendations both for the remaining 18 months of the project and for future USAID assistance to the health sector in Niger.

The external consultants were provided by University Research Corporation and Development Management Systems, Inc., and included Patrick Kelly, MD, MPH, public health physician; Dayl Donaldson, MA, MPH, health economist; Shelley Ross-Larson, MPH, public health educator; and Kevin Wiedmann, mechanic-garage management expert. The full evaluation team included the consultants, two members of USAID/N, nine people from the MOH/SA and two from the Ministry of Plan.

The initial time in Niamey was spent interviewing key people in the two ministries, collecting relevant documents and planning trips to the interior of the country. In preparation for the latter, all of the Departmental Health Directors had been previously informed of the evaluation mission in a letter sent by the Minister of Health on 11 June 1985.

The team was divided into two sub-teams covering four interest areas. The group dealing with construction and maintenance (vehicle and medical equipment) travelled from 16 June to 17 July, covering the departments of Maradi, Zinder, Dikka, Tahoua and Agadez. The second group with three interest areas (rural health, training and economics) left Niamey on 5 July and returned by 17 July, having visited the same five departments.

At each department, interviews were conducted based on prepared check lists. From 7-8 July the team had the privilege to observe a training session of village health agents at In-Gall in the department of Agadez. In Zinder, special attention was given to the school ENICAS. Finally, in the department of Diffa, 2 villages were visited and in-depth interviews were conducted with villagers and village health agents (VHWA and TBAs) using portions of the same questionnaires that had been used in a previous survey conducted in Diffa in 1976. (Wassiry) Because the question of impact of the rural health system was of interest, the villages were not chosen randomly, but on the basis of the following three criteria:

1. Having had a village health team for at least five years
2. Having at least 2 VHWA and 2 TBAs
3. Being more than 30 kilometers from the nearest health facility.

The villages visited were Toumours and Baloumeri.

CHAPTER II

BACKGROUND

A. Health Policy in Niger

In the early 60's, two organizations were created in Niger to provide health services to the rural populations. These were OMNES (Nigerien Organization of Mobile Medicine and Health Education) at the national level and Mobile Hygiene and Medical Teams (EHMM) at the departmental level that were to ensure continuity, by placing first-aid workers in the villages. In a document entitled Development Perspectives for the Decade (1965-1974) it was stated that the training of village health workers would permit simple medical care and improve the cooperation of the rural population with mass medical campaigns.

A Rural Animation Service, created in 1962, found that medical care was a priority need often expressed by the villagers and thus in 1964 the first significant efforts to train village health workers began in the arrondissement of Tessaoua in the department of Maradi.

Village-based health received new emphasis after the change in government in 1974, when the President proclaimed the right of every citizen to a better quality of life. In the first "Journées d'Etudes de la Santé" in Niamey in 1975, it was stated that the country had "opted for global medicine (curative, preventive and educative) that was to be continuous (for acute and chronic diseases and surveillance), integrated (coordinated with all other development sectors), promotional, regularly evaluated by all the communities with their participation, aimed at self-sufficiency and based on motivated and competent personnel working in the context of well-organized, improved, adapted health structures and using rationally chosen methods."

3

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At the National Health Debate in Maradi in 1983, new directions were described including:

1. Integration of the rural health system into the Society of Development and encouraging voluntary participation of the people.
2. Intensification of the training of health personnel and village health workers.
3. The promotion of fundamental and applied research in health.

The Interim Consolidation Program (ICP) in 1984 put more accent on the reinforcement of the rural health system (especially supervision) and called again for participation of the people and coordination of health with all other development sectors.

ORGANIZATION OF THE MOH/SA

The current organizational chart is presented in the following table. Reporting directly to the Minister are the Chief of Cabinet, the Secretary-General, 3 Inspectors and the ONPPC. The Secretary-General oversees and coordinates 5 Directorates and 2 Divisions in the central Ministry and the 7 departmental health directorates (DDS).

The main difference from the organizational chart in 1978, at the start of the RHIP, is the creation of a planning unit which is now called the Division of Planning and Programming. The Division of Village Health Teams is found in the Directorate of Health Facilities (DES). The director of the DES is also the director of the RHIP with its 2 sections: the Office of Programs and the Office of Financial and Administrative Affairs.

At the departmental levels, each medical director has three principal assistants: a deputy director, a deputy director in charge of VHTs and a deputy director in charge of management. The 2 schools of public health report directly to the DEESN in Niamey.

B. Brief Description of the RHIP

Originally planned as a five year project, the Rural Health Improvement Project grant agreement between the GON and USAID/N was signed in June 1978, with actual implementation starting in 1979. More historical information relevant to the RHIP is presented in Annex B.

The global aim of the project has been to encourage and assist the health strategy of the GON as defined in the 3 Year Development Plan (1976-78) and the 5 Year Development Plan (1979-83). The major components of that strategy are these:

1. Priority to be given to mass medical care, both preventive and curative, with the accent to be on increasing the access of the rural people to village health teams.
2. An emphasis on training of health personnel from the village to the middle and specialty levels accompanied by more equitable distribution of personnel between rural and urban zones.
3. An increase in health infrastructure, especially rural dispensaries and medical centers at the MC level.
4. Better management of health services.
5. The need for cost recovery mechanisms.
6. Special attention to be given to maternal and child health, sanitation, nutrition and the supplying of medicines.

The RHIP, as indicated by its name, has been particularly concerned with the rural part of Niger's health system. The project purpose was described as the establishment of a viable rural health delivery system with inputs to be provided in three major categories:

1. Health Resources Development

This included training of several types: VHTs, short-term in-country, and short and long-term third country.

2. Institutional Support

This has consisted of the purchase of cars and mopeds, the provision of equipment, supplies and medicines and the construction and/or renovation of health facilities.

3. Technical Assistance

Technical assistance has been provided in two stages. Africare joined the project in 1979 and has provided trainers of mechanics, bio-medical technicians and sanitation students at ENICAS. The University of Tulane School of Public Health team arrived in October 1984 and is in the process of setting up a computerized management information and planning unit in the MOH/SA.

Since the project PACD has now been extended to December 1986, the present evaluation rather than being final is a second interim assessment of the progress achieved towards the stated objectives.

III. PROJECT DESIGN AND EXECUTION

A. Summary of Major Objectives and Achievements

1. Project Goal: "To improve at low cost the quality of life and working capacity of the rural population."

The suggested indicators, life expectancy and infant mortality, refer to quantity of life, although they may be considered to be indirect indicators of socio-economic conditions. In any case, reliable service data are not available to derive them. Declaration of deaths is very incomplete and village VHW records only attempt to distinguish between deaths greater or less than 5 years, not greater or less than 1 year. The difficulties of demonstrating increased worker capacity and relating it to health services are discussed in the impact analysis in section V.B.

2. Project Purpose: "A viable rural health delivery system which demonstrate the value of prevention/early diagnosis/timely curative care/propoer referral."

In section V.B. are found global, structural, personnel and utilization indicators and a discussion of the potential contribution of the morbidity and mortality survey. In spite of progress in the evolution of process indicators, there is little evidence that the pattern and burden of disease is different in Niger than in neighboring countires, with the three most common illnesses being stated to be malaria, respiratory infections and diarrheal diseases.

As access has been increased to people with previously unmet need, the total number of reported symptoms has increaed. Evacuations from villages to medical facilities are rarely recorded; for example, three per 100 TBA-months of activity. Because of the gaps in the drug distribution system, many VHTs have been without medicines, and pharmacies and medical depots do in fact report very few sales to VHWs.

Evidence of systematic preventive practices in villages is the exception rather than the rule, one occasional activity being village clean-up campaigns. The question of average distance of the population from a source of medical care has not yet been calculated, although the VHT Division of the MOH/SA has begun to consider distance in relation to the establishing of recommended frequencies of supervisory visits.

3. Human Resources Development

a. Training (Detailed analysis is presented in section IV.A).

1. Village Health Teams

10,759 village health agents (VHAs and TBAs) were trained from 1978 to 1984. We estimate that 80% of them (8,607) were financed by the RHIP, 143% of the project goal of 6,000.

17,052 VHAs were retrained (some of them several times), 126% of the goal of 13,500.

2. In-country training of health personnel

519 annual scholarships were awarded to certified and state nursing students, 116% of the goal of 440.

125 annual scholarships were given to sanitation agent and technician students and 10 to laboratory technicians.

18 national seminars, 125% of the goal of 16 were held and 37 departmental seminars were held. The number of people attending these seminars exceeded 1100.

3. Third-country training

70 trainees have been sent abroad (280% of the goal of 25), of which 34 have returned already.

b. Field Experience for medical students

The RHIP called for 125 medical students to get rural experience through the project; none received this training due to the lack of elaboration of a specific program with the medical school.

4. Institutional Support

a. Transportation System

Detailed analysis is presented in section IV.B. Using available data from 4 departments, we have estimated that 87% of the Ministry's vehicle fleet is working, with 50% of the vehicles in good to excellent condition.

Mopeds were found to be unsatisfactory in rural Niger, although it is not clear to what extent the fault lies with the machines and to what extent with the way in which they were distributed, used and maintained.

b. Drugs, Equipment and Supplies

The only systematic way medicines and supplies got to the villages was in association with VHA training sessions. No audio-visual or health education materials were supplied to the health centers or VHTs; however, the DEESN has received some audio-visual equipment.

Support to the immunization program was less than the project goal. USAID did, however, assist the MOH/SA to develop an EPI program by funding a seminar on the subject and providing the services of short-term consultants from the CDC. The EPI program is now part of the proposal which has been submitted to the World Bank for funding. At present the director of DHMM states that there are only some 29 adequately functioning Ped-O-Jets in the country.

c. Construction

Seven dispensaries (at a cost of \$100,000 apiece) and a warehouse were completed as called for in the project. The DDS complexes in Agadez and Zinder with their design faults (some of which are described in section IV.B) only require water and electricity hook-ups to be finished.

d. Renovation of health facilities and sanitation improvements were less than the project goals.

An average of 10 facilities have been renovated a year, including painting of a hospital wing in Niamey. Sanitation outputs have included the following:

1. 1979-80 Construction of 7 latrines in Dosso department
2. 1979 Purchase of 120 water filters for Niamey and Zinder departments
3. 1980-81 Purchase of 150 water filters at an average cost of close to 60,000 CFA francs
4. 1984 Construction of 14 latrine complexes in the Dosso department.

The evaluation team did not determine the extent to which this sanitation construction and equipment was properly used and maintained.

B. Project Design Issues

In spite of the fact that the issue of management has been of concern from the beginning of the project and was stressed again in the first interim evaluation, the program still remains a major constraint to implementation.

The American Public Health Association evaluation of 52 USAID funded health projects in 1982 (KARLIN) cited management as a major problem in virtually every one of them and the declarations of the 12th International Health Conference held in Washington, DC by the National Council for International Health on June 2-5, 1985 on the same subject, indicate that the solutions are not going to be easily found and implemented.

The following are a few of the lessons learned from this project:

1. The design team was over-optimistic and underestimated such difficulties as the length of start-up times and the magnitude of friction in the funding pipeline.

2. The flow of information was sometimes inadequate, especially as pertains to the translation of USAID documents into French for the Ministry.

3. Documentation in the project was not always complete. The development of computerized data bases started in both the MOH/SA and USAID/N should be of much help.

4. Operational research is only now beginning to be included as a component of the project.

A few suggestions for the development of follow-up assistance include the following:

1. The Government of Niger must be a full partner in all phases of the design process.

2. If short-term consultants must be used, special efforts should be made to ensure continuity.

3. Adequate resources should be made available for operational research in the next phase. The testing of new ideas is essential before implementation on a nation-wide scale.

4. Search for ways to increase flexibility in implementation.

5. Explore the issue of combining health with other development activities. A list of ministries that could cooperate with the MOH/SA is presented in table III.B.1. A specific example of the need for such teamwork is the necessity of redefinition of legal texts pertaining to contraception and the practice of traditional medicine.

6. Coordination with other donors is of utmost importance.

7. Insistence on the dichotimization of the health system into rural and urban is not always a useful exercise. Definitions vary widely and the GON considers Primary Health Care to be part of the entire system.

Table III.B.1

List of Ministries that should Collaborate
with the Ministry of Health and Social Affairs
(in alphabetical order)

1. Ministry of Civil Service and Labor
2. Ministry of Commerce and Transport
3. Ministry of Finance
4. Ministry of Foreign Affairs and Cooperation
5. Ministry of Higher Education and Research
6. Ministry of Information
7. Ministry of Interior
8. Ministry of Justice
9. Ministry of Mining and Industry
10. Ministry of National Defense
11. Ministry of National Education
12. Ministry of Plan
13. Ministry of Postal Service and Telecommunications
14. Ministry of Rural Development
15. Ministry of Water and Environment
16. Ministry of Youth, Sports and Culture

Source: Abdou. Memoire 172/84, CRDS, Cotonou.

C. Effect of the Drought and Other Shocks to the Health Care System

The following quotes illustrate the optimism of the Project Paper:

1. Given a continuation of the present boom in uranium revenues, the MOH can manage the additional recurrent costs generated by this project (p. 35)

2. The program goal of improving the quality of life of the rural population depends on the important assumption that other factors do not prevent or outweigh effects of improved health services, i.e., drought. (p.112).

Both of these assumptions were wrong. In 1980 the world price of uranium fell by 25% and varying degrees of drought have been constant during the life of the project, having been especially severe from 1982-1984. To these problems were added other economic shocks due to the rise in value of the US dollar against the French Franc and the politics of Nigeria which closed its common border with Niger and demonetized the Naira, which had been in use in several areas, especially in the Department of Diffa. Several available indicators indicate the magnitude and trends of the economic situation:

1. Available grain has declined from a peak in 1981 (with a surplus of 120,352 metric tons) to an estimated deficit of 30,794 tons in 1984, due to a fall in production and an annual population growth rate of about 3%.
2. The per capita GNP fell from US\$310 in 1982 to US\$240 in 1983.
3. The Ministry of Health received no money from the National Investment Fund in the years 1983-84 and has seen its percentage of the national budget shrink from 7.3% to 5.6% from 1978 to 1984.

The effects of the drought on the rural populations have been severe. Some farmers have had no crops for the last three years and last year nomads

lost large numbers of animals, the hardest hit being the cattle-raising Peulhs. Lack of food and water forced people to move to the extent that especially in the North, whole villages were abandoned. Some gathered in food distribution camps and off-season gardening sites, others went to the cities (Zinder's population jumped from 90,000 to 160,000 last year) and able-bodied men left the country to look for a means of livelihood, leaving their women, children and elders behind. In the arrondissement of Matemaye, the population density is now close to 100 per square kilometer. Here are some of the effects of the drought and worsening economic situation on the health sector in general and rural health care in particular:

1. Efforts devoted to the coordination and distribution of emergency relief aid have taken resources both human and financial away from other health programs.
2. Urban medical facilities have been required to handle an increase in patients without a concomitant increase in personnel, medicines and operating budgets.
3. Widespread outbreaks of measles occurred this last year being seen even in adults.
4. Maternal and child malnutrition has increased in rural areas, an effect of both food shortages and lack of buying power.
5. At the Ministry of Health, major organizational reforms which have been under study since 1981, have not been implemented due to lack of funds in the government budget.
6. Many Village Health Teams have been inoperative as VHWs have left, funds from the sale of medicines have been used for food rather than replenish stocks and supervisory visits have been either too rare or too cursory.

In the light of such difficulties, it is remarkable that the rural health program has grown from an estimated coverage of 17% of the population in 1978 to 45% in 1984, and the MOH acknowledges that the RHIP was a major contributor to this effort. It is now generally realized, however, that excessive attention was given to the training of VHTs to the detriment of supervision and program maintenance. Thus the Interim Consolidation Program calls for the reinforcement of that which exists with training of new VHT's to be slowed and specifically directed to those areas of the country which are relatively underserved.

This year the rains started in April, the millet is green and there is hope that the harvests will be good. An important indicator for the health of the Diffa department has been the reappearance in force of the Komadougou river on 17 July, two weeks ahead of its arrival last year. A good harvest, however, should not lead to the conclusion that hard times are over. After 17 years of drought in the Sahel, this phenomenon can be considered to be permanent rather than temporary. Some of the implications for health sector programming recognized by the GON include the following:

1. Health services alone are not sufficient to produce health, and should thus be integrated into all development projects.
2. The conference of Government administrators in Zinder from 3-5 January 1985 stated: "Given the disproportionate rate of increase of the population vis-à-vis that of production, the insufficiency of arable land (12% of the country's total area) and the degradation of social values, the Conference recommends the adoption of a national population policy."
3. Increased participation of the people in the planning, execution and financial maintenance of health programs is necessary and will hopefully be achieved through the vehicle of the Society of Development from the village to the national level.

An important implication of continuing economic hardship in Niger for GON and USAID program design is the necessity of operational research to find ways of reducing costs and increasing efficiency by exploring alternative approaches to the delivery and financing of health care.

CHAPTER IV
ANALYSIS OF PROJECT INPUTS AND OUTPUTS

A. Human Resources Development

Placement of Inputs and Achievement of Outputs

A. VHT TRAINING AND RETRAINING, SUPERVISION AND DRUG RESUPPLY

A.1 Introduction

The Project Paper states that by the end of the project 6,000 village health agents will have been trained and 13,500 will have been retrained. As demonstrated in Table IV.A.1: Training of VHWs and TBAs for All Departments, 10,759 have been trained from 1978-1984, far exceeding the original project target.^{1/} ^{2/} Similarly, Table IV.A.2: Retraining of VHWs

Table: IV.A.1

**TRAINING OF VHWS AND TBAS FOR ALL DEPARTMENTS
 1978-1984**

<u>Year</u>	<u>VHWs</u>	<u>TBAs</u>	<u>Total</u>
Previous	1,529	1,262	2,791
1978*	438	533	971
1979*	461	483	944
1980*	907	950	1,857
1981	903	1,098	2,001
1982	902	848	1,750
1983	803	833	1,636
1984	796	804	1,600
Total trained in Project Years 1978-1984	5,210 (744/year)	5,546 (793/year)	10,756
TOTAL TRAINED	6,739	6,811	13,550

Source: 1978 and 1980: Mid-Term Evaluation.

^{1/} Not all trainings and retrainings have been financed by RHIP.

^{2/} In certain regions, primary school teachers have received VHw training.

for All Departments, shows that the Government Of Niger efforts again exceeded the project goal. Over 17,000 village health agents have attended retrainings.^{1/}

Table: IV.A.2

RETRAINING OF VILLAGE HEALTH AGENTS FOR ALL DEPARTMENTS
1978-1985

<u>Year</u>	<u>VHAs</u>	<u>TBAs</u>	<u>Total</u>
1978 ^{1/}	384	326	710
1979 ^{2/}	N/A	N/A	N/A
1980 ^{3/}	692	708	1,400
1981	675	628	1,303
1982	1,150	1,204	2,354
1983	1,632	1,686	3,318
1984	1,784	2,005	3,789
1985	1,937	2,221	4,158
TOTAL	8,254	8,778	17,032

^{1/} Data from: Situation des ESV à la fin de l'Année 1978

^{2/} Retraining figures for 1979 will be added at a later date.

^{3/} 1980-1985: Data provided by MOH/SA.

A.2 Findings

Rate of Training

As noted in the Ministry of Plan's Analyse du Programme de l'Auto Encadrement Sanitaire au Niger, the number of VHAs and TBAs trained to date has strained the capacity of many dispensaries, MCs and DDS's to supervise effectively.

^{1/} Since village health agents are retrained every three years, some have attended two or three retrainings; thus, the number of retrainings exceeds the total number of village health agents trained.

Training Curriculum for Initial Trainings

As noted in previous evaluations^{1/} considerable efforts have been devoted to perfecting the village health agent training curricula. The first training guide, Auto-Encadrement Sanitaire: Méthodes de Formation des Agents de Santé de Village, was developed in 1980, and introduced first at the National Training of Trainers Seminar, and subsequently at Training of Trainers Seminars held throughout the departments. This has meant that a standardized curriculum is used in training throughout the country. Revised guides were developed in both 1982 and 1984.

Training occurs over a 14 day period, with a nurse teaching the class of VHWs, and a midwife teaching the TBAs. The initial training generally occurs at Medical Posts or MCs. The DDS in each department informs a nurse when the training is to be held, and the DDS provides material support (gas, per diems, kits, medications to be distributed, etc.).

Both the VHWs and the TBAs' curricula cover nutrition, clean water, maternal and infant care practices, predominant health concerns and preventive measures, basic hygiene, and demography. The VHW curriculum in addition covers appropriate treatment of common illnesses and trauma. The entire curriculum is generally covered during the initial training. The agents trained (many of whom cannot read or write) may be being asked to assimilate too much information in a two-week period.

The curricula note specific objectives for each lesson, i.e., what the trainee is expected to have learned. It also has the instructor encourage discussion of traditional methods of treatment, and then has him comment on which of these methods are effective and which are to be discouraged.

In the training observed by this team, the instructor lectured only for brief periods, then encouraged class participation through questions and answers, thus ascertaining class retention of the material. Material previously taught was reviewed numerous times. Audio-visuals and other didactic aids, though present, were not used.

^{1/} Most recently in Analyse du Programme de l'Auto Encadrement Sanitaire au Niger, Ministère du Plan, MSP/AS, Gouvernement du Niger, Mars 1985, p.5

No oral examination is given at the end of training. In the course of the semestrial supervisory visits, the Assistant DDS for village health teams routinely tests the knowledge retention of recently trained VHWs and TBAs. Handouts and aides-memoires are not made available to TBAs and VHWs for use on their return to the village.

Diarrheal diseases and oral rehydration therapy are extensively discussed in the curricula.

Chapter 4 of the VHW curriculum is entitled "Maternal and Infant Health, including Family Planning." In the training observed by the team, the VHW instructor only made a passing reference to the subject. In the TBA manual, advantages of birth spacing are noted, including the reduction of maternal and infant mortality and decreased risk of child malnutrition, especially at the time of weaning. Couples desiring family planning are advised to visit a midwife at the nearest MC.

Specific health needs and lifestyles of the nomadic populations are not singled out in the village health team curriculum, nor are conditions due to the drought. A chapter could be added to the village health team curricula which addresses the specific needs of nomads, and which suggests how the village health team program developed for sedentary populations can be modified for nomadic groups.

Retraining

At the dispensaries, retrainings for VHWs and TBAs are generally held in January and February (this year they were delayed until April). The departmental VHT directors all keep detailed records of these retrainings. Each agent is supposed to be retrained every three years. The criteria for selecting those village health agents who will attend are (a) that they have served two years since their initial training, and (b) if, in the course of supervisory visits, many lacunae have been noted in knowledge retention. In November or December, each department is asked to send a planned retraining

schedule to the central level of the MOH/SA. The Division of village health teams then establishes a retraining calendar and submits it to the RHIP (within the MOH/SA) for financing. The retraining lasts 10 days. Although the retrainings are not intended to be a simple repetition of the initial training, in fact they generally repeat what was taught in the initial training. If a nurse has attended a seminar on a specific topic, or been instructed to impart new information, this topic will be communicated to the VHAs.

It was the impression of the team that the TBAs' retrainings do not cover new material. Three TBAs interviewed by the team said they found their retrainings repetitious, and wished new techniques and information would be imparted. On two separate occasions, in two different departments, TBAs told the team they would appreciate knowing how to advise newly-delivered mothers on post-partum abdominal cramps. One young TBA also commented that when she makes a referral to a dispensary of a pregnant woman she deems high risk (according to criteria taught in the training course), the treatment dispensed by the midwife seems relatively simple and easy to learn. This TBA felt some of these upgraded skills could be taught to TBAs. She also expressed a desire to attend adult literacy classes.

A.3 Recommendations

Rate of Training

The Analyse du Programme de l'Auto Encadrement Sanitaire au Niger, Mars 1985,^{1/} suggests slowing down the rate of training of new village health teams. The team agrees with this suggestion and recommends that the number of new village health workers trained during the remainder of the project should be reduced to a maximum of 1,000 agents per year. The selection criteria for

^{1/} Ministère du Plan, MOH/SA, Gouvernement du Niger, Mars 1985.

villages to receive village health team training include areas where there are dispensaries, but not full village health team coverage, and training of replacements for teams that are not up to their full complement.

Initial Trainings

Nurses at the dispensary level who are the village health agents' direct supervisors should be more involved in training.

Curriculum

1) Future curriculum revisions should consider the following:

- a) reduction of the ratio of theoretical to practical content;
- b) the relevance of training to the actual tasks performed by the village health agents;
- c) The guide should explicitly mention which topics are to be covered at the first training, and which should be taught at retrainings.

2) The next curriculum revision should consider including the following subject matter:

- a) specific family planning methods explained in depth to both VHWs and TBAs;
- b) a section on specialized nomadic health concerns^{1/} (this would be taught only in trainings conducted in areas with a large nomadic population);
- c) more emphasis on the recognition of the effects of malnutrition among infants and children.

Teaching Methods

The present emphasis on class participation is to be commended. Use of

the audio-visual aids and pedagogic materials (mentioned for every lesson in the Curriculum Guides) is to be encouraged. Handouts such as the one on weaning porridges or the Aide-memoire on Sanitary Education Themes need to be reproduced in bulk and distributed to village health workers at each training and retraining.

Knowledge Retention

During the field trip the team verbally tested the knowledge retention of village health workers agents and found it adequate. Those village health agents identified as not having successfully mastered the curriculum material should be targeted for the next retraining to be held (rather than having them wait the full for three year cycle).

Retraining

The retrainings should be restructured to introduce new themes such as family planning methods, as well as reviewing the original subject matter. Use of audio-visual aids is to be encouraged during these sessions.

B. IN-COUNTRY TRAINING

B.1 Introduction:

The MCH/SA has two national training schools and which are supported under the RHIP.:

ENICAS, the National School for Nurses and Social Workers, in Zinder which trains state nurses and sanitary technicians. Entrants have 10 years of previous schooling and their Brevet. Graduating nurses may be assigned to dispensaries, or in the case of exceptional students, medical circumscriptions (MC) where they will train and supervise village health teams. They may also work at hospitals, MCH clinics and the transmissible disease control units.

ENSP, the National School of Public Health, in Niamey now trains, as "Superior Technicians", nurses, midwives, and laboratory technicians. Entrants have 12 years of previous schooling and their Baccalaureat. The first group of nurses trained at ENSP as "Superior Technicians" will probably be assigned to hospitals for the first few years after graduation, then will assume the direction of MCs.

Previous evaluations have been impressed, as has this evaluation team, with both the quality and quantity of training at ENICAS and ENSP. Both are producing large numbers of nurses, midwives, sanitary technicians, and laboratory technicians able to perform in the wide spectrum of assignments they may expect to receive in the course of their careers. The following recommendations are by no means meant to obscure the schools' accomplishments to date.

The Project Paper's logical framework states that by the end of the project there will be a marked increase in the number of academically trained health professionals working at all levels in the rural health delivery system. This was to have been achieved by training 10 new teachers to be divided between ENSP and ENICAS, and by paying for the education of a total of 200 certified nurses and 75 sanitarians (at ENICAS), 100 state nurses (at ENSP), and 175 medical students trained in rural health^{1/}.

The 1981 Mid-Term Evaluation, and the 1982 Revised Implementation Plan, recommended support for an additional 100 certified nurses and for 40 state nurses, and increased funding to produce 35 sanitation technicians by 1985. It was also observed that the funding for field experiences for 175 medical students had not been used, and it was recommended that these funds be reprogrammed. The 1981 evaluation recommended that the RHIP support a new program for training of laboratory technicians at ENSP.

^{1/} Specifically, the Project Paper (p. 116) committed the RHIP to supporting 40 certified nursing (IC) students and 15 environmental health workers per year at ENICAS; 20 state nurses and midwifery students per year at ENSP; and the field training of 35 medical students per year.

B.2 Findings:

At the time of this evaluation, the project's outputs for the Human Resource Development subcomponent had, for the most part, been achieved and exceeded. A total of 440 annual scholarships for certified and state nurses were projected in the Project Paper and the RIP; a total of 510 have been awarded. Funding was increased for the training of sanitary technicians at ENICAS, and the first 16 (of the 35 projected by the RIP) graduated in June, 1985. A total of 125 annual scholarships were awarded to sanitation agent and sanitary technician students from 1979-84, as well as 30 ENSP lab technician annual scholarships (totals do not include scholarships programmed for 1984-85, as funds for neither ENICAS nor ENSP had been received at the time of this report). Eight teachers had been trained; six of these graduates are presently assigned to ENSP, and two to ENICAS. Two other teachers are scheduled to return from training this year, bringing the total to the 10 projected in the original Project Paper.

Table IV.A.3 and Table IV.A.4 list the number of student nurses supported at each school by USAID since the beginning of the project.

In addition, the Project Paper stated "health professionals will continue to acquire new skills and theories relevant to the health needs of the community through continuing education programs." This will have been achieved by project support of 16 national conferences for approximately 120 persons each. These national conferences have been felt to have been of great benefit. Each of the seven departments hold two 4-day conferences each year for 50 persons in each year of the project. Over 1,100 persons will have participated in MOH conferences and seminars by the end of the project.

Table: IV.A.3

ENICAS: STUDENT ENROLLMENT AND DONOR SUPPORT
1978-1985

YEAR	NURSES				SANITATION				TOTAL ENROLLMENT	% USAID SUPPORTED	% SUPPORTED BY OTHER DONORS	USAID EXPENDITURE, ^{3/}
	ODN	CAN	USAID	TOTAL	ODN	CAN	USAID	TOTAL				
1978-79									120 ^{1/}			
1979-80			40				15					
1980-81			40				15					
1981-82			40				15		283 ^{2/}			30,790,000
1982-83			100				45		296 ^{2/}	49%		85,790,000
1983-84	20		110				35		289 ^{2/}	49%	7%	25,918,700
1984-85			<u>4/</u>				<u>4/</u>		431 ^{2/}	(33%)		

^{1/} Mid-Term Evaluation.

^{2/} Figures supplied by DEZIN, taken from "Situation Scolaire à l'ENICAS, Année Scolaire 1983-84."

^{3/} Amounts provided by MHI/SA, RHP project.

^{4/} As of July 22, 1985, 1985 RHP 1984-1985 ENICAS scholarship funds had not been received by the MHI/SA RHP project.

Table: IV.A.4

ENSP: STUDENT ENROLLMENT AND DONOR SUPPORT
1978-1985

YEAR	NURSES/MIDWIVES			TOTAL	LAB. TECHS			TOTAL ENROLLMENT ^{3/}	% USAID SUPPORTED	% SUPPORTED OTHER DONORS	USAID EXPENDITURE
	CON	OTHER DONORS	USAID ^{2/}		CON	OTHER DONORS	USAID				
1978-79	N/A ^{1/}	N/A	—	N/A	N/A	—	—	242	0	N/A	
1979-80	N/A	N/A	20	N/A	N/A	—	—	264	0	N/A	2,500,000
1980-81	N/A	N/A	20	N/A	N/A	—	—	295	7	N/A	
1981-82	N/A	N/A	20	N/A	N/A	—	—	334	6	N/A	14,000,000
1982-83	N/A	N/A	60	N/A	N/A	—	15	327	22	N/A	29,500,000
1983-84	N/A	N/A	60	300	N/A	—	15	391	19	25%	11,700,000
1984-85	—	—	<u>4/</u>	—	—	—	<u>4/</u>	404	—	—	<u>4/</u>

^{1/} N/A: Not available

^{2/} Figures supplied by INSP.

^{3/} The enrollment figures, supplied by IHSN, do not take into account repeating students.

^{4/} As of July, 1985 HUP INSP scholarship funds for the academic year 1984-1985 had not been received by the MO/SA.

Continuing Education

The continuing education program of the MOH/SA is organized by the DEESN. (At present two persons at the DEESN are handling the workload previously divided among a staff of seven.) In a 1984 World Bank survey,^{1/} of 188 MOH/SA staff it was found that 73 percent of the 70 certified nurses surveyed had no exposure to continuing education. The DEESN is well aware of this need and intends to address it as soon as the department is adequately staffed. The World Bank paper documents the continuing education needs of MOH/SA field staff (reinforcement of technical competencies, management techniques, and training of trainers) and the changes advisable to implement an ongoing continuing education program.

Given the volume of work for which the DEESN is responsible, and its level of staffing, the department is to be commended for the numerous seminars it has organized with RHIP sponsorship. At present an average of four national seminars (see Table IV.A.5: RHIP Sponsored National Seminars) are organized each year and are held in Niamey at the ENSP. The seminar themes are identified in the course of "Journées d'Etudes," field inspection visits by the Minister of Health, and meetings held between the various departments (DDS) and the Ministry. A yearly calendar of seminars is subsequently developed. Each DDS designates the persons to attend in view of the seminar's objectives.

The World Bank paper commented that the personnel selected to attend continuing education events tended to be recent nursing graduates. The paper recommended certified nurses who have served years in the field without ever having attended a seminar or workshop should be targeted for continuing education events. When the DEESN is adequately staffed it will embark on more continuing education programs designed to reach more B and C level field staff.

In discussions held with MOH/SA staff during the team's field trip, the staff frequently made reference to the annual "Journées d'Etudes"^{1/} and topics discussed there. All who had attended The Training of Trainers of VHTs

^{1/} Paulette Chapponnière and George Walter, Rapport d'une Consultation Projet de Santé: Niger; Banque Mondiale 3-27, février, 1984; p. 16, p. 38.

made favorable reference to this national seminar and to the spin-off seminars held at the departmental level. Uniform regrets were expressed that no further Training of Trainers had been held recently (see Table IV.A.5: RHIP Sponsored National Seminars). Similarly, field staff working with village health teams find the Trimestrial Departmental Staff Meetings a useful exercise for exploring solutions to problems commonly encountered when supervising village health teams. Unfortunately, staff meetings have been held this year in only one department.

B.3 Recommendations for Duration of Present Project

1) RHIP provides scholarship support for 145 students at ENICAS (33 percent of the 1984/5 student body) and for 75 students at ENSP (19 percent of 1983/4 student body). The team recommends continuation of **this level of support** for the additional year of the project.

2) In order to ensure a high level of training for the village health workers, ENICAS and ENSP should strengthen the pedagogic training that nursing and midwifery students receive in how to train and supervise village health workers.

3) At present an ENICAS or ENSP nursing student receiving a USAID/RHIP scholarship signs his/her name to a list of recipients at the beginning of the school year. The donor's name is not highlighted. After signing the list each scholarship student could be handed a letter from USAID Mission informing them that they are the recipient of a USAID/RHIP scholarship.

4) The last columns of Tables IV.A.3 and IV.A.4 ENICAS and ENSP student enrollment were taken from the RHIP accounting books at the MOH/SA. No funds appear to

1/ As of 1984 the "Journées d'Etudes" will only be held biannually. The next one is scheduled for August, 1986. Four months before the "Journées," all departments are canvassed to determine which themes they would like discussed. The three topics most frequently suggested are the ones selected.

Table: IV.A.5

RHIP - SPONSORED NATIONAL SEMINARS
1979-84

<u>YEAR</u>	<u>TITLE OF SEMINAR AND LOCATION</u>	<u>NO. OF PERSONS ATTENDING</u>	<u>TOTAL EXPENDITURE (CFA)</u>
<u>1979</u>			
	Seminars on Retraining VHTs; Niamey		
1/29 - 2/10		17	
3/19-31		15	
5/21 - 6/2		25	2,285,000
7/8-17	Workshop on National Health Program; Dosso	40	3,301,545
	4th "Journées d'Etudes"; Maradi	95	7,198,455
<u>1980</u>			
7/2-9	Seminar on Training VHTs; Niamey	35	2,241,375
8/18-30	5th "Journées d'Etudes"; Zinder	109	13,690,000
<u>1981</u>			
	6th "Journées d'Etudes"; Diffa (Topics Covered: National strategies for health education and family health; health indicators; proposed MOH/SA reorganization)	111	18,000,000
<u>1982</u>			
5/24-28	Seminar on Hospital Management	13	500,000
10/25-11/4	Seminar on VHT Training of Trainers	29	3,044,000
8/23 - 9/9	7th "Journées d'Etudes"; Dosso	127	9,500,000
<u>1983</u>			
3/21-30	National Debate on Health; Maradi	211	25,000,000
11/25 - 12/4	Seminar on ORT/Diarrhea	27	2,794,475
7/18-23	National Seminar on Malaria	49	2,655,475
10/12-13	Seminar on Leprosy; Niamey	11	139,000
<u>1984</u>			
4/24-28	Seminar on Expanded Program on Immunizations	15	1,175,300
3/2	Meeting with the DDS and MOH/SA seminars	23	370,310
8/10-21	8th "Journées d'Etudes"; Agadez	150	25,617,890
Total		<u>1,102</u>	<u>117,512,825</u>

have been released for either school for the school year 1984-85. This needs to be looked into.

5) Table IV.A.6: Library Needs at ENICAS contains a list of textbooks (and the quantity needed) that RHIP should consider ordering for the library in the near future.

6) To date no sanitation agent graduates have been assigned to rural areas and none have participated in training programs for village health agents as suggested in the first evaluation report. A solution to the problem of placement of sanitation agents and technicians needs to be actively sought.

7) The planned computerization of DAF personnel records will enable the MOH/SA to document progress in its efforts to achieve better rural coverage. When this is accomplished, the MOH/SA will be able to furnish information to USAID regarding the placements of the various categories of health graduates.

8) The computerization of DEESN records would facilitate its work and permit easier data tabulation displayed in tables similar to those in this report. The RHIP project should provide the DEESN with computer capability and staff members should be sent for computer training.

B.4 Recommendations: Future In-Country Training:

1) For USAID to have an influence on the content of courses taught at ENSP (i.e., influence their relevance to rural primary health concerns), a future project should consistently provide a higher percentage of total scholarship support than the current 19 percent.

Table IV.A.6

LIBRARY NEEDS AT ENICAS

<u>Title*</u>	<u>No. of Textbooks Needed</u>
Urgences Médicales	20
Urologie	20
Statistique	15
Génétiqne	20
Pathologie respiratoires	30
Pathologie digestive	30
Endocrinologie	30
Cardiopathie	30
Traumathologie	30
Législation du travail	15
Maladies transmissibles par voie sexuelle	?
Diététique	10
Physique	10
Mathématiques	10
Calcul appliqué	10

*These books are available from Librairie Masson.

2) A sanitarian with experience in basic sanitation and water technologies should be employed to provide technical assistance as an ENICAS faculty member.

3) Midick should continue to be a field training site for students. Funding problems would be simplified if the RHIP picked up the entire package.

4) Transport to ENSP and ENICAS students' rural field assignments continually presents a problem. A future project should provide for the maintenance of vehicles at both schools.

5) A future project should consider providing subsidized cafeteria privileges for the entire ENICAS student body.

6) As the MOH/SA acquires more audio-visual materials, personnel in charge of this equipment should receive training in equipment repair and maintenance.

C U.S. AND THIRD COUNTRY-TRAINING

C.1 Findings:

The Project Paper's logical framework states that at the end of the project a group of MOH/SA health and auxiliary support personnel will have been trained in areas such as health administration and planning, etc. The subframe for Human Resources Development goes on to state that the purpose of the project is to "increase the number of technically qualified village health teams, health professionals and auxiliary support personnel working in the rural health delivery system." To achieve this, the project would send 25 participants for third country training in Africa or Europe. The participants were to be teachers for academic health institutions, senior MOH officials, etc.

A review of Table IV.A.7: RHIP Sponsored U.S. and Third-Country Training, 1978 Until Present, shows that the first consideration in the logframe has been achieved. In fact, the initial plan to send 25 trainees abroad has been greatly exceeded. Approximately 70 participants selected for the most part, by competitive examination from MOH/SA personnel, have been trained in African, French and American institutions. The estimated total cost of this training has been \$625,911^{1/}. The type of training received ranges from social work to advanced studies in cardiology.

For the 1984-1985 academic year, the RHIP scholarships^{2/} accounted for 33 of the 73 third-country long-term training grants (45 percent) provided to MOH/SA health personnel.^{3/} WHO provided 20 scholarships (27 percent of the total) and was the second largest supporter of long term training. The remainder of the scholarships were provided by other donors (IAC, OCCGE, UNICEF, Russia, Algeria, and Germany).

Approximately two-thirds (68 percent) of the long term training has been in fields directly related to rural health delivery. Since 1982, several of the participants have received third-country training in specialties that are less directly related to rural health (i.e., anesthesiology, kineotherapy, psychiatry, traumatology, and cardiology).

Of the 70 persons trained abroad since 1978 under RHIP scholarships, 34 have subsequently returned to Niger (the rest are still studying abroad). Twenty (60 percent) of these 34 are now employed in the city of Niamey. Of these 20, 12 (60 percent) are involved in work related to rural health.^{4/}

^{1/} U.S. \$1 = 430 CFA francs.

^{2/} The USAID also provided two scholarships to MOH/SA personnel studying Management and Law at the University of Niamey.

^{3/} Data provided by DEPR.

^{4/} Assignments to FNSP, DHA, MOH/SA and ONPFC (all located in Niamey) were considered as related to the delivery of rural health services for the purposes of this analysis.

Table: IV.A.7

SHIP SPONSORED U.S. AND THIRD-COUNTRY TRAINING
1978 UNTIL PRESENT

Name	Type of Training	School	Location	Dates	Expenditure GN/U.S.\$ *	Organization & Location Where Currently Employed	Current Employ- ment Approx to Imp Rec'd?
1. Issa Babacar	Tech. Act. Soc.	IPS	Abidjan	1978-81	1,980,000	Hospital de Zinder	Yes
2. Hassane Ach	"	"	"	"	"	CNS Maradi	Yes
3. Mhacoum Aglis	"	"	"	"	"	ENP Niamey	Yes
4. Tahira Gaba	"	"	Zaire	1979-83	"	Hospital de Librou	Yes
5. Alio Sibo	Enseignement	ISIM	"	1979-82	"	ENP, Niamey	Yes
6. Elhadji o Baizer	Surveillance	"	"	"	"	Dir, Hospital, Niamey	Yes
7. Bachir Yacouf	"	"	"	"	"	Dir, CH, Agadez	Yes
8. Djafaru Djilo	Enseignement	"	"	1979-83	"	ENP, Niamey	Yes
9. Amaku Mmane	Tech. Sp. Labo.	IUIS	Lomé	"	"	Hospital, Niamey	Yes
10. Bouroum Sarna	"	"	"	1979-83	"	Dispensary Niamey	Yes
11. Adamu Madi	"	IPS	Abidjan	1979-82	"	ENP, Niamey	Yes
12. Yaya Amaku	"	"	"	"	"	City Gov't Niamey	Yes
13. Bawa Bawa Daurah	"	"	"	"	"	Embassy	Yes
14. Moussa Ichi	Santé Publique	ISP	Nerne	1979-80	1,680,000	IDS, Librou	Yes
15. Kadri Kadi	"	"	"	1979-82	"	Further studies in U.S.	
16. Kane Mohamed Salissou	Ingn. Sanitaire	Ferris State	USA	"	\$42,068	"	
17. Bartra Oumou	"	Southern Univ	"	1979-83	\$27,929	DH, DHM, Niamey	Yes
18. Adamu Oumou	Surveillance	ISIM	Zaire	1980-83	2,160,000	Hospital, Niamey	Yes
19. Mhamane Hamidu	"	"	"	"	"	?	Yes
20. Mhamane Daka	Tech. Act. Soc.	IPS	Abidjan	"	"	ENP, Niamey	Yes
21. Moe Gadiro Mhamane	"	"	"	"	"	DS/DH/AS Niamey	Yes
22. Djibo Bigné	"	"	"	"	"	Niamey	Yes
23. Mlle Hadilaye Mhamane	Enseignement	QSSI	Dakar	1980-82	"	MH/SA, Niamey	Yes
24. René Mathieu	Anesthésie	IEP	Algerie	1980-83	"	IDS, Zinder	Yes
25. Sidiou Sarda	"	"	"	1980-84	"	Hospital	
26. Bouroum Abou	Tech. Sp. Labo.	IUIS	Lomé	"	2,640,000	QHC, Niamey	Yes

* Government of Niger provided airfare until 1983. Amounts shown are for tuition food and lodging.
Expenditure data in CFA francs provided by MH/SA PRK Project. Expenditures data in U.S. dollars is taken from files USAID/Niamey.

Legend: IPS = Institut de Formation Sociale
ISP = Institut Santé Publique

ISIM = Institut Sup de Tech Med
IEP = Institut Tech Santé Publique

IUIS = Institut Univ T Santé
CSP = Collège de Santé Publique

Table: B.8 (continued)

Name	Type of Training	School	Location	Dates	Expenditure in U.S.\$ *	Organization & Location Where Currently Employed	Current employ- ment appear to long Rec'd?
27. Mue Geba Sarou	Tech. Sup. Labo.	IUIS	Gene	1980-84	2,600,000	CHU, Niamey	Yes
28. Amadou Bakari	Nutrition	ISM	Zaire	"	"	Hospital, Zaire	Yes
29. Balamba Issoufou	"	"	"	"	"	MH/SA, Niamey	Yes
30. Hamari Haroun	"	"	"	"	"	ENP, Niamey	Yes
31. Mirdakouba Mito	Enseignement	"	"	"	"	Hospital, Niamey	Yes
32. Ali Sarth	"	"	"	"	"	ENP, Niamey	Yes
33. Mito Keia	Surveillant	"	"	"	"	ENP, Niamey	Yes
34. Mue Hariso Georgette	"	"	"	"	"	ENP, Niamey	Yes
35. Soko Bawa Moune	Administration	Talare	USA	1982-83	\$36,136	MH/SA Niamey	Yes
36. Nassirou Abdoullamin	Enseignement	ISM	Zaire	1982-85	2,600,000	Still studying abroad	
37. Hariso Souleymane	"	"	"	"	"	"	
38. Baka Bakary	Kinesithérapie	"	"	"	"	"	
39. Idrissou	Psychiatrie	"	"	"	"	"	
40. Moune G. Gero	"	"	"	"	"	"	
41. M. Hariso Aouine	Surveillant	"	"	"	"	"	
42. Haroun Yacoub	Gestion Hospital	"	"	"	"	"	
43. Mue Aziza Sifin	Tech. Sup. Labo.	IUIS	Gene	"	"	"	
44. Ousmane Elhadji	"	"	"	"	"	"	
45. Issa Ousman	"	"	"	"	"	"	
46. Moune Bachir Soto	Enseignement	ISM	Zaire	1983-86	2,900,000	"	
47. Mue Ben Wadal Alchoum	"	"	"	"	"	"	
48. Mue Fitchim Akou	Tech. Sup. Labo.	IUIS	Gene	1982-86	"	"	
49. Ibrahim Mafachi	Anesthésie	CSP	Marr	1983-85	"	"	
50. Ibrahim Adamou	"	"	"	"	"	"	
51. Mouradla Amadou	"	"	"	"	"	"	
52. Ibrahim Ali	Kinesithérapie	"	"	"	"	"	
53. Gou Moune	Anesthésie	"	"	"	"	"	
54. Akou Haroun	Medic. Radio	"	"	"	"	"	
55. Dr. Amadou Abdoulaye	Transologie	"	"	"	3,000,000	"	
56. Mue Tahira Halimou	Anesthésie	"	"	"	2,900,000	"	
57. Kelessie Babacar	Généraliste	Wright State	USA	1983-87	\$37,000	"	
58. Tahira Yehya	"	"	"	"	"	"	
59. Amadou Soto	Enseignement	CSP	Marr	1984-86	2,900,000	"	
60. Amadou Diogou	"	"	"	"	"	"	
61. Jidi Sani	"	"	"	"	"	"	
62. Sani Zagre	"	"	"	"	"	"	
63. Babacar Thiéké Achate	"	"	"	"	"	"	
64. Dr. Acifa Tidjani	OS Chirurgie	"	"	1984-88	"	"	

Table: B-8 (continued)

<u>Name</u>	<u>Type of Training</u>	<u>School</u>	<u>Location</u>	<u>Dates</u>	<u>Expenditure CFA/U.S.\$ *</u>	<u>Organization & Location Where Currently Employed</u>	<u>Current Employ- ment Approx- imate Rec'd?</u>
65. Dr. Boukari Ousseini	CES Gynecology	CSP	Marc	1984-88	3,600,000	SEII studying abroad	
66. Babacar Hamidou	Documentaliste	CSSI	Dakar	1984-86	"	"	
67. Malzani Goya	"	"	"	"	2,900,000	"	
68. Dr. Diatta Jocrin	CES Cardiologie		Abidjan	1984-87	"	"	
69. Kane Mohamed Salissou	Genie Sanitaire	Tufts Univ.	USA	1984-86	\$37,000	"	
70. Dr. Tarkari Kacki	Sante Publique	Tulane Univ.	"	1984-87	\$39,150	"	

C.2 Recommendations for the Duration of this Project

A) The USAID/RHIP currently supports 45 percent of long-term U.S. and third-country training for MOH/SA personnel, and should continue this level of support for the duration of the current project.

B) USAID and the MOH/SA should agree on the categories of specialties that are priorities for rural health delivery and thus are eligible for RHIP scholarship support.

C) The MOH/SA should acquaint USAID with its overall Manpower Plan, demonstrating how the specialties selected for RHIP funding fulfill the requirements of this plan, and promote rural health services.

D) The practice should continue of selecting trainees who have served five years in rural health areas.

C.3 Recommendations for a Future Project

USAID and the MOH/SA should review and analyze together "Besoin en Personnel" projections and other donors' anticipated support in order to identify training needs that USAID might support in the future.

D SHORT-TERM THIRD-COUNTRY TRAINING

D.1 Findings

Neither the Project Paper nor the Mid-Term Evaluation provided specific guidelines for this component.

Table IV.A.8: RHIP Sponsored Study Trips/Short-Term Third-Country Training shows that six MOH/SA employees have been sent abroad with RHIP funds for study trips during the life of the project. An additional 10 to 40 employees have been sent under centrally-funded auspices. The WHO supports much of the short-term training at the MOH/SA.

Table: IV.A.8

RHP - Sponsored Study Trips/Short-Term Third-Country Training
1961-1963

Year	Name	Where Employed	Description of Short-Term Training	Location	Dates	Expense (FA/U.S.\$)	Presently Using Knowledge Acquired?
1961	Solo Murre Bwa	MH/SA	Seminole Santé Rblique	Lome, Togo	Nov 15-20	\$2,112	Yes
	Johnny Choufor	MH/SA (and mobile)	Seminole Santé Rblique	Lome, Togo	Nov 15-20		?
1960	Solo Murre Bwa	MH/SA	Int'l Medex Conference	Honolulu, Hawaii	Sept 26-10/13	\$13,135	Yes
	Anche Labit	MH/SA	Int'l Medex Conference	Honolulu, Hawaii	Sept 26-10/13		Yes
1963	Dr. Kachi Takari	MH/SA	German Hospitaliers	Dakar, Senegal	Jan 15-30	3,200,000	Yes
	Mr. Ali Babacar	MH/SA	German Hospitaliers	Cottbus, Berlin			Yes
	Mr. Ousyul Ramatou	MH/SA		Abidjan, C/Wolof			Yes
	Mr. Salifu Murtan	MP/T					
	Kachi Kachi	MH/SA	Primary Health Care in Senegal	Senegal	Aug 22-32	2,225,000	Yes
	Quiba Alatum						Yes
	Murtan Alatum						Yes
	Mr. Gaba Murtan						Yes

The Tulane RHIP project component intends to embark on short-term third-country training in the near future. Tulane plans to train 15 MOH/SA personnel in a two-week course, four persons in a two-month course, and one person in a long-term Master's program at Tulane.

D.2 Recommendations for Duration of Present Project

1) The course "Training of VHT Trainers," offered annually at the Centre de Formation du Personnel des Services de Santé in Lomé, Togo, has been found very useful by MOH/SA staff sent under WHO scholarships. MOH/SA should explore with WHO the possibility of increasing the quota of Nigeriens permitted to attend the course in order permit a larger number of Nigeriens to attend with RHIP funding. The next course will be held January through March 1986. Department VHT directors who have not yet attended the course, and nurses who supervise and teach village health teams and who have spent five years or more in rural dispensaries would be the groups most eligible for attendance.

2) It is hoped that DEESN staff members will continue to have priority in the selection of those able to attend the planned Tulane computer courses to enable the eventual computerization of student dossiers and record keeping.

B. Institutional Support

Construction, Vehicle and Bio-Medical Equipment Maintenance and Repair

1. Organization of the Division of Infrastructure and Statistics

The Direction of Infrastructure and Statistics (DIS) is responsible for logistical and administrative support of all vehicle and equipment installations and operations for the Ministry of Health in Niger. The DIS assumed these responsibilities in 1982, and has therefore been carrying on these activities for only the past three years. Prior to 1982, these activities were handled by the Secretary General's Cabinet, Ministry of Health.

In order to provide logistical support to all the departments in Niger, three services have been created to handle vehicle and equipment logistics and support. These services are:

A. SERPA:

The Vehicle Fleet Maintenance and Repair Service, or SERPA, is responsible for all maintenance and repair activities for the Ministry of Health Vehicle Fleet as well as for most parts procurement, record keeping and training of drivers and technical personnel. This service, created in 1976 and placed under DIS in 1982, consists of the following installations:

Central Garage - SERPA/NIAMEY:

SERPA/NIAMEY is the hub of the nation-wide SERPA system. As well as being responsible for maintenance and repair of the approximately 150 MOH vehicles in Niamey Department, the SERPA also procures spare parts, in lots and through competitive bidding, for MOH/SA vehicles in all seven departments in Niger.

A training center for mechanics has been built and equipped at SERPA/Niamey. This center is designed to upgrade the skills of new SERPA employees as well as to provide re-training of existing SERPA personnel. In 1984, six mechanics were trained in this Center. Unfortunately, no personnel have been trained or re-trained as yet during 1985.

SERPA/NIAMEY is also responsible for keeping records on all vehicles under its care. The recording system consists of a file for each vehicle

which contains: 1) Requests for maintenance and repair, which must be approved by the DIS before a vehicle is admitted to the garage, 2) work orders, which show what work is performed on a vehicle, including what parts are used as well as their cost, and 3) a record of cumulative parts costs for the vehicle. It should be noted that starting in 1982, total cumulative parts costs for vehicles were kept without a yearly breakdown. Starting in 1984, cumulative parts costs are kept by year, making it simpler to do cost analysis on a yearly basis.

SERPA/Niamey also keeps a running parts inventory, which tracks which parts go where, as well as their cost.

Antenna Garages:

Each department has its own SERPA antenna garage for maintenance and repair activities within the department. Permanent SERPA installations exist in Diffa, Dosso and Tahoua Departments, while Agadez, Maradi and Zinder Departments are using temporary facilities while awaiting the completion of construction of new facilities in those departments.

Antenna garages depend upon SERPA/Niamey for most parts, although funds are available at the departmental level through the Departmental Direction of Health (DDS) for local purchases of parts, lubricants and supplies as needed.

Antenna garages are responsible for their own record keeping and for requesting re-stocking of spare parts inventories through SERPA/Niamey. The antenna garages also rely on SERPA/NIAMEY to provide such services as engine block re-boring and crankshaft grinding. Details of how the SERPA antennas operate will be found under their respective department headings in this report.

B. SERAM:

The Bio-Medical Equipment Maintenance and Repair Service, or SERAM, is responsible for maintenance and repair operations on all bio-medical equipment on a country-wide basis.

SERAM consists of two installations, the main installation in Niamey and the SERAM antenna in Zinder. SERAM/Niamey covers the Departments of Agadez, Dosso, Niamey and Tahoua, while SERAM/Zinder is responsible for the Departments of Diffa, Maradi and Zinder.

Due to the extremely wide variety of makes and models of bio-medical equipment in use in Niger, spare parts are ordered directly from manufacturers on an as needed basis for the larger, more expensive items. Stocks of smaller, less expensive parts do exist in both Niamey and Zinder.

C. SERMEX:

The Physical Plant Maintenance and Repair Service, or SERMEX, is responsible for all other equipment not covered by either SERPA or SERAM. This equipment includes cold chain equipment for storage of vaccines, back-up generators for emergency power in hospitals, air conditioners, furnishings, etc. It should be noted that SERMEX has only been in operation since November of 1984, and that personnel total four technicians based in Niamey with a limited budget and country-wide responsibilities.

D.2 Project Inputs: Construction, Vehicle Maintenance and Repair, and Bio-Medical Equipment and Repair

A. Construction:

The original Project Paper called for construction of two DDS complexes consisting of DDS offices, an antenna garage of SERPA, and visitors' quarters. These DDS complexes were to be built at Agadez and Zinder starting in 1979. At the time of the Revised Implementation Plan, October 1982, no construction had been started, although sites had been selected and plans had been drawn up and approved. There apparently were problems obtaining a waiver to increase the funding necessary for the procurement of local materials. Construction started during 1983, and the construction of a DDS complex in Maradi was added to the project using counterpart funds. Plans for Maradi are identical to those used for Agadez and Zinder.

Construction continues in fits and starts up to present date. Numerous flaws were detected in the plans, which required modifications to be made to

the structures, increasing the time necessary to finish the facilities. Some of the flaws detected in the garage facilities were:

- In-ground work pits too wide to allow access to vehicles requiring service. Modifications have been made to the pits in Agadez and Zinder. Modifications to Maradi are underway.
- Access to pits was designed as a series of steel rungs set into the pits' walls submarine style - a dangerous means of access for those mechanics who may have grease and oil on their shoes. Proper stairwells have been constructed at all three locations.
- Work pits were designed much too deep to allow technicians to reach under-car elements requiring service. This flaw has been corrected in all three centers.
- Sighting for work pits was designed to be placed at technician's waist height. Not only is this placement useless for illumination purposes, but also extremely dangerous as the lights are not recessed, but fully exposed allowing easy breakage followed by the dangers of electrical shock. These fixtures should be replaced by approved recessed wall sockets to allow connection of approved safety lights and/or electrical tools for under-car operations.
- Access for vehicles to work bays was designed as an abrupt step up of some 30 centimeters from ground level, making it difficult, if not impossible, for vehicles to gain access to work bays. The addition of ramps to work bays has been completed in all three locations.
- At all three centers, outside truck ramps were constructed that were too steep, twice the height they should be, have level surfaces too short for most (if not all) trucks and there may prove to be too much space between ramps for trucks to safely mount the ramps. Although the slope has been improved in all three centers, the problems remain of height, level surface for parking trucks, and possibly width. Width should be measured first, and should the ramps prove too widely spaced, then the ramps will be unuseable. It should be noted that the interior safety shoulders can

- not be cut down to allow access to trucks as the interior retaining walls under these shoulders are not load bearing walls, and will not support the weight of trucks. Should the width prove acceptable, the ramps can be lowered by cutting off the tops of the ramps to a level not to exceed one meter from ground level. This will serve not only to lower the ramps to proper levels, but also to lengthen the level surface to allow trucks to be blocked on a level surface instead of partially on the incline as is the case at the present time.

- Enclosed space for a workshop and for parts storage is very small for the overall size of the garage facilities. Space for spare parts storage measures some 28 square meters of floor space which corresponds to the area required for spare parts storage for some 7-10 vehicles, assuming full stocks of spare parts as are required by all SERPA antennae. The facilities, however, will have to handle from 20 to some 45 vehicles. Enclosed workshop space is identical to the space allotted for parts storage, and suffers the same constraints.

- Floor space available for work bays is sufficient to provide seven work bays (32 square meter standard bay), yet is divided into only four work bays that are overly long and wide for the vehicles requiring service. The standard bay of 4 meters wide and 8 meters long would occupy only 32 square meters of space each. Total floor space at an antenna garage is 243 square meters, or 61 square meters per bay. The number of bays is sufficient in both Agadez and Maradi considering the present sizes of the motor pools (some 20 vehicles each). However, SERPA/Zinder will be strained to service some 45 vehicles with only four work bays. This flaw cannot be easily corrected. Therefore, additional space may have to be considered for SERPA/Zinder at some later date.

The DDS complexes in Agadez and Zinder are essentially complete, lacking only water and electrical hook-ups and provisional acceptance by the Ministry of Public Works before occupancy can take place. Some modifications are still under way at Maradi and, although minor, will put off the opening of this facility.

The DDS complexes, including office space, garage and visitors' quarters, have been built at an average cost of \$245,000.

B. Vehicle Maintenance and Repair:

Personnel:

AFRICARE technicians were provided to the Departments of Diffa, Tahoua and Zinder to set up functional garages and logistic systems and to train Nigerien technicians. Nigerien technicians are provided for each Departmental SERPA by the Ministry of Health. (See Table D.1 for breakdown of personnel by department.)

Vehicles:

Thirty-two (32) automobiles and 91 mopeds were purchased under the project to round out the Ministry of Health motor pool. (See Table D.2 for the departmental distribution of these vehicles.)

Tooling and Equipment:

Some \$150,000 has been spent to date under the project for tools and equipment for the three garages. Although a few items have been sent to Zinder, the vast majority of tools and equipment are in storage in Niamey, awaiting the opening of the DDS complexes.

Parts Inventory/Procurement:

The majority of parts procurement for all departments (except Dosao, which relies on Belgian assistance) is done through SERPA/Niamey. SERPA/Niamey procures parts in lots, through competitive bidding, according to inventories in stock in Niamey as well as requests made by each department. Approximately 100,000,000 CFA francs worth of parts were distributed among the different departments during 1984 from SERPA/Niamey (see Table D.1 for breakdown by department). This 100,000,000 CFA franc figure includes national budget inputs as well as USAID and UNICEF budgetary inputs.

Table D.1

**SUMMARY INFORMATION ON SERPA ANTENNA GARAGES
1985**

	<u>ACADEZ</u>	<u>DIFFA</u>	<u>MARADI</u>	<u>TAHOUA</u>	<u>ZINDER</u>
No. of Vehicles	20	20	24	32	44
Tools	insufficient	insufficient	insufficient	sufficient	insufficient
Equipment	insufficient	insufficient	insufficient	sufficient	insufficient
Personnel					
Mechanics	1	1	2	1	2
Apprentices	2	2	2	3	2
Other: Body work, electricians, etc.	0	0	1	0	3
Parts inventory	non-existent	insufficient	non-existent	sufficient	insufficient
Approx. CFA ex- penditures for parts in 1984 per vehicle	268,000	510,000	516,000	445,000	555,000

Table D.2

RHIP VEHICLE INPUTS BY DEPARTMENT

<u>AUTOMOBILES</u> <u>Department</u>	<u>Make</u>	<u>Year</u>	<u>Condition</u>
<u>Agadez</u>			
0141 AZ1A	Land Rover	1982	Good
0142 AZ1A	Land Rover	1982	Good
1459 NY1A	Scout	1980	Passable
<u>Diffa</u>			
0135 DA1A	Land Rover	1982	Good
0136 DA1A	Land Rover	1982	Poor
<u>Maradi</u>			
0197 M11A	Land Rover	1982	Broken down
0198 M11A	Land Rover	1982	Sold
<u>Tahoua</u>			
0242 TA1A	Land Rover	1982	Good
0241 TA1A	Land Rover	1982	Good
0175 TA1A	Scout	1980	Passable
<u>Zinder</u>			
0228 ZR1A	Land Rover	1982	Good
0164 ZR1A	Scout	1980	Good
0102 AZ1A	Scout	1980	Good
0230 ZR1A	Land Rover	1982	Good
0229 ZR1A	Land Rover	1982	Good
<u>Niamey</u>			
2226 NY1A	Land Rover	1982	Good
2227 NY1A	Land Rover	1982	Good
2228 NY1A	Land Rover	1982	Good
2229 NY1A	Renault 18	1982	Sold
2230 NY1A	Renault 12	1982	Good
2231 NY1A	Nissan Patrol	1982	Good
2213 NY1A	Nissan Patrol	1982	Good
1926 NY1A	Toyota Corolla	1981	Passable
1927 NY1A	Toyota Corolla	1981	Passable
?	Toyota Starlet	?	Sold
1457 NY1A	Scout	1979	Poor
1815 NY1A	Scout	1979	Poor
<u>Dosso</u>			
0163 DO1A	Land Rover	1982	?
0164 DO1A	Land Rover	1982	?

Three additional International Scouts have been taken out of service which brings the total number of automobiles purchased under the project to 32.

Table D.3
 SERPA BUDGET
 FY 1984

<u>BUDGET INPUTS</u>	<u>CFA FRANCS</u>
National Budget	40,090,586 (40%)
USAID/PASR	23,834,826 (24%)
UNICEF	<u>35,748,805 (36%)</u>
TOTAL	<u>99,674,217 (100%)</u>

BREAKDOWN OF BUDGET BY DEPARTMENT

Agadez - 25 vehicles	6%
Diffa - 14 vehicles	5%
Donso - 31 vehicles	2%
Maradi - 29 vehicles	13%
Tahoua - 33 vehicles	13%
Zinder - 28 vehicles	13%
Niamey - 145 vehicles	<u>49%</u>
	100%

In addition to SERPA/Mamey parts inputs, each department has a budget for vehicle maintenance under the DDS. This budget is used to procure parts, lubricants and supplies on a local, and as needed, basis (see Table D.4 for breakdown by department).

Each department, therefore, has its own stock of spare parts that is replenished by SERPA/Mamey as well as by the department level budget. On top of this, those departments that had AFRICARE technicians benefited from an additional \$2,000 per year per technician for the purchase of parts, tools and equipment.

Other Inputs:

Diffa Department had operated under a separate project, the Basic Health Services Delivery project since 1977. Funded by AID (\$2.8 million) and staffed by AFRICARE, this project was assimilated into the RHIP on April 1, 1981. Inputs under this heading included a staffed and equipped garage facility.

Table D.4

SERPA COST INFORMATION
FY 1984

The following are inputs of the Ministry of Health, USAID, and UNICEF to SERPA operations by department for vehicle maintenance and repair:

<u>AGADEZ DEPARTMENT</u>	<u>FCFA</u>
SERPA/Niamey	6,000,000
DDS	<u>700,000</u>
Total	6,700,000
6,700,000 for 25 vehicles = 268,000/vehicle	

<u>DIPPA DEPARTMENT</u>	
SERPA/Niamey	5,000,000
DDS	1,701,334
Africare professional fund	<u>400,000</u>
Total	7,101,334
7,101,334 for 14 vehicles = 507,238/vehicle	

<u>MARADI DEPARTMENT</u>	
SERPA/Niamey	13,000,000
DDS	<u>1,979,166</u>
Total	14,979,166
14,979,166 for 29 vehicles = 516,522/vehicle	

<u>TAHOUA DEPARTMENT</u>	
SERPA/Niamey	12,000,000
DDS	2,276,000
Africare professional fund	<u>400,000</u>
Total	14,676,000
14,676,000 for 33 vehicles = 444,727/vehicle	

<u>ZINDER DEPARTMENT</u>	
SERPA/Niamey	13,000,000
DDS	2,152,479
Africare professional fund	<u>400,000</u>
Total	15,552,479
15,552,479 for 28 vehicles = 555,445/vehicle	

D.3 Project Outputs: Garage Construction and Vehicle Maintenance and Repair

The project goal, as articulated in the Project Paper, under this heading is "a functioning transportation system responsive to the distribution of goods and services (supervision)." This goal was unchanged by the Revised Implementation Plan of October, 1982.

Specific expected outputs of the project under this heading are:

Construction:

Construction of two garages, in Agadez and Zinder.

Tools and Equipment:

Two equipped garages, in Agadez and Zinder.

Maintenance Plan:

A functioning maintenance plan for vehicles used in the different departments.

Vehicles:

Twenty-four (24) automobiles and 100 mopeds distributed among the various departments of which 75 percent were to be running at any one time. It should be noted that the original Project Paper called for 48 automobiles and 200 mopedettes. Half of the vehicles were to be purchased at the beginning of the project. Those vehicles purchased at the end of the project were meant to replace those purchased at the beginning of the project. Therefore, only half of the total number of vehicles purchased under the project can be considered as part of the project outputs.

Training:

The Revised Implementation Plan called for 12 mechanics to be trained by the Project Assistance Completion Date (PACD) of June 30, 1985. PACD has been extended to December 31, 1986.

Parts Inventory/Procurement System:

A functioning inventory and parts re-order system was to have been set up in those departments receiving inputs.

The outputs described above are expected of Diffa, Tahoua and Zinder departments. Outputs for Agadez and Maradi departments remain to be determined.

D.4 Bio-Medical Equipment and Repair

Activities under the Bio-medical Equipment Maintenance and Repair Service, or SERAM, are not as intensive as those under SERPA, as there are only two SERAM installations, one in Niamey and one in Zinder. The total budget for SERAM is some 10,000,000 CFA francs which includes the AFRICARE professional fund inputs.

Outputs to be reviewed under this heading are:

The existence and operation of a periodic maintenance plan:

Meetings with John Strother, the AFRICARE technician at SERAM/Zinder, have shown that a periodic maintenance plan does exist. Mr. Strother has established maintenance checklists for all equipment covered. However, it should be noted that these checklists are written in English, and do not yet exist in French.

The existence and operation of a parts inventory/re-ordering system:

There is not yet a comprehensive parts inventory/re-ordering system under SERAM. What does exist is a system of work orders that lists work performed, as well as those parts used, or which must be ordered. The parts used according to the work orders are to be ordered and recorded on inventory cards upon arrival. It is hoped that this system, though slow in producing a complete inventory of parts, will result in an efficient inventory/re-ordering system by the end of the project (December 31, 1986).

Technician training:

Training of SERAM technicians is more difficult than originally expected. It is rare to find technicians that already have a solid understanding of electronics that can be used as a basis for training on

bio-medical equipment maintenance and repair. Identified technicians have received training at the WHO technical school in Lome, Togo.

Technicians working for SERAM at present have received on-the-job training. It should be noted, however, that Mr. Strother has created a number of lesson plans for more formal training, yet these plans are written in English and do not yet exist in French.

Recommendations:

- 1) Translation of existing maintenance, repair and training materials into French.
- 2) Institution of these translated systems in SERAM installations in Niamey and Zinder with the goal of creating a national system for bio-medical equipment repair.
- 3) Consideration should be given to providing technicians with basic level electronics training before sending them to the WHO school in Lomé.

D.4 Review of Findings and Recommendations by Department

A. AGADEZ:

Agadez has received the least inputs under this project of any of the departments to date. Although Agadez was to receive major inputs early on in the project, construction of the new DDS complex did not start until a very late date, and still lacks water, electricity and provisional acceptance of the construction by the Ministry of Public Works. As occupancy of the DDS complex has not yet taken place, Ministry of Health officials have held back tool and equipment inputs until they can be secured in the new complex.

The situation in Agadez at present is a bit discouraging. Three SERPA technicians are posted to Agadez where they occupy a corner of the now-abandoned Administrative Garage. SERPA/Agadez is equipped with one tool box and four jack stands. The vehicle fleet in Agadez Department totals 23 vehicles, of which 20 are claimed to be in running condition. It should be

noted, however, that only 8 of these vehicles are considered to be in good shape. Spare parts inventories are woefully inadequate for the vehicle fleet to be supported. Such necessary items as filters, hoses and spark plugs are not in stock, nor are they readily available on the local market. There is no evidence of a periodic maintenance plan for the motor pool. Apart from a card file for those few parts that are in stock, there is no recording of work performed on vehicles, nor is there any record of cumulative costs for vehicle repairs.

There is no evidence of a training program for mechanics assigned to the SERPA in Agadez. It should be noted that the expatriate technical assistant, a Dutch volunteer, was unavailable for consultation as he had been evacuated for medical reasons and will take annual leave before returning to post. The DDS was not informed of when the technical assistant would return to post.

Recommendations:

It is obvious that the motor pool in Agadez is in poor shape. However, a number of measures can be taken to correct this situation.

1) The new DDS/garage facility should be inspected by the Ministry of Public Works. Should there prove to be no major constraints to acceptance of the facility, it should be put into operation as soon as possible. Acceptance of the facility will be the first step towards providing the tools and equipment inputs necessary to achieve project outputs.

2) A system of record keeping for the vehicle fleet must be established. The simplest way to accomplish this would be to adopt the system presently used by SERPA in Niamey. This system of authorized work orders provides a cumulative history of vehicle maintenance and repair, listing all inputs (parts and labor required) resulting in an effective means of judging cost effectiveness and vehicle performance.

3) Spare parts inventories must be upgraded to allow an effective maintenance and repair program to commence. Receipt and use of spare parts should be logged in the same manner as SERPA/Niamey, allowing the simple

tracking of fast moving parts and, as a result, timely re-ordering of essential items.

4) A periodic maintenance plan must be implemented to ensure that the greatest number of vehicles possible be kept in the best condition possible. Oil changes and adjustments of such components as the valve train, brakes, ignition, etc. should be regularly scheduled. Checking the condition of all major components for wear and timely repair would go a long way towards increasing vehicle life while reducing the amount of time the vehicle is non-functional.

5) Training of garage personnel in the execution of the above mentioned systems will be required. It is recommended that the training center at SERPA/Niamey be used to teach these systems and to upgrade mechanical skills of garage personnel.

6) The input of additional personnel, in the form of a qualified automotive electrician and another mechanic, would allow SERPA/Agadez to better respond to the needs of a transportation system operating under unusually harsh conditions.

It would be grossly unjust at this time to evaluate the outputs of SERPA/Agadez, as most inputs to the service are not yet in place. SERPA/Agadez could easily become a model of efficient operations once the scheduled inputs have been put in place.

B. DIFFA:

Diffa has been the recipient of various inputs since 1977 when AFRICARE started implementation of the Basic Health Services Delivery (BHSD) project. This project was integrated into the present RHIP on April 1, 1981 and will continue until PACD, December 31, 1986. Project inputs have included construction of a garage facility, tooling and equipment to support maintenance and repair operations, spare parts inputs in addition to what is supplied by SERPA/Niamey, and technical assistance in the form of an AFRICARE mechanic/trainer. It should be noted that this technical assistance ended in

June 1985, and it is now a question as to whether the mechanic/trainer should be replaced.

Diffa is the most remote department headquarters visited at some 1,350 km. from Niamey. Although the road is for the most part in excellent shape, the last 70 km. of pavement is in need of major repairs, increasing the difficulties of transport of needed materials.

Of 20 vehicles on the DDS/Diffa roles, 14 are presently functioning. However, only nine of these are considered to be in good shape. One reason for this may be that the periodic maintenance schedule for SERPA/Diffa, as established by AFRICARE technicians, is implemented every 6,000 km. as opposed to a schedule of 3,000 km. in Zinder and Tahoua.

The garage facility at SERPA/Diffa is sufficient in size, with four work bays for 20 vehicles, or one work bay per five vehicles. Tooling and equipment, however, are at less than optimum levels. Although a fairly complete set of tooling and equipment were installed starting in 1978, the years have taken their toll in the form of breakage and loss.

The spare parts inventory is also incomplete, though in much better shape than either Agadez or Maradi as fast moving parts such as filters, belts, hoses, etc., are in stock, permitting the implementation of maintenance operations. However, stocks of spare parts for more major repairs do exist, although the number of vehicles broken down would indicate that these stocks are insufficient. The spare parts are inventoried in Diffa, and the use of spare parts is attributed to particular vehicles.

Records are also kept on work performed on each vehicle, although these records are not as well organized as those in either Tahoua or Zinder. Through these records it can be seen, for example, that maintenance is performed on vehicles. However, it should be noted that a periodic maintenance checklist is not used.

Training has progressed to the point where the three technicians in Diffa are capable of performing most tasks. However, the technician who is "de facto" chief of SERPA/Diffa still holds the job title of driver. Various

attempts have been made to have this technician's job title changed to mechanic, yet the situation remains unchanged. It should also be noted that this technician is not literate. Record keeping, parts inventories/re-orders, etc. are presently done by the management personnel of the DDS. The chief of management, Mr. Boucar Kanta, should be commended for his dedication and assumption of duties well beyond the scope of his job.

Recommendations:

Notwithstanding the long-term technical assistance a provided by AFRICARE to Diffa, the garage is not as well organized as it should be, nor is record keeping in tune with the national SERPA system. Considering the fact that the chief of SERPA/Diffa is not literate, any record keeping at Diffa is to be appreciated. Furthermore, SERPA/Diffa is hard pressed to keep up with the work load with only three technicians.

As the AFRICARE mechanic trainer has just left Niger at the end of his contract (June 1985), it is now a question whether he should be replaced.

With these points in mind, the following recommendations are made:

- 1) Technical assistance should be continued to Diffa, with the goals of organizing the garage and bringing record keeping and maintenance and repair operations up to a level consistent with the national SERPA system.
- 2) The present "de facto" chief of SERPA/Diffa should have his job title changed to mechanic, and be placed on the MOH's mechanic personnel roster.
- 3) A fourth SERPA technician should be recruited for Diffa in order to assist with the present workload. This technician should be literate in order to re-assume the administrative responsibilities now being performed by the DDS.
- 4) A periodic maintenance checklist should be established and used in Diffa to ensure the best possible operation of the vehicle fleet.

5) Funds should be made available for SERPA/Diffa to replace worn out shop equipment, and broken and missing tools. The funding necessary to accomplish this recommendation is approximately \$10,000.

C. MARADI:

Maradi has suffered much the same fate as Agadez, in that inputs for SERPA have not yet been put in place. Although a new DDS complex has been built at Maradi using counterpart funds, modifications to the garage structure are not yet complete. As a result, tooling and equipment purchased for Maradi are being held in storage in Niamey awaiting occupancy of the new complex.

Spare parts inventories are practically non-existent in Maradi, with the exception of Land-Rover oil filters.

There is no evidence of a periodic maintenance plan.

Records are not kept on vehicles, so it is impossible to tell what work has been performed on any vehicle. As a result, the condition of the vehicle fleet is impossible to determine.

Personnel assigned to SERPA/Maradi consists of two mechanics, two apprentice mechanics and one body-work technician. A Dutch volunteer has also been assigned to Maradi, but was unavailable for consultation as he was on annual leave.

Recommendations:

Maradi, like Agadez, has not yet received the necessary inputs in order to become a functioning facility. Therefore, the following recommendations are made:

1) Modifications to the DDS complex should be completed, water and electricity be hooked up, and provisional acceptance of the complex be made by the Ministry of Public Works. This will allow tooling and equipment inputs to be installed in Maradi for more effective operations.

2) A periodic maintenance plan should be established in accordance with recommendations by SERPA/Niamey.

3) A system of recording should be established for vehicles and parts inventory/procurement along the lines of the system established by SERPA/Niamey.

4) Training of technicians should take place, vis-à-vis, the systems cited above.

D. TAHOUA:

Tahoua is by far the best department visited. There is a fully equipped, functioning garage with the most complete stock of parts of any of the departments seen.

The success of Tahoua dates back to inputs of tools and equipment with German assistance. This was followed by five years of technical assistance by an AFRICARE technician, Mr. Jon Neuman. SERPA technicians in Tahoua credit Mr. Neuman's efforts in organization and training as the main reasons for the smooth functioning of the garage. Mr. Neuman completed his contract and departed Niger on June 2, 1985. He recommended in his final report that he not be replaced, as the chief of SERPA/Tahoua, Mr. Mahayou Doudou Miston is capable of handling all garage activities. Miston is well organized and runs a clean shop. Vehicle records are being kept up and parts inventories are being monitored for periodic re-ordering.

Six technicians were trained in Tahoua, however, one is no longer at his assigned post.

Of the 32 vehicles on the DDS roles, 29 of the vehicles are in running condition and 15 are considered to be in good shape.

A periodic maintenance schedule is tacked to the wall and is followed.

Parts inventories are kept and parts are re-ordered on a periodic basis. The use of parts is recorded on the inventory cards as well as on individual

vehicle work sheets. The recording system in Tahoua is in line with the excellent system used by SERPA/Niamey.

Recommendations:

- 1) The AFRICARE technician not be replaced in Tahoua, as the SERPA personnel (four technicians) are capable of handling operations.
- 2) A body worker/welder be assigned to Tahoua to round out technical expertise and relieve the chief of SERPA of some these duties.
- 3) A roof be placed over the outside work pit for protection from sun and rain.

E. ZINDER:

Zinder is another SERPA installation that is working well, notwithstanding the fact that it is operating out of temporary headquarters until the new DDS complex is occupied. Although not fully equipped, SERPA/Zinder has had some inputs of tooling and equipment that allow it to operate, though not at optimum levels.

Zinder has had technical assistance from AFRICARE technicians for the past five years. However, it is only since September of 1984 that a SERPA counterpart was assigned to Zinder. The present AFRICARE technician, Mr. Mario Iachella and the chief of SERPA/Zinder, Mr. Mamane Garba, have an excellent working relationship. Although both of these technicians have been in Zinder for less than a year, they have put together a good record keeping system for vehicles and parts inventories. This system is also in line with SERPA/Niamey's system.

Of the 44 vehicles on the DDS roles 41 are in running condition with 27 of the vehicles in good to excellent condition.

Spare parts inventories are good, but not as complete as the inventory at Tahoua.

Tooling and equipment is minimal at SERPA/Zinder, and will not be complete until the new DDS complex is occupied.

A periodic maintenance schedule is followed, although no checklist is used. Scheduled maintenance, however, is noted on the individual vehicle sheets.

Recommendations:

SERPA/Zinder is a working installation that can only improve when the scheduled inputs are installed. The following recommendations are made:

1) The new DDS complex should receive provisional acceptance from the Ministry of Public Works and should be opened as soon as possible. This will allow the tooling and equipment, already purchased and stored in Niamey, to be put in place.

2) A periodic maintenance checklist be established and kept up for each vehicle as part of the present recording system.

3) Technical assistance from AFRICARE should continue for at least one year after the opening of the new DDS complex to ensure the establishment of maintenance and repair systems.

With these inputs in place, there is an excellent chance that SERPA/Zinder can surpass SERPA/Tahoua as a model of departmental SERPA efficiency.

Outputs under Africare Contract

AFRICARE has been providing technical assistance to the Departments of Diffa, Tahoua and Zinder under this project. In general, the services rendered under the AFRICARE contract are good to excellent. The exception to this is with respect to the operations of the Diffa garage.

As can be seen in the description of activities by department, both Zinder and Tahoua are operating well, with Tahoua no longer requiring a technical assistance component. Zinder, once it receives the scheduled inputs, has an excellent chance of fulfilling all project objectives by PACD (December 31, 1986).

Diffa has not yet achieved expected outputs, as only 70 percent of the vehicle fleet is operating at the present time. However, it should be noted that Diffa is operating better than either Agadez or Maradi which have not received intensive technical assistance as of yet. With this in mind, it is suggested that dynamic technical assistance be recruited for Diffa, and that the goal for Diffa be to improve operations to match those in both Tahoua and Zinder.

Considering the overall performance of AFRICARE technicians, it would be appropriate to consider AFRICARE as a source for technical assistance to both Agadez and Maradi, as well as for continued assistance to Diffa.

General Conclusions:

As has been noted above, scheduled inputs have been slow in coming and are not yet in place in Agadez, Maradi and Zinder. Modifications to the garage must be completed in Maradi, and all three centers opened before project outputs can reasonably be measured at these centers.

Diffa has fallen short of expectations and will require additional, technical assistance, a literate SERPA technician and moderate inputs of tooling and equipment before expected project outputs can be achieved.

Agadez and Maradi will require dynamic technical assistance in order to start operating efficiently. Should the Dutch volunteers not prove capable of providing improved assistance, consideration should be given to providing technical assistance from other sources.

A periodic maintenance schedule and vehicles-specific record-system should be established for all vehicles in the SERPA system.

The SERPA system is a good one, as seen by results being obtained in Tahoua and Zinder. Stricter application of this system in the other departments will go a long way towards achieving an efficient and cost effective country-wide maintenance and repair network.

C. PROJECT MANAGEMENT

C.1. Findings

Several of the persons interviewed in Niamey and the departments indicated that the principal management problem experienced with the project was delay in receipt of project funds for: in-country training, and village health team training, retraining and supervision.

Several factors under the control of the MOH/SA and Government of Niger contribute to the lengthy delay of project funds. These include:

- Poor project accounting controls in the MOH/SA;
- High turnover of project accountants in the MOH/SA (five in two years);
- Lack of detailed prospective planning, programming, and budgeting for project activities;
- Direct payment of project funds from the Treasury to construction entrepreneurs, without clearance by MOH/SA;
- Since 1982, centralization of the planning of project activities which are implemented at the departmental level;
- The lag time (two to three months) between placement of funds at the department level and return to Niamey of receipts for departmental project expenditures;
- Failure of the BRIP to request monthly advances, when there are any project funds in the Treasury account.

Factors on the USAID/Niamey side which contribute to delays in the flow of project funds include:

- Limitation to a 30-day advance of project funds with subsequent advances made only when 80 percent of the prior advance has been justified against receipts.
- Use of only one account for the project.

C.2. Actions Taken to Date

Over the years USAID/Niamey has taken steps to improve project financial management, including:

- Engagement of an expatriate accountant to set up and maintain the requisite bookkeeping system for the project in the MOH/SA;
- Provision of training through the Sahel Regional Financial Management Project on AID accounting requirements under 121D legislation;
- Ongoing support from the USAID health and controller's offices, vis-à-vis, preparation of vouchers;
- Efforts to shut down leakages of project funds from Treasury.

C.3. Recomendations

For MOH/SA and USAID

1. The RHIP has experienced chronic problems with sustaining the timely flow of project funds. The MOH/SA and USAID should jointly set up a system for the planning, programming, and budgeting of project activities, particularly those conducted at the departmental level. The system should decentralize some planning authority to the departmental level. Resources from the Sahel Regional Financial Management Project and from the Sahel Manpower Development Project should be utilized to provide the training and technical assistance necessary to develop an appropriate system for the project.

2. The MOH/SA and USAID should explore the possibility of moving the principal project account out of Treasury, perhaps to the BDRN, in order to stop the diversion of project funds directly to construction contractors, and to shorten the time required for the Government of Niger to disperse project funds.

3. The team recommends that procedures be established for providing travelers' checks to students at third-country training sites in soft-currency countries (e.g. Zaire).

For USAID/Niamey

1. USAID should require that the MOH/SA submit quarterly reports for the RHIP program which not only review the achievement of the previous quarter's project, but also lay out the program for the subsequent quarter including estimates of the monthly advances required to carry out the prospective program. This quarterly report should be a detailed document following from an annual project plan which is prepared prospectively.

2. Recognizing that the cycle between the receipt of a monthly advance for periodic major activities at the departmental level) and the return of vouchers for these departmental activities usually requires more than 30 days, USAID should set up two project accounts, one for ongoing departmental VHT activities, the other for all other project activities.

CHAPTER V
THE VILLAGE HEALTH SYSTEM

A. DESCRIPTION

The jump in coverage of Niger's village by village health teams from 17% to 40% in the 6-year period from 1978 to 1984 shows that the rural health system has been remarkably successful on a quantitative basis. In recent years, however, enthusiasm has waned as an increasing number of indicators have led to the conclusion that a truly "self-reliant system" (Auto-Encadrement Sanitaire) is more theory than reality and that first-aid workers are more medicine salesmen than true promoters of village health. Some of these indicators include increasing abandonment rates, rare preventive action, empty or incompletely stocked medical kits and lack of support by the villagers and authorities both traditional and administrative.

The important challenge now is to identify the key problem areas in order to development rational recommendations to strengthen the system. The RHIP from its inception has supported the GON's conviction that PHC cannot be isolated from the entire health system. Thus this project has provided inputs from the village to the national level in the two major categories of human resources development and institutional support. To help answer the question of how useful and relevant these inputs have been for the improvement of the quality of life of the rural populations, we can look at how the system works at the village level, identify some of the problems and solutions being tried and indicate some possibly fruitful suggestions for the future.

The major components of the rural health system include the following:

1. Initial dialogue with the villagers ("Sensibilisation") including recruitment of candidates for training and installation ceremonies after training
2. Training and retraining
3. Supervision
4. Restocking of medicines and supplies
5. Community support

1. INITIAL DIALOGUE (Sensibilisation)

Theory

From the beginning of the rural health program in the 1960's this has been considered to be a major if not one of the most important steps in the process. Multidisciplinary teams (animation, health and literacy) enter into dialogue with the villagers, discussing with them their health problems, explaining the opportunities and obligations of the rural health program (RHP), and suggesting criteria for the choice of candidates to be trained (including age, length of stay in the village, and honesty). The process takes four visits per village:

1. Initial contact
2. Identification of the candidates
3. Taking the candidates to the training site
4. Officially presenting the health agents with their medical kits after training

Practice

The "sensibilisation" teams do not always have representatives from the three services, the number of visits to the villages and time per visit are often inadequate for real dialogue and the official installation ceremonies after training are often eliminated. Some of the consequences are these:

1. The visiting team may not always have someone with a good understanding of the local culture and language.
2. Candidates are hurriedly chosen and may not be the best ones available.
3. The villagers may not really understand the implications of the long-term support they are being asked to provide.

Comments

Because the RHP has been in existence for so long and villages continue to ask for VHTs, perhaps the importance of this phase has been underestimated.

For example:

1. Part of the lack of support for the RHP may stem from the fact that it is not well adapted to or in keeping with the priorities of the traditional and religious beliefs of the people.
2. The vast majority of village health workers are in fact not volunteers but have been designated in one fashion or another by the community. It is not known how many accept the position gladly and how many do not.
3. The success of village health agents appears to be related to how influential they are. It is not known which variables are relevant for such status. Caste may be important in the Tuareg culture and youth is not always a detriment.

RHIP

The project does not specifically mention this phase of the rural health system but instead focused on the importance of supervisory visits.

Recommendations

1. Ways of strengthening cooperation between animation, health and literacy should be explored.
2. Anthropological studies should be encouraged to better understand the cultures and beliefs regarding health and disease of the people served.

2. TRAINING AND RETRAINING

Theory

According to yearly plans that have been made, each department organizes retraining sessions in the first quarter of each year followed by training of new health agents.

Practice

Plans are not always followed because of such events as the late reception of funds and extra training programs being added in response to urgent needs such as the gathering of people in off-season gardening sites. Representatives from the animation and literacy services are not always present at the training sessions. If rains start during training, the session may be cut short.

Comments

The GON has extensively revised and tested the training manuals for village health workers. Some questions which might be raised about training include:

1. The ratio of theoretical to practical content.
2. The relevance of training to the actual tasks the health workers perform in the villages.
3. The amount of information that can be assimilated in one training session by mostly illiterate health agents.
4. The frequency and content of retraining.
5. The site of the training.

RHIP

Training of village health workers and their trainers has been a major activity of the project.

Recommendations

1. Ways to encourage cooperation between animation, health and literacy services should be sought.
2. Nurses at the dispensary levels, who are the village health workers' direct supervisors, should be more involved in training.

3. SUPERVISION

Theory

Regular supervision of the village health workers is essential for success of the rural health program. Visits are necessary for replenishing medicines and supplies, evaluation of the performance of the VW's, collecting statistics and continuing the education of the health workers and villagers alike. All villages are to be visited according to the following schedule:

1. One a month by the nurse from a dispensary.
2. Four times a year by a nurse and midwife from a Medical Circumscription.
3. Twice a year by a team from the departmental level.
4. Once a year by a team from the national level.

Practice

Villages, especially those that are farther from medical centers, are visited irregularly and in a manner that is too cursory to be a real supervisory visit. Table V.A.1 shows why the question of supervision is such a monumental task. On the average in 1984 there were 563 VW's per department, 104 per arrondissement and 17 per dispensary. When visits are done, often as many as 5-7 villages are seen in a single day, little more is done than checking the medical kits and the record notebooks and mid-wives are rarely members of the team.

Table V.A.1

**Rural Health System
Supervision
Infrastructure and Personnel - 1984**

Depart	MC	PMRD	SN (MC)	SMW (MC)	CN (MC)	VHT	VHT MC	VHT PMRD	VHT SN	VHT SMW	VHT CN
Agadez	3	15	15	9	36	113	38	8	8	13	3
Diffa	3	12	8	4	26	234	78	20	29	59	9
Dosso	5	33	19	12	58	726	145	22	38	61	13
Maradi	7	36	23	18	72	728	104	20	32	40	10
Niamey	7	66	41	18	127	824	118	12	20	46	6
Tahoua	7	34	20	10	79	497	71	15	25	50	6
Zinder	6	38	23	9	65	820	137	22	36	91	13
Total	38	234	149	80	463	3942					
Average							104	17	26	49	9

Source: Bilan Annuel d'Activités ESV 1984
Rapport d'Activités du MSP/AS 1984
MC - Medical Circumscription
PM - Medical Post
RD - Rural Dispensary
SN - State Nurse
SMW - State Mid-wife
CN - Certified Nurse
VHT - Village Health Team

Comments

Some of the consequences of inadequate visits include the following:

1. The quality of care given by the health workers suffers.
2. The quality of record keeping suffers.
3. Problems related to the restocking and management of medicines and supplies are not resolved.
4. Village health workers receive no encouragement to engage in preventive and educational activities.

The reasons for lack of adequate supervisory visits are abundant:

1. Inadequate personnel
2. Lack of motivation
3. Lack of vehicles and fuel to run them
4. Inaccessibility of some villages during the rainy season
5. Inability to find villages or nomadic camps that have moved.

RHIP

The project address the problem of supervision by logistic support which included the purchase of vehicles, the construction and equipping of departmental garages, the provision of technical assistance to train mechanics, and gasoline to run the vehicles. Two of the major problems were that Mobyettes proved to be unsuited for the rugged conditions of most of the country and gasoline provisions were often delayed.

Recommendations

Supervision clearly represents one of the weakest elements of the RHP and one of the toughest to solve.

Operational research in this area has started and more should be encouraged. For example:

1. Attempts are being made to define and standardize the content of supervisory visits.
2. The question of rhythm of visits is being investigated. Perhaps villages that are less than a given distance from a dispensary (less than 5 or 10 kilometers) require fewer visits than those that are more distant.
3. More dispensaries are being built and others that have been built and equipped will soon be opened. What about the cost of rural dispensaries and can ways be found to decrease it?
4. What are the feasible transportation options if Mobylettes, horses and camels are to be excluded? If more robust motorbikes are to be provided, how will they be distributed and maintained? Light 4-wheel drive vehicles such as the Suzuki are being tested in the departments of Dosso and Niamey. If they prove to be reliable, they may provide a partial answer as they are cheaper to buy and operate than larger vehicles such as Landrovers or Toyotas.
5. How can midwives and female nurses be encouraged to participate in village visits?
6. To what extent can supervisory visits be directed to places where people regularly gather such as markets and pastoral wells?
7. How can the use of vehicles be better coordinated in the rural areas?
8. One of the positive actions the GON is planning is to redistribute more of the present personnel to the rural areas, with the goal of having at least two nurses at the dispensary level.
9. One way to free up vehicles for supervision and reduce costs of the medical system is support the government's goal of having at least one surgeon in each department to reduce the number of medical evacuations.

4. RESTOCKING THE MEDICAL KITS

Theory

When returning to their villages after training, first-aid workers are provided with medical kits (wooden or metallic for villages and leather sacks for nomads) and birth attendants are given UNICEF midwifery kits. Restocking occurs as follows:

1. Where payment is not required, the MCH/SA replenishes the stocks. This concerns VHW's in Agadez department and the arrondissement of Tchintabaraden in Tahoua Department and all of the birth attendants.
2. For all other VHW's, medicines are to be sold and replacement stocks purchased from Popular Pharmacies, medicine depots or health centers. Products such as alcohol, mercurochrome and methylene blue are to be replaced free of charge.

Practice

No systematic methods exist to ensure continuing medicines and supplies. Some of the ad hoc solutions include:

1. Exaggerating annual training needs and using the extra medicines to supply village health teams.
2. Medical centers sometimes borrow from their stocks to give medicines to villages.
3. Other sources include other projects with health components, NGO's (such as Africare, Care, Caritas) and funds from sub-prefectures.

Comments

The lack of reliable supply systems for village medicines and supplies represents a major obstacle to the functioning of the VHW's, for in the eyes of the villagers, medicines are their *raison d'être*.

RHIP

The project objectives called for the provision of drugs and equipment for all VHT's in the country over a five year period. The only medicines which got to the villages were those provided with training sessions, the assumption being that stocks would be replaced by funds generated by sales.

Recommendations

1. There are some villages in the country where fewer medical kits than VHTs were provided, with the result that VHTs are called "grands ou petits securistes" depending on whether or not they have one. The project might consider giving them to the have-nots.
2. Studies are needed to permit the government to implement in a rational and equitable way the policy of payment for medicines that was espoused at the Maradi conference in 1983. The current policy of free medicines for nomads in some parts of the country and not in others needs to be reexamined.

5. COMMUNITY SUPPORT

Theory

"Auto-Encadrement Sanitaire" (A Self-Reliant Health System) implies that the villagers have been involved in the decision-making process in the planning, implementation, and evaluation of the rural health system. In other words, they have taken their health into their own hands.

Practice

As stated earlier, it is probable that the villagers have had less than adequate information, understanding and decision-making authority, and thus real participation is the rare exception rather than the rule.

Comments

The evaluation team had the opportunity to visit two villages in the department of Diffa and interview both village health workers and villagers using the same questionnaires that had been used in a survey in 1976 (Wassiry). The results are presented in Table V.A.2. In both villages, the villagers expressed satisfaction in the services of the village health workers and agreed that when possible medicines should be purchased. The health agents interviewed (both VWs and TBAs) had all been retrained an average of 3 times, had been visited an average of three times a year over the last four years, responded accurately to questions of diagnosis and treatment, and had well-stocked although incomplete medical kits. In response to the question of remuneration for the VW's, the responses were unequivocal. The villagers saw no need to remunerate the VW's for their services and one VW claimed that in nine years of service he had not even received a chicken. When in one village, the conversation turned to the possibility of training first-aid workers for the treatment of animals, it was learned that 60 nomadic "tribes" were willing to contribute up to a total of 2 million CFA francs a year to maintain the system, including operating costs for the village chief's Toyota and salaries for the workers. In this one case it would appear that the question of lack of community financial support for VW's is related to priorities and willingness to pay rather than an inability to pay.

RHIP

The project did not directly address the issue of community participation and support.

Table V.A.2

Village Surveys in Diffa

Directed Interview with Villagers

	1976			1985
	N	OUI	%	2 Villages
Does the VHW treat people?	222	201	91	Yes
Does he provide health education?	222	94	58	Yes
Are there any people who refuse to be -treated by the VHW?	222	141	36	No
Must medicines be purchased?	222	219	99	7/10-Pay
Is it necessary to remunerate the VHW -for his services?	222	38	17	No
Is the VHW useful to the villagers?	222	220	99	Yes

Directed interview with the VHWs

Has he received formal VHW training?	27	25	93	Yes
How was he chosen?				
Designated by the population	27	25	93	Yes
Volunteer	27	1	4	No
Retrained at least once?	27	12	44	Yes
How will the kit be restocked?				
Sale of medicines	27	19	70	Yes
Where are people treated?				
At the VHW's house	27	26	96	Yes
Has he ever evacuated a sick person -to a dispensary?	27	13	48	Yes
Does he have a record notebook?	27	15	56	Yes
Visited at least once last year by:				
Nurse from a rural dispensary	27	0	0	Yes
Nurse from a MC	27	25	93	Yes
Mobile medicine team	27	12	44	Yes
Animation Service	27	18	67	Yes
Authorities (Admin. or Trad.)	27	5	19	No
Has a health committee existed?	27	5	19	No
Did it function last year?	5	0	0	-
Any trad. healers in the village?	27	9	33	No
Good to cooperate with them?	9	8	89	Yes
Receive any aid from the village?	27	5	19	No
Would he like to continue working in -these conditions?	27	21	78	Yes

Observation of the medical kit

Well kept?	20	8	40	Yes
Stocked				
Well	20	3	15	Yes
Poorly	20	9	45	
Empty	20	8	40	
Money exists for restocking the kit	20	15	75	Yes
The kit was restocked at least once last year	27	20	74	Yes

Recommendations

1. The GON is convinced of the need of active participation of the villagers in the rural health system and has thoroughly debated the issues at the Maradi conference in 1983 and the Health Conference at Agadez in 1984. Efforts to actively involve such institutions as the Development Society, the Samariya and the cooperatives should be encouraged.
2. Operational research is currently underway which should be followed. At Tchintabaraden the idea of village pharmacies run through cooperatives is being explored. In Diffa a Canadian project has restocked medicines in 30 villages and is working with Village Development Councils to provide management and support of the system.

Conclusion

Observers agree that even after more than 20 years of village-based health care in Niger, a lot of unanswered questions remain and that the gap between theory and practice is often wide. Where there is less agreement is in the specification of the causes of the problems and suggestions for their solution. Issues such as supervision, drug supplies and community participation are extremely complex and it will be only through intensive studies and operational research involving true partnership with the rural populations that progress will be made towards the goal of "health for all" that is adequate qualitatively as well as quantitatively.

V. B. Impact Analysis

The RHIP Project Paper (p. 2) makes the following claim:

"While scientifically valid data regarding the impact on morbidity and mortality of village health teams is not presently available, it is highly probable that the VHT's are having significant impact on the health of the populations they serve."

The U.S. AID overall rationale for health projects in the Sahel has been essentially the following:

1. The major goal is food self-sufficiency.
2. Farmers are often unable to work because of illness.
3. Health projects will reduce mortality and the number of days of restricted and lost activity.
4. This will permit farmers to work more and to increase food production.

Thus at the end of this project we are asked not only to measure life expectancy and infant mortality but also to show a decrease in worker incapacity. The voluminous literature on the relationships between health projects, health and agriculture leads to these conclusions:

1. Even in well-controlled experimental settings (such as Saranghal or Danfa) the evaluation of impact is highly complex and the results inconclusive. (Faruque)

2. The relations between health and economic development are so complex that the definitive study in this area will never be made. (Barlow)

3. That healthy men produce more (not that they can but that they actually do) is logical but has only been proved in a small number of limited situations. (Davies)

4. Rainfall and pricing policies are better explanatory variables for agricultural production than health.

Having noted the difficulties does not mean that we can say nothing about the health system. In fact there is a tremendous amount of information, which although less than perfect, can still lead us to reasonable conclusions about the present situation, historical trends and specific areas of strength and weakness. In 1981 WHO came out with a set of guidelines for evaluation including four major categories of indicators: health policy, social and economic, utilization of services, and basic health status. (Health for All Series No. 4) The same year at the 6th Health Study Days in Difa, the MOH/SA produced a list of suggested health indicators and in 1983 published an analysis based on them. (Indicateurs Sanitaires, Niger, 1983).

For the purposes of this evaluation we will start with the twelve global indicators suggested by WHO. Then we will use the specific categories of health infrastructure, personnel and utilization of services, comparing national results with those in the Difa Department and whenever possible examining trends covering the years of the life of the RHIP from 1978 to the present. Finally, we return to the national level to discuss the question of basic health status indicators.

GLOBAL INDICATORS (Table V.8.1)*

In the area of health policy, the GON scores very high marks, having launched a program of rural care in 1964 (14 years before Alma Ata) and reaffirming its political commitment after the change of government in 1974. While resources

are woefully scarce, the government is attempting to redress inequities in the distribution of resources, encourage increased participation of the people and improve efficiency in the management of programs both national and those assisted by foreign aid. Although water supplies, sanitation and immunization coverage are inadequate, maternal and child care is better with 410/1000 deliveries being assisted by midwives or trained birth attendants and 210/1000 well babies being seen in health centers. The levels shown by the socio-economic and health status indicators are a reflection of the fact that Niger is a member of the group of low-income semiarid countries of the world.

* A "+" indicates that Niger's health system has attained the WHO suggested level, "+" means that considerable progress has been made towards the goal and "-" means that the current situation falls very short of the goal.

Indicator	Niger	Verification
6 A health strategy is well-defined, accompanied by explicit resource allocations with needs for external resources receiving sustained support from more affluent countries.	+	a. Several new programs are planned including the fight against diarrheal diseases, an Expanded Program on Immunization, an anti-malarial program, a nutrition program and family health; however, an explicit national strategy does not yet exist, especially concerning the coordination of these programs.
	-	b. Intersectoral collaboration is weak.
		c. As for external funding, the chosen sectors do not always fit with national priorities and operational delays are common.
7. Primary health care is available to the whole population, with at least the following:		
		a. safe water at home or within 15 minutes walk, and adequate sanitation
	-	a. 1983
		Water at home or within 15 min. Adequate sanitation
		Rural 34% 3%
		Urban 48% 36%
		b. 1983
	b. Immunization against diphtheria, tetanus, whooping cough, measles, poliomyelitis and tuberculosis	Vaccine Coverage
		Children BCG 70%
		Tetracoq 5%
		Measles 16%
		Pregnant Women Tetanus 4%
		c. 45% of villages have VHT's but the restocking of medicines is not systematic
		d. 410/1000 deliveries are attended of which 53% are handled by rural trained birth attendants. 210/1000 well babies are seen in health centers; the number seen by health agents in the villages is not known.

Indicator	Niger	Verification
8. The nutritional status of children is adequate in that:		
a. at least 90% of newborns weigh at least 2.5 kg.	-	a. 80% (Survey at the Central Maternity at Niamey 1979-1983) Newborns are not weighed in the villages
b. at least 90% of children have an adequate weight for height	-	b. 14-24% fall between 80-85% (Nutritional survey in 3 departments Dec. - Jan. 1985)
9. The infant mortality rate is below 50 for 1000 live-births	-	1983 - 139/1000
10. Life expectancy at birth is over 60 years	-	1983 - 45 years
11. The adult literacy rate is over 70%	-	12%
12. GNP per capita exceeds US\$ 500	-	1983 - US\$ 240

Source: Development of Indicators for Monitoring Progress Towards Health for All by the Year 2000. WHO, Geneva 1981
 Canevas du Niger - Periode 1983-1985
 World Development Report-1985 World Bank, Washington, DC.

The following tables show the evolution of health infrastructure, personnel and utilization of health services from 1978 to 1984. The pre-project data for Diffa are based on the results of a survey done in 1976. (Wassiry)

NATIONAL INDICATORS

1. Evolution of Health Infrastructure
(1978-1984)

The ratio of population to hospital beds has worsened by 25%, population to dispensaries has improved by 18% and population to medicine distribution points (Popular Pharmacies and medicine depots combined) has improved by 50% from 242781/1 to 12057/1. There are now approximately 300 annual births per available maternity bed.

Table V.B.2

Evolution of Health Infrastructure (1978 - 1984)			
Year	Category	Number	<u>Population Category</u>
1978 POP=5098400	Hospitals	7	
	Hospital		
	Beds	3,162	1,612
	Maternities	41	
	MCH centers	20	
	MP + RD	159	32,065
	Popular Pharmacies	15	339,893
	Medicine Depots	6	
<hr/>			
1984 POP=6149102	Hospitals	13	
	Hospital		
	Beds	3,075*	2,000
	Maternities	53	
	Maternity Beds	1,044	294**
	MCH centers	28	
	MP + RD	234	26,278
	Popular Pharmacies	20	307,455
	Medicine Depots	31	

* The University hospital at Niamey is not yet operational.

** Expected annual births

Source: Rapport d'Activités du MSP/AS 1984

Five Year Development Plan 1979-83 (Health Sector)

2. Evolution of Health Personnel
(1978-1984)

Population to personnel ratios have improved by 3% for physicians (The percentage of Nigerian physicians going from 25% to 40%), worsened for state nurses by 14% and worsened for certified nurses by 14%. Women of child-bearing age per midwife has improved by 42%, and the number of sanitation technicians (7) is insignificant. In all cases the pop./personnel ratios are short of the norms called for in the 1979-83 Five Year Development Plan.

Table V.B.3
Evolution of Health Personnel
(1978 - 1984)

Year	Category	Nigerien Total %		Niger	Pop/Category	Pop Desired/ Cat*
1978 POP=5098400	Physician	29	118	25	43,207	
	State Nurse		345		14,778	
	Mid-wife		88		14,484**	
	Certified Nurse		735		6,937	
	Sanitation Technician		4		1,274,600	
1984 POP=6149102	Physician	59	147	40	41,831	30,000
	State Nurse	302	366	83	16,801	8,350
	Mid-wife	183	183	100	8,400**	2,852**
	Certified Nurse	777	777	100	7,914	3,911
	Sanitation Technician	7	7	100	878,443	

* Target in Development Plan (1979-1983)

** Women (14-49 years)

Source: Rapport d'Activités MSP/AS 1984
Five Year Development Plan 1979-1983
(Health Sector)

3. Utilization of Health Services
(1978-1984)

On the average there is one visit per year for every two people. The number of women receiving at least one prenatal visit per expected births has improved by 55% from 182 to 282/1000 and assisted deliveries per expected births has improved by 65% from 118 to 195/1000. Well babies seen per number of children under 1 has improved by 9% from 184 to 201/1000.

Table V.B.4
Utilization of Health Services
(1978 - 1984)

Year	Category	Number	Category Per Person
POP = 5098400	Visitors* (MCH Excluded)	2,500,000	0.49
	Prenatal Visitors	46,314	182/1000**
	Deliveries	30,000	118/1000**
	Well Baby Visitors (under 1 year)	46,949	184/1000**
1984	Visitors (MCH Excluded)	3,302,350	0.54
POP = 6149102	Prenatal Visitors	86,551	282/1000**
	Deliveries	59,801	195/1000**
	Well Baby Visitors (under 1 year)	61,659	201/1000**

* Visitor refers to "consultant" not "consultation"

** Expected births

Source: Rapport d'Activités du MSP/AS - 1984
Five Year Development Plan 1979-83 (Health Sector)

4. Rural Health System
Village Health Teams (1978-1984)

The number of VHT's has increased by 161% from 1496 to 3898, and the number of villages covered has increased from 17% to 45%. The population to VHW ratio has improved by 56% from 2965 to 1309/1 and women of child-bearing age per TBA has improved by 67% from 604 to 200/1. The denominators for these ratios represent the rural population, estimated to be 83% of the total population.

Table V.B.5

Rural Health System

Village Health Teams (1978 - 1984)

Year	Category	Number	Villages in Niger	% Villages Touched	Vill.Per Category	Rural Pop Per Category
1978	VHT	1,496	8,615	17	5.8	2,965
POP=5098400	VHW	2,185			3.9	2,030
Rural Pop.= 4435608	TBA	1,836			4.7	604*
1984	VHT	3,898	8,625	45	2.2	1,309
POP = 6149102	VHW	5,769			1.5	885
Rural Pop.= 5103755	TBA	6,380			1.4	200*

* Rural Women (14-49 years)

Source: Five Year Development Plan 1979-83 (Health Sector)
Bilan Annuel d'Activités ESV - 1984 Avril 1985

Rural Population = 83% of total Population

5. Rural Health System
TBA Activities - 1984

On the average, 259/1000 expected births are attended before delivery by a trained TBA ranging from a low of 86 in Agadez to a high of 404 in Dosso. Each TBA averages less than one delivery a month and there are only 3 evacuations recorded for every 100 TBA-months of activity.

Table V.B.6
Rural Health System
TBA Activities 1984

Depart.	Population	TBAs Present	Births Attended*	Expected Births**	Attended/Expected***	Births/TBA/ Month	Evacu- ations	Evac./ TBA/ Month
Agadez	150,607	106	530	6,250	86	0.4	31	0.02
Diffa	201,704	325	797	8,371	95	0.2	70	0.02
Dosso	835,314	1,158	13,996	34,666	404	2.5	226	0.02
Maradi	1,144,445	1,495	10,848	47,494	228	0.6	596	0.03
Niamey	1,412,045	1,148	9,629	58,600	164	0.7	352	0.03
Tahoua	1,197,306	969	18,797	49,688	378	1.6	554	0.05
Zinder	1,207,681	1,393	11,520	50,119	230	0.7	445	0.03
Total	6,149,102	6,594	66,123	255,188	259	0.8	2,274	0.03

* Births assisted after delivery are excluded
** Expected births = 83% of pop. times 50/1000
*** Per thousand

Source: Bilan Annuel d'Activités ESV 1984

6. Rural Health System

Dosso Department - 1984

VHW Activities

On the average there are 1.4 consultations per rural person per year with each VHW treating 2.5 patients/day. Three major symptoms (fever, diarrhea and headache) represent 77% of the consultations, with 58% of this group being children under the age of 5 (73% for fever and headache and 27% for diarrhea). The number of major consultations per child (0-4 years) per year is 3 of which the number under 1 year is unknown. Reporting of deaths is low with only 11% of expected deaths being declared.

Table V.B.7
Rural Health System
Dosso Department 1984
VHW Activities

Population	820000
Rural Population	680600
Rural Children (0-4 years)	131696
Number of VHW's present	1041
Total Consultations	943997
Consultations/person/year	1.4
Consultations/VHW/day	2.5
Consultations (3 major symptoms)*	726834
Children (0-4 year)	419760
% of the consultations	58%
% = fever + headache	73%
% = diarrhea	27%
Consultation/child/year	3
Expected Deaths	17015
Declared deaths	1835
Percentage of deaths declared	11%

* Fever, diarrhea, headache/pain
Source: Rapport d'Activites - Dosso 1984

DIFFA DEPARTMENT INDICATORS

1. Health System Indicators
(1976-1985)

The average rate of population growth was 3.2%. The ratio of population to dispensaries is unchanged at 16667/1 and population to medicine distribution points is now 66667/1. The ratio of population to health personnel worsened by 33% for physicians, improved by 41% for state nurses and improved by 13% for certified nurses. The ratio of women of childbearing age improved by 78% from 37500/1 to 8333/1. The percentage of villages covered by VHT's rose from 11% to 37%.

Table V.B.8
Health System Indicators
(1976 - 1985)

DIFFA DEPARTMENT	1976	1985
Demographic Indicators		
Area		
Population	140216	140216
Population/Squares	150000	200000
Number of Villages	1	1.4
National Indicators		
Crude Birth Rate	50-55/1000	52/1000
Crude Death Rate	25-30/1000	25/1000
Crude Rate of Natural Increase	2.5%	2.7%
Infant Mortality Rate	200/1000	139/100
Infrastructure and Personnel		
Departmental Health Directorate	1	1
Departmental Hospital Center	1	1
Physician	2	2
State Nurse	2	8
Certified Nurse	3	11
Mid-Wife	1	2
Hygiene and Mobile Medicine Team		
Physician	1	0
State Nurse	1	2
Certified Nurse	2	3
Maternity	0	4
Mid-Wife	0	4
Medical Circumscription	3	3
Medical Post	0	3
Rural Dispensary	9	9
(MC+RD) State Nurse	5	8
(MC+RD) Certified Nurse	21	26
Popular Pharmacy	0	2
Medicine Depot	0	1
Villages with VHT's	62	206
VHWs trained	110	392
Population/Physician	50000	66667
Population/State Nurse	18750	11111
Population/Certified Nurse	5769	5000
Population/Mid-Wife	150000	33333
Percentage Villages covered	11%	37%

2. Rural Health System

TBA Activities

(Jan-June 1985)

With 279 active TBA, the ratio of rural women (14-49) to TBA equals 143/1. On the average 60/1000 of expected births are attended before delivery by a trained TBA. There are only 14 births recorded and 3 evacuations for every 100 TBA-months of activity.

Table V.B.9
Rural Health System
Diffa Department (Jan-June 1985)
TBA Activities

Population	200000
Rural Population	160000
Rural Children (0-4 years)	27200
TBAs present	279
Attended births*	228
Expected births	4000
Attended births per Expected births	60/1000
Births/TBA/month	0.14
Evacuations	49
Evacuations/TBA/month	0.03

* Births attended after delivery are excluded
Source: Rapport d'Activites - Diffa (Jan-June 1985)

3. Rural Health System

VHW activities (Jan-June 1985)

Table A.10

With 288 active VHW's the rural population to VHW ratio is 556/1. An average of 0.5 consultations per person per year occur with VHW's seeing less than one patient a day. The three major symptoms represent 56% of the consultations with children under 5 accounting for 47% of them (66% fever and headache, 34% diarrhea). An average of less than 1 major consultation per child per year is recorded. Only 3% of expected deaths are recorded.

Table V.B.10
Rural Health System
Diffa Department (Jan-June 1985)
VHW Activities

Population	200000
Rural Population	160000
Rural Children (0-4 years)	27200
Number of VHW's present	288
Total Consultations	39077
Consultations/person/year	0.5
Consultations/VHW/day	0.7
Consultations (3 major symptoms)*	21947
Children (0-4 year)	10289
% of the consultations	47%
% = fever + headache	66%
% = diarrhea	34%
Consultation/child/year	0.8
Expected Deaths	2000
Declared deaths	61
Percentage of deaths declared	3%

Source: Rapport d'Activites - Diffa (Jan-Juin 1985)

* Fever, diarrhea, headache/pain

4. Rural Health System

Coverage and Rates of Abandonment

The percentage coverage varies depending on the definition used. Village coverage of 31% breaks down to 38% and 8% when villages and nomadic tribes are separated. Rates of abandonment while only 27% on the average for VHW's become 73% and 10% when the northern and southern arrondissements are separated. Likewise for the TBAs 25% becomes 81% and 10%.

Table V.B.11
Rural Health System
Diffa Department - (Jan - June 1985)
Coverage and Rates of Abandonment

A. Diffa Arrondissement

Population	69000
Villages	215
Tribes	60
Villages Touched	81
Tribes Touched	5

COVERAGE

Villages	38%
Tribes	8%
Total	31%
Percentage of the Population	44%
Population/Village Health Team	970

B. Rate of abandonment: 3 arrondissements

1. VHWs

N'Guigmi	73%
Maine-Soroua + Diffa	10%
Total	27%

2. TBAs

N'Guigmi	81%
Maine-Soroua + Diffa	10%
Total	25%

Source: Rapport d'Activites - Diffa (Jan-Juin 1985)

Comparison of Diffa and National Averages

In general the population ratios to infrastructure and personnel in Diffa compare favorably with the national averages. One important problem is the higher population to physician ratio (66667 versus 41831) coupled with the fact that there is now no surgeon in the Department. Where Diffa is worse off than the national averages is in the productivity of the village health agents. All of the reasons for this are not known but probably include such factors as large numbers of empty medical kits, exodus of large numbers of people, and incomplete record keeping. The Diffa statistics also confirm the special difficulties encountered in delivering a viable rural health system to the nomads.

NATIONAL BASIC HEALTH STATUS INDICATORS

Earlier this year the MOH/SA with the help of the Tulane team conducted a national morbidity and mortality survey using questionnaires for villages and mothers, and doing physical examinations of children. In all, about 38 villages (divided into 3 ecologic zones), 1200 women and 3000 children were covered. The data have been coded, verified and computerized and are now ready for analysis by the MOH/SA and the Bureau of the Census in Washington, DC.

Since the data must be analyzed without the benefit of a pre-project baseline study, the results obtained may provide tentative estimates of morbidity and mortality but will probably be unable to answer the question of presence or lack of impact causally related to the rural health system during the life of the RHIP.

The following are but a few of the factors complicating the analysis:

1. Only 7 of the surveyed villages had no VHT or dispensary. Also given the increased mobility of the population in the drought years and health education campaigns on radio and television, it is unlikely that these villages are "uncontaminated" by the rural health system.

2. The small number of villages means that the possibility of controlling for possible confounding variables will be very limited.
3. The question of how some villages acquired VHT's and others did not is not known. Perhaps the relevant variables include distances from the nearest health center, the dynamism of the village chief and the openness of the population to modern medicine.
4. The strength and integrity of the rural health program certainly varied in the villages with VHT's in the areas of the quality of the initial information given, the types of candidates chosen, the quality of training, the status of the medical kits and the frequency and quality of the supervisory visits.
5. If we accept the hypothesis that the rural health system has functioned in a less than optimal manner in the last 7 years, then it is reasonable to assume that any effect would have been a small one. If this is the case, the small sample size (originally 200 villages were suggested) of the survey may increase the chance of failure to detect small changes that have occurred. In the language of the statisticians, the "power" of the survey to detect such changes may be too low.

CONCLUSION

The WHO global indicators show that the GON's political commitment to rural health care remains firm. Areas in need of special strengthening include the budget of the MOH, rural sanitation, immunization coverage and literacy rates, especially of women.

Health structure and personnel indicators show that Niger had made considerable progress in increasing access of the rural populations to health services. Little is known about the quality of the services and although villagers generally express satisfaction with their VHT's, they have yet to become effective participants in support of the system. Finally, the morbidity and mortality study will produce some basic health indicators but will probably be unable to show causal links related to the presence or absence of contact with the rural health system.

C. Community Participation and Development Activities in Niger

Social responsibility and mutual aid have existed historically in Niger's traditional cultures. The creation of the Society of Development is aimed at the strengthening of community efforts to address all of its problems, including health. The organizational diagrams of the Society of Development and its relationship to the Samariya (youth organization) and the cooperatives are presented in Figures V.C.1 and V.C. 2. Included among the socio-professional organizations are the Nigerien Womens' Association (AFN), the Islamic Association, and the Association of Parents of School Children. Village development committees have played a positive role in the coordination of emergency food distribution activities.

The realization of dynamic community participation and self-reliance will not be easy as village committees (for health and other sectors) and cooperatives in the Sahel have rarely had sustained success. An additional challenge to increased community participation in Niger will be achievement the right balance of centralization and decentralization of the decision-making processes as the Government of Niger seeks to encourage more local initiative. The questions in this area are complex and need intensive study.

Figure V.C.1
DEVELOPMENT SOCIETY: STRUCTURE

PCMS
Chief of
State

Government

CNSD
5 Representatives CRD
7 Rep. per National
Office of the Socio-

Professional Associations
CRD
Prefet + 15 to 30
Member chosen by CSRD

CSRD
Sub-prefet or Mayor +
12 to 30 members chosen
by local councils

CLD
Chief of canton or groupement
+ 20 to 30 members chosen by
Village or tribal councils

CVD
Village or tribal chief +
**representatives of socio professional
association**

Population

Source: Commission Nationale pour la Mise en Place
de la Société de D(-GL-)Développement. p. 46

Figure V.C.2.

DEVELOPMENT SOCIETY: PARTICIPATING STRUCTURES

LEVELS	SAMARIYA STRUCTURES	DEVELOPMENT STRUCTURES	COOPERATIVE STRUCTURES
Nation	National Council (CNS)	Nation Council (CNSD)	Nation Union (UNC)
Department	Regional Council (CRS)	Regional Council (CRD)	Regional Union (URC)
Arrondissement	Sub-Regional Council (CSRS)	Sub-Regional Council (CSRD)	Sub-Regional Union (CSRC)
Canton or Groupement	Local Council (CLS)	Local Council (CLD)	Local Union (ULC)
Village, Tribe or Quarter	Samariya	Village Council (CVD)	Mutual Village Group. (CMV)

Source: Commission Nationale de Mine en Place
de la Société de Développement p. 47.

ECONOMIC AND FINANCIAL ANALYSIS

A. ECONOMICS OF THE HEALTH SECTOR^{1/}

This section begins with a summary of Niger's overall macro-economic situation and highlights those parameters which constrain, or otherwise impact on the ability of the government or private sector to provide health services. Information follows about trends in, and the allocation of, government health sector investment and recurrent expenditures, private health expenditures and donor expenditures in the health sector. The section concludes with a description of the major sectoral policy issues arising as a consequence of economic and financial constraints.

A.1. Macro-Economic Context

The Rural Health Improvement Project (RHIP) activities commenced under the relatively favorable economic circumstances that accompanied the uranium boom from 1975 to 1980. GDP and GDP per capita real growth was over 5 percent per annum. However, as noted in the Mid-Term Evaluation, Niger's economic prospects declined in 1981 with the decrease in the world price of uranium, and return of several years of drought which affected both agricultural and livestock production levels. GDP and GDP per capita real growth turned negative in the early 1980's (see Annex D, Table D.1). World uranium prices are not expected to increase in the foreseeable future, and the projected rate of GDP growth for Niger for the rest of the decade is low. Per capita income growth will probably stagnate during this period with estimated population growth rates of 2.7 to 3.2 percent per annum.

^{1/} Many activities are related to good health, e.g. agricultural production and distribution, and nutritional status; safe water supplies and sanitary waste disposal; women's education and employment; and preventive and curative services provided by health personnel and facilities. For purposes of this economic and financial analysis, the health sector is defined as activities related to the provision of preventive and curative services by health personnel and facilities in the public or private sector.

The uranium boom of the late 1970's contributed to the real growth of government revenues of 23 percent from 1978 to 1981. However, government expenditure expanded even more rapidly during this period, almost 74 percent in real terms. This resulted in an over two-fold increase in the government's budgetary deficit, which was 61.2 billion CFA francs in 1981. The Ministry of Finance (MOF) and International Monetary Fund (IMF) projected this deficit to decline to about 42 billion CFA francs by 1985 (see Annex D, Table D.2).

Niger has financed a significant proportion of its debt from foreign sources, and outstanding and dispersed external debt reached 46 percent of GDP in 1983, and the ratio of public debt service payments to export earnings and private transfers equaled 33 percent (see Annex D, Table D.3).

A.2. Government of Niger Investment in the Health Sector, 1978-1985

The Five Year Plan for Economic and Social Development, 1979-1983, indicated that the Government of Niger planned to allocate 5 percent of public investment to the health sector. However, actual public investment in the health sector was only 2 percent of total public investment, and only 43 percent of the planned level for health. This ratio of actual to planned investment was lower than for all other sectors (see Annex D, Table D.4). Government of Niger health sector investments were to be for the construction of 118 dispensaries, 14 PMIs, 16 maternities, 8 MCs, and one departmental hospital at Zinder (Five Year Plan, p. 409). Thus, the inability of the Government of Niger to reach investment targets may partially explain the current imbalance between infrastructure and peripheral health workers.

Further, even though the Government of Niger indicated that it planned to allocate 4 and 5 percent of public investment funds to the health sector in 1984 and 1985, there was no public investment in the health sector in 1984 due to the collapse of the National Development Fund (FNI). This resource allocation decision may in part be due to the current and anticipated availability of external resources for health sector investment.

A.3. Analysis of the MOH/SA Budget

Information on the MOH/SA budget for 1978-84 appears in Table IV.A.1. As noted above, the Government of Niger health sector investment expenditures comprised about 2 percent of total public expenditure until 1983, when health investment expenditures dropped to zero. The recurrent budget for the MOH/SA has remained a steady 6 to 7 percent of total government recurrent expenditure, but since 1980 has remained relatively constant in real terms in spite of increases in the number of health personnel and facilities. Thus, total Government of Niger expenditures for the health sector declined in real terms by 32 percent from 1980 to 1984. This downward trend is even steeper when considering Government of Niger health expenditure per capita. Real expenditure per capita peaked in 1980 and by 1984 had declined by 39 percent. If Niger's population is growing faster than the official rate of 2.7 per annum, this decline would be even steeper. Government per capita expenditures for health in 1984 were 310 FCFA (US \$0.75).

Information about the allocation of the MOH/SA budget to particular functional categories from 1978 to 1985 appears in Table IV.A.2. The allocation of the budget to salaries (50 percent), operating expenses (11 percent), transport (9 percent) and medicines and vaccines (28 percent) is shifting with an increasing proportion of available budgetary funds being required for fixed salary obligations at the cost of financing other recurrent expenditures. A study prepared as a background document for a World Bank Structural Adjustment Credit (SAC) to Niger estimated the recurrent costs associated with Niger's current health manpower development plan to 1989. At 900 million FCFA, this amount was added to current salary expenditures and compared to three projections of the MOH/SA budget in 1989 assuming annual increases of 1.5, 5 and 8.5 percent. Under these scenarios salaries as a percent of the total budget was 66, 57 and 50 percent respectively.^{1/} In view of the stagnation of the recurrent health budget in real terms, this analysis suggests that current training plans will continue to shift government resources to salaries at the expense of budget for materials, transport and medications.^{2/}

^{1/} MOP et MSP/AS. Analyse de la Formation Medicale et Paramedicale au Niger. Mars 1985. pp. 21-21.

^{2/} It should be noted that the current allocation of Niger's health budget between salary and other expenses is unusual. In many developing countries 70 to 80 percent of the public health budget is expended for salaries.

Detailed information about the allocation of the overall MOH/SA budget to urban as compared to rural areas, or for preventive as compared to curative activities was not available. However, the available information can be pieced together to provide some sense of these allocations. For example, Table VI.A.3. shows the breakdown of the MOH/SA non-salary budget for administration, hospital and departmental health activities from 1983 to 1985. About 43 percent of this non-salary budget is allocated for Niamey, Zinder and tuberculosis hospitals. Coupled with the fact that 51 percent of the MOH/SA's personnel budget goes to the Niamey and Zinder hospitals, one can conclude that approximately half of the MOH/SA budget goes to the Niamey and Zinder hospitals for curative services and urban populations.

Information about allocation of the MOH/SA budget by departments to tertiary and secondary/primary levels, and on a per capita basis appears in Table IV.A.4. Although information was not collected on the MOH/SA's criteria to determine the departmental allocation of the MOH/SA budget, it is likely that the allocation of funds is determined in large part by the distribution of the fixed costs of infrastructure and personnel. Thirty-two to 60 percent of departments' budgets go for hospital-related care. The departments with national hospitals, Niamey and Zinder have the highest percents of their budgets for hospital care. Forty to 60 percent of department's budgets go for secondary or primary services. Less than 10 percent is allocated to the MCH services provided by PMIs.

Departmental per capita allocations of the MOH/SA budget range from 72 CFA francs in Dosso to 408 in the Niamey department, with per capita expenditures higher than the mean expenditure of 187 CFA francs in the Agadez, Diffa and Niamey departments. Total MOH/SA expenditures per capita are all under 100 CFA francs in the other four departments. Expenditures of department budgets per capita for non-hospital care range from a low of 48 CFA francs in Dosso to a high of 203 CFA francs for residents of Agadez. In Diffa and Niamey departments, over 100 CFA francs per capita is spent for non-hospital services, and from 50 to 60 CFA francs per capita in the other departments. Finally, departmental allocations of PMI expenditure per

TABLE VI.A.1

ANALYSIS OF MOH/SA BUDGET^{1/}
1978-1984

	1978	1979	1980	1981	1982	1983	Proj. 1984
<u>TOTAL GON EXPENDITURE^{2/}</u>	59.2	74.1	107.4	140.8	121.2	118.8	104.9
Capital	27.7	36.4	59.6	89.1	62.5	55.7	37.4
Recurrent	31.5	37.7	47.9	51.7	57.7	63.1	67.5
<u>TOTAL BUDGET MOH/SA - Current^{3/}</u>	2.7	3.7	4.6	4.6	5.4	4.4	4.5
Capital (FNI only)	0.5	1.0	1.6	1.2	1.6	0	0
Recurrent	2.2	2.7	3.0	3.4	3.8	4.4	4.5
<u>TOTAL BUDGET MOH/SA - Real^{4/}</u>	2.0	2.6	2.8	2.5	2.7	2.0	1.9
Capital	0.4	0.7	1.0	0.6	0.8	0	0
Recurrent	1.6	1.9	1.8	1.9	1.9	2.0	1.9
<u>MOH/SA BUDGET AS PERCENT OF GON EXPENDITURE</u>	4.6	5.0	4.3	3.3	4.5	3.7	4.3
Capital	1.8	2.7	2.7	1.3	2.6	0	0
Recurrent	6.7	7.2	6.3	6.6	6.5	7.0	6.7
<u>REAL ANNUAL CHANGE IN MOH/SA BUDGET (%)</u>		30.0	7.7	-10.7	8.0	-25.9	-5.0
Capital		75.3	42.9	-40.0	33.0	-100.0	0
Recurrent		18.8	-5.3	5.6	0	5.3	-5.0
Total Per Capita		23.4	6.5	-11.7	4.0	-28.6	-7.5
<u>MOH/SA EXPENDITURE PER CAPITA^{5/}</u>							
Current CFA Francs ^{3/}	515	685	830	820	930	730	730
Real 1976 CFA Francs ^{4/}	385	475	506	447	465	335	310

- Sources: 1/ Billion CFA Francs
 2/ Toh, K. Recent Macroeconomic Developments in Niger: Country Situation, Policy and Outlook, Niamey: USAID, April 1984, Table A.II.
 3/ MSP/AS. Rapport d'Activités du MSP/AS - 1984, Tableaux III 1.3, 1.4, 1.8.
 4/ Current figures deflated with implicit GDP deflator, index year = 1976 from Toh, K., op. cit., Table A.1.
 5/ Assumes a population growth rate of 2.7 per-cent per annum.

TABLE VI.A.2

FINANCIAL DISTRIBUTION OF MOH/SA BUDGET
1978-1984

Year	MOH/SA Budget (000 CFA)	MOH/SA Budget (Real 1976 CFA)	% Real Annual Change	Personnel (%)	Medicines & Vaccines (%)	Transport (%)	Operating Funds (%)
1978	2.210.500	1.650.250	—	48	24	10	18
1979	2.665.800	1.849.965	12	45	30	10	15
1980	3.039.600	1.853.415	0	45	31	10	14
1981	3.448.500	1.879.292	3	49	29	9	13
1982	3.812.400	1.905.247	1	51	29	8	12
1983	4.366.500	1.991.047	5	53	26	8	12
1984	4.455.500	1.893.540	- 5	54	26	8	12
1985							

Source: MSP/AS, Rapport d'Activités du MSP/AS - 1984, Tableaux III, 1.3, 1.4, 1.8

TABLE VI.A.3
DISTRIBUTION OF MOH/SA OPERATING BUDGET^{1/}
1983-1985

<u>ADMINISTRATION</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Cabinet and Central Services	56.5	59.3	80.7
ENSP	23.5	24.5	34.8
ENICAS	25.5	26.5	42.1
SERAA	8.0	8.0	8.0
SERPA	14.0	11.9	11.9
World Health Organization	4.5	4.5	4.5
Medicines (1% of total)	9.5	9.5	9.5
Gasoline (33% of total)	54.5	54.5	59.4
<u>Total:</u>	<u>196.0 (10%)</u>	<u>198.6 (10%)</u>	<u>251.0 (11%)</u>
 <u>HOSPITAL SERVICES</u>			
Ninney Hospital	190.5	134.7	249.0
Zinder Hospital	32.7	54.5	80.9
Tuberculosis Centre (CNAT)	19.3	19.3	36.6
Building Maintenance	26.0	26.0	30.0
Transport and per diems	90.0	90.0	90.0
Medicines (5% of total)	522.5	522.5	522.5
Gasoline (9% of total)	9.9	9.9	10.8
<u>Total:</u>	<u>910.9 (45%)</u>	<u>886.9 (42%)</u>	<u>1,017.8 (43%)</u>
 <u>DEPARTMENTAL SERVICES</u>			
CHD and DDS	61.5	63.6	114.5
PMI, MC, RD	155.5	155.0	190.6
EDDM	27.2	24.8	42.4
Vaccines	200.0	200.0	200.0
Medicines (44% of total)	418.0	418.0	418.0
Gasoline (51% of total)	100.7	100.7	109.8
<u>Total:</u>	<u>962.9 (47%)</u>	<u>962.1 (47%)</u>	<u>1,075.3 (46%)</u>

^{1/} Billion current CFA francs: Figures do not include personnel expenditures.

TABLE VI.A.4

ALLOCATION OF FUNDS FOR FIXED DEPARTMENTAL HEALTH UNITS
1984

Depart- ment	Total Budget (000 CFA)	Hospitals %	DDS + MC %	PMI %	Total Non-Hospital Expenditures (000 CFA)	Population	Per Capita Non-Hospital Expenditures (CFA)	Pregnant Women (000 CFA)	PMI Expenditures Pregnant Woman (CFA)
Agadez	56,004	46	50	4	30,516	150,600	203	7,530	353
Diffa	54,452	45	49	6	29,864	201,700	148	10,085	296
Dosso	59,769	32	64	4	40,431	835,300	48	41,765	46
Maradi	106,292	42	54	4	61,754	1,144,400	54	57,220	71
Niamey 612	575,541	54	38	8	251,961	1,412,0400		186	70,602
Tahoua	103,718	36	61	3	66,680	1,197,300	56	59,865	60
Zinder	192,107	60	36	4	77,640	1,207,600	64	60,380	152
TOTAL	1,147,883	50	44	6	568,846	6,149,100	93	307,455	220

Note: The number of pregnant women was estimated as 50 per 1000 population.

Population estimates derived by using 1977 census figures plus 2.7% annual rate of increase

Source: MOH/SA, Rapport d'Activités du MSP/AS - 1984, Tableaux III, 1.7.

pregnant woman mirrors the pattern observed for non-hospital expenditures, i.e., expenditures in the Agadez, Diffa and Niamey departments are all above the national average of 220 CFA francs, and the other departments below this amount. MOH/SA per capita expenditures in Dosso may be low because of inputs from several Belgian health projects. Per capita expenditures in the Agadez and Diffa departments are high because of their small population size relative to the fixed costs of providing health services.

A.4. Private Expenditures for Health

Nigeriens pay for health services supplied by both the public and private sectors. Their support for public sector services primarily comes from tax revenues. In addition, hospitals collect fees for a variety of services, VHAs are to sell the medications in their kits, and TBAs are given payments in cash or in-kind for their services. Further, the limited supply of drugs at public health facilities has resulted in a system whereby some patients are given prescriptions to be filled at popular pharmacies or private drug depots. In addition, patients can go directly to those outlets to purchase drugs sold over-the-counter. Finally, payments in-cash or kind are made for the services of traditional healers. More detailed information on private expenditures for health services can be found in Section C.

A.6. Policy Dialogue

The difficult macro-economic situation of Niger has profound implications for the levels and growth of government investment and recurrent expenditures for the health sector. The slowed growth of government revenues and expenditures, reduced health sector investment to less than half of planned targets for 1979 to 1983, and the collapse of the FNI completely eliminated public investment funds allocated to the health sector. Recurrent expenditures have remained a relatively constant proportion of total government recurrent expenditure, but have not increased in real terms since 1980, in spite of increases in health personnel and facilities. Total government real per capita expenditure has declined by 39 percent as a consequence of the decline of the MOH/SA budget and population growth.

The implications of the above have not been lost on the Government of Niger and external donors involved in the health sector. The "Debat de Maradi" in 1983 and the "Journées d'Etudes a Agadez" in 1984 were national health policy dialogues that focused on issues of financing for health sector activities and improved drug distribution (see "Cost Recovery and Beneficiary Contributions" discussion, Section C, and Chapter VII.) The World Bank has included several health policy issues in its Structural Adjustment Credit (SAC), including: the need to reduce GON plans for manpower training (especially physicians), and facility construction; the need to recoup part of the costs of providing health services through user fees at all levels of health services; the high cost of medical evacuations to Europe; the disequilibrium in the allocation of the health care budget for curative as compared to preventive health care, for urban as compared to rural populations, and for health personnel as compared to other operating expenditures. Many of these issues are being considered as areas for policy dialogue in future USAID/N health sector assistance.

B. RECURRENT COSTS OF THE RHIP PROJECT

In light of the preceding discussion on the current difficulties of the Nigerian economy in general, and of the health sector more specifically, it is necessary to see if a comparison of ex-post estimates of the recurrent costs of the RHIP with MOH/SA budgetary resources is as optimistic as estimates made during project design or subsequent to the mid-term evaluation. The following section will 1) review the Project Paper and Revised Implementation Plan estimates of project recurrent costs, 2) re-estimate the recurrent costs of the project as of June 1985, and 3) compare these with available MOH/SA budget resources. Subsequent sections of this chapter will discuss means available to reduce the recurrent cost financing gap including: reallocation of the MOH/SA budget, cost recovery, cost reduction, slowed rates of investment, and donor financing of recurrent costs.

B.1. Project Paper and Revised Implementation Plan Recurrent Cost Estimates

The Project Paper for the RHIP estimated that the additional recurrent costs of the project to the MSP/AS at the end of the project in 1983 would be 263,000,000 FCFA for salaries or retraining support to the new personnel trained by the project. This sum was equivalent to 30 percent of the MSP/AS's 1977 budget for personnel, and 14 percent of the total MSP/AS budget for 1977. Assuming a project life of 5 years, the total budget of the MSP/AS would have to grow in real terms by 5.4 percent per year in order to absorb these recurrent costs at PACD. Although the analysis did not compare this growth rate with the historical trend from 1973 to 1977, the authors concluded that,

"Given a continuation of the present boom in uranium revenues, and continuation of the GON's increasing support to the health system... the MOH can manage the additional recurrent costs generated by this project". (Project Paper, p. 35).

Unfortunately both of these assumptions failed to hold true as the fall of world uranium prices in 1981 has led to a real decline in public revenue of 25 percent by 1984, and the allocation of government expenditure to the health sector has declined from 8 percent in the early 1970's to 5.5 percent in 1984. In addition, the Project Paper did not include estimates of the recurrent costs of salaries for new garage mechanics and lab technicians; for supervision of new VHTs; for depreciation and maintenance expenses of new construction, vehicles, mobyettes, immunization, A-V and lab equipment; and for continuation of drug and vaccine resupply. Furthermore, the analysis did not carefully assess prior experience with the resupply of VHT drugs through direct sales to the villagers, nor the re-stocking of VHT kits through purchases from MSP/AS facilities, Popular Pharmacies and private drug depots.

In spite of recognition in the Mid-Term Evaluation that revenue from uranium sales had dramatically declined, the evaluation concluded that this change had only had a "limited" impact on project activities, but that the issue of recurrent costs would have to be continuously monitored over the life of the project. The evaluation recommended extension of the project and expansion of some of the project outputs, particularly in the area of training. For a comparison of the specific target outputs see Table VI.B.1.

The Revised Implementation Plan developed a more thorough quantification of the recurrent costs of the revised RHIP project. These estimates were as follows:

<u>Item</u>	<u>Estimated Annual Recurrent Cost - 1985 (FCFA)</u>
Salaries	275,380,000
In-Service Education	160,000,000
VHT Recyclage	56,000,000
VHT Supervision	23,100,000
Vehicle Maintenance	2,263,000
Construction Maintenance	6,600,000

TOTAL	523,343,000

This total represented a 15 percent increase in the MOH/SA budget for 1981, and would imply that the budget of the MOH/SA would have to increase in real terms by 3.5 percent per year (for the 4 years from 1981 to 1985) in order to absorb these additional recurrent costs. The MOH/SA budget had increased in real terms by about 8.5 percent per annum from 1979 to 1981, and the economic analysis of the RIP concluded that:

"Because of the historical and continued GON commitment to rural health, and recent evidence of absorbing newly trained medical personnel funded by the project, the MOH would be expected to be able to manage the additional recurrent costs generated by the revised plan." (Revised Implementation Plan, p. 34).

Although both the above economic analyses determined that the MOH/SA would be able to pick up the recurrent costs of project activities, several assumptions or factors have changed which indicate a re-evaluation of this question. These factors include:

- A decline in the total MOH/SA budget in real terms of approximately 24 percent between 1981 and 1984, with the recurrent budget remaining constant over the same period. (see Table VI.A.1).
- Increases in the number of ENSP or ENICAS students, or VHTs trained beyond the targets envisioned in the revised project design,
- The project did not require the MOH/SA to gradually assume the recurrent costs of VHT retraining and supervision activities over time.
- The system of selling drugs from VHT kits to provide funds for drug resupply is not working. (see discussion in Chapter VII).

A recalculation of the project recurrent costs follows below.

B.2 Evaluation Estimates of the Recurrent Costs of Non-VHT Components

The evaluation scope of work indicated that the recurrent cost analysis should focus on estimation of the VHT-related components of the project.

Thus, a complete re-estimation of the recurrent costs of the other components of the project was not undertaken. However, data were available from a variety of sources to allow for estimation of the annual recurrent costs of most non-VHT components (with the exception of the MOH/SA warehouse; vehicle and medical repair, A-V, and cold chain equipment; and vaccines). The estimated total annual recurrent cost of project non-VHT components in 1985 is 418,259,300 FCFA (U.S. \$929,465).^{1/} This total is distributed among various categories as follows:

	<u>FCFA</u>	<u>%</u>
Salaries	335,592,000	80%
Seminars/Conferences	34,960,000	8%
Building Maintenance	17,100,000	4%
Vehicle Maintenance	<u>30,607,300</u>	<u>7%</u>
 TOTAL	 418,259,300	 100%

Assuming the project supports one additional year of scholarship support at ENICAS and ENSP, and that one-third of the students have been supported by the project during the previous two years and graduate in Spring 1986, this will result in 418 new certified nurses and sanitary agents and 13 new state nurses. The additional recurrent salary cost will equal 28,476,000 FCFA, bringing total project salary related recurrent costs to 364,068,000 FCFA or 82 percent of the new project total of 446,735,300 FCFA.

Discussion of these non-VHT component recurrent costs with respect to the MOH/SA budget will follow the next section which estimates VHT-related recurrent costs.

^{1/} Assuming 460 FCFA = U.S. \$1.00

TABLE VI.B.1
ESTIMATE OF RECURRENT COST OF NON-VHT PROJECT OUTPUTS

OUTPUT	PP QNTY	RIP QNTY	ACHIEVEMENT JUNE 1985	ESTIMATED ANNUAL RECURRENT COST	
				UNIT	TOTAL COMPONENT
<u>HUMAN RESOURCES</u>					
Long term training	25	n.a.	70	Proj trained existing MOH/S personnel	
Certified Nurses	200	300	340	408,000 ^{1/}	138,720,000
State Nurses	100	140	180	684,000 ^{1/}	123,120,000
Sanitation Agents	75	45	125	408,000 ^{1/}	51,000,000
Auto-Mechanics	50	5	n.a.	432,000 ^{1/}	2,160,000
Bio-med. Technicians	50	4	30	686,400 ^{1/}	20,592,000
Medical Students	25	0		component dropped in RIP	
Departmental Seminars	175	n.a.	37	-	3,360,000 ^{2/}
National Conferences	5	n.a.	18	-	31,600,000 ^{3/}
<u>INSTITUTIONAL DEVELOPMENT</u>					
DDS Complexes-off/gar	2	2	2	3,300,000	6,600,000 ^{4/}
Dispensaries					
- New	7	7	7	1,500,000 ^{5/}	10,500,000 ^{6/}
- Renovat/equip	220	n.a.	70	-	
- Sanit Improve	220	n.a.	14	Information not collected	
			270	Information not collected	
				H ₂ O filt: 270	
Warehouse	0	0	1	Information not collected	
Vehicles	42	34	32	457,400 ^{6/}	14,636,800
Mobylettes	200	100	91	175,500 ^{7/}	15,970,500
Garage equip	(list)			Purchased but not installed	
Medical Repair equip	(list)			Information not collected	
A-V equipment	(list)			Information not collected	
Cold chain equip	(list)			Inputs not provided, lack F plan	
Vaccines- full vaccination for 500,000				Inputs not provided, lack F plan	
TOTAL					418,259,300

n.a. - information not available

NOTES TO TABLE VI.B.1

1/ Monthly salary figures for 1985 were provided by the MOH/SA. These salary figures were for personnel newly entering public service and include the base salary, plus a housing adjustment minus a retirement fund contribution.

	<u>FCFA/month</u>
Certified Nurses	34,027
State Nurses	57,029
Sanitation Agent (D1)	34,107
(D2)	31,919
Automechanic (5)	31,070
(6)	35,952
(7)	40,026
Bio-medical Equip Technician	57,209

Monthly figures were rounded off and multiplied by 12 for estimates of annual salaries. When more than one salary category existed for any level of personnel, the median or highest figure was selected.

2/ The annual recurrent cost of departmental seminars was calculated as follows:

7 depts x 20 participants/dept x 4 qtrs x 3 days/qtr x 2000 FCFA/day =
3,360,000 FCFA

from: MSP/AS. Bilan Annuel d'Activites ESV, 1984. Avril 1985, p. 10.

3/ The "Debat de Maradi" in 1983 cost 25,000,000 FCFA for 211 participants, and the "Journées d'Etudes a Agadez" in 1984 cost 25,617,890 FCFA for 150 participants. In addition, the project financed approximately 2 national conferences per year of about 30 persons each at an average cost of 110,000 FCFA per person (see Table IV.A.5). For purposes of this analysis, it was assumed that this level of conference activity would continue post-project, giving a total annual recurrent cost of:

	<u>FCFA</u>
National Policy Conference or "Journées d'Etude"	25,000,000
2 national seminars	<u>6,600,000</u>
TOTAL	31,600,000

4/ The RIP estimates of 3,300,000 FCFA per DDS were utilized.

5/ Unlike the DDS complexes where project-related recurrent costs are solely for maintenance of the new building, the 7 dispensaries constructed with project funds are newly installed capacity, and thus their total recurrent cost must be included. Tankari et al, 1983 estimated the annual recurrent costs for a dispensary in 1982 (n=11) at:

	<u>FCFA</u>
Personnel	1,059,000
Operating Budget	35,000
Medicines	977,000
Food	86,000
Transport	23,000
TOTAL	<u>2,180,000</u>

Other estimates were reported by P. Boyle in 1985 for a sample for 4 dispensaries (2 in Filingue, 2 in Tessaoua):

	<u>FCFA</u>
Personnel	748,029
Maintenance	136,005
Medicines	612,024
Equipment	136,005
Depreciation	408,016
Other	226,676
TOTAL	<u>2,266,756</u>

For purposes of this analysis, it was assumed that the recurrent cost of a dispensary is 2,500,000 FCFA. The reader must bear in mind that these are under-estimates of the true recurrent costs of dispensaries because the demand for drugs far exceeds available government supply, and many other inputs are inadequately supplied. It was assumed that the personnel who staffed the new dispensaries were drawn from those trained by the project. Thus, an estimate of these salaries of 1,000,000 FCFA per dispensary was subtracted from the total 2,500,000 FCFA figure to give a net additional recurrent cost per dispensary of 1,500,000 FCFA.

6/ Several figures exist for the annual maintenance costs for 4-wheel drive vehicles in Niger. These estimates vary with: 1) vehicle type, 2) type of maintenance plan, 3) vehicle use (terrain, etc.):

	<u>FCFA/vehicle</u>
Belgian project - Dosso	153,000
Tankari et al -1983	273,000
RHIP evaluation - 1985	268,000-555,000

Given this wide range of estimates, an average of the current maintenance expenditures in the 7 departments was selected (see Table IV.B.4), and equalled 457,400 FCFA.

7/ The Project Paper estimated the maintenance costs per mobylette in 1978 to be U.S. \$200.00. Assuming an annual inflation rate of 10 percent, this would equal U.S. \$390 in 1985, or 175,500 FCFA (U.S. \$1.00 = 450 FCFA).

B.3 Estimates of the Recurrent Costs for VHT-Related Activities

Several authors have made hypothetical estimates of the recurrent costs of the VHT program in Niger based on assumptions about the type and quantity of inputs required to carry out the project. The results of these studies are summarized below.

Ministry of Health-Chad

In 1978, a mission from the Ministry of Health and Social Affairs in Chad^{1/} visited Niger to conduct an evaluation of the VHT program. Their report included an estimation of the investment and recurrent costs of the VHT program for Niamey Department (see Table VI.B.2 column I). In summary, their estimates of the average annual investment and recurrent costs per VHT in the Niamey department were:

Animation:	62,000 FCFA
Training & Drug kit:	101,000 FCFA
Retraining:	25,333 FCFA ^{2/}
Supervision:	32,000 FCFA

TOTAL INVESTMENT COST/VHT= 163,000 FCFA
TOTAL RECURRENT COST/VHT= 57,333 FCFA
R COEFFICIENT^{3/} = 0.35

Boukari, Tankari and Wright

Estimates of the average annual investment and recurrent costs of the VHT program in the Niamey department in 1978 were also made by Boukari (1979) Tankari (1979) and Wright (1979), and reported in a paper by Mead Over of Boston University (see Table V.B.2, column II). In summary, these estimates are:

Animation:	23,418 FCFA
Training & Drug kit:	125,196 FCFA
Retraining:	22,399 FCFA ^{2/}
Supervision:	34,130 FCFA

TOTAL INVESTMENT COST/VHT= 148,614 FCFA
TOTAL RECURRENT COST/VHT= 56,529 FCFA
R COEFFICIENT = 0.38

Over-Boston University

Over (1985) modified the Boukari, Tankari and Wright estimates given above in order to estimate the investment and recurrent costs of a nation-wide VHT program. He assumed that average costs would rise as the program was implemented in more remote, less densely populated parts of the country.

In summary, his estimates (see Table VI.B.2, column 3) are:

Animation:	109,580 FCFA
Training & Drug kit:	162,672 FCFA
Retraining:	34,691 FCFA ^{2/}
Supervision:	75,803 FCFA

TOTAL INVESTMENT COST/VHT= 272,252 FCFA
TOTAL RECURRENT COST/VHT= 110,494 FCFA
R COEFFICIENT = 0.41 ^{3/}

-
- ^{1/} Including Erna Kerat, USAID/N and Peter Knebel, consultant.
^{2/} Assuming VHTs are retrained every 3 years.
^{3/} Ratio of recurrent to investment expenditures.

TABLE VI.B.2
ESTIMATES OF AVERAGE COST PER VHT (in FCFA)

	MSP/AS TCHAD ^{1/} FOR NIAMEY DEPT	OVER ESTIMATES ^{2/} FOR NIAMEY DEPARTMENT 1978/79	OVER ESTIMATES [#] EXPANDED PROGRAM 1978/79
	1978		
ANIMATION			
Salaries	25,080 - 54,000	8,778	29,260
Per Diem	5,460 - 12,600	1,740	5,800
Transport	5,000	12,600	73,920
Vehicle Maintenance	8,000		
Other	300	300	600
TOTAL	43,840 - 79,900	23,418	109,580
TRAINING (14 days)			
Salaries	8,340 18,600	16,980	32,760
Per Diem	104 240	216	432
Trainees-Rations	56,000	39,200	39,800
Secouriste Kits(2)	30,000	58,000	58,000
Matrone Kits (2)	8,000		
Transport	3,000	11,400	31,680
Vehicle Maintenance	4,000		
Other	1,000	-	-
TOTAL	110,444 - 120,840	125,196	162,672
RETRAINING (14 days)			
Salaries	8,340 18,600	5,460	10,920
Per Diem	104 240	72	144
Trainees-Rations	56,000	13,067	13,067
Transport	3,000	3,800	10,560
Vehicle Maintenance	4,000		
TOTAL	71,444 - 81,840	22,399	34,691
SUPERVISION			
Salaries	11,216 - 18,807	18,599	37,198
Per Diem	2,612 - 5,818	3,474	6,947
Transport	7,846	11,957	31,457
Vehicle Maintenance	4,914		
Other	700	100	200
TOTAL	26,588 - 38,085	34,130	75,803

Sources:

1/ MSP/AS/TCHAD. Evaluation du Programme des Equipes de Sante Villageoises de la Republique de Niger, September 1978. Details behind assumptions for estimations are shown in original report.

2/ Over, Mead. "The Effects of Scale on Cost Projections for a Primary Health Care Program in a Developing Country (Niger): Social Science and Medicine, forthcoming, Table 1.

3/ Ibid., Table 3.

Evaluation Estimates

The foregoing estimates cannot be utilized without modification for estimation of the recurrent costs of the VHT program in 1984. For example, domestic cost estimates for the 1978 studies would have to be inflated to represent 1984 costs, and the cost of imported items such as petrol would have to be adjusted for inflation and the decline in the exchange value of the CFA. Further, interviews with the DDS Adjoint In-Charge of the VHT programs in Agadez, Diffa and Zinder, indicate that the 1978 studies over-estimated: 1) the actual amount of time that MOH/SA personnel spend in animation and supervision activities, and 2) the actual number of trips made to villages for animation and training activities. Further, these estimates do not illustrate how the average investment or recurrent costs may vary with different departmental population density/dispersion and terrain.

Insufficient information is available to allow for estimation of the recurrent costs of the VHT program if it operated according to design plans, i.e. if there were adequate numbers of personnel and facilities to match the ideal ratios of MCs and dispensaries to VHTs and adequate personnel, vehicles and petrol to follow the prescribed frequency and duration of supervisory visits. What follows below is an estimation of the investment and recurrent costs of the VHT program as it actually operated in 1984 in the 7 departments of Niger. Table VI.B.3 shows the actual expenditures of the MOH/SA in support of VHT animation and training activities in 1984. The average expenditures per VHT by department were as follows (in order of increasing expenditure):

<u>DEPARTMENT</u>	<u>ANIMATION AND TRAINING EXPENDITURE PER VHT (FCFA)</u>
Zinder	95,288
Maradi	116,840
Donso	130,332
Niamey	133,876
Tahoua	138,176
Diffa	173,708
Agadez	<u>336,400</u>
NATIONAL AVERAGE	124,068

Examination of these figures suggest that the average cost for VHT animation and training rises with the difficulty of terrain and distance travelled, and varies inversely with the number of VHTs trained. The much higher average cost per VHT trained in Agadez also results from the higher expenditures for medicines and equipment per VHT. It is MOH/SA policy that the population in Agadez does not have to pay for VHA drugs. Thus the drug expenditure figure may include drugs used for VHA resupply.

Table VI.B.7 shows the actual expenditures of the MOH/SA in support of VHT retraining activities in 1984. The average expenditure per VHT retrained by department were (in order of increasing expenditure):

	<u>Retraining expenditure</u> <u>per VHT</u>
	<u>FCFA</u>
Niamey	47,516
Tahoua	47,796
Zinder	47,964
Maradi	49,944
Dosso	50,548
Diffa	51,344
Agadez	66,564
National Average	<u>50,312</u>

These figures again suggest that average cost increases with the difficulty of terrain and the distance travelled, and varies inversely with the number of VHTs retrained. These figures however show much less inter-departmental variation than those for VHT training. This is due to the lack of medical and supply inputs for retraining, and the much larger number of VHTs receiving retraining.

I/ If expenditures for medicines and equipment are subtracted from animation and training expenditures, the resulting average animation and training cost per VHT somewhat higher than the average cost for retraining; probably due to the fact that training courses are 14 days and retraining courses only 10 days.

Table VI.B.5 shows MOH/SA expenditures for VdT supervision activities in 1984. It is not known how many of the VHAs or TBAs in each department actually received any supervisory visits, nor with what frequency. In the absence of such information, these total expenditure figures were divided by the number of VHWs in each department in 1984. The average annual expenditure for supervision per VdT by department were (in order of increasing expenditure):

	<u>Supervision Expenditure</u> <u>per VdT</u>
	<u>FCFA</u>
Maradi	4,828
Niamey	5,300
Dosso	6,092
Zinder	7,116
Tahoua	8,396
Diffa	19,436
Agadez	40,860

These figures suggest that the average costs for VdT supervision increase with the difficulty of terrain and distances to be travelled, and vary inversely with the number of VHWs to be supervised. However, comparison of the per diem figures for the departments ^{1/} suggests that not all the VHWs in at least the Maradi department, and possibly others, receive supervisory visits, as insufficient personnel time would be spent on supervision.

1/ Per diems per VdT equal

Maradi:	348 FCFA,
Dosso:	1,206 FCFA
Zinder:	1,209 FCFA
Tahoua:	1,415 FCFA
Niamey:	1,747 FCFA
Diffa:	3,762 FCFA
Agadez:	6,237 FCFA

Although the above figures show actual expenditures for the VHT program for 1984, they do not include all of the recurrent costs of the VHT program, e.g. the administrative costs of the program and 4 wheel drive vehicle maintenance.

Further, the part of the time of other MOU/SA personnel (e.g. Director DES, Directors of DDS, nurses and midwives at MCs and dispensaries, animators and drivers) is utilized in support of the VHT program. However, a portion of their salaries is not included as recurrent cost of the VHT program because it is assumed that they would continue to be employed in their same positions in the absence of the VHT program. The time they allocate to the program, however, does have an opportunity cost as these people would spend time in other health service activities in the absence of the VHT program.

Utilizing the above information it is possible to derive a rough estimate of the investment and recurrent expenditures for the VHT program in 1984 as follows:

<u>Investment cost:</u>	Animation and Training	<u>FCFA</u> 66,777,566
<u>Recurrent cost:</u>	Retraining	47,657,213
	Supervision	<u>28,064,941</u>
	Total Recurrent	75,722,154

Assuming USAID/N has supported approximately 30 percent of the VHTs trained in the VHT program since 1978, this would imply that 46,947,735 FCFA of the total VHT program recurrent costs would be attributable to the RHIP project.

1/ This figure will be discussed again with the recurrent costs of non-VHT components.

Examination of the actual average investment and recurrent costs per VHT allows for comparison with the MOH/SA CHAD, Boukari-Tankari-Wright, and over hypothetical estimates.

Average Investment cost Per VHT	= 124,068 FCFA
Average Recurrent cost Per VHT	= 25,011 FCFA ^{2/}
Coefficient	= 0.21

These average cost estimates are lower than for the other authors by virtue of excluding health personnel salaries, and also reflect the fact that the actual program is not utilizing the inputs envisioned in its design. This is particularly striking for the recurrent cost category and corroborates information about the infrequency of supervisory visits.

1/ This figure was calculated as follows:

VHTs at end of 1984	= 12,149
VHTs at end of 1977	= 2,751
VHTs trained from 1973 to 1984	
net of attrition	= 9,358
80% of Number Added	= 7,486 (62% of total at end of 1984)

62% of VHT Program Annual Recurrent Expenditure	= 46,947,735 F CFA
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2/ This was assumed that VHTs are retrained every third year. Thus only one third of the retraining cost per team is included in the estimate of annual recurrent cost.

8.4 Recurrent Cost of VHF Program Borne by Beneficiaries

In addition to the VHF program recurrent costs estimated above that are borne by the Government of Niger, USAID/F and other donors, there are other recurrent costs which are borne by the VBAs themselves or by the populations they serve. The evaluation team did not find any estimates of the time spent by VBAs or TBAs in village health activities or for resupply of drugs and medicines. Similarly, estimates were not available of the time villagers spent in village health committee meetings or in work activities to compensate the VBAs. This time has an opportunity cost, and one of the reasons for implementation problems at the village level in the VHF program may be the failure on the part of health planners to determine how these time costs would be compensated for. An additional set of recurrent costs borne by the villagers include payments to TBAs for deliveries and baptisms. Payments in-kind were made to TBAs before the VHF program, and thus these are not additional recurrent costs of the project (and strikingly are those most readily paid). Finally, payments for VHA drugs are another recurrent cost borne by the villagers. Information about the annual drug requirements of populations served by VBAs was not available. However, if it is assumed that the initial stock of drugs is sufficient for 3 months, then an estimate of the annual cost of resupplying a VHA kit would be:

		<u>FCFA</u>
Drugs (4 x 25,000)	•	100,000
Transportation	•	2,000
Total:		102,000

Assuming one VHA kit for a village of 50 households, with 3 persons per household, this equals an annual household expenditure of 2,040 FCFA per year, or 255 FCFA per capita. Information contained in the cost recovery section of this chapter (section C), suggests that such expenditures are feasible for some of the rural Nigerian population to pay.

3.5 Total Project Generated Recurrent Costs and Discussion

Information from the preceding analysis suggests that a minimal estimate of the recurrent cost of the RHIP project in 1985 to the Government of Niger is as follows:

	<u>FCFA</u>
<u>Non-VHT Components</u>	
Salaries	335,592,000
Seminars/Conferences	34,960,000
Building Maintenance	17,100,000
Vehicle Maintenance	30,607,300
Sub-Total	<u>418,259,300</u>
<u>VHT Component</u>	46,947,735
<u>Project Total:</u>	<u>465,207,035</u>

This total equals 10 percent of the MOH/SA's recurrent budget of 4,832,670,000 FCFA for 1985. The MOH/SA is currently supporting the salary^{1/}, building maintenance and a portion of the vehicle maintenance project recurrent costs, with the RHIP project continuing to support the cost of conferences, the VHT program and vehicle maintenance. Assuming the MOH/SA currently supports 50 percent of vehicle maintenance costs, the recurrent budget of the MOH/SA would have to increase by 97,211,388 FCFA or by 2 percent to pick up recurrent costs still financed by the project. Although in more prosperous times it would seem feasible for the MOH/SA to incorporate these recurrent costs by the end of the project in December 1986, the stagnation of the MOH/SA budget in real terms in the face of increased numbers of personnel and facilities and the slip of the available recurrent funds for personnel as compared to direct operating expenditures, makes this absorption a less certain outcome, dependant on the priority that the MOH/SA gives to support of its policy development and rural program efforts. Discussion of alternative solutions involving cost recovery or cost reduction activities follows on the following sectors of this chapter.

^{1/} Project salary recurrent costs equal 14 percent of the MOH/SA's total salary expenditures of 2,346,060,000 FCFA in 1985.

TABLE VI.B.3
ACTUAL DEPARTMENTAL EXPENDITURE FOR ANIMATION AND TRAINING VHTs
1984

	<u>Agadez</u>	<u>Diffa</u>	<u>Dosso</u>	<u>Maradi</u>	<u>Niamey</u>	<u>Tahoua</u>	<u>Zinder</u>	<u>Total</u>
<u>Numbers Trained</u>								
VHTs	41	56	112	136	108	152	449	1,054
TBAS	19	51	113	116	182	144	473	1,099
<u>Total:</u>	<u>60</u>	<u>107</u>	<u>225</u>	<u>252</u>	<u>290</u>	<u>296</u>	<u>923</u>	<u>2,153</u>
<u>Expenditures</u>								
Instruction	900.000	1.915.000	3.375.000	3.720.000	4.455.000	4.250.000	10.845.000	29.480.000
Medicines	3.557.910	1.948.975	3.155.205	3.060.185	4.308.860	4.854.130	9.516.555	30.401.820
Equipment	99.450	88.980	145.000	165.750	0	259.000	476.750	1.234.930
Oil	80.000	80.000	110.000	115.675	123.240	114.600	120.000	743.515
Petrol ^{1/}	408.630	613.740	546.006	747.300	826.800	747.300	1.029.525	4.919.301
<u>Total:</u>	<u>5.045.990</u>	<u>4.646.695</u>	<u>7.331.211</u>	<u>7.360.910</u>	<u>9.713.900</u>	<u>10.225.030</u>	<u>21.987.830</u>	<u>66.779.566</u>
<u>Ave Expenditure</u>								
Per Agent	84.100	43.427	32.583	29.210	33.469	34.544	23.822	31.017
Per Team	336.400	173.708	130.332	116.840	133.876	138.176	95.288	124.068
<u>Ave Expenditure</u>								
W/O Meds.equip.								
Per Agent	23.144	24.381	17.916	16.409	18.638	17.270	12.995	16.323
Per Team	92.576	97.524	71.664	65.636	74.552	69.080	51.980	65.292

Note: ^{1/} Department allocations in litres. cost Per litre assumed to be FCFA.

Source: MSP/AS. Bilan Annuel d'Activites ESV, 1984. Avril 1985, P.6.

Table VI.3.4
Actual Departmental Expenditures for Retraining VHTs
1984

	<u>Agadez</u>	<u>Diffa</u>	<u>Dosso</u>	<u>Maradi</u>	<u>Niamey</u>	<u>Tahoua</u>	<u>Zinder</u>	<u>Total</u>
<u>Numbers retrained</u>								
VHTs	67	110	310	367	408	192	330	1,784
TBAs	30	89	394	484	342	300	366	2,005
<u>Total:</u>	<u>97</u>	<u>199</u>	<u>704</u>	<u>851</u>	<u>750</u>	<u>492</u>	<u>696</u>	<u>3,789</u>
<u>Expenditures</u>								
Instruction	970.000	1.390.000	7.650.000	9.280.000	7.500.000	5.030.000	7.220.000	39.640.000
Oil	74.030	74.700	113.120	155.520	190.005	90.000	134.650	1.664.050
Petrol ^{1/}	570.174	489.720	1.133.670	1.190.433	1.219.053	758.748	991.365	6.353.163
<u>Total:</u>	<u>1.614.204</u>	<u>2.554.420</u>	<u>8.896.720</u>	<u>10.625.953</u>	<u>8.909.058</u>	<u>5.878.748</u>	<u>8.346.015</u>	<u>47.657.213</u>
<u>Ave. Expenditure</u>								
Per Agent	16.641	12.836	12.637	12.486	11.879	11.949	11.991	12.578
Per Team	56.564	51.344	50.548	49.944	47.516	47.796	47.964	50.312

Note: ^{1/} Department allocations in litres. cost Per litre assumed to be 159 FCFA.

Source: MSP/AS. Bilan Annuel d'Activites ESV, 1984. Avril 1985, P.4.

Table VI.B.5
Actual Department Expenditures for Supervision of VHF's
1984

	<u>Agadez</u>	<u>Diffa</u>	<u>Dosso</u>	<u>Maradi</u>	<u>Niamey</u>	<u>Tahoua</u>	<u>Zinder</u>	<u>Total</u>
<u>Numbers of VHF's</u>								
VHAs ^{1/}	199	313	1,035	1,151	1,142	672	1,257	5,769
TBAs	96	325	1,158	1,495	1,148	969	1,189	6,380
<u>Total:</u>	<u>295</u>	<u>638</u>	<u>2,193</u>	<u>2,646</u>	<u>2,290</u>	<u>1,641</u>	<u>2,446</u>	<u>12,149</u>
<u>Expenditures</u>								
Per Dien ^{2/}	460.000	600.000	661.000	230.000	1.000.000	580.660	800.000	4.331.600
Petrol ^{3/}	2.297.550	2.423.160	2.598.537	2.858.979	1.908.000	2.703.000	3.392.265	18.181.491
Mobylette ^{2/}	255.000	77.000	80.000	106.000	125.250	160.000	160.000	1.220.250
Maintenance								
<u>Total:</u>	<u>3.013.550</u>	<u>3.100.160</u>	<u>3.339.537</u>	<u>3.194.979</u>	<u>3.033.250</u>	<u>3.443.660</u>	<u>4.352.265</u>	<u>28.064.941</u>
<u>Ave. Expenditure</u>								
Per Agent	10.215	4.859	1.523	1.207	1.325	2.099	1.779	2.310
Per Team	40.860	19.436	6.092	4.828	5.300	8.396	7.116	9.240

Note: ^{1/} Situation at the end of the 4th qtr. 1984.

^{2/} Actual budget distributed to departments. In 1984, the distributed Budget for per diems was on average 54 percent of the forecasted budget for per diems, and for mobylette maintenance was percent of the forecasted budget for mobylette maintenance.

^{3/} Departmental allocations in litres. cost per litre assumed to be 159 FCFA.

Source: MSP/AS. Bilan Annuel d'Activites ESV, 1984. Avril 1985, P.7-8.

C. COST RECOVERY AND BENEFICIARY CONTRIBUTIONS

One potential type of solution to the problem of inadequate government resources to finance the recurrent cost of health services is to collect revenue from those who benefit from the health services. The following section reviews: 1) current contributions that Nigeriens make for health, 2) evolving GON policy concerning beneficiary contributions, 3) income constraints to cost recovery, and 4) future cost recovery policy issues, and design and implementation requirements and constraints.

C.1 Current Contributions of the Nigerien Population for Health

Nigeriens pay for health services supplied by the public and private sectors. Their support for public sector services comes primarily from taxes. In addition, hospitals collect fees for a variety of services, VHWs are to sell the medications in their kits, and TBAs are given payments in cash or in-kind for their services. Further the limited supply of drugs in the public health system has resulted in a system whereby patients with the ability-to-pay (subjectively determined by the providers) are given prescriptions for medications to be filled at the Popular Pharmacies or private drug depots. In addition, patients can go directly to these drug distribution outlets to purchase drugs which can be sold over the counter. Finally, people demanding services from traditional healers are expected to make payments in cash or kind. The limited information which exists quantifying these expenditures is detailed below.

Payments for Hospital Services

The Ministries of Plan and Public Health, as part of preparatory discussions for the World Bank Structural Adjustment Credit (SAC), conducted a review of the allocation of public funds to the national hospitals in Niamey

1/ MOP et MSP/AS. Analyse du Fonctionnement Hospitalier au Niger cas des Hôpitaux Nationaux de Niamey et Zinder, Mars 1985, pp. 30.

and Zinder.^{1/} Their paper also reviews current CON policy regarding charges to patients for hospital services, the level of revenue collected at this time, and problems with the hospitals' pricing systems and implementation of current policy. The study concludes that the national hospitals could be self-financing in part, thus releasing public funds for rural and preventive health activities. Selected information from that study is summarized below.

In 1985, the national hospitals in Niamey and Zinder will absorb 51 percent of the budget for health personnel, 27 percent of the budget for material, 30 percent of the budget for medications, and 55 percent of the budget for food and clothing: totalling more than 40 percent of the operating budget of the MSP/AS. In addition, the hospitals receive significant external assistance in the form of expatriate medical personnel and drugs. Capital investments in the two hospitals during the Programme de Consolidation, 1984-1985, came from private sources and were not reviewed by the Government of Niger for their impact on the operating costs of the two facilities. Management of the financial and material resources of the hospitals is shared between the medical and administrative hospital staffs, and problems of communication and coordination adversely affect the rational allocation of resources with the hospitals.

A system of hospital charges was created by decree No. 62-127/455 on May 22, 1962 and has not been formally changed since that time. Charges are collected for:

- Hospital days, depending on the category of bed;
- Surgery, depending upon the procedure;
- Supplies and medicines;
- Deliveries;
- Specialist consultations (radiology, physiotherapy, stomatology, ophthalmology);
- Medical exams (special);
- Laboratory tests.

1/ MOP et MSP/AS, Analyse du Fonctionnement Hospitalier au Niger, Cas des Hopitaux Nationaux de Niamey et Zinder, Mars 1985.

Each procedure or consultation is assigned a number of charge units which corresponds to a given unit charge. Revenue from some of the charges is divided between physicians and the public treasury. Different fees have been set for four different socio-economic groups: functionaries, "petit payants", indigents and children. Charges for indigent patients with a certificate from their local authority are to be paid by the "collectivités territoriales." The charges are set favorably for functionaries, who receive a 20 percent reduction and sometimes pay nothing.

In practice, collection of payment for hospital charges is not rigorously reinforced. Even so, receipts in 1984 for Niamey Hospital totalled 80,871,175 FCFA and 11,034,155 FCFA for the Zinder hospital, covering 17 and 3 percent of the operating costs of these facilities respectively. If the 1962 tariff system was rigorously applied, it is estimated that revenues would cover 40 percent of Niamey and 13 percent of Zinder hospitals' operating expenditures. A commission recently proposed modifications to the 1962 tariff schedule. Had this schedule been applied in 1984, the revenues generated would have covered 65 percent of Niamey and 55 percent of Zinder hospitals' operating expenditures. Although the proposed schedule was rejected by the Council of Ministers, on June 26-28, 1985 it was decreed:

"..... that there will be a rigorous application of existing legislation concerning fees for medical visits, exams, hospitalization and medical evacuations." (Le Sahel, 3 July 1985)

Up to the present time, charges have not been collected for services provided or drugs dispensed by MCs, dispensaries and PMIs. Donor-supported hospital or other health facilities have often instituted their own fee schedules for consultations, drugs, laboratory and xray services.

Cost Recovery: The Income Constraint

Since the early 1980's, both the MSP/AS and donors have started to consider whether fee schedules could be altered or instituted at new levels to raise additional revenue to support public sector health services. One approach to answering this question is to examine household incomes and expenditure levels for all health-related goods and services. Unfortunately national surveys examining household expenditures (including those for health services) do not exist in Niger. However, limited information on household cash incomes and expenditures does exist in Niger: Social and Institutional Profile. Surveys in other countries with income levels similar to that for Niger have found that households spend from 2 to 5 percent of their income on health services and medicines. If these percentages are applied to Niger's income data, some crud estimates can be made of what the Nigerien population would be able and willing to pay for health services and medicines.

Information from Niger: A Social and Institutional Profile (SIP) estimates that per capita annual crop and livestock income ranged from 13,400 to 31,600 CFA francs in 1977, with the range depending on the amount of rainfall received in different areas. Using the percentages of 2 to 5 percent, this would imply per capita health expenditures of 268 to 1580 CFA francs in 1977. The SIP also provided survey information on household revenues from 1977 to 1978 in the range of 82,389 to 396,137 CFA francs, and on household expenditures during the same period of 169,292 to 477,640 CFA francs. Utilizing the 2 to 5 percent estimation rule, this would imply household expenditures for health related goods from 1648 to 23,882 CFA francs in 1977 to 1979. If households are assumed to average 6 members, this implies per capita annual expenditures for health from 275 to 3980 CFA francs (for details on SIP information see Tables D.1, D.2, D.3.)

Support for Rural Health Infrastructure and Wells ^{1/}

Although the MOH/SA or donors generally have taken responsibility for the construction and maintenance of rural health facilities, select communities have elected to commit labor, materials and financial resources to either build, expand and improve, or maintain rural dispensaries or other buildings. Communities have also purchased ambulances, vehicle maintenance parts, and gasoline for evacuations. They contribute food and cooking utensils for nutrition demonstration sites. Villages also provide labor for well construction and maintenance. Communities with wells also contribute 25,000 FCFA per year to an arrondissement account to pay for the clearing and improvement of wells by OFEDES. At the present, these payments are inadequate to support maintenance at the prescribed frequency of once every three years.

Payment for Village Health Agent, Drugs or Services

One of the key components to the sustained functioning of the VHT program is the resupply of the drugs in the VHW's kits. Revenue from VHA drug sales is to be used to pay for resupplies available from popular pharmacies, drug depots or during supervisory visits. Unfortunately, many, if not most, of these mini-revolving drug funds have decapitalized, and the VHWs no longer have drugs to dispense. This problem is discussed in more detail in Chapter VII.

TBAs that receive VHA training do not sell drugs or supplies but are to receive payment in-cash or in-kind for deliveries and baptisms. Few problems have been noted with this system, as TBAs have traditionally been paid for their services. In some cases, TBAs that have received VHA training found that the population was resistant to continuing traditional payments because it was perceived that they had become government employees.

^{1/} Information per USAID/N agricultural Development Office seminar by Tom Painter and Philip Boyle on September 5, 1985

Payment for Drugs at Popular Pharmacies or Private (Drug) Depots

Nigeriens purchase drugs and medical supplies at any of the 18 popular pharmacies or 40 private drug depots in Niger (these are described in more detail in Chapter VII). Drug prices are set nationally, and only military or health personnel and students receive a 20 percent discount off the list price of the drugs. Sales at popular pharmacies are increasing rapidly, over 20 percent per annum between 1978 and 1982. Per capita expenditures on drugs sold by popular pharmacies in 1983 equalled 260 FCFA (U.S. \$0.58). However, little has been written concerning the catchment area of popular pharmacies or depots and other specifics of the population's demand for drugs at private outlets. Specific studies in this area are recommended in Chapter VII.

C.2 Evolving Government of Niger Policy concerning Beneficiary Contributions

As described in Chapter V, section C, the participation of the Nigerien population in the process of development through the structure of the Society of Development is a cornerstone of Niger's political philosophy. The report of the "Journées d'Etudes de la Santé à Agadez," gives the following definition of community participation in the health sector of Niger.

"The participation of the people in health and social welfare activities, can be defined as their free and voluntary initiative, either personal or collective, to complement the efforts of the State in contributing to the promotion of health and search for social welfare. It is a political commitment which is manifested by the degree of responsibility in decision making in health across the institutions and structures of participation which are the Development Councils. This assumes that the population takes part in the conceptualization, definition of objectives, implementation and evaluation of health projects and programs..."^{1/}

Recent national health sector policy dialogues: the "Debat de Maradi" in 1983 and the 8th "Journées d'Etudes de la Santé à Agadez" in 1984, included specific working sessions on community participation, and resource generation and allocation^{2/}. Select policy recommendations from these sessions are summarized below.

^{1/} MSP/AS. 8eme Journées d'Etudes de la Santé, Agadez, 10-20 Aout, 1984, p. 27.

^{2/} The "Debat de Maradi" also included working sessions on personnel training and social action. The "Journées d'Etudes de la Santé à Agadez" also included a session on drug supply issues. Recommendations from this latter session are summarized in Chapter VII.

1. Acceleration of integration of the process of "auto-encadrement sanitaire" in the Society for Development including:
 - . the population taking greater responsibility for health matters,
 - . improved management of the system,
 - . searching for a solution to the problem of lack of payment for VRAs.
2. Assumption by village communities and territorial collectives of responsibility for the program of "auto-encadrement sanitaire" over the medium term. Village councils should determine financing modalities.
3. Encouragement of development of associations and mutual funds for the promotion of health.
4. Institute a National Solidarity Fund for health.
5. Greater support from urban and semi-urban populations for the specialized health services available in urban areas.
6. Encouragement of community participation in the construction, renovation and maintenance of health buildings, including the use of local materials.
7. Institution at all levels of health service a health card system, and rigorous application of current laws regarding charges for drugs.
8. Study of the means to divide the cost of medical evacuations between the State, the collectives, and the beneficiaries.
9. Placement of superior cadres of health personnel in medical centers.
10. Reallocation of the financial resources of the State for health towards prevention and education activities.

11. Promotion of the assumption of responsibility for the construction of VHA kits by villages.

12. Participation of private enterprises in the cost of training the health personnel that they require.

13. Examination and adoption by the authorities of the laws which regulate private practice which could complement the efforts of the State.

Cost Recovery: The Income Constraint

As the MOH/SA starts to consider whether and how fee schedules can be altered, or instituted at new levels, to raise additional revenue to support public sector health services, consideration will have to be given to the ability and willingness of Nigeriens to pay for health services. One approach to answering this question is to examine household incomes and expenditure levels for all health-related goods and services. Unfortunately national surveys examining household expenditures, including those for health services, have not been carried out in Niger. However, limited information on household cash incomes and expenditures exists in the Niger: A Social and Institutional Profile (SIP) document.^{1/} Surveys in countries with income levels similar to that for Niger have found that households spend from 2 to 5 percent of their income on health services and medicines. If these percentages are applied to the SIP income and expenditure data, crude estimates can be derived of what the Nigerien population would pay for public and private health services and medicines.

Information from the cited Niger study estimates that per capita annual crop and livestock income ranged from 13,400 to 31,600 FCFA in 1977, with incomes correlated with the amount of rainfall received in different areas. Using the 2 to 5 percent estimation rule this would imply per capita health expenditures of 268 to 1580 CFA francs in 1977 (see table VI.C.1). The SIP also provides survey information on household revenues from 1977 to 1978 in the range of 82,389 to 396,137 FCFA, and on household expenditures during the same period of 169,292 to 477,640 FCFA. Utilizing the 2 to 5 percent

estimation rule, this would imply household expenditures for health-related services and products from 1648 to 23,882 FCFA. Assuming households average 8 members, this implies per capita annual expenditures for health from 206 to 2985 FCFA from 1977 to 1979.

Extrapolation of 1985 farm incomes from the 1977 to 1979 data is difficult. However, disposable household cash incomes are likely to have stagnated or declined by virtue of the recent drought. Inquiries on the existence of household budgetary surveys in the departments of Agadez, Diffa, Maradi and Zinder, uncovered only a 1984 survey of household cash incomes in the Tahoua Valley of Agadez. Average household incomes for different villages ranged from 7,868 to 194,189 FCFA, with an average income for the sample of 1,386 households of 60,350 FCFA (see Table VI.C.2). Using the 2 to 5 percent estimation rule, this would imply annual household health expenditures of 157 to 9,709 FCFA. Assuming households average 8 members, this would result in per capita health expenditures of 20 to 1214 FCFA. Further, anthropological investigations in the Filingue and Tessaoua arrondissements in 1985 determined that while Nigeriens were not in principal opposed to paying for a health card, health service visits or medicines at public facilities, that they would have great difficulty doing so in view of the extreme conditions brought about by the drought^{2/}. Collection and analysis of additional information on household incomes, expenditures for health services and medicines, and attitudes towards payment for services is recommended.

C.4 Future Cost Recovery Policy Issues, and Design and Implementation Requirements

Rains during the summer of 1985 have been sufficient to suggest the promise of a good harvest, and thus amelioration of the desperate living conditions of the Nigerien population. Thus, the Government of Niger can enter into a phase of more specific delineation of their cost recovery policies and onto design of collection mechanisms and implementation plans.

Policy Issues

The health policy framework outlined at Maradi in 1983, and in Agadez in 1984, raises several additional policy issues which the Government of Niger must analyze, debate and resolve before implementation designs and planning can take place.

^{1/} Institute for Development Anthropology. Niger: A Social and Institutional Profile, Dryland Agriculture, Table 2 and 3.

^{2/} Information per USAID/Niger Agriculture Development Office seminar by Ton Painter and Philip Boyle on September 5, 1985.

TABLE VI.C.2
AVERAGE CASH REVENUE OF HOUSEHOLDS IN TELOUA, AGADEZ
1984

<u>Village</u>	<u>Families Number of Households</u>	<u>Average Revenue Per Family (FCFA)</u>
Zoudou	554	7,868
Alexées	120	82,142
Azzel Keiouet	44	146,873
Azzel cooperative	15	79,287
Azzel Ecole	38	21,760
Tchimbram	15	157,289
Kefode	11	26,818
Emsalena	14	194,189
Toumga	35	71,000
Balambark	5	176,500
Indoudou	23	31,122
Assanagh	29	115,807
Azaningre	17	163,347
Tadilza	13	79,962
Agazasmalolé	19	57,526
Brytal	17	104,316
Emazegars	8	65,313
Dunwazedf	24	124,401
Tutatet	28	131,031
Tasalansalam	49	117,418
Tanatan haydaï	35	110,217
Dabaga I	42	116,967
Dabaga II	87	88,356
Zakaya	101	78,351
Tebagas	41	93,640
TOTAL	1,380	60,350

Source: Elhadj Abou Maliki. Resultat de l'Enquête Socio-Economique de la Vallée de Teloua, December 1984, MOP/Agadez, Projet Travaux Communautaires et Hydrauliques, CTA Indoudou, 31 Decembre 1984.

TABLE VI.C.1

AVERAGE FARM INCOMES IN RELATION TO RAINFALL 1977

<u>Areas</u>	<u>Districts</u>	<u>Crop and Livestock Income (000 FCFA)</u>
Above 750 mm/year	Gaya	31.6
650-750 mm/year	Madarounfa	21.0
550-650 mm/year	Dosso	17.8
	Doutchi	16.7
	Birni	16.3
	Guidan Roumji	16.3
	Aguié	14.3
Less than 550 mm/year	Loga	16.6
	Tessaoua	13.4
Less than 350 mm/year	Pastoral zone	24.5

Source: Institute for Development Anthropology. Niger: A Social and Institutional Profile, p. 23.

These issues include:

1. Delineation of the cost recovery objectives for different levels of services, i.e. what costs must the Niamey, Zinder and CHD hospitals recover? Just the cost of medicines and supplies, or also the costs of housekeeping and foodservice, or even the costs of utilities? Similarly what costs must the MCs, PMIs and RDs recover? Without setting cost recovery objectives the pricing of services will not be associated to a revenue target. Studies of the recurrent costs of health facilities (Tankari et al, 1983, and Painter and Boyle, 1985) will be useful in providing rough estimations of the operating costs of health facilities, but additional cost information, particularly of the costs for building and equipment maintenance and depreciation, and for adequate drug supplies, will be required.
2. Determination of whether the fees collected will be retained at the service facility, or aggregated to some higher level for redistribution with other government funds or in the form of specific goods (medicines, supplies, gas coupons, etc.).
3. Consideration of tradeoffs between objectives for extension of coverage and placement of superior personnel in health facilities.
4. Consideration of tradeoffs between instituting a health card system versus a system of consultation fees.
5. Reconsideration of current policy concerning the provision of drugs at public facilities, i.e. should villagers pay for VHA drugs but not for those provided at RDs (create possible bypass problems)? Should consumers pay for nivaquine but not for other drugs (create possible bias against prophylactic treatment of pregnant women and children)?
6. Consideration of the most appropriate pricing structure for drugs sold at rural public facilities, i.e. flat charge per prescription (may include several courses of drugs), flat charges per course of drug; or charges set

according to the actual cost of the drug, charge equal to ONPPC prices? Choices should be made with consideration of cost recovery objectives, impact on consumer demand, and administrative capabilities of health personnel.

7. Examination of the associations between liberalizing regulations on private medical practice, directing public resources towards preventive health activities, and government policy regarding access to health care.

Design of Collection Mechanisms and Implementation Plans

The design and implementation of cost recovery activities in developing countries must take account of: 1) consumer income and demand for services, 2) the cost of service provision and cost recovery objectives, 3) constraints on the level of administrative skills of health personnel, 4) the need to build in accountability incentives, and 5) the fact that it will probably take several years for cost recovery activities to work smoothly, to determine what pricing strategies maximize net revenues, and which encourage appropriate use of health services. Although the Government of Niger will have to consider and perhaps experiment with several designs, information should be gathered about the existing strategies and experience of PVO projects which have instituted cost recovery efforts.

D. Recurrent Cost Reduction

A second possible way to reduce the gap between government health resources and the recurrent cost of health services is through finding ways to reduce these recurrent costs. This can be achieved by reducing the rate of new investment relative to the growth of revenue, or by finding lower cost means to provide the same services. The latter is a more difficult option with which to find possible solutions to the recurrent cost financing problem in Niger, in that all health facilities lack adequate recurrent budgets for many of the most essential items.

Several recommendations were made at the national health policy dialogues at Maradi, 1983, and Agadez, 1984, pertaining to reduction of recurrent costs. These include:

1. Use of local materials in health facility construction to reduce costs of repair and replacement.
2. Reduce the cost of medical evacuations to countries outside of Niger through training and placement of medical personnel in key specialties, and by opening the University Hospital in Niamey. Reduce training in non-priority specialties.
3. Standardization of logistical and biomedical equipment in order to simplify training of maintenance personnel, and the stocking of spare parts for repair.
4. Integration over the medium term, of SERPA garages with departmental administrative garages.
5. Provide hospital food only to patients with special dietary requirements.
6. Encourage the use of local means of conveyance for medical evacuations within Niger.

In addition, this evaluation has made several recommendations pertaining to the reduction of recurrent costs, including:

1. Revision of, and adherence to, an essential drugs list by the ONPPC.
2. Review of and control over non-project donations of advanced medical technology.
3. Adherence of donors to Government of Niger designs for new health facility construction.

4. Operations research to define cost-effective VHT supervisory visit frequencies and circuits within a financially feasible set.
5. Reduction of the rate of training of VHTs to no more than 250 teams per year.

Finally, the World Bank as part of its SAC negotiations is seeking policy change to reduce the rate of manpower training at ENICAS and ENSP, and to delay opening of the University Hospital in Niamey.

CHAPTER VII
PHARMACEUTICAL DISTRIBUTION SYSTEM

A. DESCRIPTION OF NIGER'S PHARMACEUTICAL DISTRIBUTION SYSTEM

Both the private and public sectors participate in the distribution of drugs and medical supplies in Niger. The drug distribution system in Niger consists of :

- National Office of Pharmaceutical and Chemical Products (ONPPC)^{1/},
- Public health delivery service institutions, e.g. hospitals, maternities, PHUs, MCHs, PMUs, and dispensaries;
- 18 popular pharmacies;
- 40 private drug depots;
- Cantonal depots for the resupply of village health workers, e.g., as in Maradi;
- Village pharmacies (e.g., the medical kits of the village health workers);
- Contributions of donors and private voluntary agencies.

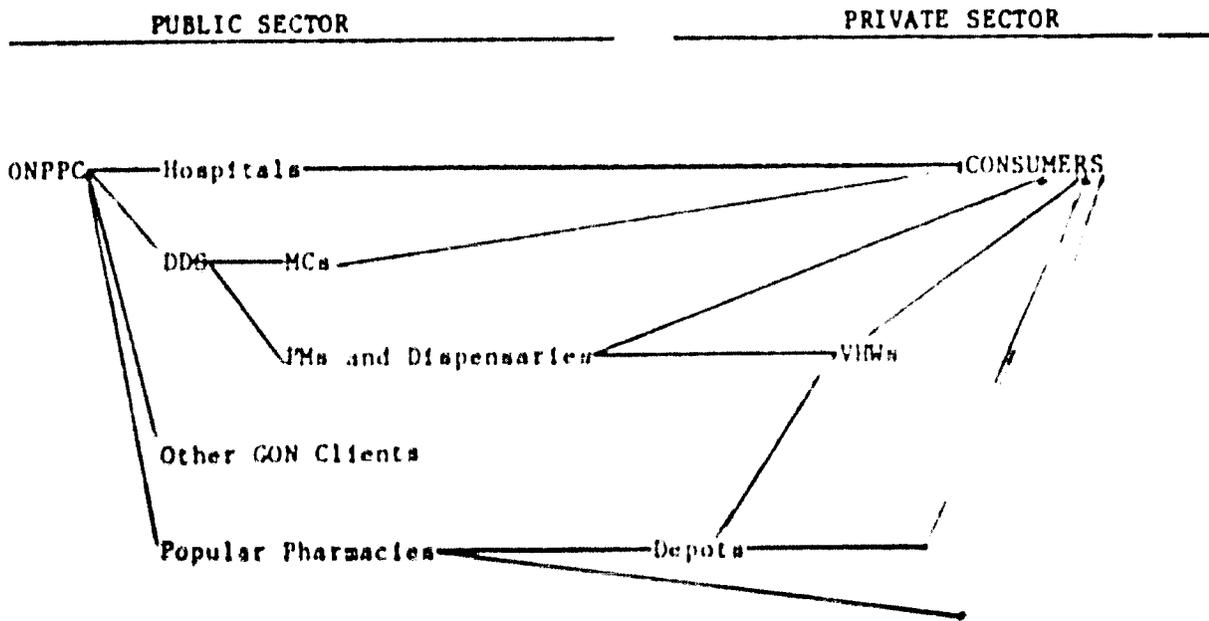
A brief description of these entities follows below. A schematic diagram of their relationship to one another appears in Figure VII.A.1.

The National Office of Pharmaceutical and Chemical Products (ONPPC) was created by the Government of Niger in 1962 as a government parastatal for the purpose of controlling the production, importation, and distribution of medicines and chemical supplies in the public and private sectors of Niger. The goals of the ONPPC are to reduce: 1) Niger's dependence on foreign suppliers of medicines, and 2) the costs at which medicines are supplied to Nigerian health institutions and consumers.

^{1/} For more detailed information on the ONPPC see: Xavier de Metz, Diagnostic de L'Office des Produits Pharmaceutiques et Chimiques, Etude IDA/OSM, Février 1984, 69 pp.

FIGURE VII.A.1

PHARMACEUTICAL AND DISTRIBUTION SYSTEM IN NIGER
1985



Total consumption of pharmaceutical products in Niger increased by 66 percent between 1978 and 1983 to about 570 FCFA per caps (US \$1.27).^{1/}

The ONPPC is to gradually assume production of all essential drugs required by the State and the private sector, and during the 1970's, acquired machinery to prepare aspirin and chloroquine tablets and certain solutions. While production has increased dramatically from less than 1 percent of total sales in 1977 to 8 percent of sales in 1983, ONPPC production remains a minor source of drugs for the country (see table VII.A.2). The ONPPC produces sufficient quantities of aspirin to supply the country's needs, but all other drugs to some extent are imported or contributed by donors. Donor contributions of essential drugs force operation of fabrication units below capacity. Hence ONPPC's unit prices are often higher than the world price for the same generic item.^{2/}

Prices are set by the ONPPC as follows. A margin of 28 percent for essential items and from 32 to 35 percent for all other items, is added to the cost to deliver imported drugs to Niamey. ONPPC Prices charged in Agadez, Diffa, and all other departments, are the same as those in Niamey.

In 1985, it was estimated that 55 percent of drugs purchased by the MOH/SA were distributed to hospitals, 44 percent of rural health facilities and services, and 1 percent to the central administration. Government health facilities prepare quarterly requests for medications which are sent to

1/ US \$ 1.00 = 450 FCFA.

2/ The ONPPC indicated that they are not consulted regarding certain donations of drugs. They recommended that donors, prior to importing drug contributions, request permission from ONPPC indicating what products they wish to bring into the country and in what quantities. Further, the ONPPC would prefer that donors provide funds for the purchase of drugs, rather than give donations in-kind which may include inappropriate, brand-name drugs.

TABLE VII.A.2

ONPPC: PRODUCTION AND SALES
1977-1983

<u>Year</u>	<u>Production</u>	<u>Sales</u>		
		CON Ministries	Popular Pharmacies	Total
1977	38.1	693.7 (66%)	352.2 (34%)	1,045.9
1978	53.4	858.6 (66%)	436.2 (34%)	1,294.8
1979	124.9	1,100.5 (65%)	585.1 (35%)	1,685.6
1980	132.1	1,516.1 (63%)	878.9 (37%)	2,395.0
1981	135.8	1,759.9 (60%)	1,165.9 (40%)	2,925.8
1982	212.0	2,123.0 (59%)	1,462.0 (41%)	3,585.0
1983	291.0	1,907.0 (54%)	1,597.0 (46%)	3,504.0

1/ Million CFA francs.

Source: ONPPC.

the departmental and national levels for comparison with the available budget, and then sent to the ONPPC. Provided the drugs are in stock, the ONPPC distributes the drugs back to the departments, which then redistributes them to the health facilities.

The ONPPC with the MOH/SA has developed lists of products which different levels of the health system are authorized to dispense. For example, VHAs are able to dispense about 10 items, and depots from 50 to 100 items. The total number of different products handled by the ONPPC totals about 4000, and efforts are being made to reduce this to no more than 2000 products.

The popular pharmacies, or regional commercial outlets of the ONPPC, are to be located in each of Niger's 35 arrondissements. At present, there are popular pharmacies in 18 arrondissements: Agadez, Arlit, Diffa, Dosso, Douchi, Filingue, Konni, Madaoua, Magaria, Mainé Soroa, Maradi, Niamey, Tahoua, Tera, Tessaoua, Tillabery and Zinder. The popular pharmacies sell drugs to MOH/SA facilities and personnel, private drug depots, VHAs and the public. Prices are reduced by 20 percent for sales to depots and VHAs. The pharmacies are managed by nurses or pharmacists who have received one-month of management training from the ONPPC, followed by 4 months of practical training at an existing popular pharmacy.

On the other hand, drug depots are small private businesses, usually owned and operated by an entrepreneur, who may, or may not, have had some health training. There are currently 40 depots in Niger. To open a depot, the entrepreneur must apply to the MOH/SA, providing papers which attest to his/her citizenship, educational level and law-abiding character. If the background of the entrepreneur is found acceptable, the MOH/SA will grant a depot license. The entrepreneur can only sell from a fixed list of ONPPC products and at ONPPC prices. Inspections are conducted twice annually by the DDS, pharmacy inspector, and director of the local popular pharmacy, to determine if the entrepreneur is adhering to these requirements.

Data for the Zinder popular pharmacy's sales to 5 depots between October 1983 and June 1985 gives some approximation of the level of sales by these depots (see Table VII.A.3). Sales ranged from 2.4 to 10.5 million FCFA for the calendar year 1984.^{1/} Sales to the depots for the 12 months between June 1984 and May 1985 were from 23 to 39 percent lower than for 1984, perhaps because of lower household incomes associated with poor rains in 1984. Monthly sales also seemed to decline

1/ During 1984, the Zinder popular pharmacy's drug sales to VHAs totaled only 15,400 FCFA for 11 visits by VHAs, for an average sale per VHA visit.

Table VII.A.3

Popular Pharmacy Sales ^{1/} to Private Drug Depots - Zinder Department
October 1983 - June 1985

	<u>MIRRIAH</u>	<u>GAORE</u>	<u>TANCUT</u>	<u>MATAMAYE I</u>	<u>MATAMAYE II</u>
<u>1983</u>					
October	5,529,050	307,750	601,300	1,156,750	-
November	1,747,725	511,675	641,000	871,700	-
December	2,397,950	1,476,200	194,750	531,900	-
<u>1984</u>					
January	2,841,600	526,375	644,975	205,050	-
February	1,811,100	488,525	0	505,050	-
March	791,525	773,550	304,975	474,225	-
April	843,650	400,025	350,425	171,900	-
May	891,800	443,375	456,550	175,650	-
June	426,200	150,275	16,250	97,750	-
July	304,625	49,030	348,650	123,400	-
August	296,650	72,175	254,425	102,925	-
September	263,150	86,325	163,325	83,200	-
October	513,825	222,475	38,350	154,000	-
November	1,339,600	326,275	269,050	264,800	-
December	582,675	293,975	220,625	37,500	1,060,400
<u>1985</u>					
January	621,100	335,375	112,500	117,350	378,375
February	605,650	269,300	188,900	75,950	141,700
March	642,125	386,675	93,100	116,925	472,875
April	404,675	196,075	138,025	26,200	279,625
May	667,400	549,775	183,300	273,350	627,775
June	760,850	588,575	140,250	32,900	354,750
<u>Total 1984</u>	10,522,820	3,832,380	3,007,600	2,395,450	NA
<u>Total 6/84-5/85</u>	6,667,675	2,937,730	2,106,750	1,473,350	NA

^{1/} Before subtracting 20 percent reduction

Source: Records of the Popular Pharmacy, Zinder.

during the summer planting season, and rise again after the fall harvest, probably reflecting the availability of householder's time and cash incomes.

Visits were made to the Miriah and Gaore depots to obtain information about sales revenue, operating costs the initial investment costs to open a depot, and other qualitative data. The entrepreneurs at Miriah estimated that her sales averaged 20,000 FCFA per day, or 600,000 FCFA per month (note: this estimate is corroborated by the Zinder popular pharmacy sales data). She estimated her monthly expenditures as follows:

Drug resupply	480,000
Transportation	60,000 (daily trips from Zinder)
Guardian	15,000
Rect	10,000
Electricity	8,000
<u>Total:</u>	<u>573,000</u>

This her net monthly profit would equal 27,000 FCFA. (or 334,000 FCFA annually about US \$ 742.00). She estimated that her investment cost were 1,520,000 FCFA, including a loan of 950,000 FCFA in the form of drugs from ONPPC. She estimated that it had taken 7 months to pay the loan asked for recommendations as to how the Government could help her improve her business, she indicated that the ONPPC reduction should be increased to 25 or 30 percent, and that there should be some wholesalers reduction for the milk and wheat products she retailed. The products most in demand were antibiotics, Nivaquine and products for children's illnesses. VHAs do not restock at her depot.

The depot entrepreneur at Gaore estimated his daily sales at 7,500 FCFA, or 225,000 FCFA per month (note: this estimate is lower than what would be expected given Zinder popular pharmacy sales to the Gaore depot). He also indicated that no VHAs purchased drugs at his depot and that most of sales were medicines for children's illnesses. His estimated monthly expenditures were:

Drug resupply	180,000
Transportation	5,000 (restock 2 to 4 times per month)
Rect	14,000
<u>Total:</u>	<u>199,000</u>

Thus his net monthly profit equal 26.000 FCFA (or 312.000 annually, about US \$ 693.00). The entrepreneur was unable to estimate his initial investment costs, but did indicate he had applied to the ONPPC for a loan of 80.000 FCFA in medications to expect his inventory.

The final outlet for drugs are the village pharmacies of the VHAs. These consist of a kit of 10 essential drugs given to the VHA at the start of his initial training. He is to sell the medicines at the price of 2 pills for 5 FCFA, and to use the revenue acquired to resupply his kit. Unfortunately, many, if not most, of these mini-revolving drug funds have decapitalized and the VHAs no longer have drugs to dispense. Identified causes of decapitalization include:

- VHAs give drugs away for free to the poor, to family members, or influential members of the community.
- VHAs use the funds collected for other purposes.
- VHAs are not close to a MOH/SA health facility with drugs for resupply, a popular pharmacy or drug depot.

Other possible causes of decapitalization include:

- VHA training gives insufficient detail on, and emphasis to, resupply of the kit.
- Recommended prices are insufficient to cover the drug, transportation and time costs associated with resupply.

Solutions to these problems may include:

- Strengthening curricula and training in drug sales and resupply.
- Study of the adequacy of drug prices recommended to VHAs.
- Strengthening of awareness of oversight responsibility and oversight skills of village health committees during animation and VHA installation.
- Increase the number of sites, public or private, which distribute VHA drugs and supplies.

Current operational research which has recently begun regarding the specific problem of medicine supplies in the villages includes:

- 1) The Italian sponsored UNICEF/WHO integrated nutrition project in the arrondissements of Ouallam, Gouré and Tchintabaraden. The possibility of cooperative management of village pharmacies is being explored.
- 2) A CIDA sponsored integrated project in Diffa has restocked medicines in 40 villages to be managed by the village development committees (project "Appui au Développement Agricole du Département de Diffa).

Further analysis is needed to identify other causes of decapitalization and to identify feasible solutions.

B. Pharmaceutical Supply Policy Developments

Several new policies regarding the development of the pharmaceutical supply sector in Niger were recommended at the "debate de Maradi, 1983 and the 8th" Jannes d'Etudes de la Santé à Agadez" 1987. These are summarized below:

1. Open popular pharmacies in all of Niger's arrondissements.
2. Systemmatize the procedures for opening drug depots to increase the distribution of medical products.
3. Reduce Niger's dependance on external source for essential drugs by increasing ONPPC's productive capacity.
4. Create an Institute for the study of traditional medicines.

policies included for discussion in addition, one of the structural adjustment credit, is the need to develop and adhere to an essential drugs list.

C. SUMMARY AND RECOMMENDATIONS

C.1 Findings

1. The ONPPC would welcome donor assistance in improving their production, quality control, and distribution systems. Assistance sought includes technical assistance, and financial assistance to expand production capacity and the vehicle fleet for drug distribution.

2. Government expenditures in 1985 for medicines was equivalent to 310 FCFA (US \$0.69)^{1/} per capita. Thus, drugs supplied to government health facilities are insufficient to meet the demand for drugs. Consequently Health personnel give prescriptions to patients to be filled at popular pharmacies or depots.

3. Popular pharmacies in Agadez, Diffa, and Zinder were clean and stocks were well-organized, and they appeared to be well-managed public enterprises.

4. Similarly depots in Gaoché and Mirriah were clean and profitable enterprises for the sale of drugs. The drugs sold are primarily those for children.

^{1/} US \$ 1.00 = 450 FCFA

C.2 Problems

1. ONPPC's capacity to produce essential drugs is under-utilized and as a consequence unit prices are higher than world prices for the same generic items.
2. Points of drug distribution in Niger outside of government health facilities and personnel are very limited with only 18 popular pharmacies and 40 private drug depots.
3. Although it is Government of Niger policy for there to be a popular pharmacy in each of the 35 arrondissements, the ONPPC lacks the investment capital to do so, and the profitability of pharmacies in these smaller market areas is unknown.
4. Funds (credit) for the investment required to open or expand a depot are limited.
5. As the network of depots expands, the ONPPC is concerned about its ability to remain profitable, i.e. the ONPPC adds a margin of 28 to 35 percent to the cost of the drugs delivered to Niamey and passes 20 percent of this margin onto the entrepreneurs of the drug depots.
6. There are no formal mechanisms for training depot entrepreneurs in drug dispensing or depot management (although the popular pharmacies will give informal two-week stage to interested entrepreneurs).
7. Taking operating costs into account, the profits of depots are not high. This diminishes the incentive to open a depot and encourages sales of more expensive drugs with a larger absolute profit.

8. A reduction of 20 percent off ONPPC prices is given to depot entrepreneurs for stock purchased at popular pharmacies. However, if VHAs restock from depots they do not get a reduction.

9. Prices of drugs sold by VHAs are not standardized, and it has not been determined if they are adequate to recover the replacement costs of the drugs.

10. Patients are required to pay for drugs dispensed by VHAs, but not for medicines dispensed by non-hospital health facilities.

11. Patients in Agadez are not required to pay for VHA medicines. However, other equally poor populations in Niger (e.g., in Tahoua and Diffa) are required to pay for VHA medications.

12. Many of the medical kits of VHAs in Niger no longer contain drugs due to problems that the VHAs have in collecting payments for drugs, in managing the funds collected, or in getting to sources of resupply. Ad hoc actions taken to ameliorate the situation include: special village collections for funds, VHAs contributing funds out-of-pocket, and special contributions by PVOs.

C.3 Recommendations

1. USAID/N should invite the ONPPC to articulate their needs for assistance to determine if bilateral or centrally-funded projects include funds which could be used to meet these needs.

2. USAID/N should provide assistance to the Government of Niger to study drug pricing policies. The study should focus on issues of:
 - Margins required to insure ONPPC, depot and VHA profitability.

 - Appropriate pricing strategies for each distribution point in the public and private system, bearing in mind cost recovery objectives, administrative capacity constraints, and impact on consumer demand.

 - Pros and cons of different mechanisms to collect fees for drugs at public health institutions, e.g. health cards, flat charges per course of treatment, or variable charges based on the cost of the drug.

 - Lack of variation in drug prices between Niamey and other departments, to determine if the cross-subsidization is appropriate.

3. Prospective depot entrepreneurs, as a part of receiving their license, should be strongly encouraged to participate in a practical stage at the popular pharmacies or pharmacies of a MC, to learn about the indications and contra-indications of the medications they will be licensed to dispense, as well as in a basic management system for the depot.

4. ONPPC should develop a system of the basic accounts and records required to correctly manage a depot.

5. USAID/N should finance an operations research study to determine the constraints and possible solutions to developing a viable means for resupply of the VHA kits. Alternatives to be studied include:

- MOH/SA financing stocks of VHA drugs at MCs to be distributed through sales or during supervisory visit;
- Depots of village health worker drugs at the cantonal level (e.g. as in Maradi);
- Provision of a 10 percent price reduction from depots to VHAs, so that depot entrepreneurs and VHAs each receive a reduction of 10 percent off ONPPC prices;
- Place responsibility for drug resupply on the CVDs or cooperatives.

6. USAID/N should finance a study to locate areas with potential new markets for popular pharmacies or private drug depots. The study should also estimate the investment required for each new enterprise, the time required for loan repayment, and describe barriers to expansion of the pharmacy/depot network. The Office for the promotion of Nigerien enterprises (OPEN), or a similar organization, could be contracted with to conduct the study.

7. Subsequent to achievement of Recommendation No. 4, USAID/N should consider providing investment credit to the ONPPC, to increase the number of popular pharmacies, and through the ONPPC or other Nigerien organization, to approved applicants to open drug depots. Careful selection of credit recipients will be required in order to assure a loan repayment level above the 52 percent experienced with cooperatives in the Niamey Productivity Project.

8. The MOH/SA, with USAID/N financing, should undertake a study of the current charge schedule recommended to VHAs, the adequacy of such a schedule to cover the costs (drugs, transportation, and VHAs' time) for drug resupply, and the actual pricing and fee collection practices of VHAs. The study should focus on making recommendations for VHA training in drug sale and resupply, village development and health committee sensibilisation and involvement in drug resupply, and changes required in recommended prices for VHA medications.

9. The MOH/SA should consider application of the recommended charges for VHA drugs to all departments, with local administrations having the responsibility of assisting poorer sub-populations to purchase VHA drugs.

ANNEX A

MOH/SA: Details of Organizational Chart - 1984

A. DIRECTORATES

1. Administration and Finance (DAF)
 - a. Personnel Service
 - b. Offices
 1. Accounting
 2. Transportation
 3. Pharmacies
2. Health Facilities (DES)
 - a. Divisions
 1. Departmental Directorates and Hospitals
 2. Maternities
 3. Village Health Teams
 4. Inspection of Occupational Health
 5. Laboratories
 - b. Office of Sports
3. Training and Health and Nutrition Education
 1. Training and continuing education
 - a. Office of middle and higher education
 - b. Office of continuing education
 2. Health and Nutrition Education
 - a. Offices
 1. Health Education
 2. Nutrition
 3. Gifts in kind
4. Social Affairs and Maternal and Child Health (DAS/PMI)
 - a. Accounting office
 - b. Division of Social Affairs
 1. Offices
 - a. Social Service and Protection of Minors
 - b. Women's education and control of social works
 - c. Division of MCH
 1. Office of coordination
 2. Office of supervision
5. Hygiene and Mobile Medicine (DHMM)
 - a. Office of accounting, personnel and logistics
 - b. Division of Hygiene and Sanitation (DHA)
 1. Offices
 - a. Sanitary evacuation of waste materials
 - b. Food hygiene
 - c. Public supply of potable water
 - d. Hygiene, environment and health education
 - e. Pest control
 - f. Laboratory of hygiene and sanitation technics
 - c. Division of School Health

B. DIVISIONS

1. Health Infrastructure and Statistics (DIS)

a. Offices

1. Programming for health facilities and markets
2. Statistics, documentation and legislation
3. Logistics (Car Pool) and accounting

2. Planning and Programming

a. Offices

1. Immunizations
2. Leprosy
3. Venereal and infectious disease control
4. Health police and laboratories
5. Collection of statistics, reception and stocking of vaccines

ANNEX B

HISTORICAL INFORMATION ON THE RHIP

A partial history of events leading up to, and including the RHIP, is presented in Annex B.1. The first major health project financed by USAID in Niger was started in the mid-1960's, based in Mainé-Soroa in the Department of Diffa and jointly executed with the Peace Corps. This experience led to the creation of AFRICARE and thus, when the Niger Basic Health Services Delivery Project contract was awarded to AFRICARE in 1977, it was logical that it be based in Diffa.

In the mid to late 1970's Primary Health Care appeared to be an ideal solution to meeting the health needs of those without access to medical services. PHC was claimed to be a means of providing health services that were cost effective, preventive as well as curative, and supported by community involvement.

Some of the important declarations of which supported the development of PHC programs included the following:

- 1) The U.S. Congressional New Directions amended the Foreign Assistance Act to put emphasis on the meeting of the basic needs of the poor, including the needs for nutrition, shelter, clothing, health services and education.

- 2) The CILSS health strategy adopted in Ottawa in June 1977 called for the development of village-based programs.

- 3) In 1978, WHO gave PHC its official blessing at Alma Ata. Since by this time, Niger already had 14 years of political commitment and experience in village health care, the study leading to the preparation of the RHIP Project Paper claimed that "Niger represents the best opportunity in the West African health sector for USAID to demonstrate its willingness to support

implementation of a government health strategy." (Joseph) Originally conceived as a health sector grant, the proposal was revised to a more specifically targeted rural health project in response to reviews in Washington which had raised doubts about management capabilities and the availability of technical assistance.

By the early 1980's USAID had evaluated a large number of first-generation health projects and came to the following conclusions:

1) Primary health care in general was neither as effective or as inexpensive as had been thought.

2) Specific interventions which had been shown to have an impact on child morbidity and mortality included such things as immunizations, oral rehydration, nutritional monitoring and early intervention, birth spacing and sanitation. Thus the USAID emphasis in the health sector shifted to an emphasis on improved program design, management and implementation, a search for ways to make health programs self-financing and the introduction of relatively simple, proven technologies. Specific examples of how this policy was implemented in the RHP include the following:

1) Strengthening of the health planning capabilities of the RD/AS through the management information system being installed by Fulani.

2) Continuing support of the training of sanitation technicians at ENICAS with emphasis on the use of simple appropriate technologies.

3) Support of the Government's efforts to develop an Expanded Program on Immunization.

The 1983 Niger Country Development Strategy Statement claimed that the RHIP achieved what it was designed to do; that is, train large numbers of people from the village to the national level. However, for there to be a lasting impact on the health of the nation, this trained personnel must work in the context of a viable, functioning health system that is sustainable in the long-run by the country's own resources. The search for answers to this latter challenge explains the multitude of questions now being asked about community participation, user fees, better planning, increasing involvement of the private sector and coordination with others assisting the health sector including WHO, UNICEF, the World Bank, NGO's and Belgian and Dutch bilateral aid.

TABLE B.1.

PARTIAL HISTORY OF THE RHIP

- Mid 1960's - Combined USAID/Peace Corps project in Diffa department**
- 31 Jan 1977 - Niger Basic Health Services Delivery Project**
- 16 May 1977 - Niger Health Sector Assessment**
- 14 Nov 1977 - Rural Health Policy and Village Health Services in Niger: Technical Analyses and Program Recommendations for an AID Project Paper**
- 17 Jan 1978 - Project Paper**
- 1 June 1978 - Grant Agreement between the Government of Niger and USAID**
- 11 Aug 1979 - Host country contract for AFRICARE to provide technical assistance to RHIP**
- 1 Apr 1981 - Amendment No. 1: Merges the Niger Basic Health Services Delivery Project into RHIP**
- Apr 1981 - First Interim Evaluation**
- 24 May 1982 - Project Evaluation Summary**
- 21 Oct 1982 - Revised Implementation Plan**
- 1 Jan 1983 - AFRICARE host country contract under RHIP**
- 25 May 1984 - Arrête No. 11/SBP/AS/PASR Portant Attributions des Services du Projet Amélioration de La Santé Rurale**
- 27 Aug 1984 - Tulane contract signed**
- Oct 1984 - First contingent of Tulane team arrives**
- Feb 1984 - Tulane chief of party arrives**
- 11 Jan 1985 - Tulane committee established in MOH**
- Jul 1985 - AFRICARE contract renewed**
- Jul 1985 - Second Interim Evaluation**
- 31 Dec 1985 - Project Assistance Completion Date**

ANNEX C

HEALTH AND MANPOWER PLANNING

Health Planning

A national seminar on health planning was organized by WHO in Niamey in 1979. Over the years the MOH/SA had also benefited from technical assistance in the area of epidemiological data collection and from inputs from such projects as the Strengthening of Health Delivery Systems, jointly managed by WHO and USAID.

The 8th "Journées d'Etudes de la Santé" held from 1975 to 1984 and the national health debate at Maradi in 1983 are indicative of the systematic efforts of the MOH/SA to debate the issues, evaluate that which exists and recommend changes in strategy and programs. Another tool developed to attain the elusive goal of program coordination has been the creation of intra- and inter-ministerial committees. Unfortunately, there are too many meetings and too few people to attend them with the result that few of the committees have been functional on a regular basis (one exception being nutrition). At the 6th "Journées d'Etudes de la Santé" in Diffa in 1981, detailed proposals were suggested for reorganization of the MOH/SA, including the creation of two new directorates for Family Health, and Hygiene and Sanitation. In 1983 a planning unit was created which is not yet fully functional and may some day also become a directorate. Two mémoires by Nigeriens from the Regional Center of Health Development (CRDS) in Cotonou have also addressed the issues of health planning in Niger. The first, by Dr. Lazare LOCO, made recommendations for management improvement in the health system and the second, by Dr. Ibrahim ABDOL, noted the lack of written descriptions of the services and jobs at all levels of the system. (Loco, Abdou)

Two main problems hindering the implementation of recommendations in the Ministry have been the lack of trained personnel and extreme budgetary constraints. The first problem is beginning to be alleviated as graduates from long-term training are returning, although staffing is still inadequate; the second is yet without a solution.

The management information/planning unit set up by Tulane University in the last six months is currently spending much of its time in data processing and analysis of a recently conducted morbidity and mortality survey. Its broader objective is to enable the Ministry to improve the quality of its service data and transform it into timely, reliable information, which will allow decision-makers to better manage and evaluate the Ministry's programs. The team is currently working on guidelines for operational research in response to the Ministry's desire to strengthen this area. The planning unit is already looking towards the decentralization of its services to other branches of the MOH/SA and out to the departments. Links already exist with the National Family Health Center, which is setting up data collection systems and planning a variety of studies. Another important link to be strengthened is the one between the MOH/SA and the demographic unit in the Ministry of Plan so that population information will be an integral part of future planning exercises.

Manpower Planning:

In 1981 the MOH/SA developed a manpower plan titled "Besoins en Personnel," based on the Five Year Plan for Economic and Social Development (1979-83), that has been updated on an annual basis. In the past, the DEESN generated the specific targets to train each year in each specialty. Recently, all the directorates in the MOH/SA have participated in these decisions. In generating specific numbers for each specialty the major criteria kept in mind by the planners are future budgetary constraints (for example, salary obligations of new graduates); WHO health coverage norms; and whether or not the concomitant infrastructure exists to support a person trained in that specialty.

All of the recipients of RHIP scholarships for long-term training were employees of the MOH/SA, or the Ministry of Higher Education, who generally had worked a minimum of three years for the government before being sent for further studies. Most of the trainees are chosen by competitive examination. During their studies abroad they continue to receive their Government of Niger salary which is supplemented by the USAID scholarship. The latter covers the difference in cost-of-living between Niger and the country in which the student is pursuing his studies. If USAID discontinued these scholarships the MOH/SA would approach WHO, the second largest donor in this arena. WHO support would not be nearly as large as that provided by USAID.

Given the small increases in the MOH/SA budget in recent years and the increasing percentage required for personnel costs, the subject of manpower needs and constraints is one of which the Ministry is acutely aware. The situation presents a difficult dilemma, for while on the one hand there is a need at all levels for more and better trained people, on the other hand operating budgets are inadequate to allow them to work effectively. Some of the MOH/SA decisions aimed at alleviating the problem include:

- 1) More emphasis on retraining existing personnel.
- 2) More equitable distribution of personnel, particularly regarding the rural areas.
- 3) The search for ways to implement and standardize user fees for medicines and health services.

Manpower studies have recently been done (World Bank, Ministry of Plan and MOH/SA) and more work is continuing at the present. The document "Analyse de la Formation Médicale et Paramédicale au Niger" looks at health training projections through 1989 and presents very conservative estimates of the costs involved. Based essentially on this data, the following Tables C.1-C.3 present the number of graduates expected and the supplemental funds needed to cover training and salary costs. Between 1986-89, an average of 229 graduates a year are projected at an average training cost of 2.7 million CFA francs per person.

Assuming that the current MOH budget and percentage for personnel is essentially changed from 1984, then the increase needed in the personnel budget to cover the salaries of graduating doctors, superior nursing and obstetrical technicians and state nurses from 1986 to 1989 will be about 31 percent of the 1985 budget, or an average annual increase of 7 percent per year.

Another existing study describes manpower needs and projections for the Department of Zinder. (Abdou) The analysis concludes that personnel problems consist of number of factors including insufficient numbers, lack of job descriptions and suboptimal distribution. In order to increase access to health services in Zinder from 1984-88, the proposal calls for the construction of 15 new dispensaries and an increase of rural health personnel including seven physicians, 15 state nurses, 15 mid-wives, five sanitation technicians and five laboratory technicians. In 1988, just the salaries of the additional physicians, state nurses and mid-wives represent approximately 45 percent of Zinder's 1984 non-hospital budget.

A third example of manpower projections related to the training of village health teams is presented in Table C.4. As previously noted, the MOH/SA is increasingly aware of the problems of supervision, with the ICP calling for a reduction of VHTs to be trained a year from 500 to 250. The calculations in the table demonstrate the effect of slowing the training rhythm to about 200 VHTs per year from 1985 to 1989. Based on the hypothesis of a continuing rate of population increase of 2.7%, population coverage would increase by 1% per year to 50% in 1989, at an average annual cost for training and retraining of close to 100 million CFA francs.

Even this markedly slower rate of training would have a significant effect on the problem of supervision, for the average number of VHTs per department would increase by 27% from 563 to 715. The MOH/SA is now planning a seminar/workshop to be held soon on the subject of the definition of services to be delivered in each health facility and the number, qualifications and

tasks required of the health personnel. This information will permit a more rational planning of personnel needs than simply using population ratios, which are sometimes misleading. For example, the fact that the ratio of village health teams to dispensaries in Agadez is only 8/1 as compared with a national average of 17/1 does not necessarily mean that supervision is easier in Agadez. Other questions which may be considered in further manpower analyses include the following:

1) The scale of health service and personnel resources can be related to the needs and demands of the population. For example, an arrondissement in a densely populated area might require two mid-wives whereas another might only need one.

2) The question of productivity has not yet been thoroughly analyzed. If ways can be found to allow people to be twice as effective than only half as many will be needed.

3) What specific objectives concerning traditional medicine can be developed? What lessons can be learned from neighboring countries which have created institutes, conducted surveys of traditional healers, and tested and refined traditional treatments? Has such an approach effectively increased access to services and reduced costs to the Government?

4) What are the specific objectives of the planned National Center for Health Development (CNDS)?

Table C.1
Projection of Health Personnel
1984 - 1989

Category	1984	1985	1986	1987	1988	1989	% INCREASES (1984 -89)
Physician	147	172	195	232	259	281	91%
Superior Obstetrical Technician	-	-	20	55	105	127	-
State Mid-Wife	183	238	238	238	238	238	-
(SOT + SMW)	183	238	258	293	343	365	99%
Superior Nursing Technician	-	-	30	83	159	192	-
State Nurse	366	480	605	731	803	942	-
Certified Nurse	777	777	777	777	777	777	-
(SNT + SN + CN)	1143	1257	1412	1591	1739	1911	67%

* 7 Physicians in training outside of Niger are included.

Source: MOP and MOH/SA. Analyse de la Formation Médicale et Paramédicale au Niger
Mars 1985.
Rapport D'Activités du MSP/AS - 1984.

Table C.2
 TRAINING COSTS OF HEALTH PERSONNEL
 (Estimates graduates 1986 - 89)

Category	Cost PER Student CFA	NUMBER OF GRADUATES PER YEAR				TOTAL	TOTAL COST CFA
		1986	1987	1988	1989		
Physician	10,170,000	20	34	27	22	103	1,047,510,000
Superior Nursing Technician	2,277,152	30	53	76	33	192	437,213,000
Superior Obstetri- cal Technician	2,277,152	20	35	50	22	127	289,198,000
State Nurse	1,415,994	141	134	76	143	494	699,501,000
Total Graduates PER Year	-	211	256	229	220	-	24.734.422.000

Ratios of training costs:

Physician/superior technician = 4.5/1
 Physician/state nurse = 7.2/1
 Physician/village health agent = 254/1

Average cost/year = 618,356,000
 No. of graduates/year = 229
 Average cost/graduate = 2,700,000

* Estimated cost of training a VHA = 40,000 CFA.

Source: MDP and MOH/SA Analyse de la formation médicale et Paramédicale au Niger
 Mars 1985.

Table C.3
Health Personnel Salaries
Estimated graduates 1986-1989

Category	Grade	Annual Salary	1986		1987		1988		1989	
			No	Additional Salaries						
Physician	A1	1,053,900	24	25,293,600	20	21,078,000	34	35,832,600	27	28,455,300
Superior Nursing Technician	A2	915,900	30	27,477,000	53	48,542,700	76	69,608,400	33	30,224,700
Superior Obstetrical Technician	A2	915,900	20	18,318,000	35	27,477,000	50	45,795,000	22	20,149,800
State Nurse	B2	719,496	141	101,448,936	134	96,412,464	76	54,681,696	143	102,887,928
Totals			215	172,537,536	242	193,510,164	236	205,917,696	225	181,717,728

* Starting rates in 1983

** - Physicians have a year of civil service before receiving full salary

Source: MSP/AS Chiffres de personnel
Salaries: bureau du Personnel.

Table C.4
Slower Training Plan for VHT'S
(1985 - 1989)

Year	Population	Population Covered	VHT'S to Train	Total VHT'S	Training Costs CFA	VHT Retraining 1/3 each year	Costs of retraining CFA
1984	6,149,102	45% 2,767,096		3942			
1985	6,315,128	46% 2,904,959	196	4138	31,360,000	1314	52,566,570
1986	6,485,636	47% 3,048,249	204	4342	32,640,000	1379	55,166,895
1987	6,660,748	48% 3,197,159	212	4554	33,920,000	1447	57,887,235
1988	6,840,589	49% 3,263,767	220	4774	35,200,000	1518	60,727,590
1989	7,025,284	50% 3,512,642	229	5003	36,640,000	1591	63,647,955
Totals			1061		169,760,000	7249	289,996,245

Annual Rate of Population Increase = 2.7%

Persons/VHT = 702

Training cost/VHA = 40,000 CFA

1 VHT to Train = 3 VHA's

1 VHT to Retrain = 3 VHA's

Retraining cost/VHA = 13,335 CFA

Total Costs (Training + Retraining) = 459,756,245 = 91,951,249/year

At 1\$ US = 460 CFA = \$200,000/year

Source: MOP and MOH/AS Analyse de la formation médicale et Paramédicale au Niger
1985

ANNEX D

TABLES FOR ECONOMIC AND FINANCIAL ANALYSIS

TABLE D.1

NIGER: TRENDS IN GDP AND GDP PER CAPITA
1978-1985

	1978	1979	1980	1981	1982	1983	Projection	
							1984	1985
GDP (current CFA) ^{1/}	362.1	442.6	528.5	597.6	650.4	676.8	732.4	803.6
GDP (real 1976 CFA) ^{1/}	270.4	307.1	322.2	325.7	325.0	310.7	311.3	320.0
Annual real rate of growth ^{2/}	8.3%	13.6%	4.9%	1.1%	- 0.2%	- 4.4%	0.2%	2.8%
Population (000,000) ^{3/}	5.0	5.2	5.3	5.5	5.6	5.8	6.0	6.1
GDP Per Capita ^{4/} (current CFA)	72.4	85.1	99.7	108.7	116.1	116.7	122.1	131.7
GDP Per Capita ^{4/} (real 1976 CFA)	54.1	59.1	60.8	59.2	58.0	53.6	51.9	52.5
Annual real rate of growth	---	9.2%	2.9%	- 2.6%	- 2.0%	- 7.6%	- 3.2%	1.2%
Implicit GDP Deflator Index (1976=100)	133.9	144.1	164.0	183.5	200.1	217.8	235.3	251.1

^{1/} Billion CFA francs.

^{2/} Trend rate of real GDP growth from 1976-85 was a 4.4 percent increase per annum.

^{3/} Population growth rate of 3.0 percent per annum from 1982.

^{4/} Thousand CFA francs.

Sources: - Toh, K., Recent Macroeconomic Developments in Niger: Country Situation, Policy, and Outlook, Niamey: USAID, April 1984, Table A.1.

- IMF. International Financial Statistics Yearbook, 1984. Washington, DC: IMF, p. 451.

TABLE D.2

**NIGER: CENTRAL GOVERNMENT REVENUE, EXPENDITURE, DEFICIT AND FINANCING^{1/}
1978-1985**

	1978	1979	1980	1981	1982	1983	MOF		IMF	
							Projections 1984	1985	Projections 1984	1985
Total Revenue ^{2/}	45.8	59.9	74.9	76.8	75.1	68.7	77.3	81.7	74.0	79.6
Total Expenditure	59.2	74.1	107.4	140.8	121.2	118.8	104.9	116.0	104.9	116.0
Capital	47%	49%	55%	63%	52%	47%	36%	37%	36%	37%
Current	53%	51%	45%	37%	48%	53%	64%	63%	64%	63%
Change in Arrears (decrease -)	---	1.9	2.7	2.8	14.7	-1.7	-11.5	- 7.4	-11.5	- 7.4
Budget Deficit	-13.5	-12.4	-29.8	-61.2	-31.5	-51.8	-39.0	-41.7	-42.3	-43.8
Financing	---	12.4	29.8	61.2	31.5	51.8	23.1	23.3	23.1	23.3
External	---	13.8	18.2	40.4	20.1	36.6	16.6	20.8	16.6	20.8
Domestic	---	1.4	11.6	20.8	11.4	15.2	6.5	2.5	6.5	2.5
Financing Gap	---	---	---	---	---	---	15.9	18.4	19.2	20.5

^{1/} Current billions CFA francs.

^{2/} Tax revenues comprised from 83 to 91 percent of total central government revenues from 1978 to 1985.

Sources: Toh, K., Recent Macroeconomic Developments in Niger: Country Situation, Policy and Outlook, Niamey: USAID, April 1984, Table A.11.

TABLE D.3

NIGER: EXTERNAL DEBT AND DEBT SERVICE RATIOS
1979-1985

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
<u>External Debt:</u>							
Total	115.3	149.5	223.7	245.7	288.6	329.8	344.7
Public	54.8	86.0	166.7	197.5	251.5	296.3	318.5
Private	60.5	63.5	57.0	48.2	37.1	33.5	26.2
<u>Debt Service Ratios</u>							
Total	14.3	19.0	30.9	40.0	33.0	31.0	28.0
Public	2.4	6.3	11.4	27.0	22.0	24.0	22.0
Private	11.9	12.7	19.5	13.0	11.0	7.0	6.0

1/ Billion current CFA francs.

Sources: 1979-81:

- Toh, K., Dimensions of Current Economic Difficulties in Niger and proposed AID Sector Grant, Niamey: USAID, July 1983, p. 24.
- Debt service ratios calculated with debt as percent of exports of goods and non-factor services.

1982-85:

- Toh, K., Recent Macroeconomic Developments in Niger: Country Situation, Policy and Outlook, Niamey: USAID, April 1984, Table A.19.
- Dollar figures converted to CFA with the following exchange rates: 1982: 328.6 CFA/\$; 1983: 378.5 CFA/\$; 1984 and 1985: 409 CFA/\$.
- Debt service ratios calculated with debt as percent of exports of goods, services and private transfers.

TABLE D.4

NIGER: PUBLIC INVESTMENT EXPENDITURES^{1/}
1979-1985

Sector	Planned Targets for Public Invest. 1979-1983	Total Spending In Constant 1979 Prices 1979-1983	Ratio of Actual to Planned	Planned Investment	
				1984	1985
Directly Productive Sector ^{2/}	175.98 (46%)	126.9 (36%)	0.72	22.9	22.6
Economic Infrastructure ^{3/}	67.76 (19%)	109.0 (31%)	1.61	16.9	18.6
<u>Social Services</u>	<u>144.44 (30%)</u>	<u>76.3 (22%)</u>	<u>0.67</u>	<u>21.9</u>	<u>24.6</u>
Education	65.86 (17%)	44.5 (13%)	0.68	4.2	6.7
Health	18.97 (5%)	8.2 (2%)	0.43	2.6 (4%)	3.1 (5%)
Water Supply	24.42 (6%)	13.9 (4%)	0.57	14.7	13.7
Housing and Urbanization	5.19 (1%)	9.7 (3%)	1.87	0.4	1.1
Administrative Infrastructure	26.27 (7%)	38.2 (11%)	1.45	0.6	0.3
TOTAL	<u>384.45 (100%)</u>	<u>350.4 (100%)</u>	0.91	62.3	66.1

^{1/} Billions CFA francs.

^{2/} Agriculture and rural sector, mining, industry, energy, commerce and tourism.

^{3/} Transportation and telecommunications.

Source: Toh, K., Recent Macroeconomic Developments in Niger: Country Situation, Policy and Outlook, Niamey: USAID, April 1984, Tables A.7 and A.9.

ANNEX E
DESCRIPTION OF ENICAS AND ENSP

A detailed description of the two national training schools of the MOH/SA follows.

I. ENICAS: Nursing Training

When the Ecole Nationale d'Infirmiers Certifiés et des Aides Assistants de l'Action Sociale (ENICAS) opened in 1975 it trained certified nurses (CN) in a one year course. The training of assistant social workers and sanitary agents was added in 1979. In 1982, the training of certified nurses was increased to two years in order to provide more practical clinical experience. School entrants have six years of primary school education and two years of secondary education. On graduating, these certified nurses are assigned for a minimum of three years to head rural dispensaries or work in medical circumscriptions (MC), hospitals, transmissible disease control units, or MCH clinics. If assigned to a dispensary or a MC their duties include the supervision of village health workers.

The 10 full-time faculty members of ENICAS must be state nurses with a minimum of three years of field experience. The teaching staff at ENICAS consists of 10 faculty members assigned by MOH/SA and 60 part-time instructors who are paid by the Ministry of Finance 1,500 CFA/hour for anywhere from 20 to 40 hours of teaching. These instructors teach specialized subjects such as physics, chemistry, English and French. They must pass a national exam and are required to work for one year as a teaching assistant. An additional two years of training (at the Centres d'Enseignement Supérieur et Soins Infirmiers in Dakar, or similar schools in Algeria, Belgium, France, and Yaounde) brings them to approximately a Master's degree level, following which they return to ENICAS.^{1/} After this training, a faculty member can teach any of the courses in the ENICAS nursing curriculum. Since all are well-versed in

^{1/} Mid-Term Evaluation, 1981.

pedagogic techniques, faculty members assigned to supervise students' field trainings are expected at that time to impart teaching methodologies. The Assistant DDS for village health workers in Zinder is the part-time instructor at ENICAS responsible for instructing nursing students on their future responsibilities vis-à-vis village health workers.

In the past, the certified nurses at ENICAS were taught basic theories of community health and hygiene, including health and nutrition education in which pedagogic techniques are discussed.^{1/} The far-ranging content of the curriculum is intended to prepare the student for the wide range of assignments they may expect to receive during their career.

In 1982, ENICAS was renamed the "Ecole Nationale des Infirmiers et des Cadres de l'Action Sociale," reflecting a change in entry and graduation requirements. As of September 1985 all students at ENICAS have their Brevet,^{2/} and a total of 10 years of previous schooling. Their studies at ENICAS now last three years. As a result of these changes, ENICAS nursing graduates will be state nurses, rather than certified nurses, and environmental sanitation students will be sanitation technicians, rather than sanitary agents. To be eligible for further training, the nurses must now have served five years in field positions, rather than the three years previously required.

In addition to their tuition, students receive a scholarship of 20,000 CFA francs (U.S. \$46)^{3/} per month from which they must finance their food and lodging (no dormitories are provided). Seventy students are given subsidized cafeteria privileges at the ENICAS campus cafeteria. For them monthly food expenditures represent 18 percent of their monthly scholarship. Those without cafeteria privileges must spend an estimated half of their allowance on food. The cafeteria can handle a much larger volume of meals, and the meals can be consumed outside of the cafeteria. If the entire student

1/ Family Health Care Report: Rural Health Policy and Village Health Services in Niger; Nov. 14, 1977, - p. 31.

2/ These students are referred to as Breveté Orientés to distinguish them from graduates who are Breveté d'Infirmier.

3/ U.S. \$1 = 430 CFA francs.

body could benefit from subsidized meals, it would enhance the students' living standard.

The 1980 Diffa/AFRICARE Project Evaluation remarked that inadequate time was allocated for practical training. This deficiency has since been rectified. In addition to receiving a more thorough grounding in community health, the state nursing students at ENICAS now have a month of practical training at the dispensary nearest their home after the first and second year of their studies. During their third year, groups of 10 students are placed for two months (January, February) in a rural circonscription medicale (MC). It is at this time that the students receive their first "hands-on" experience in teaching and supervising village health workers. Their field training is under the auspices of the Chief of the MC, and an ENICAS faculty member who pays a one-week supervisory visit to the MC. If village health worker training does not take place at the MC during the students' field training, by their graduation from ENICAS, these nursing students will not have had any practice teaching village health workers.

The library at ENICAS is inadequate. Students are not provided textbooks and subsequently can only study from their lecture notes. A student can check out a library textbook for two weeks at a time, but there are not a sufficient number of texts for the entire student body.

Graduation requirements are quite strict. The student must pass written exams in medicine and surgery, and an oral exam on dermatology, venereal disease, ear, nose and throat problems and public health and administration. If the student has an overall average greater than or equal to 10/20, he becomes a state nurse (Infirmier Diplômé d'Etat); if the average is between 9.99/20 and 8/20 he receives a Brevet d'Infirmier. If his average is lower than this he receives no degree.

II. ENICAS: Sanitation Training

Although the Revised Implementation Plan discussed the importance of providing added support to the sanitation training program at ENICAS, the institution is still weak. Of the three sanitary engineers provided by AFRICARE, two worked at the DHMM in Niamey, and all three participated in the

training program at ENICAS. Since the last engineer left in 1984, a standing request for a replacement has yet to be filled. One man was identified, but due to excessive delays in the hiring process, he decided to go elsewhere.

Other than the lack of teaching staff, the main problem has been the lack of funds to implement practical experience which has been put into the curriculum. "Hands-on" work is programmed as follows:

- 1) First year: 100 hours of basic sanitation technology (BST);
- 2) Second year: 40 hours of BST; and
- 3) Practical field work in the village of Midick, 8 km. from Zinder.

No more than 60 percent of the practical work was achieved this year.

The Midick project, planned since 1982, only started in January of this year. Midick is a village in which year-round gardening provides vegetables to the markets in Zinder. One indicator of the higher than average wealth of its inhabitants is the large number of bicycles in the village. A study conducted in 1982 showed the people to have a high prevalence of diseases related to problems of water and sanitation (schistosomiasis, amebiasis, and Guinea worm). Thus a proposal was developed calling for sanitation students at ENICAS to work with the villagers towards the goals of treating the parasites, the provision of health education, and the installation of simple technologies including latrines, filters and repair of the village well. The evaluation team visited the village and observed the following:

- 1) About 73 out of 150 planned latrines have been built; the school providing the cement slabs and technical assistance and the villagers providing the labor. Four of them were seen and found to be clean, with wooden covers in place.

- 2) The health education given has yet to have had an impact. The village chief, when questioned about the causes of Guinea worm and schistosomiasis, attributed all disease to Allah.

3) The village's drinking water sources consist of muddy ground water in ponds and a well in need of repair. The probability that these sources are contaminated is high.

4) The use of filtered water has not yet been achieved. An empty ONERSOL filter was found unused near the school and the clay jars which were bought to make into filters have not been used.

Part of the funding problem for Midick has been due to difficulties of coordination between AFRICARE and the MOH. AFRICARE was to originally have funded the entire project, but the proposed budget was considered to be inadequate. The RHIP agreed to pick up the difference, but as has happened with other parts of the project, funds have not been made available in time.

A major problem which is at yet unresolved is the placement of sanitation agent and technician graduates. Three potential places of employment involve three different ministries; Medical Circumscription (Health), city sanitation (Interior) and village hydraulic projects (Environment). Another problem is that no funds have been forthcoming to support the workers and provide them basic equipment.

III. ENSP:

The National School of Public Health (ENSP) established in 1965 is located in Niamey. From 1975-1982 it trained only state nurses (SN), midwives, and (since 1979) laboratory technicians. Entry level requirements were the Brevet (awarded after 10 years of primary and secondary schooling). On graduating, the state nurses and midwives were assigned to "medical posts" (MPs), MCs, hospitals, MCH clinics and transmissible disease control units. Laboratory technicians are assigned to the city, hospitals, and DHA.

In 1982, ENICAS began to train state nurses. ENSP now trains state nurses,^{1/} midwives, lab technicians and social workers as Superior

^{1/} The last group of Brevetés to train as state nurses entered ENSP in the 1982-83 school year, and graduated in June, 1985.

Technicians. All entrants to the school must have their Baccalaureate (awarded after 12 years of schooling). The Superior Technicien students receive a scholarship of 35,000 CFA francs (U.S. \$80)^{1/} per month plus tuition. The school's enrollment is over 400 each year, of which 75 (20 percent) are supported by USAID. Other donors support 25 percent of the enrollment. Approximately 75 nurses, 55 midwives and 20 lab technicians graduate each year. The Ministry employs all graduates.

The permanent faculty members at ENSP have a background similar to that of the ENICAS faculty. There are 20 ENSP faculty and 47 part-time instructors.

During their three years at ENSP, in addition to the usual nursing curriculum, nursing students take courses in public health theory and practice, public health administration, methodology, statistics and demography. The change in the level of training has resulted in an increase in the level and number of courses taught. Biology and genetics have been added to the curriculum and anatomy and physiology are now taught as two distinct courses.

This year, for the first time, a discussion of family planning methods was introduced in the curriculum for obstetrics, and two students wrote their final "memoires" this year on the subject. Combatting diarrheal disease is taught in pathology.

The students learn about village health teams in the course of a six-hour seminar given by the MOH/SA coordinator for village health teams, and attended by all third year nursing students. The topic is also discussed during the semester course on public health theory. Students learn pedagogic methods, and use of audio-visual aids in the Health Education course and practice teaching sessions are held. Plans are underway to provide graduates with a "tool-box" of teaching aids for use in the field, i.e., flannelographs, drawing materials, tape recorder, etc.

The students' exposure to training and supervision of village health teams comes in the two-month rural field training that all third year nursing

^{1/} U.S. \$1 = 430 CFA francs.

students must undertake. Transportation to the field training sites poses a continual problem. The MCs where students do their field training have been carefully selected in four departments (Niamey, Dosso, Tahoua and Maradi) by the ENSP faculty members. The criteria for MC selection includes whether or not a village health team training is planned during the two months of field training, as well as the teaching abilities of the chief of the MC. Only once, in Tahoua in 1978, have students not been able to observe a training of village health teams during their field study, and this one time was due to a delay in the arrival of funds to finance the training. The students accompany the head nurse on supervisory visits to village health workers and traditional birth attendants and are themselves supervised by ENSP faculty during two half-day visits during the course of the two months.

During the 12-day visit to the field, the evaluation team observed one training and inquired about arrangements in each department for the supervision of village health teams. In one department, dispensary nurses had an average of 30 village health teams to supervise and spent an average of six working days a month on supervisory visits. In another department, supervisory visits were made infrequently, and one individual interviewed had never conducted one. In view of the percentage of the nurses' and midwives' workload that training and supervision of village health teams should entail, and given that the Government of Niger is insisting on assignment of nursing graduates to rural areas, more curriculum emphasis on supervision is justified.

If possible all nursing students, by their graduation, should have had the opportunity to practice teach one class of village health teams for one day under the tutelage of an instructor trained in pedagogic methods. Similarly, all should have conducted one supervisory visit, using a standardized supervision guide for VHTs.

IV. Assignment Procedures for ENCAS and ENSP Graduates

The names of graduating nursing students are forwarded to the DETSN^{1/} in the MOH/SA. A "decision d'admission" is made for each graduate, and is

^{1/} The name of ENCAS graduates are first sent to the prefecture, which then forwards them to the DETSN.

signed by the Minister of Health. After this step, the names are given to the MOH/SA Assignment Committee (Comité d'Affectation) comprised of a representative from the Minister's Cabinet, the DES, and the DAS/PMI, the Chief of Personnel (DAF) and the Chief of the Hospital Division. This committee meets in July and August to recommend specific assignments for graduating students. Accompanying the names of certain graduates is a report prepared by the Director of ENICAS or ENSP on the student's relationships with others, and an assessment of his ability to handle responsibility (in particular if he is capable of directing an MC). The Committee also receives a list of personnel needs from each DDS of the seven departments. These lists may contain the names of individual graduates the DDS would like to have assigned to his department.

In reaching its recommendations for individual assignments, the committee consults the Director's reports, the DDS's list of personnel needs and the quotas developed in 1981 defining the number and types of personnel to be assigned to dispensaries, MCs, MCH clinics (PMIs), and hospitals. The committee is also guided by the July 13, 1979 Government decree (recently reinforced by another decree) stating that all nurses and midwives are obliged to serve a minimum of one year in a rural milieu. In principle, recommendations for assignments to the various departments are made randomly, except for those graduates with health problems or those who have been earmarked for positions as head of MCs. Where possible, married women are assigned to the same department as their husbands. These assignment recommendations are then sent to the Minister of Health who reviews the list, makes any changes and then gives his final approval.

Each DDS is then sent a list of nurses assigned to it, and the DDS makes the specific assignments to health facilities for ENICAS and ENSP graduates. The average length of stay at a post is three years. After serving one year in a rural area, a nurse is entitled to request and receive a transfer to the same locality where her husband is posted.^{1/} This stipulation occupies the majority of the Assignment Committee's time during the rest of the year. It makes it impossible to respect the quotas defined in 1981, and results in such

^{1/} In other cases, family health concerns may be cited as reasons to request a transfer to an urban area.

situations as certain MCs having two or three midwives assigned to them, and others having none, or some hospitals having 10 state nurses when only five or six are called for. Attrition rates are very low: of 2,069 professional staff in the MSP/AP (total number of employees is 4,000) there are 10 retirements each year on the average. (The retirement age for professionals is 55, and 60 for auxiliary staff.)

It was not possible at the time this report was written to determine the percentage of recent ENICAS and ENSP graduates now serving in rural areas. However, the Personnel Department, in conjunction with the RHIP/Tulane computer project located at the MOH/SA, intends to computerize its personnel records in the near future. This will make it possible to produce tables showing the urban and rural assignments among recent nursing graduates.

It should also be noted that the MOH/SA plans, in the near future, to reassign nurses to rural areas in order to correct regional disparities. There are 777 certified nurses and 366 state nurses in the country. In June, 1985 another 146 state nurses graduated from ENSP and ENICAS. These 1,289 nurses are sufficient to provide the desired coverage of two nurses for each of the 211 dispensaries.^{1/}

Job descriptions are being developed for nurses assigned to each of the various levels of health facilities.

V. Manpower Planning for ENICAS and ENSP

(For an explanation of overall planning procedures refer to the discussion in the Long Term Training Section of this report.)

The planning for student enrollment at ENICAS and ENSP is done by the DEESN at the MOH/SA in accordance with projected budgetary constraints as well as the objectives laid out in the Five Year Plan (1979-83) and the Ministry of Plan's Interim Consolidation Program (1984-85).

^{1/} These statistics do not include midwives. If midwives are included in the overall tally, the total number of personnel available for assignment to dispensaries is even greater.

The differences in future salary obligations due the different cadres of staff are considered by the various MOH/SA Directorates during the annual exercise in planning the size of entering classes at ENSP and ENICAS.

Table E.2: Ratio of Population/Health Personnel contains five-year projections for population coverage by three categories of health personnel (physicians, midwives and nurses), based on the number and rate of persons currently being trained. When these trends are compared with the objectives contained in the Five Year Development Plan 1979-83, we see that physician and nurse coverage will be in accord with the Plan's projections. However, insufficient numbers of midwives are being trained to achieve in 1989 the desired ratio of women in child-bearing ages to midwives.^{1/} This may have a bearing on future levels of USAID scholarship support provided midwifery students at ENSP.

As has been seen from Tables IV A.1. and IV A.2, student enrollment at ENSP has nearly doubled since 1978, and has almost quadrupled at ENICAS since that time. The growth at both schools is due to the new entry level requirements which resulted in two sets of students being trained simultaneously and to the opening of new sections at each school. It must also be kept in mind that increasing numbers are graduating from high school each year and are seeking further education which will lead to gainful employment.

The Government of Niger is aware of its guarantee to provide employment to all ENICAS and ENSP graduates. The size of the student body at ENSP may decrease in the ensuing years. This, plus the fact that the RHIP project supports less than 20 percent of ENSP enrollment, implies that USAID support is not as crucial to ENSP as it is to ENICAS (where RHIP supported 49 percent of student enrollment in 1984, and a projected 33 percent in 1985). It would be difficult for the Government of Niger to continue funding the current number of ENICAS students if USAID withdrew its support.

^{1/} If a 3.2 percent (instead of 2.7 percent) annual population growth rate is used for these projections, the ratio of women in child-bearing ages to midwives in 1989 is 4,930.

RATIOS OF POPULATION/HEALTH PERSONNEL
(1984/89)

<u>Year</u>	<u>Population*</u>	<u>POP/MD</u>	<u>Population (STNC + SN + CN)</u>	<u>Women (14-49) (STOC + SMW)</u>
1984	6,149,102	41,831	5,380	8,400
1985	6,315,123	36,716	5,024	6,634
1986	6,485,636	33,260	4,593	6,285
1987	6,660,748	28,710	4,187	5,683
1988	6,840,588	26,411	3,934	4,936
1989	7,025,284	25,001	3,676	4,812

Note: Objectives of 5 Year Development Plan, 1979-83 (Health Sector).

Population/physician = 30,000
 Women (14-49)/Midwife = 2,582
 Population/nurse = 3,911

* Annual growth rate = 2.7%

Source: - Ministère du Plan, MOH/SA. Analyse de la Formation Médicale et Paramédicale au Niger, Mars, 1985.

- Plan quinquennal de Développement 1979-83 (Secteur Santé).

MD: Physician
 STNC: Superior Technician in Nursing Care
 STOC: Superior Technician in Obstetrical Care
 SN: State nurse
 CN: Certified nurse
 SMW: State midwife

The Government of Niger is also considering increasing the numbers of state nurses admitted to ENSP for continuing education. In addition to providing a career ladder to nurses with field experience, this policy builds competence within the ranks without having to train new personnel, and the long term budgetary obligations are less than if new personnel were trained. It does not, however, provide further training and entry level positions to high school graduates.

ANNEX F

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APPENDIX C

MEMBERS OF THE EVALUATION TEAM

Ministère de la Santé Publique et des Affaires Sociales

Dr. Mamadou SOUMAILA	-Directeur de la DES et Directeur du Projet PASR
Mme. Ansou Amadou MAIGA	-Chef de la Cellule de Planification
Mr. Mounsa BADJE	-DEESN - Chef de la DIV/ENRES
Mr. Issa Boubacar CAMARA	-DES - Coordinateur du PASR
Mr. Mamane SOFO-BAWA	-DES - Directeur Administratif et Financier du PASR
Mr. Issoufou AHI KIAFFI	-DES - Directeur de la E.S.V.
Mr. Ibrahim Amadou LAMINE	-Chef de la DIS
Mr. Djibo GARBA	-DFI/MP
Mr. Ibrahim MAGAGI	-CP/MSP/AS
Mr. Aboubacar SAIBOU	-MOP

USAID/Niamey

Mlle. Dawn LIBERI	-Directrice des Programmes de Santé
Mme. Erna KERST	-Spécialiste d'Evaluation Bureau des Programmes

Consultants

Dr. Patrick KELLY	-Chef d'Equipe Planificateur Sanitaire/Epidémiologiste
Mlle. Dayl DONALDSON	-Economiste Sanitaire/Expert en Gestion
Mme. Shelley ROSS-LARSON	-Spécialiste en Formation et en Education pour la Santé Sanitaire
M. Kevin WIEDMANN	-Mécanicien/Expert en Gestion de Garage

APPENDIX H

PERSONS CONTACTED BY EVALUATION TEAM

USAID/Niamey

Peter Benedict - Mission Director
Randy Casey - Program Office
Clinton Doggett - Program Development Office
Abbe Fessenden - Program Office
Mike Gould - Mission Engineer, GDO
Erna Kerst - Projects Office
Dawn Liberi - Health Officer
Stan Mitchell - Controller
Charles Morgan - IDI, Niger Cereals Project
Tom Olson - Agricultural Economist
Jesse Snyder - Deputy Mission Director
Kiart Toh - Economist

Government of Niger (does not include members of the joint evaluation team)

Mme. Laure Agbessi - Directrice, DAS/PMI
Dr. Alpha Cissé - Directeur, DHMM
Dr. Maidanda Djermakoye - Directeur, ONPPC
Mlle. Alzouma Francoise - Directrice, DEESN
Oussené Garba - Directeur, ENSP
Mr. Harouna - Jurist, Cellule de Planification
Dr. Lazare Loco - Directeur Adjoint, DHMM
Barté Oumarou - Ingénieur Sanitaire à la DHA
Ibrahim Wassiry - Enseignant, ENSP

Agadez Department

Siddo Bouzaima - DDS Adjoint, ESV
Nahamane Laouli Itnah - Chef de CM
Dr. Hamidou Miye - Médecin Chef du CHD
El Hadj Mohamed Nadjim - Department de l'Animation
Dr. Francois Petitjean - DDS Adjoint, PMI
Ahamat Tcheou - DDS Adjoint, Gestion
Dr. Hamidou Unige - DDS Adjoint
Bachabi Youssef - Director CHS
***** - Direction of Plan
***** - Pharmacie Populaire

Dosso Department

***** - DDS

Diffa Department

***** - DDS Adjoint, ESV
***** - Pharmacie Populaire
CVD members of *****
Biribu Hallam Bumara - Matron de Hallam Kournari
Katachala Lawan Kadey - Chef de Village
Haoune Kadairam - Matrone de Hallem Kournari
***** - Secouriste
***** - Secouriste

Ingall

Omar Basso - Chef de PM
***** - Infirmier
***** - Sage Femme
3 members of the CVD
Postmaster
Guerisseur

Maradi Department

Ali Cisse - DDS Adjoint, ESV
Ayouba Dogonyaro - DDS Adjoint
Dr. Mamane Marafa - DDS

Tahoua Department

***** - DDS
***** - DDS Adjoint, ESV
Idi Moussa - *****

Zinder Department

Cheffou Gaoh - Pharmacie Populaire
Daouda Halidou - Director Adjoint, ENICAS
Dr. Abdou Ibrahim - Director DDS
Baare Issa Ibrahim - DDS Adjoint, ESV
Sountalma Issaha - DDS Adjoint, Gestion
Barko Moustapha - Depot Gaore
Tassaou Namaou - Chef de CM, Gaore
Zeini Sambert - Co-ordinator PMI
***** - Depot Mirriah
***** - Chef de CM, Mirriah

Others - Niamey

Laurie Blum - Nutritionist, Peace Corps
Carlos Cuevas - Ohio State
Jean-Jacques Frere - Tulane University
Dorothy Garrison - Director, Africare
Doug Graham - Ohio State
Jan Hogle - Anthropologist, PRITECH
Mamadou Issa - Director Adjoint, Peace Corps
Dorett Lyttle-Byrd - Assistant Administrator
Tim Manchester - Tulane University
Nancy Mock - Tulane University
Francis Mody - Banque Mondiale
Dr. Abdoulaye Norgoungou - Banque Mondiale
Ron Phillips - CLUSA
Yves Renaud - RESEFOP, Belgium
Alexander Shaw - World Bank
Louis Siegel - Ministry of Plan
Dr. John Wright - World Health Organization
Danielle Vaillencourt - World Bank

Others - U.S.A.

Jerry Cashion - AID/W
Mead Over - Boston University
Christian Peortman - Economist, World Bank
Hjalte Sederlof - PHN, World Bank

APPENDIX I

ITINERARIES FOR FIELD WORK

<u>DATE</u>	<u>EQUIPE A</u>	<u>EQUIPE B</u>
Juin 26	Niamey - Zinder	
Juin 27	Zinde.	
Juin 28	Zinder	
Juin 29	Zinder - Diffa	
Juin 30	Diffa	
Juin 31	Diffa	
Juillet 1	Diffa	
Juillet 2	Diffa - Maradi	
Juillet 3	Maradi - Tahoua	
Juillet 4	Tahoua	
Juillet 5	Tahoua	Niamey - Tahoua
Juillet 6	Tahoua - Agadez	Tahoua - Ingal
Juillet 7	Agadez	Ingal
Juillet 8	Agadez	Ingal
Juillet 9	Agadez - Tahoua	Ingal - Agadez
Juillet 10	Tahoua - Niamey	Agadez
Juillet 11		Agadez - Maradi
Juillet 12		Maradi - Diffa
Juillet 13		Diffa
Juillet 14		Diffa
Juillet 15		Diffa - Zinder
Juillet 16		Zinder
Juillet 17		Zinder - Niamey