

**PRITECH**

Technologies for Primary Health Care

Management Sciences for Health  
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NIGER NATIONAL ORT PROGRAM

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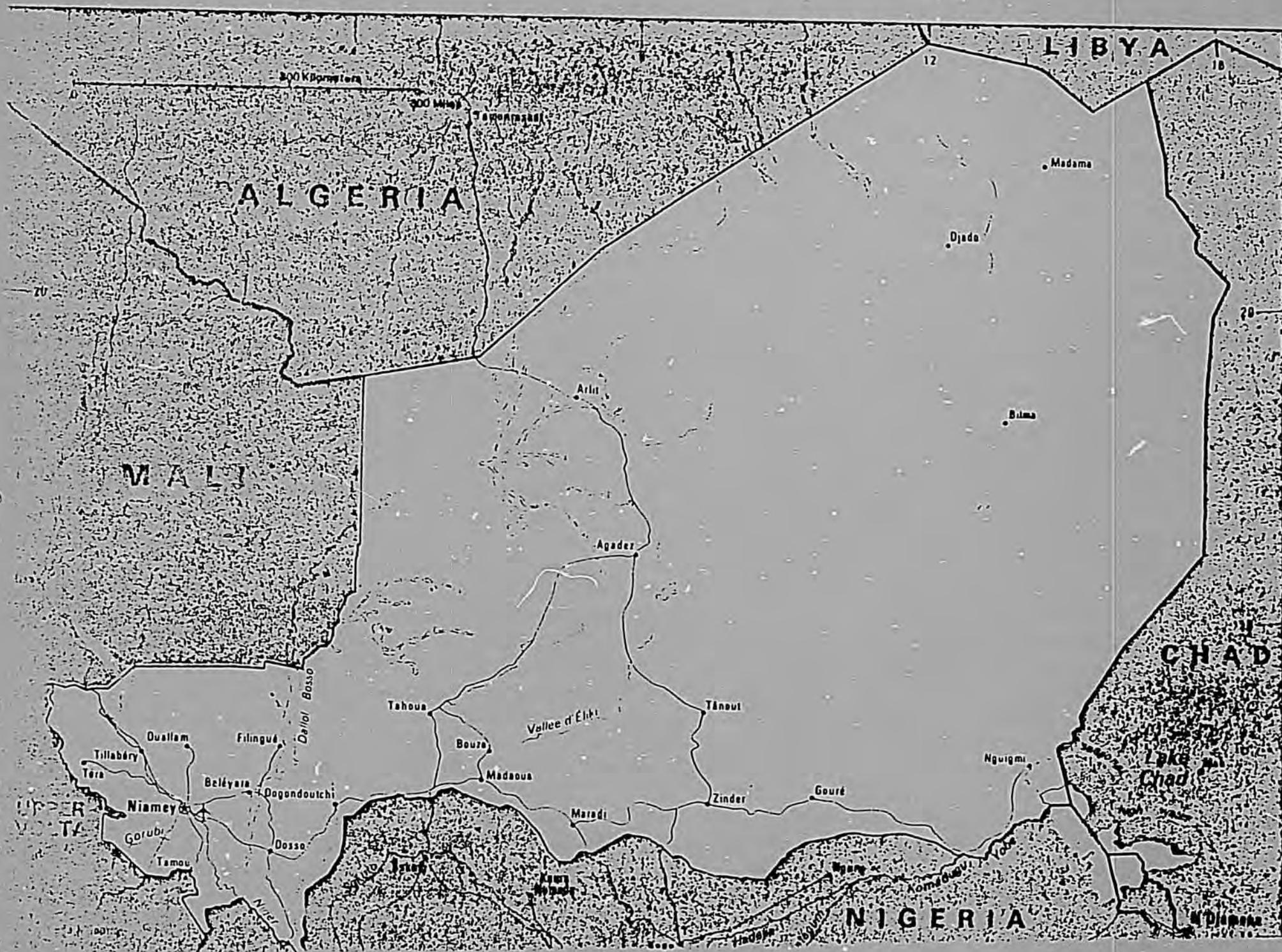
## I. EXECUTIVE SUMMARY

The Nigerien National Diarrheal Disease Committee has prepared a three year program proposal for ORT training and education at the village level, accompanied by distribution of ORS packets supplied initially by UNICEF and eventually from local production. The objective is to encourage mothers to use home-made ORS for diarrhea and to provide ORS packets for serious cases. This program builds upon the GON's expansion and strengthening of the primary health care system at the village level, with assistance from USAID's Rural Health Improvement Project (RHIP). The program will begin with MOH-initiated activities with donor support being provided for extensive field activities and an educational campaign scheduled for September 1985.

The major components of the program are (a) training of health staff in each of the seven geographic departments through organized seminars; (b) development of educational materials for use by health workers and other extension agents, and ORT messages for broadcast by mass media; (c) focussed training and supervision of village health workers; (d) distribution of ORS packets supplied by UNICEF; (e) local production of packets with equipment provided by the Belgians; (f) baseline, evaluation and operations research studies. The PRITECH program is being asked to finance education materials, some education equipment, operations research studies, short-term technical assistance, and a resident PRITECH representative employed part-time to handle administration. Financial management and administrative capability for this program have been carefully assessed by PRITECH and the USAID.

This MOH proposal is the fruition of a two year effort, begun by a national seminar on ORT sponsored by WHO in 1982. The National Committee is led by a full time and capable senior MOH official; commitment and action has been demonstrated by the MOH in preparing the plan and securing donor support. PRITECH assistance was catalytic and essential to moving this proposal to its completion very quickly. Nevertheless, the MOH, at all levels, has taken responsibility for the program and given extraordinary attention to the effort. UNICEF will play a leading role in the financing and implementation of the program. To buttress the Committee's capabilities, the resources and mechanisms of the RHIP project can be used to introduce ORT into the health care system within the existing authorities of the project. Since the RHIP project life expires six months prior to completion of the ORT program, the USAID and PRITECH will work out with the GON financial arrangements for this period. A follow-on AID project or the World Bank health project planned for FY 1986 are possible sources of funds.

# Niger



## II. BACKGROUND

### A. General Indicators of Development

Niger's population of approximately 6 million is concentrated in small villages across a strip of land on the southern border, adjacent to the Niger river. Nomadic pastoralists, perhaps 15% of the population, extend into northern areas. Three-fourths of Niger is arid desert.

Development programs sponsored by the moderate and pragmatic military-led government attempt to meld five major ethnic groups. These groups are disparate, yet relatively compatible. Nigerien policies are oriented towards maintaining traditional values allowing development to occur in carefully planned and structured ways. Uranium revenues, the most readily available domestic resources for development, have declined dramatically since 1980 and thereby recurrent budget allocations are especially constrained.

Niger is among the least developed nations. The per capita GNP in 1981 was only \$300. Adult literacy is in the range of 10-15%. Infant mortality is among the highest in the world, estimated at 160-200 per 1000. Estimated life expectancy is less than 45 years. To compound the plight of the Nigerien people, a serious, perhaps devastating, drought is recurring now.

### B. Health Indicators

National data describing Niger's population is scarce; the data that exist have uncertain reliability. Mortality in Niger is high by world standards - estimated at 22 deaths per thousand each year for the period 1975-80. The structure of the population appears to have become relatively larger for young age groups. Since the change is not adequately explained by changes in fertility, some have inferred that infant and child mortality may have declined. At the same time, the already high fertility seems to be rising slowly; some estimate the crude birth rate could reach 55 per thousand by the end of century. The annual growth rate of the population is close to 3%.

During the national seminar on diarrheal diseases at the end of 1982, the following illness were judged as national health priorities:

- diarrheal illness with incidence at 200% and recorded mortality of about 20,000 per year (Available data are based solely on health facility records and thus greatly underestimate the real rate of diarrhea-associated mortality)
- malaria with incidence of 100% and mortality of about 110,000 per year.
- respiratory diseases with 170% incidence and mortality of about 19,000 per year.
- malnutrition with mortality of about 28,000 cases per year.

The Ministry of Health (MOH) estimates that diarrhea is the second cause of death for children in Niger after malaria. For medical centers (excluding hospitals) about 10% of patients are diagnosed as diarrhea cases, of which 5% are accompanied by the remark "with dehydration". Diarrhea incidence is higher in reports from maternal/child care clinics, where it can comprise 20% of total cases reported. (Observers of diagnostic practices in clinics state that childhood diarrhea may be under-reported in clinics, because it is a common problem and not always seen as a serious problem.) There have been no definitive studies of the etiology of diarrhea. As an indicator of poor environmental hygiene, the MOH reports that less than 30% of the population has access to an acceptable quality water source (cement lined well, bore well or waterline system).

The National Joint Niger/WHO/UNICEF Applied Nutrition Project undertook a nutritional survey in 1980 in the Department of Niamey:

- one-third of children under 5 had first degree protein-calorie malnutrition (PCM);
- over one-third had second degree PCM; and
- more than 2% had third degree PCM.
- 57% of children under 5 and 61% of pregnant women were anemic.

Another study in the Department of Niamey in 1981 found that among children ages 3-5:

- 17% were chronically undernourished,
- 9% had acute undernutrition, and
- 38% were underweight.

### C. The Health System

#### 1. Current Policy

The CON clearly is committed to improving the health conditions of the population, and has shown a welcome shift away from the excessive reliance on capital intensive clinical medicine that characterized the first 15 years following independence. During those years, the emphasis was on training health professionals and constructing clinical health facilities, mainly in the capital city and in other large urban centers. Today, the accent is on preventive public health measures and, through the development of decentralized paramedical Village Health Teams (VHTs), on improving access to health facilities in the rural areas.

The increasing percent of the CON's annual health operating budget between 1979 and 1980 for rural health care as opposed to urban hospital services reflects the government's rural health priorities: allocations to hospitals decreased from 43% to 35% while those to the rural health care system increased from 57% to 65% (Lukas 1982:5).

According to the five year plan for 1979-1983, the goal is "health for all by the year 2000".

To achieve the overall improvement in the health of the rural population, the GON has mounted a three-pronged approach:

- a. To expand the provisioning of basic health services through broadened immunization campaigns and through the expansion of the VHTs, where the goal is to increase the number of villages covered from about 1,500 in 1978 to 4,000 in 1983, and to decrease the ratio of persons to each dispensary or medical center from almost 27,000 in 1978 to about 19,000 in 1983;
- b. To improve environmental health conditions through expanded provisioning of potable drinking water and sanitary waste disposal systems.
- c. To improve the nutritional status of the population by education programs and by encouraging increased food crop production on the farms.

## 2. The Historical Basis of the GON Rural Health Strategy

At independence, the Republic of Niger found itself in the position of other land-locked Sahelian countries, with lack of effective infrastructure and lack of resources in the health sector. Realizing that a basic and far-reaching reform of the health sector was necessary if the GON was to undertake the spread of health services to the mass of the population, the GON prepared in 1964, a Ten-Year Perspective on the Development of Health Services (1964-1973). This major study was financed by USAID and had the technical collaboration of the WHO. In this preface to the published study, the then Minister of Health underlined the need for a basic reform that would "permit the transformation and progressive abandonment of the structures of the colonial period to the benefit of an organization designed and adapted to the needs and capabilities of the Republic of Niger."

The Minister identified the two greatest constraints to this reform to be "the lack of qualified personnel, and the insufficiency of financial resources".

In the text of the 1964 study, the three highest priorities chosen were: (1) "medicine de masse", i.e., public health, preventive and simple curative services to be provided to the rural population; (2) health education -- especially regarding MCH (mother and child health), nutrition, and village hygiene; and (3) training of Nigerien health workers. Significantly, and quite differently from many other African countries, much lower priority was placed on the further development of hospital-based services in urban areas.

At about the same time, and continuing to the present, the GON placed emphasis on the development of health auxiliary training at the village level. The concept of the village "secouriste" had been developed throughout the French colonial health systems in Africa. This person

acted mainly in first aid and as a liaison with the mobile services of the Service des Grandes Endemies. But beginning in 1959, the concept of the Village Health Team (VHT--French acronym ESV), consisting of a secouriste with expanded preventive and curative functions, and a re-trained traditional midwife (matrone), gained momentum. These secouristes and matrones were embodied in a village structure of community participation in selection and support, and supervised by Ministry of Health personnel from "arrondissement" (the most peripheral dispensary level in the MOH system), "circonscription medical" (health center) and departmental (most peripheral physician) levels. This concept developed progressively with MOH support far beyond what was to be found (or for that matter, beyond what is still to be found) in other Sahelian countries. However, there were always, and still remain, significant problems in implementing this system of VHTs: logistic problems in supervision and supply, resource constraints, lack of adequate numbers of personnel and relevant training and motivation of supervisory personnel, problems of sustaining volunteerism at the village level and special problems involved in serving the nomadic population. In addition the VHT development was uneven between, and within, different departments, but the critical point is that the GON has (a) a long historical experience with the development and implementation of village-based rural health systems, and (b) a demonstrated commitment to peripheral rural health services as a major priority in its health strategy.

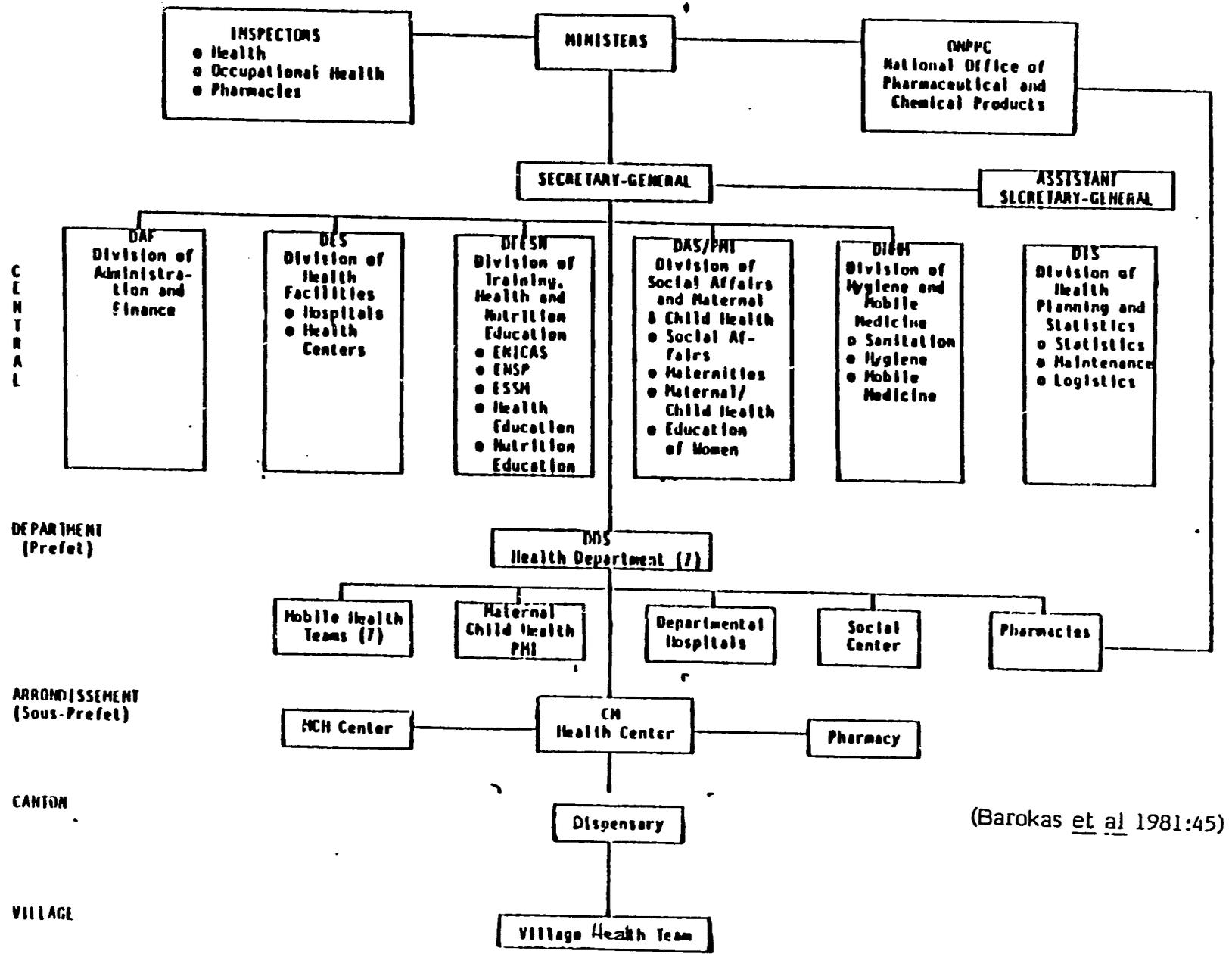
With the change of government in 1974, and the new administration's thrust to develop a broad base of support in the rural areas, this priority emphasis on the further development of "medicine de masse" through the vehicle of the VHTs gained added importance. The most major constraints remained the same as those of 1964 - lack of trained personnel and the lack of financial resources. These overshadowed other important technical constraints such as logistics, and technical considerations regarding the nature of the training function and the supervision of secouristes and matrones. Nevertheless, the GON's basic policy and strategy has remained consistent, well thought-out, and actualized by priority in the allocation of available scarce resources.

### 3. Current Health Services

Current health services in Niger are under the authority of the Ministry of Public Health and Social Affairs (Ministere de la Sante Publique et des Affaires Sociales, or (MSP). The MSP has both a centralized national-level administration and a territorial organization for the provision of health services at regional and local levels (see Figure 1).

The MSP provides preventive health services, including immunization campaigns, maternal and child health services, and malaria prophylaxis. Non-MSP programs for providing clean water and improving community sanitation also contribute to preventive medicine. Much MSP activity, however, is curative in nature. Visits to health facilities most often are prompted by urgent health problems due to illness or accident. Laboratory facilities for diagnosis and analysis are concentrated at the nation's seven hospitals; elsewhere treatments must be based largely on observable symptoms and patients' descriptions of their problems.

# ORGANIZATION OF THE MINISTRY OF PUBLIC HEALTH AND SOCIAL AFFAIRS



(Barokas et al 1981:45)

The territorial organization of the Ministry of Public Health follows that of the civil administration, with operations at department, country, district, and village levels. Each of the seven departments has a Direction Department de Sante (DDS), whose director coordinates all health services. These include health care facilities from departmental hospitals down to village health teams.

Health care facilities are summarized in Table 1. A hospital is located in each department capital, with those at Niamey and Zinder designated as national hospitals and the others as departmental hospitals. Government physicians are found only at this level. Government pharmacies are also located in each department capital. Although six private clinics were reported in 1978 (Republique du Niger 1980:403), there are restrictions on private medical practice. The "virtual prohibition" of private practice reported by the Rural Health Improvement Project (RHIP) evaluation team (Barokas *et al* 1981:51) does not preclude private voluntary organizations working in the health sector. The Sudan Interior Mission (SIM) has operated a hospital at Galmi for many years.

A network of 38 medical center (Centres Medicaux, CM) is found at the arrondissement, on county level. A CM is headed by a state-diploma nurse (a graduate of the Ecole Nationale de Sante Publique), with several certified nurses and a driver under his supervision. A CM also usually includes a maternity clinic staffed by a certified midwife and a maternal and child health program. Pharmacies are sometimes located at the county level.

Certified nurses (with a total of about ten years schooling) staff the lowest level of fixed health care facilities, and the rural dispensaries are found at the canton or district level. Other small rural facilities serving administrative posts are termed postes medicales. As of 1980, 189 dispensaries and 24 medical posts were in operation.

Elementary health care at the village level is provided by volunteer health workers. A village health team should include two health workers (secouristes, usually men) and two birth attendants (matrones), who are chosen from traditional midwives. Secouristes and matrones are selected by the village community and undergo a brief training period (105 hours for matrones, and 94 hours for secouristes, over a period of about ten days). They then return to the village with a simple kit that includes an initial supply of medicines. Minimal supervision of village health teams is provided by the nurses of the canton dispensaries, or the CM where no dispensary exists. Village health team members charge for their medications and are expected to purchase new supplies as needed from the dispensary or CM.

By 1980, some 2,400 village health teams were in operation, although not all had a full implement of four members. Despite their limited training village health teams can deal with health problems such as malaria (treated with chloroquine) and conjunctivitis (treated with ophthalmic ointment). In theory, cases beyond their competence are referred to a dispensary, CM, or hospital. A \$14 million USAID-funded project, Niger's Rural Health Improvement Project (RHIP), is contributing to the expansion of the village health team program during the current

TABLE 1 - HEALTH CARE FACILITIES, NIGER

<u>Facilities</u>	<u>1978</u>	<u>1980</u>
National hospitals (Niamey, Zinder)	2 (1,318 beds)	2
Departmental hospitals	5 (695 beds)	5
Private clinics	6 (212 beds)	no data
Medical Centers (CMs)	38 (937 beds)	38
Maternity Clinics	41 (including 4 private)	49
Dispensaries	159	189 plus 24 "medical posts")
Maternal and child health centers (PMIs)	20	24
Departmental mobile medical teams	7	7
Pharmacies (government sponsored)	15	18
Private pharmacies	2	no data
Village health teams	1,496 teams	2,411 teams

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1978 data: République du Niger 1980:403

1980 data: Barokas et al 1981:8-9.

midwives, and laboratory technicians. Nursing and midwifery programs last for three years; laboratory technicians receive two years of training. The ENSP enrolled a total 285 students during 1980-81. Candidates for the state nursing program are recruited through two channels: at the BEPC level (certificate earned after ten years of previous schooling); and by competitive examination among certified nurses with four or more years of experience (Barokas et al. 1981:115)

The Ecole National des Infirmiers Certifies et des Aides-Assistants de l'Action Sociale (ENICAS), located in Zinder, trains certified nurses and social workers for the MSP's Division of Social Affairs and Maternal and Child Health (DAS/PMI). Students are recruited by examination among persons with two or more years of secondary school (the CFEPD certificate plus two years, nurses was extended from one to two years in 1981, to allow for more extended practical experience in the training program (Barokas et al. 1981:112). ENICAS also trains sanitation agents in a program that also was expanded to two years in 1981 (Ibid.:118).

#### D. Historical Evaluation of Diarrheal Disease Treatment

The Government of Niger initiated a national seminar on diarrheal diseases which took place in Niamey from November 25 to December 4, 1982, as part of a series financed by WHO. At the end of the seminar, a national program for the "fight against diarrheal diseases" was recommended. Previously, there was no program to coordinate activities which could reduce morbidity and mortality from diarrhea.

Curative treatment of diarrhea has been commonly used in the health system: at the Village Health Team, dispensary, medical center, maternal child/care clinics and hospitals levels. Severe cases of acute diarrhea may receive intravenous solutions (Ringer lactate, salted isotonic serum) available at large health centers. Medical staff were reported to be knowledgeable about ORT only at the National Hospital in Niamey and rarely at local dispensaries. In general, the health personnel at the dispensary level have not had ORS packets. UNICEF's packets will be held for distribution until educational seminars have occurred for health staff in the Departments. Diarrhea is specified in the regular reports of medical centers and hospitals, with particular attention given to cholera and diarrhea with dehydration.

The seminar report recommended a diarrheal disease program for children between the ages of 0-4 to reduce morbidity and mortality. By the year 2000, mortality due to diarrhea for children under five will be reduced by two-thirds. There should be 100% ORT coverage of children at the time. In short term, a program for the years 1984-87 was defined, dividing the country into three zones for simultaneous activity: riverine, sahelian and saharan zones. The program features administration of ORT from the hospital to the family level in cases of acute or chronic diarrhea. Intravenous therapy will be used only at stages of severe dehydration when ORT is no longer efficacious (coma, persistent vomiting, acidosis). The program relies on Ministry of Health staff and resources, and action by the population, especially mothers of families.

The seminar report recommended creation of a National Committee for the Fight Against Diarrheal Diseases. The committee's functions include proposing national policies, managing and supervising program activities, and program evaluation. Members represent key sections of the Ministry as well as the Office of Pharmaceutical and Chemical Products (ONPPA) which would supply ORS packets to the health system. The committee has been established and has been functioning for several months. It is led by a capable full-time senior MOH officer, formerly a Division Director with field experience. The committee has taken responsibility, actively, for the program outlined below. The program strategy agreed upon at the seminar has two aspects: education of mothers about how to use home-based and packaged ORS through their interaction with the health system; supply of ORS packets to families through the health system, initially with packets imported by UNICEF and later from local production. Program activities and evaluation plans are specified in annex 1, Nigerian National Program for the Fight Against Diarrheal Diseases.

### III. Analysis of Constraints

#### A. Global Environment

The major sources of government revenue are from taxes on income and profits, turnover taxes on goods and taxes on international trade, and exceptional contributions from uranium mining.

The significance of uranium as a source of government revenues is summarized below:

<u>Fiscal Year</u>	<u>Uranium Revenues</u> (in billion CFA francs)	<u>as % of the</u> <u>National Budget</u>
1977	10.0	29
1978	18.0	42
1979	24.1	43
1980	24.6	34
1981	13.0	16
1982	11.0	12

Total revenue increased rapidly at about 30% during the period 1978-1980; it has slowed down substantially since 1980. Although the total revenue was projected at the level of 93.9 billion CFA francs in 1982, it fell short by a substantial amount. According to CDSS estimates, the shortfall was well over 15%. The anticipated revenue for 1983 was 81.2 billion CFA francs, representing a reduction of 13.4 % from the previous year's expected revenue.

With its ambitious investment program under the Five-Year Plan, and the current fiscal difficulty, the recurrent cost problem becomes a serious concern in the immediate future. However, no systematic, thorough

examination of the problem has been done up to this time. The government has however agreed to conduct studies in certain sectors, such as agriculture and health.

As a rough indicator of the order of magnitude of the problem, USAID estimated the recurrent costs of some major projects in the Five-Year Plan. For example, according to the USAID analysis, if the recurrent costs for agriculture and livestock projects were to reach the stage of normal operation in 1983 as planned, the requirement would be roughly 8.5 billion CPA francs. But the 1983 current expenditure budget for the Ministry of Rural Development was only 2.1 billion CFA francs.

According to the USAID CDSS, there are several implications of the recurrent cost problem. First, it is clear that the Nigerien Government will have serious difficulty meeting the recurrent cost burden of the rural development program as planned. The government has already recognized the necessity to adjust its investment plan. The last two years of the plan (1983-1984) have been devoted, in the Nigerien Government's words, for "pause and consolidation". Second, donor agencies need to consider that recurrent cost financing may be justifiable for projects where a substantial amount of assistance from different donor agencies has already been put into rural development projects. The health sector fits this category. Finally, the Nigerien Government is having difficulty meeting its local currency contributions in projects. Consideration will have to be given to provide additional financing to local currency as well as recurrent cost financing of potentially worthwhile project activities.

#### B. General Health Environment

Less than 30% of Niger's people are considered to have access to any form of modern medical services. For the majority of rural Nigeriens, health care is still a form of traditional medicine.

There are a wide variety of constraints at various levels that hinder the GON from fully implementing its rural health policy. The vast land area of Niger, the scattered village and nomadic population, the difficult Sahelian and desert terrain and climate, and the poorly developed communications, transport and infrastructure pose severe obstacles to the development and maintenance of an effective and efficient health system. Personnel can become isolated from technical and motivational support; vehicles have an extremely short useful life, logistic support and supply channels are difficult to create and sustain. In the case of sandy areas, nurses may have to travel by horse, camel, or foot to reach VHTs; during the rainy season in other areas, village access routes are impassable. All these constraints are familiar throughout the Sahel. The GON policy of placing emphasis on simple health activities that can be carried out by VHTs at the village level would seem to be the most appropriate and feasible response to these awesome problems.

Although the VHT health delivery system is generally thoroughly compatible with the sociocultural milieu of the population, special constraints arise in the application of the system to the nomadic populations. It was AID's initial understanding that the GON was desirous of a separately designed project of health care for the nomads. However,

GON officials have made it clear that their current policy is to integrate health activities related to the nomads. They hope to work out the challenges posed by health problems among these migratory groups as part of the overall national rural health effort, with appropriate attention to requirements of local variation.

Any additional program activity raises questions about whether the central Ministry personnel can plan, control, and implement the interventions. There are clearly both quantitative and qualitative constraints at the central MOH level. Skilled senior and middle management personnel are in short supply, as are lower level personnel needed to carry out routine administrative tasks. The personnel list for the central services and cabinet services and cabinet level positions includes only 20 positions. While the Ministry is short in the numbers of trained high level personnel, particularly those with backgrounds in health planning and financing, those persons who are available appear to be competent and hard-working. The design team for the USAID health project encountered no evidence that funds are used for purposes other than those for which they are intended.

In summary, Niger's ability to respond to basic health problems has been limited by:

- inadequate health facilities and logistics system, coupled with the limited national road network;
- limited support capability, i.e., diagnostic facilities, health education materials, training capacity, etc.
- limited coordination with sectors directly or indirectly affecting health.

### C. Diarrheal Disease Control

Constraints in the operational health system will be especially pertinent to education of families about ORT and distribution of ORS packets. Although the MOH is making an effort to increase the number of health personnel at every level of the health delivery system, the supply of health professional, para-medical, and support personnel is still far below that required to meet national health demands, particularly concerning the rural areas. Trained to provide simple preventive and curative health at the village level, the VHTs could have a major impact on the health status of the rural population. However, the performance of these teams is totally dependent upon the capability and availability of the health professionals in the health centers and rural dispensaries. Appreciating the potential fragility of this system, the MOH is expanding both the quantity (two nurses per health center and per dispensary) and the quality of the health professionals. The village workers must be continually assessed in terms of quality of performance and the relevance of their skills to the village needs.

In addition to their responsibilities at the health centers and dispensaries, both the certified and state nurses participate in the

training and supervision of the VHTs. It seems essential, therefore, that they receive additional training if they are to be effective trainers and supervisors for ORT programs. Equally important is their ability to motivate, encourage, and psychologically support the village health workers. Certainly, any deficiencies in the nurses' ability to train and supervise would seriously affect the efficiency and success of the VHT program. According to the curricula at ENICAS and ENSP the nurses are technically qualified to work in the health centers and rural dispensaries. Both schools offer courses in public health theory and practice. The certified nurses are taught basic theories of community health and hygiene, including health and nutrition education. The course at ENSP is more detailed and comprehensive and includes courses in public health administrative, methodology, statistics and demography.

Another considerable constraint lies in the area of logistics and transport. The rural health delivery system represents a continuous circuit flowing between the Department heads and the village team. Supervision and support pass from the Departmental Health Director to the state and certified nurses who in turn supply support, supervision and medical provisions to the VHT. A feedback system (medical referrals and village health data) begins with the village worker and passes up through nurses in the rural dispensary and health center until it reaches the Department Health Director. Distances are often great, roads are poor and in many areas nonexistent. The lack of appropriate vehicles at all levels, and of trained mechanics to maintain and repair vehicles, plus the high cost of gasoline, seriously hamper the necessary support for the present system.

The need to integrate the nomads into the rural health delivery system poses particular problems which the MOH will have to address at some point. Even if VHTs are trained and placed, retraining, provision of ORS supplies, and supervision will still be difficult due to the migratory patterns of nomads.

#### IV. Strategic Options

Prior to the PRITECH consultation, the MOH Diarrheal Disease Committee was considering a pilot program to establish training seminars and to develop educational materials starting in only two Departments. The training arrangements were to be patterned on the model of the Rural Health Delivery program. The committee had taken the initiative to plan three seminars for the two Departments. The pilot programs were to provide experience with training and supervision methods for health workers and to test educational materials. The committee wanted to use the existing health services infrastructure which could provide ORS packets to families and which gave opportunity to educate the population about ORT. The plan reflected growing confidence in the capability of health workers to understand and to transfer to the population a new medical technology. The plan also reflected the committee's conviction about the efficacy of ORT, following the national seminar in 1982. The plan anticipated local production of ORS with help from the Belgians, with an interim supply of packets from UNICEF. The main questions before the committee were about the pace and scope of the effort and the sources of financing.

The Committee had not considered the possibilities of launching a national program nor using mass media for communications about ORT. They had very little experience with development of appropriate educational materials for ORT, e.g., selecting effective messages and designing formats. Supply of ORS packets was uncertain. The interest and cooperation of donors was not organized. The GON finances were severely constrained.

After PRITECH completed a review of the program plan with the Committee, the Committee concluded that educational materials could be produced for the main ethnic and language groups throughout the country, and that the health infrastructure throughout the country was ready to handle the ORT technology. Economies of scale would occur with development of materials, use of mass media, mobilization of the logistics system and the requirements placed on scarce management capability in the central Ministry. The program activities would be organized at the Departmental level, so that absorptive capacity of the systems could be determined through discussions and planning with each of the seven Departments.

There is only limited opportunity to use the private sector to help carry out an ORT program in Niger. Virtually all medical professionals in Niger are employed by the government. The health activities of private organizations are very limited (see Annex 2). There are probably opportunities to distribute ORS packets through private commercial channels.

The Committee proceeded with specification of requirements for a national program, followed by discussions with potential donors to determine whether sufficient resources would be available. The PRITECH Regional Advisor facilitated and encouraged these steps by the Committee. In mid-October, 1984, the Committee presented a national program proposal to the leadership of the Ministry of Health and to the donors. The program proposal was endorsed, the outline of an implementation plan was reviewed, and the necessary resources from the donors and the government were identified with firm commitments to secure necessary authorities and approvals. The Committee's program proposal is the basis for the PRITECH program plan described below.

## V. Proposed Project

### A. Description

The National Diarrheal Disease Committee program relies on Niger's unusually well developed network of supervised village health workers who will educate families about ORT and distribute packets of ORS. The network has been growing steadily since the early 1960s, rapidly doubling villages covered with the help of AID project funds since 1978. In 1983, 3600 villages, over 40% of the total villages, are within the system. Mechanisms for training and supervision of workers and distribution of medicines are established. Direct contact with most of the population is now a fact, although the benefits from delivery of health services have not been measured yet. This program is an opportunity to mobilize the health system in the "fight against diarrheal disease". The village health workers

will be asked to take initiative as educators, a role which the system has not yet pushed them to perform. They will be given the training and the materials to facilitate this expanded role. Radio and perhaps television messages will supplement the educational effort and hopefully stimulate families to use home-based ORS at the onset of diarrhea and to go to the health system when diarrhea is a problem. ORS packets will be pushed out into the system for delivery by the VHTs whenever diarrhea results in dehydration.

The program is optimistically planned for a brief period, three years. Its mechanisms and objectives reinforce those of the government health services system and AID's RHIP project. Even if the objectives are not fully realized during the three year period, the effort will be a useful prelude to the second phase health services project to be financed by the AID Mission, and possibly the IBRD health services project now in the planning stage.

The program was planned with the Committee as a composite effort, to be financed by the GON and by several donors. The entire program is described in detail below. PRITECH and other donor contributions are specified in the financial plan. An important element for PRITECH will be assistance with design of the program monitoring and evaluation system. We have not attempted to isolate for evaluation purposes the program elements financed by PRITECH or the AID bilateral program. The goal, purpose and outputs are defined in terms of the entire GON and multi-donor effort.

The specific elements of the program are as follows:

- Strengthen use of ORT using existing infrastructure of health facilities and village health teams.
- Develop reliable supply and distribution systems for ORS packets. Assure adequate supplies are available before beginning education of mothers about packet use. Assess availability of salt and sugar in communities.
- Train all health staff, community development, literacy workers, water agents in ORT treatment and health education for home treatment of diarrhoea, using packets where possible and sugar-salt solution where these are not available. Training seminars would occur at Department and Arrondissement (country levels).
- Provide management training for administrators of program.
- Retrain 12,000 health agents and traditional midwives (30% - 50% already have some knowledge) through refresher courses already planned (RHIP).
- Consolidate this retraining of health agents and midwives through the routine supervision system already functioning (RHIP).
- Concentrate supervision efforts on ORT education (including meetings with Village Development Committees) during one trimester, in all villages covered by Health Agent Teams (3,629 villages).

- Produce educational materials on a mass scale to support all training and informational activities (to be ready mid-1985; however, the education campaign will await adequate supplies of ORS packets at the village level).
  - Messages will be based upon RAP surveys to identify sources of diarrhea disease care and to understand family expenditures for treatment.
  - Use radio and TV to support training and information activities.
  - Produce packets of ORS locally for sale through the Health Team structure. (Health Agents already sell drugs at village levels.)
  - Assess pricing policies and cost-recovery assumptions.
- MOH will make packets available to all health facilities also. UNICEF sachets to be used until local production underway.
- Explore opportunities for over-the-counter sales and distribution through the private sector.

Carry out infant and child mortality studies in at least 3 Departments before the launching of the programme on a large scale to establish baseline data.

#### B. Goal

To reduce infant and child morbidity caused by diarrheal disease. By the year 2000, mortality rates for children under five due to diarrheal disease will be reduced by two-thirds.

#### C. Purpose

The national program for control of diarrheal disease, will establish capability throughout the country at the village level to increase access to and effective use of oral rehydration therapy for diarrheal disease. Within this program, the PRITECH project will assist the MOH Committee efforts to organize and monitor the three-year program, and will provide appropriate educational materials and technical assistance as requested.

D. Outputs

- (1) Train 30-40 core "trainers" from Department and Arrondissement levels to carry out training and supervision at peripheral levels.

Train, in each of the 7 Departments.

30-40 Health, Community Development, Literacy staff at Department level.

30-40 Health, Community Development, Literacy staff at Arrondissement level.

Totals:                    35 x 7 =    245 at Dept. level

                              35 x 37= 1,295 at Arrond. level.

- (2) Strengthen ORT component in refresher courses for approximately 40 - 50% of Village Health Team members (midwives and "secouristes") = approx. 5,000 people.
- (3) Carry out a focussed supervision/health education session with Village Development Committees and Village Health Teams in the 3,629 villages covered by these teams.
- (4) Produce appropriate education materials, including:
- 500,000 flyers
  - 30,000 posters
  - 50,000 booklets
  - 1,000 flip-charts
  - 3 radio spots, television spots
  - 1 slide set for health staff.
- (5) Evaluate the effects and monitor the execution of the programme (mortality studies, sentinel health facilities, spot studies of educational impact, routine Departmental reporting).
- (6) Produce ORS packets and ensure the sale at village level and use in health facilities.

V. E. Financial Contributions

<u>Program Item</u>	<u>Donors</u>	<u>Amount</u>
Seminars	UNICEF, Belgium, Dutch, IBRD, USAID/RHIP	\$100,000
Supervision and retraining of village health teams.	RHIP	(no incremental cost)
Production of education and training materials	PRITECH UNICEF, and OMS	\$70,000 \$54,000
Educational equipment	PRITECH	\$5,000
Program evaluation	USAID/RHIP PRITECH	\$20,000 \$20,000
Program monitoring	USAID/RHIP	(no incremental cost)
Supply of ORS Packets	UNICEF	(in-kind)
Equipment and 1 year supplies for ORS production	Belgians	\$454,000
PRITECH Resident Representative	PRITECH	\$65,000
PRITECH short-term experts & supervision	PRITECH	\$160,000
TOTAL		<u>\$948,000</u>
TOTAL PRITECH		(\$320,000)

F. The Role of Other Donors in the National Program for the Control of Diarrhoeal Diseases

Several other donors have expressed particular interest in the government's efforts to establish a national CDD program. Some have already made significant contributions to this effort, and have been waiting for a clear implementation plan, with corresponding requests for funding, to be formulated by the Government.

This implementation plan has now been developed by the National Diarrhoea Program Committee, with the help of a PRITECH consultant. The plan was formulated during September and October of 1984, a process that culminated in a multi-donor meeting, convened by the MOH in mid-October. The purpose of the meeting was to discuss the various elements of the program that require additional funding, and to obtain initial commitments from each donor as to which of these elements it is willing to fund.

The following paragraphs summarize the past and expected future involvement of the donors concerned:

UNICEF has already responded to a request from the Government for ORS packets. 1,500,000 packets have been assigned to Niger, 300,000 of which are already in-country.

In the context of the recently-developed implementation plan, UNICEF has agreed to fund in-country training courses, educational materials, technical assistance and observation/study tours. UNICEF is also willing to consider some mechanism for subsidizing the cost of locally-produced ORS packets to the consumer. UNICEF is awaiting the arrival of a Communications Support person, who will be available to assist the National CDD Committee.

WHO has already provided training materials to enable the Ministry to carry out the National CDD Seminar in 1982, and the Departmental Seminars that are to take place in October-December 1984. WHO is willing to provide additional materials for the other Departmental Seminars, as well as for the Arrondissement level coursed. The Organization will also provide copies of the WHO/UNICEF booklet "The Treatment of Diarrhea" for all the health staff in Niger.

The WHO Regional Epidemiologist has assisted the CDD Committee in designing the surveys intended to measure the impact of the CDD intervention, and will be available to ensure the adequate training of interviewers and application of the research protocols developed.

WHO is also willing to provide other technical assistance to the program, as the need for this is identified at different stages of program development.

The Belgian government provides 4 physicians to the Ministry of Health at central level. All 4 work in different aspects of public health, including Health Planning, Health Statistics, and Primary Health Care. One of these physicians is an active member of the National Diarrhea Committee, as well as being the chief technical advisor for the Village Health Team Primary Health Care system.

The Belgian government also provides several physicians to the Department of Dosso, one of whom is in charge of the Department's MCH activities.

The Belgian government has agreed to provide the equipment needed to set up an ORS production unit in Niamey. The raw materials and packaging will be provided for one year of operation, by which time the government Pharmaceutical Agency (ONPPC) should be able to sustain production costs.

The Belgian government has already arranged to fund the first Departmental training courses in Dosso and Zinder, in 1984, and is willing to finance additional training activities at local levels, should this be necessary.

The Dutch Government supports public health activities in the Department of Niamey, and provides a full-time physician as Assistant Department Health Director. The Dutch project is willing to fund all training activities within the Department, as well as to provide some educational materials. The project is currently developing a slide-set on diarrheal diseases to be used for health staff training.

The World Bank is currently at the design stage of an extensive health sector support program. Funding for this program is unlikely to be available before 1986, but should at this stage be of particular assistance to the CDD program insofar as it is intended to strengthen the health education production of educational materials for the program, after an assessment of the programs initial educational efforts and identification of modifications and additional materials required. The Bank also expressed interest in funding two of the 11 Departmental Seminars on diarrhea.

## VI. Feasibility

### A. Economic/financial

The GON has no additional or incremental resources which can be provided for this program. They have a reasonably well functioning rural health system in place, which is a vehicle for the ORT program. This system is the basis for the program and therefore is the most significant contribution. Beyond this, the GON has assigned a full time program director, who is chairman of the committee. The individual is capable, experienced and senior; his assignment by the GON is an important contribution to the program.

For the initial three year period, all apparent incremental costs have been provided in the financial plan shown at Table IV in Section VII and allocated among the donors. Once the program is established, the recurrent costs will be for supply of ORS packets and for routine supervision and training of health workers. Future programs of A.I.D., UNICEF and the World Bank promise adequate financing to augment GON resources for these costs.

PRITECH's resources have been restricted to costs of short-term technical assistance, PRITECH program administration, a portion of the educational materials, and assistance for program monitoring and evaluation systems. None of these expenditures will be channeled through GON budgets; all local costs will be handled directly by PRITECH.

B. Managerial/administrative

The managerial and administrative feasibility of this project has been one of the foremost concerns of the PRITECH team and the USAID mission. While the members of the National Committee are all very able officials, they have other fully demanding assignments. All the responsibility for administration and follow-up will rest with the full-time committee chairman. The very able USAID officers with responsibilities for health programs are also over burdened. Mindful that adequate management and administration of the program is essential, PRITECH has encouraged other donors to share responsibility by handling project components. The program has been patterned on the USAID-RHIP model for training and supervision activities, so no new administrative systems will need to be devised by the Government.

The initiative and organization for this program will have to come from the National Committee. During the planning of this program, the PRITECH Regional officer was located in MOH offices giving direct administrative and technical assistance to the National Committee. This informal but effective role stimulated Committee activity which produced the plan presented here. The Committee activities in turn galvanized support from other donors for this integrated program. This kind of direct involvement may be essential to help the MOH provide sufficient and sustained attention to the ORT program. PRITECH intends to provide this kind of direct staff support for the Committee in two ways: through regular visits of the Regional officer, up to six months of her time over a three year period; plus the assignment of a resident PRITECH program administrator who will be available to the Committee for three days each week during the first year, and two days each week thereafter. A U.S. citizen, resident in Niamey has been identified for this position; she is a french-speaking medical anthropologist with past experience working with the Ministry of Health. Her scope of work and authority is shown at annex 3. She will relieve the AID Mission of additional burdens from this program. A proposal for her to assist the Committee with the execution of several key tasks is currently under consideration by the MOH. The Regional officer is prepared to return to Niger in January, if the PRITECH program is ready to be launched. She will assist the resident PRITECH representative in establishing effective working relationships and a role with the Committee. The first task will be to lay out the necessary implementing actions by the Committee, MOH agencies or donors to maintain the project schedule.

The Committee has already scheduled training seminars for three of the seven regional Departments. After each of the Departmental seminars, the administrators of the Department will be expected to carry out a systematic ORT program. We do not know yet what the response will be at Departmental level, but the MOH leadership is demonstrating strong support for the program. We anticipate the mechanisms of the RHIP program will facilitate action within the Departments. The funding and materials for

the seminars will provide encouragement. As program action moves farther out into the system, the established patterns of training and supervision will be increasingly important. The Committee will help to monitor activities at local levels through regular supervision. The program monitoring component of the PRITECH budget will be used to stimulate and facilitate this follow-up. In the process, we hope lessons will emerge leading to changes and improvements in the program.

One of the most important and problematic steps will occur at the village level - the interaction between village health teams and families. The VHTs need to inform, educate, and demonstrate if families are to begin using ORS, whether in packet form or from home made solutions. Most VHT's have not had the interest, time or incentive to educate others. The securistes mainly dispense pharmaceuticals for fees; the matrones perform mid-wife functions for fees. Better methods of stimulating and supervising the education functions of VHTs will have to be devised through the experience of this program. Program monitoring by the Committee will be a key factor in discovering problems and solutions. Another problem at the VHT level will be the sale of ORS packets. The male securistes, not the female matrones, are allowed to sell pharmaceuticals. Yet the matrones are typically the main contact point for mothers and children. Another approach may be needed for ORS packets. Perhaps matrones can sell packets on behalf of the securistes. Or perhaps ORS can be handled differently from pharmaceuticals. The Committee is fully aware of these problems; they have already surfaced them in planning the program. PRITECH will assist the Committee as requested to discover feasible answers.

### C. Logistics

When the VHTs begin their educational efforts and the mass media is sending messages about ORT, the lack of an adequate supply of ORS packets in the villages could seriously frustrate the program. The PRITECH team has had extensive discussions with the Committee and other donors about whether ORS packets will be available when needed. There are serious questions about whether the supply of ORS packets will be adequate beyond the first few months of the program. The long lead times involved in either import or local production of packets make careful planning of the supply critical and urgent to assure a successful program.

The Belgians are supplying equipment for local production with associated technical assistance. The equipment was scheduled for arrival in January 1985; however, tenders for procurement are only now being released. Production of ORS packets may begin twelve to eighteen months later than planned. The implementation schedule presented in Section III indicates that ORS supplies need to be available in the villages beginning in September 1985. Given a three to six month period to get available packets through the MOH distribution system and out to the villages, locally produced packets are unlikely to be in the hands of VHTs during the first two years of the program. Therefore, the GON and the donors need to assure an adequate flow of imported packets.

UNICEF has committed 1,500,000 packets for delivery to Niger. About 300,000 of these packets have already been delivered. The total amount is probably adequate for the first year of the program although the GON estimates the annual requirement for the first year of the program to

be 2 million packets. Based on the questions about when local production will begin, UNICEF needs to be ready to supply additional packets to maintain supply lines beyond the first year. The GON is discussing the issue now at the staff level, but UNICEF has not been officially approached.

Other unresolved issues arise from the cost of packets to Niger and to users. The estimated cost of a locally produced packet is about 13 cents. UNICEF packets, delivered to Niger, cost UNICEF about 10 cents. Should Niger rely on local production? (The procurement process may be too far along to raise this issue). How long is UNICEF prepared to contribute sufficient packets for the national program? What should be the cost to villagers? Will the full cost of packets be competitive with alternative, less effective but popular treatments? These various questions, and the questions raised earlier about sales by secouristes and matrones should be incorporated in the scope of work for a PRITECH supply and logistics expert. The PRITECH Regional officer has broached the subject of such an expert within the Ministry. Given the sensitivity of the GON to outside experts, it is not certain that they will immediately accept the offer of an expert. Nevertheless, the Committee and the MOH recognize the problem and are seeking ways to act.

## VII. Implementation Plan

Annex III presents the cost components of the national program as agreed to by the National Committee and the participating donors. The program will occur over a three year period, from 1985-87. The schedule of implementation shown as Table III conforms to the plans of the National Committee and the participating donors. As explained above, the schedule for supply and local production of ORS packets is being reconsidered and is likely to be revised. The contributions of the various donors are presented in Table IV.

The PRITECH project would make contributions for four project components as indicated in Section VE. Upon approval of a PRITECH program for Niger, the Regional officer will hire a resident PRITECH representative in Niamey. The terms of reference for the representative are given at Annex IV.

The PRITECH team has agreed with the USAID Director that the PRITECH representative would be employed for up to three days each week during the first year, 1985, and two days each week thereafter. She will work closely with the USAID Health Officer, especially to ensure coordination with RHIP program activities. A portion of the representative's time will be spent working directly with the National Committee, to support and to facilitate their efforts. An immediate task for the resident representative, working with the Regional Advisor, the Committee and the USAID health officer, will be construction of a detailed implementation plan for the entire national program. This plan will identify implementation responsibilities, facilitate action and permit monitoring of the program.

The PRITECH program budget includes ten months of short-term expert assistance in Niger. Within this amount, six months of time is reserved for the regional Advisor over the three year life of the project, averaging two weeks in Niger every three months. The Regional Advisor will

PROGRAMME DE LUTTE CONTRE LES MALADIES DIARRHEIQUES

TABLE III

PLAN D'ACTIVITES

ACTIVITES	1984	1985	1986	1987
		Sept	Sept	Sept
1. Tenue de seminaires au niv. Dept. Planification du Programme avec chaque Departement.				
2. Etudes de base (mort. morb.)				
3. Developpement du materiel et de messages educatifs				
4. Distribution du materiel educ. et emissions de messages				
5. Formation de personnel sanit. et d'autres secteurs au niveau d'Arrondissement				
6. Supervision thematique des ESV et sensibilisation des CVD au cours de cette supervision				
7. Mise en place de l' unite de production de sachets SRO				
8. Distribution/vente des sachets				
9. Recyclage des ESV sur la RO.				
10. Etudes evaluatives sur la marche du Programme				

PROGRAMME DE LUTTE CONTRE LES MALADIES DIARRHEIQUES  
PROPOSITION BUDGETAIRE 1985 - 1987

TABLE IV

RUBRIQUES BUDGETAIRES	MSP/AS	OMS	UNICEF	BANQUE MORNDIALE	COOPER. BELGE	COOPER. NEEDERL.	P A S R/AID RHIP	PRITECH	T O T A L
1. SEMINAIRES AU NIV. DES 7 DEPARTEMENTS			✓		9.000.000	3.000.000 (Niamey)	✓		33.000.000 CFA
2. SEMINAIRES AU NIV. ARRONDISSEMENTS			✓		3.000.000 (Dohso)	3.600.000 (Niamey)	✓		22.200.000 CFA
3. et 4. RECYCL. ESV. SUPERV./EDUCATION CVD et ESV sur TRU.							✓		
5. PRODUCTION DE MATERIEL ET MESSAGES EDUCATIFS		✓ Modules Livrets OMS/UNICEF	✓					29.940.000 (5.1.,5.3. 5.3.,5.5)	61.470.000 CFA
6. EQUIPEMENT POUR L'EDUCATION SANIT.				UNITE D'EDU CAT., 1986.				771.000	771.000 CFA
7. EVALUATION DU PROGRAMME			✓				✓	8.800.000	17.413.000 CFA
8. VISITES DE PLANIFIC. ET SUIVI (Comite Progr. L.M.D.)							✓		
9. PRODUCTION ET DIST- RIBUTION DE SACHETS SRO			✓		200.000.000				
10. PERSONNEL SPECIFIQUE (Coordination Progr. L.M.D.)	1 personne à plein temps.								
11. ASSISTANCE TECHNIQUE		✓	✓					Assistant à temps partiel ✓	

provide expert assistance for development training and education materials as well as supervise the resident representative and monitor the program. The other four months of expert time will be reserved for a logistics expert, up to eight weeks, and possibly a production specialist and management information or evaluation specialists.

#### VIII. Evaluation Plan

The evaluation plan will be developed together with the initial implementation plan. The measures of national program progress will be increases in access to and effective use of ORT during the three year project period, for both ORS packets and home-made solutions. PRITECH experts will assist with evaluation methodology as well as with planning and organizing the evaluation effort. All the donors and the MOH are keenly interested in the design of evaluation efforts.

We anticipate that baseline information can be collected in conjunction with morbidity and mortality studies to be carried out by the Ministry of Health with assistance from Tulane University. Tulane is sending three long-term health planners under the RHIP program, to arrive in November 1984. Their first task will be design of the morbidity and mortality studies. Further specification of an ORT component for these studies should await their arrival. Program evaluation was given high priority at the donor coordination meeting. PRITECH has reserved \$20,000 for program evaluation and operations research costs.

#### IX. Next Steps

The MOH has requested donors to make program commitments by the end of November 1984. Some readjustment in the allocation of program components among donors may be necessary. UNICEF, the Belgians and USAID have indicated some flexibility in selecting program components. Assuming PRITECH program approval and final approval of the donor financing plan, the national program should begin in January 1985. The first priorities for PRITECH will be a) hiring a resident representative, b) determining whether a short-term supply advisor is needed and acceptable to the MOH, and c) development of educational and training materials. In the meantime, USAID/Niger, and the MOH should request the Tulane team to incorporate diarrheal disease information into the morbidity/mortality studies.

**ANNEXES**

## NATIONAL PROJECT PROGRAM FOR THE FIGHT AGAINST DIARRHEAL DISEASES

I. INTRODUCTION

In Niger, diarrhea constitutes a major public health problem. The mortality rate ascribed to this disease is 18%. Morbidity represents 10% of the total diagnoses made in the different services of consultation.

The Government of Niger, conscious of this situation, initiated a National Seminar on diarrheal diseases. This seminar, which took place in Niamey from November 25 to December 4, 1982, makes up a part of major seminars financed by the World Health Organization. It is at the end of this seminar that a national program for the fight against diarrheal diseases was recommended.

II. OVERVIEW OF THE COUNTRY

The Republic of Niger is a sahelian and landlocked country. Its surface area is 1,267,000 Km<sup>2</sup> of which 3/4ths is desert. It is bordered on the North by Algeria and Libya, on the West by Mali, on the South by Upper Volta, Benin, Nigeria, and on the East, by Tchad.

Administratively, the country is divided into 7 "departements", subdivided into 38 arrondissements and districts (roughly equivalent to our notion of county), 22 administrative posts, and 8,615 villages and encampments.

2.1 The population

The five-year plan 1979-1983 yields the following statistics:

Total population of the country.....	6,007,000 inhabitants in 1983
Annual growth rate.....	2.77%
Rural population.....	85 %
Less than 5 years old.....	19.5 %
Less than 15 years old.....	45 %
Women from 15-49 years.....	45 % of the total female population
Nomad.....	16%
Literacy rate.....	12%
School attendance rate.....	22% (1982)

2.2 Socio-economic situation

With a GNP estimated at 300 dollars per capita in 1981, Niger is classified among the 29 less-developed countries. Subsistence agriculture and extensive animal breeding constitute the principal resources of the country. The exploitation of uranium deposits resulted in a substantial increase in national revenue from 1976 to 1980. However, after 1980, the country has undergone major financial difficulties due to the fall in price of this primary material on the world market.

2.3 Health situation

The orientation of the five year plan 1979-1983 aims for the following objectives in the health sector:

- insure a wide health coverage at the village level
  - considerably increase the relative proportion of total expenses spent on preventive and mobile medicine
  - devote a special effort directed at the protection of mothers and children
- Long-term orientation aims for health for all by the year 2000.

a) Infrastructure

Hospitals and clinics..... 15 of which 6 are private

Medical centers.....	38
Dispensaries and medical posts.....	209
Maternity wards.....	49
Maternal/Child Care Clinics	
National Treasury for Social Security and FAN.....	33
EDEHS.....	7
National pharmacies.....	18
Village Health Teams. (1982).....	3533

b) Personnel

Doctors.....	147 of which 83 are expatriate
Pharmacists.....	17 of which 2 are expatriate
Dentists.....	12 of which 8 are expatriate
Sanitation Engineers.....	3 expatriates
State nurses.....	430 of which 14 are expatriate
Midwives.....	171 of which 1 is expatriate
Sanitation technicians.....	1
Certified nurses.....	783
Sanitation workers.....	17
Village Health Team Workers.....	10,311

c) Health status

Life expectancy at birth.....	42 years
Mortality rate.....	25 per thousand
Infant mortality rate.....	200 per thousand
Mortality rate for children 1-5.....	300 per thousand
Maternal mortality rate.....	7 per thousand

During the national seminar on diarrheal diseases the following illnesses were judged as national public health priorities:

- diarrheal illnesses
  - mortality; 19,800 cases per year (1981)
  - incidence 200 ‰
- malaria
  - mortality; 111,000 cases per year (1981)
  - incidence 100 ‰
- respiratory diseases
  - mortality; 18,700 cases per year (1981)
  - incidence 170 ‰
- malnutrition
  - mortality 27,500 cases per year (1981)

These priorities were determined based on the criteria recommended by WHO which include:

- the overall extent and gravity of the problem
- the technical and economic feasibility of control measures
- public acceptance

A. GENERAL INFORMATION

1. Magnitude of the problem

In 1981, an estimated 1,100,000 children under the age of 5 had on the average two episodes of diarrhea; 19,800 died as a result. Diarrhea is the second cause of death for children in Niger after malaria and after respiratory illnesses and measles.

An analysis of trimester reports of medical centers (excluding hospitals) shows 348,335 cases of diarrhea or 10 % of a total of 3,294,958 diagnoses (1981). Approximately one case in twenty is accompanied by the remark "with dehydration" on these reports. The percentage of diarrhea incidence is higher in the curative services of Maternal/Child Care Clinics where it can comprise 20 % of total diagnoses. This can be explained by:

- the young age of the population served by the maternal/Child Care Clinics
- the numerous problems of infection and malnutrition (weaning)

No extensive study has been effectuated on the etiology of diarrhea. However, laboratory exams effected by several health facilities point to bacterial and parasitic causes.

Complicating factors also exist:

- malnutrition
- certain traditional food customs or beliefs that require a reduction or cessation of eating during the diarrheal episode
- malabsorption of the digestive system

2. Etiology of diarrhea

Numerous factors contribute to diarrheal illness. In addition to malnutrition, an essential primary factor consists of poor environmental hygiene that affects both water and food supply.

Data furnished by the Division of Hygiene and Sanitation (DHA) indicates:

- 40 % of the rural population has no access to an acceptable quality water source (cement-lined well, bore well, waterline system)
- 32 % of the urban population has access to potable water
- 27 % of the total population has access to potable water ("Le Monde" N° 109 February 1984)

The principal activities of the DHA include: an antivector fight, the quality control of food commodities, the quality control of drinking water and the disposal of excreta. We note that these activities are concentrated at the departmental capital level.

The National Joint NIGER-WHO-UNICEF Applied Nutrition Project has assessed the following nutritional situation:

- A nutritional survey carried out in 1980 in the departement of Niamey showed:
  - 33.6 % of children under 5 years demonstrated the first degree of protein-calorie malnutrition (PC:)
  - 35.3 % the second degree of PC:
  - 2.3 % the third degree of PC:
  - 57 % of children under 5 and 61 % of pregnant women were anemic

-In another study effected in 1981 in the departement of Niamey for children ages 3-5, we abstract the following information:

22

• Chronic undernutrition	17 %
• Acute undernutrition	8.6 %
• Insufficient weight	37.5 %

### 3. Actions undertaken

Up till the present, the fight against diarrheal diseases has been led in a disparate manner. As of yet, there exists no program which coordinates the actions of the battle.

#### 3.1 Curative action

The patients afflicted by diarrhea are received at the Village Health Team, dispensary, medical center, maternal/child care clinics and hospital levels. At all these services, medical treatment is most commonly used. Severe cases of acute diarrhea receive intravenous solutions (Ringer lactate, salted isotonic serum), available at large health centers.

In the Maternal/Child Care Clinics simple and efficacious preparations are taught to mothers, such as: rice water, carrot soup, and guava leaf tea.

The service of Pediatrics A at the National Hospital in Niamey and the Komba dispensary (Arrondissement of Kolo) are knowledgeable about Oral Rehydration Therapy (ORT). Today still, this practice is actively used in Pediatrics A. A lack of follow-up does not permit us to assess the impact of ORT on the population of Komba. However, we do know that at the dispensary level, the health personnel no longer has recourse to ORT due to a lack of rehydration salts that have not been available since 1982.

#### 3.2 Surveillance of diarrheal diseases

Daily, weekly, and trimester reports specify certain diarrheal diseases:

-Official telegram (daily): 010 Cholera

-Weekly report (Medical centers and Hospitals):

011 typhoid fever or paratyphoid

016-1 diarrhea with dehydration

016-2 diarrhea without dehydration

-Hospital trimester report:

010 Cholera

012 Shigella

014 intestinal or liver-afflicted amebiasis

016-1 diarrhea with dehydration

016-2 other diarrheal diseases

-Trimester reports for Medical centers:

010 Cholera

016-1 diarrhea with dehydration

016-2 other diarrheal diseases

#### 3.3 Other actions

In the scope of primary health care, the Ministry of Public Health and Social Affairs has initiated several activities at the different levels of its services. The sectors of Education, Water Works, Rural Development and of Planning all enter into the promotion and protection of health. However, even though collaboration is very close between the health services and those of the Ministry of Planning, it remains inadequate with the other sectors. The major activities that do exist are:

-health and nutrition education

- sanitation
- vaccination against measles
- anti-malaria campaign
- actions in the field of maternal and child care
- village water sources
- school pharmacies and health education at school
- rural animation
- integrated projects of the Ministry of Rural Development

## B. PLAN OF ACTION

The target population of the program is children between the ages of 0-4. The program extends over a period of three years and will be effected in three phases:

- Phase I.....1984-1985
- Phase II.....1985-1986
- Phase III.....1986-1987

### General objectives

- Reduce mortality due to diarrhea for children under five years
- Reduce morbidity rate due to diarrhea for children under five years

### SPECIFIC OBJECTIVES

#### a) Middle term

- Obtain a reduction in the percentage of mortality due to diarrhea by 31% for children under five which will lead to a reduction in the mortality rate of 18 per thousand to 13 per thousand in 1987.
- Reduce the incidence of diarrhea in children under five from 1900 cases to 1850 cases of diarrhea per 1000 children in 1987.
- In 1987, 75% of reported diarrheal disease epidemics will be followed by appropriate action within 48 hours.
- In 1987, 100% of women living in urban areas will breastfeed their children (90% of these women breastfed their children in 1982).

#### b) Long term

- Mortality due to diarrheal illness will be reduced by 67% in the year 2000 for children under five
- In the year 2000, 100% of reported diarrheal disease epidemics will be followed by appropriate action within 48 hours
- Achieve 100% ORT coverage of children under five

### Strategies

The actions to be undertaken will focus on:

- The amelioration of environmental hygienic measures
- The administration of ORT from the Hospital to the family level in cases of acute or chronic diarrhea. Intravenous rehydration will be used when the subject afflicted by diarrhea is at a stage of severe dehydration in which administration of ORT is no longer efficacious (coma, persistent vomiting, acidosis);
- The development of protective maternal and child care actions

2/11

-The surveillance and detection of diarrheal epidemics in order that any major abnormal incidence be followed by an appropriate action within 48 hours.

## 1. NECESSARY RESOURCES

### 1.1 Available resources

#### 1.1.1 Human resources

- health personnel
- village health team workers (first aid/sanitation assistants and traditional birth attendants)
- the population, especially mothers of families
- pharmacists and the holders of local depositaries of medicine

#### 1.1.2 Material resources

- vehicules from the Direction of Health Care Facilities (Direction des Etablissements de Soins, DES) and those of health facilities
- Office material from the DES and health facilities
- Sites at health facilities or at the ONPPC (Nigerian Office of Pharmaceutical and Chemical Products)

## 2. Resources to be obtained

- oral rehydration salts
- national facility for the production of oral rehydration salts
- a vehicule for supervision in the departments
- funds for vehicule maintenance
- fuel for the vehicule of supervision
- per diem for the supervisor(s)
- teaching documents of mid-level complexity for the organization of departmental seminars
- financial support for the organization of seminars
- office furniture

## C. ACTIVITY PROGRAMMING

The implementation of the program will be effected in three phases:

- Phase I                   1984-1985
- Phase II                  1985-1986
- Phase III                 1986-1987

The activities will take place simultaneously in the three river, sahelian and saharan zones. The division of the territory into three zones was proposed in order to be able to define the secondary objectives of the program.

## I. PHASE I. 1984-1985

### Secondary objectives

In 1985, the program will achieve ORT coverage of:

- 42% in the river region
- 26% in the sahelian region
- 47% in the saharan region

## 1.1 Creation of the National Committee of the Fight against Diarrheal Diseases

### Role of the National Committee

- propose a national policy on the fight against diarrheal diseases

rural and urban health facilities will also be affected. For pedagogical reasons it appears desirable to limit the number of participants at each seminar to 20 persons.

Participants:

- DDS
- Head of Medical Centers
- Midwives
- Nurses responsible for medical posts or rural dispensaries
- Nurses, Social aides or Assistant Social Aides

Facilitators:

Will be chosen among those who have participated at the seminar for diarrheal diseases of November 25, 1982. However, the departments that will hold more than one seminar can recruit facilitators among those who have already participated in departmental seminars.

1.3 Logistics

This chapter concerns essentially the supply, storage and the distribution of oral rehydration salts.

1.3.1 Supply

1.3.1.1 Short-term

The procurement of 1,500,000 oral rehydration packets already requested of U.I.C.E.F. should meet the needs of the first phase.

1.3.1.2 Middle to long term

If the negotiations between the Government of Niger and Foreign Aid succeed, a national unit of ORS production will soon be installed, making it possible to meet national needs with a production capacity of up to 3,000,000 ORS packets per year (1 packet = 1 liter of solution).

1.3.2 Storage and distribution:

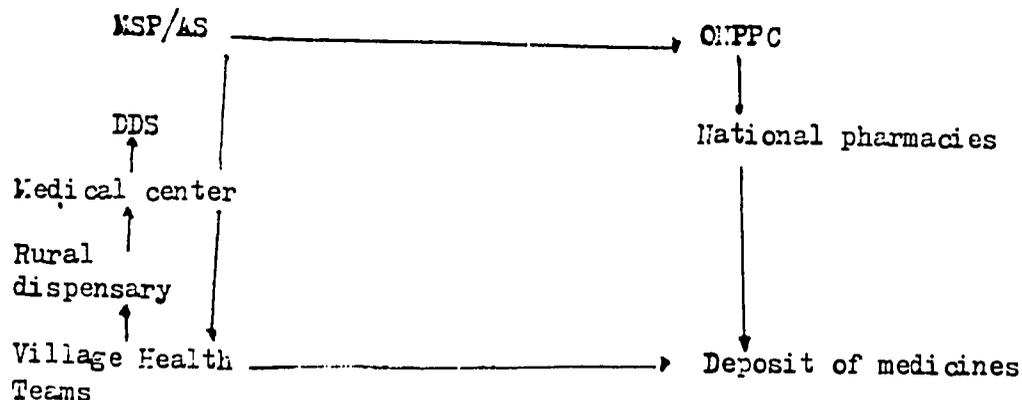
Central level:

The ONPPC is responsible for the production, storage and distribution of ORS.

Regional and Local level:

The supply and distribution system is identical to the one used for medication. Health facilities are served on demand as well as during periods of shipment orders for medications. The manifestation of an epidemic justifies an exceptional order at a given moment. The period for shipment ordering is thus fixed however shipment volume varies according to fluctuating needs.

Diagram of the supply system:



Members

- Coordinator of the program (DES)
- A second representative from the DES
- One representative from the ONPPC
- One representative from the DAS/PMI
- One representative from the DEESN
- One representative from the Medical center district
- One representative from the DEET/DEA

1.2 Creation of Regional committees (departemental level)

The Departemental Director of Health (the DDS) has the power to create a Regional committee that will assume the role of the National committee at the local level. This committee will consist at the minimum the departemental coordinator of maternal/child care clinics; the assistant DDS, coordinator of Village Health Teams; and the head of the EDHJ (Mobile Health Unit). As at the national level, a program coordinator should animate regional committees.

1.3 Actions of Sensitization and Training

1.3.1. National level

a) preparation of departemental seminars.

The DES and the DEESN will be responsible for the preparation of these seminars. However, the DDS will be their primary organizers. In light of these preparations, pedagogical documents (modules) will be ordered from WHO.

b) publication.

Written distribution of technical notes (annexes) in order to furnish information to the health training personnel. This information pertains to:

- the surveillance of diarrhea and its prevention
- CRT
- practices for the protection of mothers and children
- environmental hygienic measures

c) supervisory tours in the different regions

d) integration of ORT in the training of medical and paramedical personnel  
ESS, EMSP, ETICAS

e) collaboration with the Ministries of Rural Development, Water Works, National Education, Information and of Planning in order to promote all action facilitating the health status of the population (agriculture, animal breeding, village water sources, health education in the schools and animation).

1.2.2 Departemental level

All activities effected at the national level will be re-instituted at this level. The educational activities in this domain will focus on:

- the utilization and maintenance of systems providing potable water
- hygiene of food and drinking water
- disposal of excreta
- measures to be followed for a child afflicted with diarrhea
- maternal and child protection (see "Guide to the training of traditional birth attendants")

The practices to be promoted are:

- breastfeeding
- progressive weaning
- nutritional counselling

The departemental seminars will be organized from the beginning of phase I. Most

rural and urban health facilities will also be affected. For pedagogical reasons it appears desirable to limit the number of participants at each seminar to 20 persons.

Participants:

- DDS
- Head of Medical Centers
- Midwives
- Nurses responsible for medical posts or rural dispensaries
- Nurses, Social aides or Assistant Social Aides

Facilitators:

Will be chosen among those who have participated at the seminar for diarrheal diseases of November 25, 1982. However, the departments that will hold more than one seminar can recruit facilitators among those who have already participated in departmental seminars.

1.3 Logistics

This chapter concerns essentially the supply, storage and the distribution of oral rehydration salts.

1.3.1 Supply

1.3.1.1 Short-term

The procurement of 1,500,000 oral rehydration packets already requested of UNICEF should meet the needs of the first phase.

1.3.1.2 Middle to long term

If the negotiations between the Government of Niger and Foreign Aid succeed, a national unit of ORS production will soon be installed, making it possible to meet national needs with a production capacity of up to 3,000,000 ORS packets per year (1 packet = 1 liter of solution).

1.3.2 Storage and distribution:

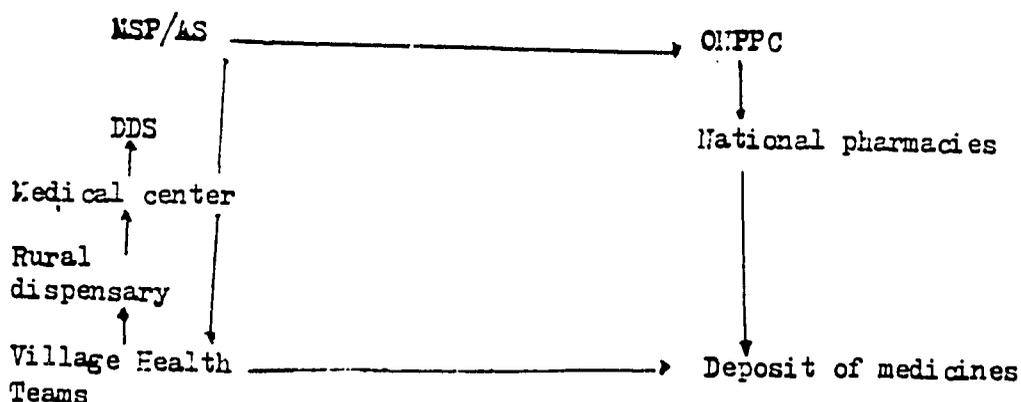
Central level:

The ONPPC is responsible for the production, storage and distribution of ORS.

Regional and Local level:

The supply and distribution system is identical to the one used for medication. Health facilities are served on demand as well as during periods of shipment orders for medications. The manifestation of an epidemic justifies an exceptional order at any given moment. The period for shipment ordering is thus fixed however shipment volume varies according to fluctuating needs.

Diagram of the supply system



#### 1.4 The treatment of diarrhea

Goal: to reduce mortality due to dehydration caused by diarrhea. This implies:

- prevention of dehydration by maintaining liquids and electrolyte balance through the use of ORT during episodes of diarrhea, in particular, with acute cases
- prevention of complications by ameliorating and maintaining nutritional status before, during, and after the diarrheal episode

##### 1.4.1. ORT

Several reasons justify this strategy conceived by WHO:

- It is simple, inexpensive treatment, easily prepared and adapted to all forms of diarrhea
- It is very efficacious treatment against dehydration due to acute diarrhea which is the first cause of death during acute diarrheal episodes
- The experiment results reported by WHO indicate that through its use it is possible to reduce by
  - \*67% the deaths due to dehydration by diarrhea of every form and every etiology
  - \*95% the mortality due to acute watery diarrhea
- The high cost of most medicine used and their relative inefficacy in the treatment of dehydration.

The program envisions the practice of ORT at all levels: Hospital, Medical center, maternal/child care clinics, village health teams, and the family.

##### 1.4.2. Maintenance of nutritional status

The actions to promote in this area are:

- continued feeding of a child during a diarrheal episode
- breastfeeding
- progressive weaning
- good nutrition of lactating mothers

##### 1.4.3. Intravenous or subcutaneous rehydration

Although expensive and almost only practical in a few health facilities, this type of therapy is at times indispensable for a child afflicted by severe dehydration. Nonetheless, even when these means are required, oral rehydration should be re-introduced when the child becomes conscious.

#### 1.5 Epidemiological Surveillance

The surveillance of diarrheal diseases will be integrated as much as possible into the national surveillance system for communicable diseases.

In chapter 3, "actions undertaken," we have indicated the normal procedures for diarrheal illness. It should be noted, however, that the trimester report of Medical centers only differentiates cholera (010) and diarrhea with dehydration (016-1) or without dehydration (016-2).

In order to ameliorate the surveillance of diarrheal diseases, the program will evoke and encourage all activity permitting better knowledge of the epidemiology of these diseases:

\*Module "General and specific objectives," coursework for head national staff

- maintain the current reporting system
- maintain monitoring forms (annexe VI-VII)
- develop teaching in public health and train epidemiologists
- create small laboratories at certain health facilities (Medical centers and maternal/child care clinics) in order to be able to make an etiological diagnosis of diarrheal diseases
- educate the population in order to obtain their help in the declaration of diarrheal illnesses

1.6 Evaluation of Phase I:

1.6.1 Goals:

- Follow the progress of the program in order to make any readjustments therein
- Gauge degrees of achievement in meeting general and specific objectives
- Determine the efficacy of actions undertaken and their cost of execution

1.6.2 Methods of evaluation

1.6.2.1 Record of preventive and curative activities

Permits the collection of the following data:

- number of cases of acute and chronic diarrhea
- number of reported epidemics of diarrhea
- number of reported epidemics of diarrhea followed by appropriate action within 48 hours
- number of diarrhea cases treated with oral rehydration at health facilities and by Village Health Teams
- number of diarrhea cases treated for children under five
- number of deaths due to diarrhea for children under five
- number of adults having received an educational message in the domain of prevention of diarrheal diseases
- number of trained or re-trained Village Health Teams having received instruction in ORT
- number of health personnel trained or having participated in a seminar on diarrheal diseases

1.6.2.2 Report on the management of ORS stocks

ORS distributed by region, by type of health facility, national pharmacies and Village Health Teams (annex V).

The majority of this data can be obtained from documents currently available:

- Register of consultations
- Bills or shipment orders for medications
- Annual activity reports
- Trimester reports of curative services
- Annual DAS/PMI report
- Trimester reports of the Medical center Maternal/Child Care clinics
- Trimester reports of the departemental Coordinator of Maternal/Child Care clinics
- Village Health Team recordbook

The distinction between acute diarrhea (less than 3 weeks) and chronic diarrhea (more than three weeks) is the only supplementary information requested (see monitoring form for diarrheal diseases proposed at the November 25, 1982 seminar).

The current system of recordkeeping at the level of Village Health Teams distinguishes between adult and child diarrheal cases. This method should be maintained, but only specifying the child case for children 0-14 years

The data concerning the distribution of ORS packets in national pharmacies will be obtained at the Direction of the ONPPC.

Two forms (annexes VI and VII) are proposed for the acquisition of data from health facilities. This data will permit those facilities and the service responsible for the management of the program to assess, at any given moment, the state of progress in the program. The completed forms will be sent to the Direction of Health Care Facilities (Direction des Etablissements de Soins) at the same time as the trimester reports of curative services.

## II. PHASE II 1985-1986

### 1) Secondary objectives

ORT will attain a coverage rate of:

- 50% in the river region
- 33% in the sahelian region
- 60% in the saharan region

### 2) Educational and preventive actions

All activities of education and training implemented during Phase I will be continued. The departements having not yet finished their seminars, will effect them at the beginning of this phase.

### 3) Treatment of diarrhea

Administered as indicated above in Phase I.

### 4) Evaluation of Phase II

The propositions made for the collection of data during the first phase will also provide the necessary indicators for evaluation of activities in the second phase.

## III. PHASE III 1986-1987

### Secondary objectives

ORT will attain a coverage rate of

- 59% in the river region
- 40% in the sahelian region
- 75% in the saharan region

The execution of this phase will be effected as the one preceding. Also in the last phase, a general evaluation will be made at the end of the period. The continuous evaluation of the program should facilitate the execution of this task.

CAMPAIGN AGAINST DIARRHEAL DISEASES. BUDGET PROPOSAL

INTRODUCTION

The general objective defined during the National Seminar will be achieved in 3 phases:

Phase I : 1983-1984

Phase II : 1984-1985

Phase III: 1985-1986

For each of these phases we have strictly adhered to the strategy defined during the National Seminar. As a reminder, the major themes of this strategy follow:

- 1) Standard treatment of acute watery diarrhea by ORT and at all levels, from the hospital to the family
- 2) Distribution of ORS through the system already defined from the ONPPC to the Village Health Teams
- 3) Supervision of the program is already assured at the DDS level through Village Health Team supervisions; those not accounted for are the supervisions specific to the program and thus imputed into the budget, supervisions that are initiated at the national central level (MSP/AS and National Committee for the Fight against Diarrheal Diseases).
- 4) The budget only considers funding for ORT, intravenous material and other therapeutic methods are left to the charge of those health facilities that benefit from their use.

PROVISIONAL BUDGET : (costs reported in French CFA - 1983)

HEADING	PROJECTED EXPENSES			PROVISIONAL REVENUE		
	PHASE I	PHASE II	PHASE III	PHASE I	PHASE II	PHASE III
Coordinator's salary	N 840,000	N 840,000	N 840,000			
Chauffeur's salary	N 360,000	N 360,000	N 360,000			
Material and furnishings EPS	E 10,000,000	E 12,000,000	E 15,000,000			
Product unit for SRD		CB 140,000,000		82,500,000	110,000,000	137,500,000
SRD packets	U 70,500,000	primary material included in CB	primary material expenses included in variable charges ONPPC			
Fixed ONPPC charges		N 35,000,000	N 43,750,000			
Variable ONPPC charges		Comprised in C.B. N 67,000,000				
Departmental seminars	PASR 9,650,200	PASR 4,136,520				
Supervisory expenses (fuel)	PASR 1,773,300	PASR 1,773,300	PASR 1,773,300			
Vehicle acquired for tours	N 8,000,000					
Maintenance of the vehicle	N 250,000	N 350,000	N 400,000			
Per diem for the supervisors	PASR 1,200,000	PASR 1,400,000	PASR 1,320,000			
<b>TOTAL</b>	<b>100,977,500</b>	<b>195,859,820</b>	<b>130,443,300</b>	<b>82,500,000</b>	<b>110,000,000</b>	<b>137,500,000</b>
<b>GENERAL TOTAL ESTIMATES</b>		<b>428,877,000</b>			<b>330,000,000</b>	

N : National Contribution ..... 158,350,000  
 CB : Belgian Aid ..... 140,000,000  
 PASR : Rural Health Improvement Program ..... 23,026,620

U : UNICEF ..... 70,500,000  
 E : Foreign assistance expected ..... 57,000,000

## ANNEX II

### PRIVATE VOLUNTARY ORGANIZATIONS IN THE NIGERIAN HEALTH SECTOR

A small number of private voluntary organizations are active in the Nigerian health sector, supplementing activities funded by the Ministry of Public Health. The Sudan Interior Mission maintains a hospital at Galmi, which provides health services for the surrounding region (Faulkingham 1975:27). Some PVOs provide personnel or other support to MSP facilities. The Groupement des Aides Privées, which is a coordinating agency for the PVOs in Niger, provides some indication of the scope and size of PVO health-related activities (République du Niger 1982b:7, 9, 11, 12, 14):

	(CFA x 10 <sup>6</sup> )
Croix Rouge Nigérienne	
National Hospital, Niamey	2.07
Mission Catholique	
Barmou Dispensary	2.10
Malbaza PMI	1.30
MISEROR	
Seven "médecins de brousse"	56.00
Sudan Interior Mission	
Galmi Hospital	35.78
Maradi Leprosarium	9.60
Dungass Dispensary	.82
Guecheme Dispensary	1.52
Galmi Area Village Health Program	7.19
Association Française des Volontaires du Progrès	
Gamkale (Niamey) PMI	5.50

There are surely omissions in the above listing.

PROGRAM FOR THE FIGHT AGAINST DIARRHEAL DISEASES  
COST COMPONENTS OF THE PROGRAM 1985-1987

1. Training of departmental personnel

(Departmental Division of Health personnel, departmental representatives of other services, representatives from each medical center)

One or two seminars of 6 days for each departement, including an average of 25 persons per seminar.

Dosso, Maradi, Tahoua, Niamey: 2 seminars

Zinder, Agadez, Diffa: 1 seminar

Total seminars: 11

Total persons to be trained:  $25 \times 11 = 275$

Average cost per seminar = 2,000,000 CFA

Total cost: 22,000,000 CFA (U.S. \$ 50,000)

2. Training/Retraining of Health, Animation, Literacy, Water Works, Education personnel at the arrondissement level.

(To be executed by the Head of the Medical Center together with facilitators provided by the Departemental Division of Health)

7 Departements:

Agadez	:	3	Medical Centers	(Arrondissements)
Diffa	:	3	Medical Centers	"
Dosso	:	5	Medical Centers	"
Karadi	:	7	Medical Centers	"
Niamey	:	6	Medical Centers	"
Tahoua	:	7	Medical Centers	"
Zinder	:	6	Medical Centers	"

TOTAL : 37 Medical Centers (Arrondissements)

Two 3-day seminars projected at each Medical Center/Arrondissement for a total of 40 persons (20 per group): 2 x 37 : 74 seminars

Average cost per seminar:

20 persons x 3 days x 2500 CFA/day	:	150,000 CFA
2 facilitators x 3 days x 2500 CFA/day	:	15,000 CFA
Transport	:	100,000 CFA
<u>Miscellaneous</u>	:	<u>30,000 CFA</u>

300,000 CFA ✓

300,000 per seminar  
600,000 per arrondissement, thus:

Agadez	600,000	x	3	:	1,800,000
Diffa		x	3	:	1,800,000
Dosso		x	5	:	3,000,000
Karadi		x	7	:	4,200,000
Niamey		x	6	:	3,600,000
Tahoua		x	7	:	4,200,000
Zinder		x	6	:	<u>3,600,000</u>

TOTAL COST : 22,200,000 CFA  
(\$ U.S. 50,000.00)

U

3. Retraining of Village Health Teams (Rural Health Improvement Program Project)

Each Village Health Team is to be retrained every three years.

Total active primary health care workers (1983)	:	5,579
To be retrained (1984, 1985)	:	3,720 (2/3 of total)
Total active traditional birth attendants	:	5,984
To be retrained (1984, 1985, 1986)	:	3,989 (2/3 of total)
Cost per health worker to be retrained	:	23,000 CFA

TOTAL COST	:	177,307,000 CFA (US \$ 402,970)
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4. A "Thematic" Supervision of Village Health Teams on Oral Rehydration Therapy

(The Medical center team and the Nurses of Rural dispensaries/medical posts will hold meetings on oral rehydration with the village development councils and the Village Health Teams in each village covered by the RHIP during a trimestrial supervision.)

Villages covered by Village Health Teams in 1983 :

Agadez	107
Diffa	207
Dosso	717
Maradi	676
Niamey	864
Tahoua	453
Zinder	<u>605</u>

3 629

Thus, 3,629 villages to be visited and sensitized on the use of Oral Rehydration Therapy (meetings with village development councils and workshops with Village Health Teams). THESE COSTS WILL BE COVERED BY THE RURAL HEALTH IMPROVEMENT PROGRAM PROJECT.

5. Production of Educational Material and Mass Media Program
- 5.1 Small poster in 4 colors, 80 gram paper printed recto verso, in 4 languages on A4 paper.
- |                            |                                   |
|----------------------------|-----------------------------------|
| Total number of copies:    | 500,000                           |
| Approximate cost per copy: | 25 CFA                            |
| Total cost:                | 12,500,000 CFA<br>(U.S. \$28,400) |
- 5.2 Large poster in 4 colors, 90 gram glossy paper. 41 x 63 centimeters.
- |                            |                                   |
|----------------------------|-----------------------------------|
| Total number of copies:    | 30,000                            |
| Approximate cost per copy: | 400 CFA                           |
| Total cost:                | 12,000,000 CFA<br>(U.S. \$27,273) |
- 5.3 Booklet in A4 80 gram paper. Eight pages in 3 to 4 colors, printed recto verso.
- |                            |                                   |
|----------------------------|-----------------------------------|
| Total number of copies:    | 50,000                            |
| Approximate cost per copy: | 210 CFA                           |
| Total cost:                | 10,500,000 CFA<br>(U.S. \$23,864) |
- 5.4 Flipchart. Ten pages of Bristol paper. 320 grammes, 29.7 x 42 centimeters printed recto verso in 4 colors, with a plastic spiral.
- |                                   |                                 |
|-----------------------------------|---------------------------------|
| 1000 copies at 2500 CFA per copy: | 2,500,000 CFA<br>(U.S. \$5,602) |
|-----------------------------------|---------------------------------|
- 5.5 Technical worksheets and various printings.
- |                             |                                  |
|-----------------------------|----------------------------------|
| 2 worksheets = 1000 copies: | 4,400,000 CFA<br>(U.S. \$10,000) |
|-----------------------------|----------------------------------|
- 5.6 WHO/UNICEF booklets.
- 3500 copies
- 5.7 Slides.
- A series of 25 slides, 10 copies  
(Dutch Medical Team)
- 5.8 Lamination of 12,000 small posters for the Village Health Teams.
- |                  |                                 |
|------------------|---------------------------------|
| Cost per poster: | 250 CFA                         |
| Total cost:      | 3,000,000 CFA<br>(U.S. \$6,800) |
- 5.9 Production and Transmission of Radio Spots.
- 2 singing spots in each of the 5 national languages = 10 spots of 3 minutes

- The Office of Nigerien Radio and Television (ORTV) will transmit two broadcasts (6 minutes) nightly for a period of one year.
- Special transmission prices for the Ministry of Health. (Radio broadcasts usually cost 11,000 CFA/minute)
- Payment of 5 performers with their orchestras: 750,000 CFA
- Translation of texts in national languages by ORTV: 30,000 CFA
- Acquisition of 150 one-hour magnetic tapes for ORTV at 2,527 each: 570,875 CFA

TOTAL COST 1,350,827 CFA  
(U.S. \$3,070)

5.10 Television broadcast of messages.

Approximate cost: 2,200,000 CFA  
(U.S. \$5,000)

5.11. Labels for UNICEF ORS Packet

2,000,000 labels of 7.5 x 9 cm. at 3 F each 6,000,000 CFA  
(U.S. \$13,636.00)

TOTAL COST OF EDUCATIONAL MATERIAL AND MEDIA: ~~48,470,800 CFA~~ ✓  
54,450,000 CFA  
(U.S. \$124,100)

6. Health Education Equipment.

6.1. 6 slide projectors. (1 per departement, except Niamey)  
Approximate cost per unit: 66,000 CFA  
Total cost: 396,000 CFA  
(U.S. \$900)

6.2 One liter metallic bowls for the demonstration of ORS preparation in each health facility.  
500 bowls at 750 CFA: 375,000 CFA  
(U.S. \$853)

7. Evaluation of the program.

1. Studies by sample on the mortality of children 0-4 years (30 sample groups per study and 90 cases per sample group).  
One study per Department (for the three climatic regions of the country: river, sahelian, and saharan).

## Cost per Study:

a) 3 teams of 3	3 chauffeurs x 12 days	
" " of 9 x 5,000 CFA/day x 12:		540,000
" " of 3 x 2,500 CFA/day x 12:		90,000
b) fuel per tour		
Niamey - Dept. (average)		270,000
Fuel in the interior of the Departement:		337,500
c) <u>Paper and Miscellaneous</u>		<u>200,000</u>

TOTAL: 1,435,500 CFA

Total per Departement: 1,435,500 CFA francs x 2  
Studies (One before and one 2 or 3 years after the program:  
2,871,000 CFA  
(U.S. \$6,525)

Total for the 3 Departements: 8,613,000 CFA  
(U.S. \$19,575)

2. Utilization of Hospital/<sup>sections</sup>Centers in order to monitor eventual developments in:
- the totality of diarrhea incidence
  - the degree of dehydration in children that present themselves at the center
  - the use of intravenous rehydration
  - the a priori use of ORT by the mother

No supplementary costs are projected except for extra registerbooks. The training and followup of relevant personnel will be made during supervisions.

3. Program Activity Reports by Departement and Arrondissement.  
(No supplementary costs).
4. Special periodic studies to evaluate the impact of the educational component of the program.  
4,400,000 CFA  
(U.S. \$10,000)

TOTAL COST OF EVALUATION: 13,013,000 CFA  
(U.S. \$79,575)

## ANNEX IV

### TERMS OF REFERENCE FOR THE REPRESENTATIVE OF PRITECH IN NIGER

1. Manage, under the direction of the PRITECH regional representative, all administrative matters pertaining to PRITECH's contribution in Niger to the National Program for the control of diarrhoeal diseases.

This function would include:

- Managing PRITECH's local bank account.
  - Disbursing funds to cover local costs incurred by PRITECH, as specified in the implementation plan of the CDD program, ensuring that the selection of contractors or suppliers conform to USAID regulations.
  - Approving, in conjunction with the Ministry of Health program Director, PRITECH-funded expenditures disbursed through the Ministry of Health, in accordance with the implementation plan of the CDD program.
  - Maintaining records of expenditures made, following a simple accounting system set up by MSH/PRITECH, in accordance with current USAID procedures. (see MSH administrative manual)
  - Submitting regularly records of expenditures for verification to a designated, certified accounting firm.
  - Monitoring CDD program activities to ensure that PRITECH-funded expenditures conform to the agreed implementation plan.
  - Assisting any short-term PRITECH consultants whose technical assistance may be required by them.
  - Managing regular contact with the PRITECH regional representative, and submitting regular bi-monthly reports according to MSH/PRITECH current procedures.
2. Assist the Ministry of Health CDD program committee in the development of the program, as required and under the direction of the CDD program coordinator.

Activities requiring some assistance would probably include:

- the development and production of educational materials
- the design of baseline surveys, evaluation studies, and program monitoring mechanisms
- liaison between the different agencies and organisations that contribute to the success of the national CDD program.