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WATER AND SANITATION FOR HEALTH PROJECT

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FORMULATION OF THE CARE MULTI-YEAR PLAN FOR WATER SUPPLY AND SANITATION IN CAMEROON

WASH FIELD REPORT NO. 75

MARCH 1983

Prepared for:
USAID Mission to the Republic of Cameroon
for CARE/Cameroon
Order of Technical Direction No. 118

MEMORANDUM

T-118

TO: Distribution

FROM: Craig Hafner, WASH Project

SUBJECT: WASH Report #75, CARE/CAMEROON

DATE: 31 March 1983

We are pleased to provide you with a copy of the WASH report entitled, "Formulation of the CARE Multi-Year Plan for Water Supply and Sanitation in Cameroon", in which WASH consultants, John Tomaro and Elizabeth Heilman assisted the staff of CARE/Cameroon in the preparation of its multi-year plan for 1984-86.

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March 22, 1983

Mr. Ronald Levin
Mission Director
USAID Mission
Yaounde, Cameroon

Attention: Mr. Raymond Martin, Health Officer

Dear Mr. Levin:

On behalf of the WASH Project I am pleased to provide you with 10 (ten) copies of a report on Formulation of the CARE Multi-year Plan for Water Supply and Sanitation in Cameroon.

This is the final report by John Tomaro and Elizabeth Heilman and is based on their trip to Cameroon from October 24 to November 25, 1982.

This assistance is the result of a request by the Mission on August 27, 1982. The work was undertaken by the WASH Project on September 25, 1982 by means of Order of Technical Direction No. 118, authorized by the USAID Office of Health in Washington.

If you have any questions or comments regarding the findings or recommendations contained in this report we will be happy to discuss them.

Sincerely,

Dennis B. Warner

Dennis B. Warner, Ph.D., P.E.
Director
WASH Project

cc. Mr. Victor W.R. Wehman, Jr.
S&T/H/WS

DBW:cdej

WASH FIELD REPORT NO. 75

FORMULATION OF THE CARE MULTI-YEAR PLAN FOR WATER SUPPLY AND SANITATION IN CAMEROON

Prepared for USAID Mission to
the Republic of Cameroon for CARE/Cameroon
under Order of Technical Direction No. 118

Prepared by:

John Tomaro, Ph.D.

and

Elizabeth Heilman, Ph.D.

March 1983

Water and Sanitation for Health Project
Contract No. AID/DSPE-C-0080, Project No. 931-1176
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U.S. Agency for International Development
Washington, DC 20523

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EXECUTIVE SUMMARY

Two WASH consultants were requested to assist the staff of CARE/Cameroon to prepare its multi-year plan (MYP) for the period 1984-1986. This called for an analysis of the most up-to-date socio-economic data on conditions in Cameroon and a review of the development objectives of the Government and the current operations of CARE. The review was undertaken to determine the extent to which CARE's water supply and sanitation activities in two provinces (north and east) reflect an important development priority of the government, are making a sufficient quantity of good water increasingly accessible to rural populations, and are improving water transport, storage, and use practices as well as personal habits related to human excreta disposal.

Since the mid-1970s the government has become increasingly concerned about threats to internal harmony and continued economic development which is perceived as resulting in provincial inequalities, annual increases in the rate of rural to urban migration, declining return on exported products, and increasing costs for imported capital goods. In order to insure continued and balanced economic development and reduce the rate of urbanization and subsequent demands on government services, the Government of Cameroon has launched a major program to improve conditions in the rural areas. However, since government resources alone are insufficient to meet the total costs of the rural development interventions, the government has adopted the self-help philosophy common to the Community Development Directorate (CD), a division of the Ministry of Agriculture.*

Improving availability of and accessibility to water has been identified by both the government and local communities as a common objective and high priority. Since the government has insufficient personnel and finances to implement water projects and CARE has a self-help philosophy that complements the government's own rural development approach and technical competence in the water sector, CARE has been invited to work with CD to launch and sustain water projects in the east (spring capping) and the north (well digging).

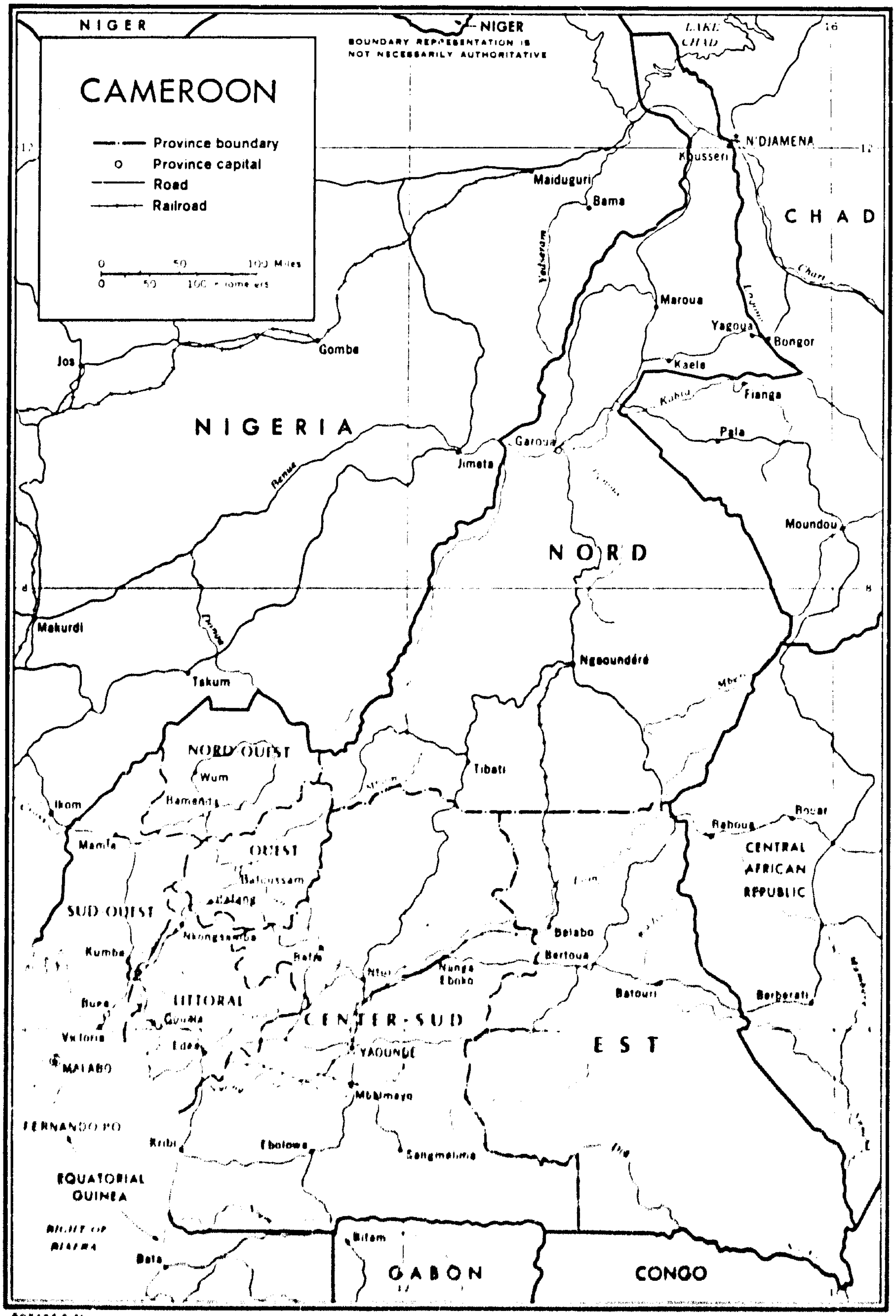
In the last four years CARE has made great strides in terms of improving spring sources in the east and digging wells in the north. Additionally, CARE has been able to involve government personnel and to provide them with on-the-job training. CARE

*Genie rural, a section also within the Ministry of Agriculture but with its roots in the French colonial tradition, is less community oriented and tends to operate for the capital, raising potential problems by causing confusions at the village level.

has also turned over to a Cameroonian the direction of the health education component of the project in the north. The technical problems encountered in the course of improving water sources have been or are being corrected following evaluations by a USAID engineer and a CARE engineering consultant.

However, CARE has not been able to involve the villagers in the process of developing or maintaining the water sources to the extent desirable, nor has CARE been able to determine whether the program has had a measurable impact on changes in the communities' health status or behavior related to excreta disposal or water transport, storage, and use.

CARE must implement the next series of water source improvement activities in a manner that allows CARE, the government, and interested donor agencies (USAID and CARE-Canada) to monitor behavior change and program impact. A design to accomplish this objective has been suggested to CARE/Cameroon and outlined in the MYP. It has been emphasized in the MYP and during discussions with CARE staff, representatives of the donor agencies, and government personnel that this can only be accomplished if CARE has the necessary resources (financial and material) as well as the full cooperation of the government. Cooperation will require the involvement of trained Cameroonian nationals (i.e., CD agents) working with CARE. They must be capable of motivating villagers and resolving all issues that may arise as CARE projects are completed and CARE staff withdraw from the project area. This point was raised and discussed with the Vice-Minister of Agriculture who is responsible for all CD training programs. It has also been emphasized that there should be better coordination among the agencies responsible for water supply and rural development projects in order to insure that development resources are wisely utilized and that villagers have a clear understanding of their role in rural development. Villagers need a clear and consistent idea of the form of participation that is expected (labor, supplies, cash), how they will benefit, what the government and collaborating agencies will provide, and how common action will benefit rural communities and contribute to the overall socio-economic development of the nation.


CAMEROON
Province boundary
Province capital
Road
Railroad
BOUNDARY REPRESENTATION IS NOT NECESSARILY AUTHORITATIVE
NIGER
NIGERIA
CHAD
N'DJAMENA
Kousseri
Maiduguri
Bama
Maroua
Yagoua
Bongor
Kaele
Fianga
Pala
Garoua
Jimeta
Gombe
Jos
Moundou
NORD
Makurdi
Ngaoundéré
Takum
NORD OUEST
Wum
Bamenda
Tibati
Ikom
Mamfe
OUEST
Bafoussam
SUD OUEST
Nkongsamba
Kumba
Bafia
Belabo
Bertoua
Nanga Eboko
LITTORAL
Buea
Victoria
Douala
Edea
CENTER-SUD
YAOUNDE
MALABO
Mbalmayo
Batouri
Berberati
EST
Bouar
CENTRAL AFRICAN REPUBLIC
Kribi
Ebolowa
Sangmelima
EQUATORIAL GUINEA
Bata
Bitam
GABON
CONGO

Chapter 1

INTRODUCTION

In June 1982 discussions were held between CARE/Cameroon staff and Craig Hafner, the WASH Senior Project Officer, during a visit to Cameroon. Following these initial discussions, the CARE/Cameroon staff met with the AID/Yaounde Health Officer, Ray Martin, to seek his advice and counsel. A formal request from the AID Mission in Cameroon for WASH assistance was made later the following month. This request was reviewed by the AID Office of Health which endorsed the idea and issued Order of Technical Direction (OTD) No. 118 authorizing the WASH Project to provide assistance (see Appendix A). The WASH Project staff contacted CARE headquarters in New York and with them clarified the scope of work for the consultants. This was finalized in October 1982 and the consultants were identified and processed. Consultant Elizabeth Heilman arrived in Yaounde the last week of October to begin work. She was joined a week later by Dr. John Tomaro. Their combined time in the field was six weeks.

Chapter 2

RURAL WATER SUPPLY AS A GOVERNMENT PRIORITY*

"In Community Development the priority area remains water to which particular attention has to be paid and for which consideration efforts must be made in terms of providing the countryside with sufficient drinking water".**

While more prosperous and potentially wealthier than many other sub-Saharan African countries, Cameroon recognizes fully and candidly that national development can only be accomplished if all national resources are enlisted and directed toward achieving common goals. The government is also aware that its present budgetary resources are not sufficient to bring about balanced development and socioeconomic changes as rapidly as possible. It must, therefore, look to the more than 5,000 villages (ranging from 200 to 5,000 in population) to contribute directly to projects that improve rural living conditions and overall socioeconomic status through contributions in cash, labor, and kind.

In July 1976, the government endorsed a community development strategy, common to the areas of the former British Cameroons and best defined as the process by which people themselves unite with the government to improve economic, social, and cultural conditions and authorized the Community Development Directorate (CD) to incorporate this strategy throughout the nation.

When the government developed a philosophy that obligated it to work "with the communities rather than for them," it set out to survey the villages of the seven provinces to determine projects of highest priority. Results of the surveys, which were not available until 1981, ranked key development concerns as follows: water, health education, agricultural credit, and rural roads.

Given its development mandate and the results of the survey, CD began to take steps to improve rural community water supply (wells or simple water points) "using simple and not too costly methods" and relying heavily on village contributions in cash, materials, and labor. Since the task was great and the bud-

*The WASH consultants' scope of work included a review of social, economic, political and historical data with relevance for the development of domestic water systems in Cameroon. The draft review of the data is available in the WASH library.

**p. 35 National Plan for Community Development: Action Plan prepared for the Community Development National Seminar, September 22-23, 1981 at Yaounde, United Republic of Cameroon.

getary and personnel resources of CD severely limited, the Directorate also turned to international donors for contributions and technical assistance. Along with a number of other agencies, CARE was invited to work with CD and villagers to improve water supply as one means, perhaps the initial means, of contributing to village and national development. While CD and agencies like CARE had the task of improving water supplies at the village levels, the government also made a major commitment to improving water supply and sanitation facilities throughout the country.

As stated in the Fifth Development Plan, the government's ultimate goal is the provision of safe water to 100 percent of the rural population by the year 2000. Coverage is defined as one protected point (i.e. well, springs, etc.) per village or one collection point for 300 to 500 people in larger villages. By 1986, the end of the current planning period, the government wants to have developed water supply systems for 50 percent of the rural population. This will require a significant investment and the construction and maintenance of numerous water points.

While it is difficult to determine the extent to which water sources have already been developed in the rural areas of Cameroon, anecdotal evidence suggests that it will be difficult for the government to achieve short- and long-term objectives, and that there are considerable and continuous maintenance problems among the sites already developed. There are also indications that (1) there are problems with water quality in certain areas and that (2) the sanitation and health education aspects of water-supply projects have often been neglected, perhaps to the long-term detriment of the project.

As part of the government's effort to improve rural living conditions, the Ministry of Agriculture has primary responsibility for developing water supply projects in the rural areas. Genie Rural and Community Development, two directorates in the Ministry, are the technical divisions charged with constructing wells and improving and maintaining water sources. While housed in the same ministry, the two directorates have two very different approaches to water resource development and rather than working in harmony are often at odds with one another. In essence, the two directorates trace their origins to the colonial administrative systems of the French and British during their tenures in Cameroon. The difference is development from above (the French approach) and development from below (the British style).

Genie Rural, a traditional directorate within the Francophone areas, emphasizes the technical engineering component of water source development and implements projects in a centralized manner. Community Development (CD), a directorate with strong roots in the Anglophone areas of Cameroon and only recently extended to the Francophone provinces (1976), works on the

basis of the felt needs of the community and insists on local participation to meet those needs. Since improved water supplies are a central concern of villagers, CD is involved in their development. However, its main role is the development of a given community's capability to participate in and direct social and economic change. Genie Rural, on the other hand, does not encourage local problem solving and local participation. It relies on engineering solutions to water supply problems; often these are beyond the ability of villagers to understand, implement, or maintain.

It should be noted that both approaches have theoretical advantages and disadvantages; these are summarized below:

Community Development:

Advantages:

- Saves scarce government resources
- Emphasizes community participation
- Is an appropriate model for "developpement auto-centre"
- Sees water as one aspect of integrated rural development
- Attempts to ensur community maintenance
- Is attractive to foreign aid donors

Disadvantages:

- Makes planning difficult
- Is slow at implementation
- Fits uneasily into a centralized administrative system
- Sometimes adds fuel to inter-village rivalries
- Creates new structures

Genie Rural:

Advantages:

- Makes planning easier
- Has a centralized administrative system
- Can implement rapidly
- Is technically efficient
- Works through existing structures

Disadvantages:

- Is expensive for central government
- Does not create community commitment to maintaining installations
- Does not encourage popular participation
- Creates long-term dependency on central resources*

*Tom Franklin, "Cameroon: Rural Water Sector," USAID Contract No. 70/01, April 9, 1979, 15.

It is also readily apparent that the potential for conflict between the two directorates is great. Their differing styles give villagers mixed signals regarding local participation and frequently produce duplication of effort and cost. The government is aware of the cost of potential real conflicts. It has endorsed the idea of establishing an all-powerful directorate that would set a uniform policy for developing rural water supplies and define more clearly the roles that CD and Genie Rural would play. It has been suggested, for example, that CD might have charge of those projects that are technically less complicated and in which the villagers can play a significant role. Genie Rural would be called on to handle the more complicated engineering tasks. While there is agreement in principle to establishing a coordinating directorate and assigning roles for CD and Genie Rural, nothing concrete has been done. As a result, CD and Genie Rural often find themselves developing sources in the same village. This creates confusion in the minds of villagers since they do not know whether participation is or is not required. It also makes it difficult for international agencies working with CD and Genie Rural to coordinate and harmonize their activities.

CD has attempted to coordinate the activities of all international agencies working in the field of rural development by establishing a Coordination Committee for Community Development (see Appendix D). In theory, this committee tries to provide effective collaboration. In practice, however, there is some difference in focus and emphasis among the international agencies. For example, SATA (Swiss Association for Technical Assistance) and CARE are attached to CD. SATA works closely with CD's Service Technique and has developed a standard design for village water supply. On the whole, SATA emphasizes the technical component of the project and concentrates on developing water sources and training the staff of Service Technique. CARE also works with CD's Service Technique, but more closely with CD's Service Animation, the division charged with motivating the local population to participate in the implementation and maintenance of rural development projects, especially water sources.*

CD has also attempted to assign international organizations and volunteer groups to different geographical regions of the country in order to achieve the dual purpose of giving local CD staff additional skills and villagers necessary technical assistance.

*While the Coordination Committee does not generate joint projects among the agencies involved, it is an important locus for sharing information. It allows the government to have more complete information on the programs of international agencies and it enables the agencies to benefit from the experiences of one another.

Although there is some overlap among the government and international agencies working in rural water supply programs, the degree of activity suggests that the government is keenly interested in improving rural living conditions. Improving rural water sources seems to be one means of ameliorating health conditions, encouraging village participation, and slowing migration from rural to urban areas.

In the north and east, where CARE is assigned, continuation of traditional hygiene practices and the lack of access to water (north) or the presence of contaminated water (east) inflicts a heavy burden in terms of loss of economic productivity and health costs. The 1979 National Nutrition Survey estimated that approximately 15 percent of ill children 3 to 23 months old in these provinces had diarrhea the week previous to the survey. While there is a general concensus that improved water supplies, latrine construction, and health education programs will result in improvements in health, there is no statistical evidence yet available in Cameroon on the extent to which improved water sources have influenced the number or incidence of diseases. It is also noteworthy that programs in health education and latrine construction are not as commonplace as are well drilling or spring capping programs.

CARE is one of the few international organizations that is trying to see that water supply, health education, and latrine construction are introduced simultaneously. Some of the other international volunteer agencies, e.g. Peace Corps and the Agents itineraires of the Practical Training in Health Education (PTHE) program, are taking the same approach, but they do not have the technical means at their disposal to develop water sources.

In summary, while developing rural water supplies has been and remains a major objective of the Government of Cameroon, there is some conflict in the approaches taken by the two directorates within the Ministry of Agriculture. There is also no fixed strategy among the agencies working with CD, although all subscribe to the general principle that village participation is a precondition for implementation and essential for project continuation. Finally there is general agreement that health improvements follow water source improvements and that health education and latrine construction and maintenance should be integral parts of water projects. However, there are few agencies working in rural water source development that are employing this multi-dimensional approach and no data that show the relationship between increased rural water supply activities and improvements in health status. CARE is one of the few programs that has linked well digging in the north with health education and latrine construction. All three elements have yet to be combined in the east, and there is still no solid evidence of the effect of the program on villagers' behavior related to water transport, storage, and use or on health status.

Chapter 3

THE CARE PROGRAM

3.1 Strategy

CARE's program in Cameroon began in 1979. In addition to confronting many of the frequently encountered problems associated with establishing an organization and launching a program, during its first four years of operations CARE faced the task of making the government and the villagers aware of its unique approach to development. CARE also quickly realized that it had to focus its programming activities in order to overcome unexpected constraints and to achieve maximum utilization of resources.

In some respects, CARE's first Multi-Year Plan (MYP) for Cameroon defined an overly ambitious program that did not take into account the novelty of the CARE approach to community development in the country, and relied too heavily on government assurances that commitments would be met in a timely and appropriate manner. The objectives of the first MYP could not be realized within the period proposed, but this phenomenon is a common occurence. There is often a lack of correspondence between actual accomplishments and program targets defined at start-up. Activities of a first MYP should have two fundamental objectives, and these are quite different from program targets. First, activities should set the overall direction of the CARE country program; second, they should strive to achieve a degree of recognition on the part of government personnel of the particular development philosophy and working-style of CARE.

Since it is only through testing many different approaches and launching multiple interventions that a program can best determine what works, why and how in the context of the country's overall development strategy, a first plan that is ambitious in scope and content is useful. It launches the program and gives it an identity. The first four years of activities should be considered the entrepreneurial phase of CARE's activities in Cameroon. A solid administration was put in place, effective working relationships with host country and international agency professionals were established, and a variety of program investments were made, evaluated, and redefined.

The activities proposed during CARE's next three-years in Cameroon (FY 84-86) are framed in light of what occurred during the first period. While much has been learned, certain issues of concern remain to be addressed and resolved in what could be called the transitional phase of CARE's presence in the country. During the next three years CARE will attempt to meet modified program goals, provide the support needed to maintain and enhance the impact of activities in place and proposed, and improve the overall administration of the program. This period

marks the transition between the entrepreneurial activities of the first four years and the management activities of the next planning period, 1986-1989. During that period, CARE's operations will be designed to replace expatriate staff with nationals on a large scale, and phase-out activities might begin.

CARE's activities in Cameroon are closely linked with those of the Community Development Directorate in the north and east, the two least developed provinces in the country. CARE has been asked to work in these provinces because the need is great and government personnel and resources are inadequate. It was also hoped that villagers might profit from adopting CARE's self-help philosophy.

CARE's initial activities were undertaken with an incomplete understanding of the difficulty of conducting operations in these two very dissimilar areas, or perhaps with an overestimation of the government's and the villages' ability and willingness to cooperate. While a number of community development activities were launched, e.g. wells dug, springs capped, and community centers built, it quickly became apparent that CARE's original targets could not be met and that the program would have to focus on one or two activities that would serve to organize the villagers and act as a catalyst for other development projects.

Program activities in the north and east met with obstacles that were unexpected or underestimated. The environment proved less than hospitable. The geology of the north was difficult to fathom; springs nestled in the dense forests and deep ravines of the east were difficult to reach and improve. Government personnel from CD who were to assist CARE staff were frequently unavailable or poorly trained. Government staff with technical expertise were difficult to enlist due to "turf" conflicts among ministries and between divisions within ministries, e.g. Genie Rural and Service Technique of CD.

CARE personnel faced, and in some regards continue to face, the difficult task of making the personnel of CD aware that CARE is not a technical assistance agency to the government. It is an independent, private voluntary organization that is prepared to work with and through the government agencies to improve socio-economic conditions in villages by involving villagers in development projects. The distinction between the two styles of operation is subtle and not easily grasped by francophone officials used to a highly centralized, top-down system of governance.

CARE's activities in Cameroon are firmly linked with those of the Community Development Directorate (see Appendix E). CARE is committed to training the personnel of CD to replace expatriate staff and to maintain and extend the projects in the north and

east. However, CARE is concerned that CD may not hold significant status in the government and that, in spite of its 1976 mandate, its influence may be less than pervasive.

CARE's concern is based on a number of small but plaguing issues that seem to symbolize CD's lack of status and its inability to influence policy and garner ressources. For example, the CD Directorate in Yaounde does not have a telephone and has not had one in the two years during which the office has been at the present location. Also, although the former Director of CD was transferred in April 1982 no new Director as been appointed. The current person in charge has been the Deputy Director. It is unclear whether he or another will be appointed to fill the vacant post or whether the current situation will continue indefinitely. Leaving the matter unresolved may indicate that the government does not attach a great deal of importance to the activities of CD.

Additionally, CD's role in rural development, especially the installation and maintenance of village water supplies through its division of service technique, is in part challenged by Genie Rural, a separate Directorate of the Ministry of Agriculture. In many respects, CD's technical service division and Genie Rural are responsible for the development of rural water supplies in Cameroon, albeit using different approaches; Genie Rural does not require the village participation requested by CD's service technique and CARE.

The existence of two competing technical services within the same ministry (Agriculture) has created competition, intensified by the fact that each has the assistance and prestige associated with working with an international agency. For example, Genie Rural is assisted by SCANWATER, a rural water supply program designed and installed by Danish technicians, while the personnel of CD are counterparts to CARE staff working at the village level.

As long as this situation continues and the lines of authority and the manner of approach to villages left undefined, it will be difficult for the community development philosophy to become part of government and village consciousness. Continuing conflict and competition give the villagers mixed signals and make it difficult to secure cooperation and understanding.

Because they are used to having things done for them rather than doing things for themselves and more accustomed to avoiding than cooperating with government programs, villagers have been slow to accept the CARE self-help philosophy and to participate in and contribute to projects. Realizing that CARE was often only one of many agencies providing development assistance and the only agency at times requiring contributions in cash, kind, and labor, villagers often rejected CARE's approach with some assurance that another agency would develop the desired water system.

Finally, CARE encountered enormous problems in securing and transporting materials to the project sites at the right time and in the proper amount. At some sites everything, from sand to spigots, was required. Logistical problems were compounded by unreliable vehicles and the absence of the trained personnel needed to repair and maintain them.

During the first four years of activities in Cameroon, CARE managed to overcome most of these constraints. More importantly, the lessons learned have been used to tailor current and proposed program activities. CARE's program is designed to inculcate the self-help philosophy among government personnel and villagers, to provide government staff and villagers with on-the-job training in water source development and maintenance, and to make available health education in water transport, storage, and use.

Water is a key concern of the villagers in the north and east. In the north water is difficult to find and/or often unavailable during the dry season of the year. In the east it is abundant but often inaccessible--at the bottom of deep ravines--and polluted. CARE has made water the focus of central concern. Within current CARE programming, water development is the process by which a village is organized to contribute to its improvement, the means for raising living standards, and the catalyst precipitating additional development activities. Additional projects may follow (e.g. reforestation projects) and they will be reviewed and supported (or postponed) as the situation warrants. In the immediate future, it is essential that CARE continue to concentrate on completing and extending the water projects. Moreover, given the investment made in water-related activities to date by all groups, CARE must enact measures to assess the impact of these projects on the behavior of those installing, maintaining, and using improved sources and ultimately the impact of behavior change on the socio-economic status of the villagers in the project areas.

3.2 Overview of Existing CARE Projects

3.2.1 East

CARE operations in the east, supported with contributions from CARE/Canada, began in 1979 and are based in Bertoua, the provincial capital with a population in excess of 20,000. From Bertoua, CARE staff, counterparts from CD, and volunteers from Canada (SUCO) and the United States (Peace Corps) attempt to cover a province that consists of four divisions--Boumba et Ngoko (56,000 pop.), Haut Nyong (124,000 pop.), Lom et Djerem (92,000 pop.) and Kadey (95,000 pop.)--and is the second largest in the country. The topography is somewhat rolling with savannah in the north and dense rain forest in the center and south.

CARE projects in the East have focused on capping springs although CARE has also improved one or two school rooms and community centers and built several latrines. Spring capping is a process which improves a local water source through the construction of a concrete box around the spring to protect the water from contamination. The box has an interior filter of natural material (sand, gravel, and rock); clean water comes through pipes placed in the facing of the box. Pressure on the cap, due to the build up of water behind the cap, is relieved through the installation of run-off pipes at the top and along the sides. A concrete apron is constructed in front of the cap and inclined to facilitate proper drainage. On average, the caps are three meters wide and one meter high.

Over the past three years, 40 springs have been capped in approximately 37 different villages averaging 470 people per village throughout the province. The cost per villager has been slightly more than US $20. On the average, CARE has contributed more than 85 percent of the capital cost per project. Village contribution has frequently been less than five percent. It should be emphasized, however, that cost per project per year has decreased over the three years while village contribution as a percentage of capital cost has steadily increased. During the period, the cost per improved source and per person served has declined as the number of sites completed in a fiscal year has increased. The current cost trend should continue since more trained personnel are available, major engineering problems have been resolved, and the villagers have a better understanding of their role in community development activities.

Spring capping in the east is a considerable engineering accomplishment given the distance covered and the terrain in question. An impression of the difficulty involved in improving the site and using the improved source can be gathered from a description of an average site. In general, villages in the province border the roads. All roads are passable in varying degrees depending on the season, and more than 95 percent are unpaved. Behind the villages are steep ravines. A portion of the hillside, usually a third, has been cleared and planted with coffee or another cash crop. The remainder of the hillside twists through rather dense forest to the spring at the bottom. The distance from top to bottom can be in excess of 250 meters but is usually 200 to 250 meters. Descending the trails to the spring and climbing back to the village in the dry season is difficult and tiring, and trails can be impassable and dangerous during the rainy season.

Since there is no mechanical means of lifting the water from the spring at the bottom of the ravine to the village at the top, all water is carried--almost exclusively in uncovered basins by women. In the course of improving these water

sources, almost all construction materials have to be transported to each village and carried downhill to the site by CARE personnel, counterparts, and villagers involved in the project.

In theory, each village initiates a request for an improved water source and sends it to the local agent of CD. The agent completes a survey of the village (see Appendices F and F2) and forwards the information and his recommendation to the CD office in Bertoua. CD reviews the information and, if the request is approved, passes it to the CARE office. The CARE engineer, in cooperation with his CD counterpart, reviews the information, visits the site, and schedules the work. The procedure is designed to ensure that the village is interested in the project, of sufficient size to benefit from an improved source, and willing to provide the labor, materials and cash required to complement CARE and the government's contribution.* The review procedure is also to ensure that the work proposed does not duplicate the activities of another development agency and that water source development is a high priority of the village.

In practice, the review system has seldom worked as designed. The site selection and review process has been less than rigorous, and there has often been an absence of cooperation and coordination among the ministries (Health and Agriculture) working in water in the east. CARE has sometimes found, after it had committed itself to a site, that the village already had one and sometimes more than one improved water source. At times villagers proved to be unwilling to participate fully in the project. The absence of village participation, or only marginal participation, slowed the construction schedule and diluted the potential impact of an improved village water source.

These issues aside, the fundamental problems with CARE water projects in the east are the absence of good baseline information on the villages and the failure to incorporate a health education program at the time each site was improved. In spite of the heroic engineering effort that has produced clean water at the source in a number of villages of the east, there is no

*The government's community development program calls for participation from the communities and international agencies as well as the government. Appendix G is a graph of the projected pattern of contributions to community self-help projects over the next two decades. The graph suggests that the government, international agencies, and villagers will contribute an equal percentage to projects during the early years of the program. By the year 2000 the communities will contribute 80 percent to each project. Donors and the government will each contribute 10 percent.

evidence that any of the interventions have had any effect on behavior related to water transport, storage, or use. Also, the absence of baseline information makes it impossible to estimate the impact, if any, of the water sources on health status. Water is still carried from the source in dirty and uncovered basins, stored in unclean reservoirs, and drunk from unclean cups. Traditional bathing and laundry practices at water sources leave them polluted and a breeding ground for malarial mosquitoes and other pathogens.

CARE has been and remains aware of the fact that cooperation among the agencies and ministries working in the east has been less than satisfactory and that it will not be possible to conduct a process or impact evaluation of the water projects without baseline data and health education. However, given that staff with skills in health education were not available when the project began and that CARE was anxious to win the confidence and cooperation of CD and the villagers in the east, the program proceeded. The Director of CD in the east has been pleased with CARE's efforts and is fully cooperative and anxious to add health education to the project. He is aware of the project's deficiencies but is currently without the means to correct them.

Two recent events suggest that a number of outstanding problems will be solved in the coming years. The recently appointed representative of the Ministry of Health for the east is reportedly willing to coordinate the activities of his ministry and its voluntary agencies (e.g. Dutch volunteers) with those of CD and CARE. There has been no cooperation between Health and CD in the past. Also, a SUCO (Service Universitaire Canadien Outre-Mer) nurse with expertise it health education will move to the east in January 1983 and begin to work with CARE. She is currently reviewing the health education component of CARE's wells project in the north. On arrival in Bertoua, she will start to employ some of the practices developed in the north, along with the methodology outlined in the following section of the MYP. It should be emphasized, however, that working alone she will be unable to influence water-related behavior to the degree necessary to have any lasting impact. She will need the cooperation of trained and energetic animateurs from CD in order to achieve maximum impact.

During the next three years, CARE will emphasize selected aspects of the technical and health education components of the spring-capping program. With the arrival of the SUCO nurse and the promise of closer cooperation between CD and the Ministry of Health, the health education program will be launched and focused to reach and motivate technical teams, health and CD personnel, school teachers, village chiefs and leaders, and villagers. CARE's ability to work with government counterparts to inculcate good health practices in water and sanitation is, however, directly related to the government's ability and willingness to provide the project with appropriately trained

staff. Without a sufficient number of animateurs, it will be difficult for CARE and the SUCO volunteers to cover the existing and proposed water sites. More importantly, since CARE's presence in Cameroon is limited in time, the government must provide personnel who can work with project staff to achieve the objectives of the program and who can continue activities after CARE staff and the volunteers have left the province. The government has indicated that staff will be made available. CARE will use all means to ensure that this promise is kept.

In the next three-year period CARE engineers and SUCO technicians will complete the spring capping program and concentrate on on-the-job, on-site training of four CD technicians who will be joining the project in FY 1985. Since one of CARE's objectives in Cameroon is 'to work itself out of a job," the staff and volunteers in the east will provide skill training for CD technical personnel who will ultimately become responsible for water-related activities in the four departments of the province. This a major program activity, defined in direct response to CD's request and in accordance with CARE's operational philosophy in Cameroon.

3.2.2 North

CARE operations in the north, supported in part by USAID, began in 1980 and are based in Mokolo, a town of slightly more than 5,000 inhabitants located in the Mandara Mountains in the extreme north of Cameroon. From Mokolo, CARE conducts well digging and health education activities in Mayo-Tsanaga and Mayo Sava, two departments of the province, and Meri, a division in the department of Diamare. There are approximately 102,000 people in the more than 75 villages of the project area.

The terrain in the north is geologically problematic. It consists of plains, plateaus and mountains. The hot and arid conditions of the region favor the cultivation of millet, cotton and peanuts, and some potatoes and some rice along the perimeters of the Logone River, the only river in the north flowing year round.

Water is an acute problem in the region. In the rainy season (May to October) flash flooding occurs in the dry river beds. Much of the water is uncaptured and of minimum benefit to the population. In the dry season (November to April) the search for water occupies a great portion of the time and energy of the women and children. Unlike the east, where water is plentiful year round, in the north good, useable water is difficult to obtain and very scarce. Also, anecdotal information suggests that the northern water table is getting lower every year, making many existing wells unuseable and water even more scarce.

In addition to addressing the complex technical problems associated with digging wells in difficult terrain and overcoming the logistical problems connected with working far from CARE's administrative headquarters in Yaounde and port facilities in Douala, CARE/Mokolo's operations have been hampered by their distance from Garoua, the administrative headquarters of the province. While CARE operations in the east are situated in Bertoua, the provincial capital, and CARE personnel have had ready access to the top administrative staff of government ministries and divisions and through them direct access to departmental staff, CARE staff in the north has had to, and continues to, work with different prefets and sous-prefets in each department. Working through CD has been further hampered by the fact that CARE had no counterpart in Mokolo until an agent was posted there in November 1981 more than one year after project activities began. CD in the north has been supportive of CARE's efforts but has not made good on its commitments to supply adequate staff and facilities. Since warehouse and garage space was not provided by CD as promised, CARE had to spend time originally scheduled for well drilling as well as funds on constructing a garage and warehouse facility.

CARE's program in the north is designed to ensure the provision of clean, reliable, and accessible year-round water sources to villages which need them and are willing to participate in the self-help program. CARE also provides health education in well protection, water storage and use, and in the location, building, maintenance, and use of latrines.

The site selection process begins when a village submits a request for a well to the prefet of the department. The prefet forwards all requests to the local CARE office for review by CARE, CD and Genie Rural technical staff. Prospective sites are visited, the technical difficulties are assessed, and the self-help philosophy explained to the villagers. Based on these visits, certain villages are selected after assessing a number of factors: location of the nearest water source, number of residents, estimate of the degree of villager participation in the well digging activities, etc. Before proceeding, however, CARE submits the list of villages to Genie Rural for final review. Close cooperation between CARE, CD, and Genie Rural avoids the problems of duplication of efforts and competition associated with the program in the east. The site selection procedure works very well and is characterized by a high degree of cooperation among the agencies working in water-related activities in the north.

It would, however, be unfair to say that installation has proceeded without difficulty. As in the east, CARE has found that villagers do not immediately grasp the self-help philosophy and often do not help in the digging or provide locally available materials to the extent requested and required. Each village is asked to provide six volunteer laborers per day, food and

lodging for the well diggers during the construction period, and certain building materials, e.g., sand, gravel, etc. On occasion, CARE has received little or intermittent assistance from the villagers. Since villagers are aware that Genie Rural constructs wells and does not require village participation, they are frequently baffled by CARE's request, do not see the rationale behind it, and participate somewhat reluctantly.

CARE technical staff has developed 23 wells in the project area since 1980. Unlike the east where technical problems are associated primarily with transporting materials to the site and securing adequate village participation, technical problems in the north are considerably more complex and commonly appear in the post-installation period. Through its own and USAID's project evaluation, CARE has found that some of the improved sources no longer have water, others provide an insufficient quantity and unacceptable quality of water (turgid), and still others have inoperable or poorly working pumps. Since the wells with problems are those that are not deep enough to ensure a year round supply of water at an acceptable rate of flow, these will have to be deepened. This will require blasting, a technique used by Genie Rural but not by CARE until now.

CARE has been aware of these post-installation problems. Many result from installation practices that are new and relatively untested in the region. While progress to date has been slow because of problems associated with estabishing the program, testing the different technical approaches and containing costs, future operations should proceed at a more rapid pace (see Appendix H).

On average, each site has cost slightly more than US $20,000 to develop. This figure should be reduced during the next three fiscal years since many of the technical problems have been overcome, construction equipment is available, and villagers have been made aware that CARE will not develop a site without their timely and regular participation. Village contributions to date, in the form of labor and materials, have averaged somewhat less than 10 percent of the total project cost but have exceeded the percentage contribution of the government. The inputs provided by Peace Corps Volunteers have amounted to 13 percent of each project. Until the end of fiscal year FY 83 the volunteers provided indispensable assistance and were involved principally in working with villagers to secure their understanding and participation.

Cost per beneficiary per well has averaged less than US $10. This figure is half of the cost in the east. It should be emphasized, however, that the average population per village in the north is considerably larger than the average in the east. Also, since several of the wells have not provided a consistent quantity of water throughout the calendar year, villagers have not been able to benefit from some of the projects. This would suggest that it is not yet possible to calculate a cost per

beneficiary. This figure can only be determined when all the wells are operating on a regular basis and providing a fixed quantity of water over a given pumping time irrespective of whether it is the rainy season or the dry season.

In addition to the well digging activities, CARE's project in the north has focused on educating the construction workers, school teachers, village leaders, and villagers themselves on the proper techniques for protecting and maintaining the wells, storing and using water, and building, using, and policing latrines. Unlike the east where health education activities have yet to begin, CARE has had a health education program in the north for the last two fiscal years, FY 80-82. The program, developed by a health education specialist resident in Mokolo, consists of motivating "project agents"--government staff from CD, Health, Jeuness et Sport, Affaires Sociales, local village leaders, school teachers and Peace Corps volunteers, etc.--to change their own and villagers' hygiene habits. Once trained, these agents participate in all phases of the well project from site selection and village extension work to post-installation visits and re-training, as required.

The focus of the health education component is two-fold: first, to give Cameroonian nationals sufficient on-the-job training in health education techniques to enable them to train other agents and the villagers of the region and supervise their activities. Second, to change the water use and hygiene habits of the villagers themselves.

Over the two past years, largely through the efforts of the health education specialist, a process for selecting, training and supervising project agents has been developed and perfected. This has been a difficult and time-consuming activity that called for the development of special motivational materials and, at times, the dismissal from the program of those prospective agents who did not perform or who tried to exploit the villagers. This activity has, on the whole, been highly successful. The north has a small cadre of motivated project agents in place. More significantly, they are currently directed by a trained Cameroonian national who replaced the expatriate when she completed her assignment and left the country. The involvement of a Cameroonian government official at this level of project activity signals the accomplishment of one of CARE's long-range objectives and the degree to which the government is committed to the project.

Beyond training a new director and project agents, health education activities have focused on changing the health and hygiene behavior of the villagers. Through the use of instructional aids and surveys, project agents have attempted to motivate the villagers to alter traditional practices in regard to (1) protecting wells, (2) storing and using water, and (3) con-

structing and using latrines. The agents have also involved school teachers in health education activities and called upon them to motivate their students (see Appendices I1, I2 and I3).

The health education program attempts to measure behavior changes by monitoring the extent to which agents and village leaders attend training sessions and implement the new health practices in the villages and the extent to which school teachers respond to the training programs by incorporating the corpus of the program in their general curriculum. Indications are that villagers are adopting the new health practices to an increasing degree and that accomplishments in training and behavior change have been considerable. Since 1980 the project has trained 48 school teachers, 44 well workers, and 123 local leaders. Analysis of the questionnaires completed by the leaders indicates that (1) new latrines are being constructed, used and maintained; (2) water storage vessels are being more frequently washed with soap; (3) CARE wells rather than the river are being used for drinking water; and (4) local leaders are to an increasing degree counselling villagers on proper hygiene, supervising village clean-up campaigns, and motivating villagers to build protective enclosures around wells. Still, the CARE project in the north cannot currently assess the effect of these behavior changes on the overall health status of the villages. As in the east, there is no baseline information on the villages of the project area, and no methodology in place to measure program impact.

CARE will continue well-digging and health education activities in the north through FY 84 when the present OPG with USAID terminates. In order to resolve many of the difficulties that have plagued the well-digging program, CARE will explore a range of technical solutions. CARE's goal will be to complete the 49 wells called for in the original project plan and to ensure that these, as well as the sites already developed, are deep enough to provide a sufficient supply of clean water throughout the year.

Progress on well construction can be made if the good cooperative relationship between CARE, CD, and Genie Rural that has characterized operations in the past remains operable, and if the government meets its commitments and provides the necessary personnel and facilities. If technical issues related to the depth of the wells and the smooth and effective operation of the pumps continue to be periodic problems, CARE may ask USAID to develop some test sites and to determine alternative solutions. Currently, however, measures implemented since the USAID evaluation appear to have resolved the outstanding difficulties.

CARE will continue to emphasize the health education component of the project now directed by a Cameroonian. Continuation of a high level of training in extension work is needed to ensure village participation in well-digging, and the proper use and

maintenance of the new facilities. As in the past, efforts will be directed at training project agents, village leaders, and school teachers. A special effort will be made to involve personnel from the Ministry of Health who are responsible for water-related activities but have not been involved in the project to any great extent.

The degree of project impact will be directly related to the quality of the training and the extent of government and villager commitment and participation. The activities of the new health education specialist will be closely monitored and supported so that the momentum achieved over the last two years will be maintained and accelerated.

A community forestation project which began in FY 82 will continue through FY 85. In cooperation with CD and the Cameroonian Forestry Service, this CARE project provides seedlings for more than 60 villages of the region. These activities will enhance the water program and protect a threatened environment. The project is designed to establish woodlots that will provide wood for fuel and building and will help to retain soil fertility. The forestry project will also check erosion, retard the rate of soil degradation, and enrich and increase the subsoil's ability to retain water. A CARE forester is in charge of the project. He will be working closely with a Cameroonian counterpart from the Fonds National Forestier and two Peace Corps volunteers.

Chapter 4

PROGRAM EVALUATION: PROCESS AND IMPACT INDICATORS

CARE has been working in Cameroon four years and, along with government and other international agencies, has invested significant resources in water supply programs in the north and east. While conscious of the need to evaluate the effect of these programs on the behavior and health status of the recipients, CARE has not had the resources or the personnel available to design and implement a process and impact evaluation. During the first years of operation in the country, CARE has channelled its energies into building a solid administrative unit, establishing good working relationships with government ministries (especially the Community Development Directorate), explaining its self-help philosophy to counterpart nationals and villagers, and improving or developing water sources in the villages of the north and east.

Not unaware of the need to monitor activities, CARE has chosen to concentrate on tracking project "inputs", primarily cost measures, and on assessing trends in program costs. This practice is completely understandable in light of CARE's limited staff and finances, the program's need to meet very tight project completion deadlines, and the staff's need to handle unexpected emergencies, when not involved full-time on project activities. The input monitoring exercise is a common evaluation practice and one wholly reasonable given the short time that CARE has been in Cameroon.

This is not to suggest that CARE has not taken steps to assess the behavioral changes that have resulted from its water projects or that CARE is not interested in evaluating the impact of its program on health status. The health education specialist working in the north has developed instruments to monitor changes in the knowledge, attitudes, and practices of the project agents, school teachers, and villagers (see Appendix G). CARE has also completed designs for health education activities in the north and east that focus on the need to monitor behavioral changes of villagers and outline the manner in which this might be done. To date, however, CARE has not been able to suggest (1) what might be the impact of its activities on health status or (2) how to measure overall socio-economic change.

Over the period of the next MYP, CARE is prepared to design and implement a program that will begin to measure behavior change and overall program impact. This section of the plan suggests the outline and major elements of the evaluation design. It should be emphasized that the design of the methodology reflects a compromise between CARE's desire to be rigorously scientific and the resources available to conduct process and impact evaluations. The design also attempts to incorporate

materials and approaches that have been developed in Cameroon and are applicable to the evaluation. Since CARE personnel and funds for evaluation activities are limited, assistance from other agencies will be needed in forms design, data collection, and data analysis.

Since one of CARE's goals is the "Cameroonianization" of its program, African nationals, especially Cameroonians, should be involved in all aspects of the evaluation activities. IFORD (Institut de Formation et de Recherches Demographiques) is attended by French-speaking students from North African and Sub-Saharan countries. Each student in the program is required to design data-collection instruments and to collect and analyze data. Preliminary discussions with staff at IFORD suggest that technical assistance could be provided to CARE. Collaboration should benefit both programs. If, however, IFORD is unable to work with CARE, another Cameroon-based institution should be approached and asked to help in the evaluation activities outlined below.

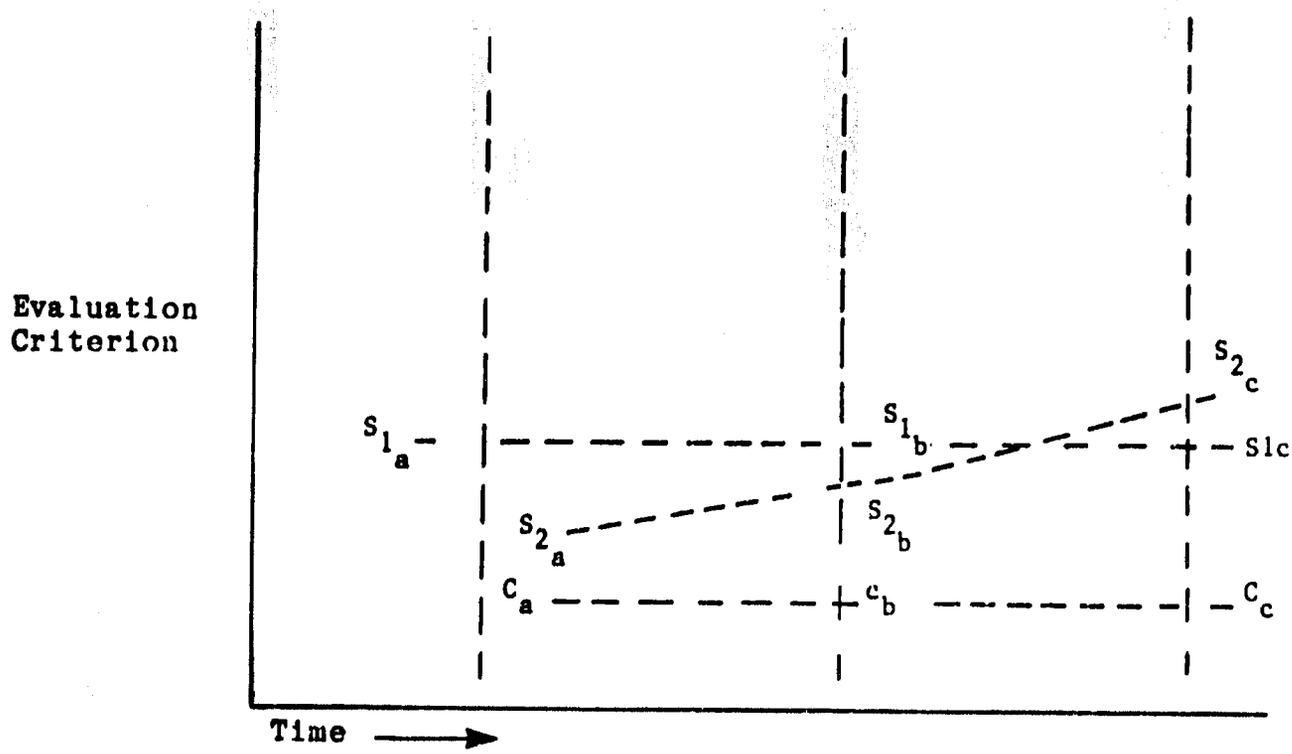
The proposed methodology combines two evaluation designs for assessing behavior change and the overall impact of CARE's water-supply activities: (1) a simple "before" and "after" approach that identifies changes brought about by the program as differences between the values of the evaluation criteria measured before and at an appropriate period after the program's introduction and (2) an approach that compares the "before" and "after" status of populations served by the program with the status of the populations not served.

The first design is the simplest type of evaluation approach, probably the most common, and least capable of distinguishing between the impacts of a particular program and impacts stemming from other causes. In this design, program objectives and evaluation criteria are identified, values are obtained for the criteria in the "before" and "after" periods, the data are compared, and other plausible explanations are examined to clarify any perceived changes. The second design calls for the same steps but attemps to account for the Hawthorne effect by including a control group (see Figure 1). If the control segment shows changes over time similar to those appearing in the population receiving the interventions--improved water supply and health education--factors other than the interventions may have been responsible for changes in health-related behavior and status.

In order to be able to develop appropriate instruments and to collect relevant data, process and impact indicators must be defined at the start of the program. The CARE health education specialist who worked in Mokolo spent considerable time defining process indicators, identifying target groups and developing instruments to measure changes in knowledge, attitude and practice (KAP) over time. These efforts have been significant

FIGURE 1

Illustration of Evaluation Design: Possible Trends of Change



c= control group (no interventions)

s_1= sample group (interventions before baseline taken)

s_2= sample group (interventions after baseline taken)

$$\left[S_{2c}-S_{2b}-S_{2a}\right]-\left[S_{1c}-S_{1b}-S_{1a}\right]-\left[C_c-C_b-C_a\right]=\text{estimated program effect}$$

and should be continued. However, since baseline data were not collected on the villages or target groups within the villages before the CARE program began, it is not currently possible to attribute any apparent changes to the interventions.

The design below is a diagram of the relationships the evaluation will attempt to track and confirm. It suggests that CARE's introduction of water-supply and health education programs will produce changes in the behavior and health status of villagers measured principally as changes in the Infant Mortality Rate (IMR), the Child Mortality Rate (CMR), and the prevalence of diarrhea in children under 5 years of age (see Figure 2). Since baseline data must be collected before any changes can be observed, initial efforts must be designed to obtain this information.

There are many baseline data collection forms already in Cameroon that could be used or modified to gather information on the villages (see Appendices J and K for CARE's current forms). The form developed or selected must be able to generate simple and unambiguous information on the population and conditions in the villages. At all times the form should prompt the collection of objective, quantifiable information. The form used to collect baseline data should ask for: yes/no answers; specific numbers of items (hectares, houses, residents, distances to and from markets, post offices, police stations, etc.), and measures of the quality of housing construction and degree of village cleanliness, especially the degree of cleanliness of currently used water sources and latrines. Quality should be assessed by comparing village conditions with pictures or drawings illustrating the different qualities and conditions. If each interviewer carries the same illustrations of degrees of cleanliness, (clean, moderately clean, littered, heavily littered, etc.) there is some assurance that data collected will be consistent and easy to record and understand.

Since the anticipated impact of the interventions will be improved rates of infant and child mortality and a lower prevalence of diarrhea among children under five, baseline data must contain information on infant and child births and deaths within the last calendar year (harvest to harvest) as well as information on ages, weights and heights, and diarrheal prevalence among children under 5 during the week preceding the survey.

Information on the villagers' knowledge, attitude, and practices regarding water use, transport and storage, and excreta disposal must also be collected. Perhaps the forms developed by the USAID/UNC PTHE project for use in Kadey and Mefou (see Appendices M1 and M2) could be modified and used, as well as the form developed by the CARE health education specialist (see Appendix J).

FIGURE 2

Evaluation Relationships

Independant variables

1. Water supply program
   a. Spring capping: east
   b. Wells: north
2. Health education program
   a. Project agents (well diggers, schools teachers, village leaders)
   b. Villagers

Intermediate variables

Measures of village socio-economic status

1. Housing conditions:
   Type of construction
   Quality of maintenance
   Degree of cleanliness
2. Village conditions:
   Measures of wealth/household
   Degree of cleanliness
   Number of facilities (school, bar, dispensaire, etc.)
3. Demographic characteristics:
   Births, deaths, migration, educational level completed occupation
4. Previous development interventions:
   Health program, e.g. vaccination
   Water project
   Sanitation program
5. Other, as determined

Dependant variables

Process

Changes in:
Knowledge
Attitude
Practices
Re: WS&S

Impact

Changes in:
IMR
CMR
Diarrheal
Morbidity among under 5s

Some process indicators have already been specified by the CARE health education specialist. These are: (1) well sites with constructed and maintained enclosures, (2) increased number and use of latrines, (3) well sites of CARE are main drinking water source for village, and (4) improvement in cleanliness of water storage and water usage vessels (see Appendix I1). These need to be complemented with indicators regarding latrine construction, maintainance, and use and general measures of village cleanliness, perhaps similar to those specified by the PTHE project (see Appendix M2). Also, since improvements in infant and child health are the results desired, process indicators that measure changes in mothers' hygiene practice and their systems for collecting, storing, and using water must be given special attention. Programs to reach and motivate this group must be developed and implemented.

CARE's health education program is designed to change the behavior of village populations. Currently, health education activities are concentrated on training project agents, one group of whom consists of village leaders. Many villagers, especially mothers of small children and principal users of water, have not been directly touched by the program. The exception are school children who attend schools where CARE trained teachers are in place. Since CARE wants to proceed at a pace that corresponds to the level of training and number of personnel available, this is an acceptable strategy for ensuring a high degree of program acceptance. Still, CARE must be aware that women are key change agents within villages and that they must be motivated to alter water use and hygienic practices before the project will have a significant and sustained impact. It is not enough to train village committees to protect and maintain wells or to keep spring sites clean; women who carry water and give it to their children to drink must be taught proper transport, storage, washing, and drinking practices.

While the baseline data need to be taken only once and only for those villages in the sample and control groups, the changes in knowledge, attitudes, and practices should be measured at predetermined, regular intervals. Attempts to assess impact should be made only after the interventions have been in place an appreciable period of time and at least one year.*

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*It is assumed that baseline data would be collected by trained professionals from IFOPD or another organization. These professionals would also be responsible for training and, if necessary, re-training those responsible for conducting other surveys. Since valid conclusions can only be drawn if comparable and reliable data are collected, it is essential that immediate attention be given to form design, interviewer training, and other issues related to ensuring data quality.

Since CARE is prepared to begin to assess the effects of its water supply and health education program but does not have the means to survey the entire project area (in the case of the east this would involve the entire province), the approach below is suggested.

It proposes the selection of a sample of villages in each project area, the collection of baseline data, the introduction or continuation of water-supply and health education activities (or for the control group their scheduled introduction for some future time), and the collection and analysis of data. The sample selected in each program area should consist of the wealthiest villages and the poorest villages. The control group should also consist of wealthy and poor villages (see Figure 3). Wealthiest and poorest are defined according to gross macro-economic indicators, referred to above as intermediate variables. For example, villages with more resources and facilities--schools, dispensaries, markets, bars/restaurants--and close to urban centers would fall into the wealthy category; those most remote and with the fewest resources, (e.g. pygmy villages in the east), would fall into the other category. Some of this information is already in the CARE files. Concentrating on these extremes should allow CARE to monitor changes in the "best-case/worst-case" situation and to suggest what has occurred or what might be taking place among those villages that fall between the two sample groups.

The overall study design needs to be modified by the realities of the project areas: (1) baseline data have not been collected in either the north or the east, and (2) project villages in the north have received both interventions (wells) and health education while springs in the project villages of the east have been capped but no health education activities have begun (see Figure 4). Since this study must take these differences into account, the approach above is suggested. The study will consist of 12 cells, six in each region allowing for multiple comparisons within each project region and between the regions.

Since the project is also monitoring changes in the knowledge, attitude, and practices of three key groups--local leaders, teachers, and well workers--a separate activity will have to be undertaken to determine changes in the characteristics of this group as it currently exists and as it develops with the addition or loss of members. These activities are already under way in the north (see Appendix J); they need to be extended to the east.

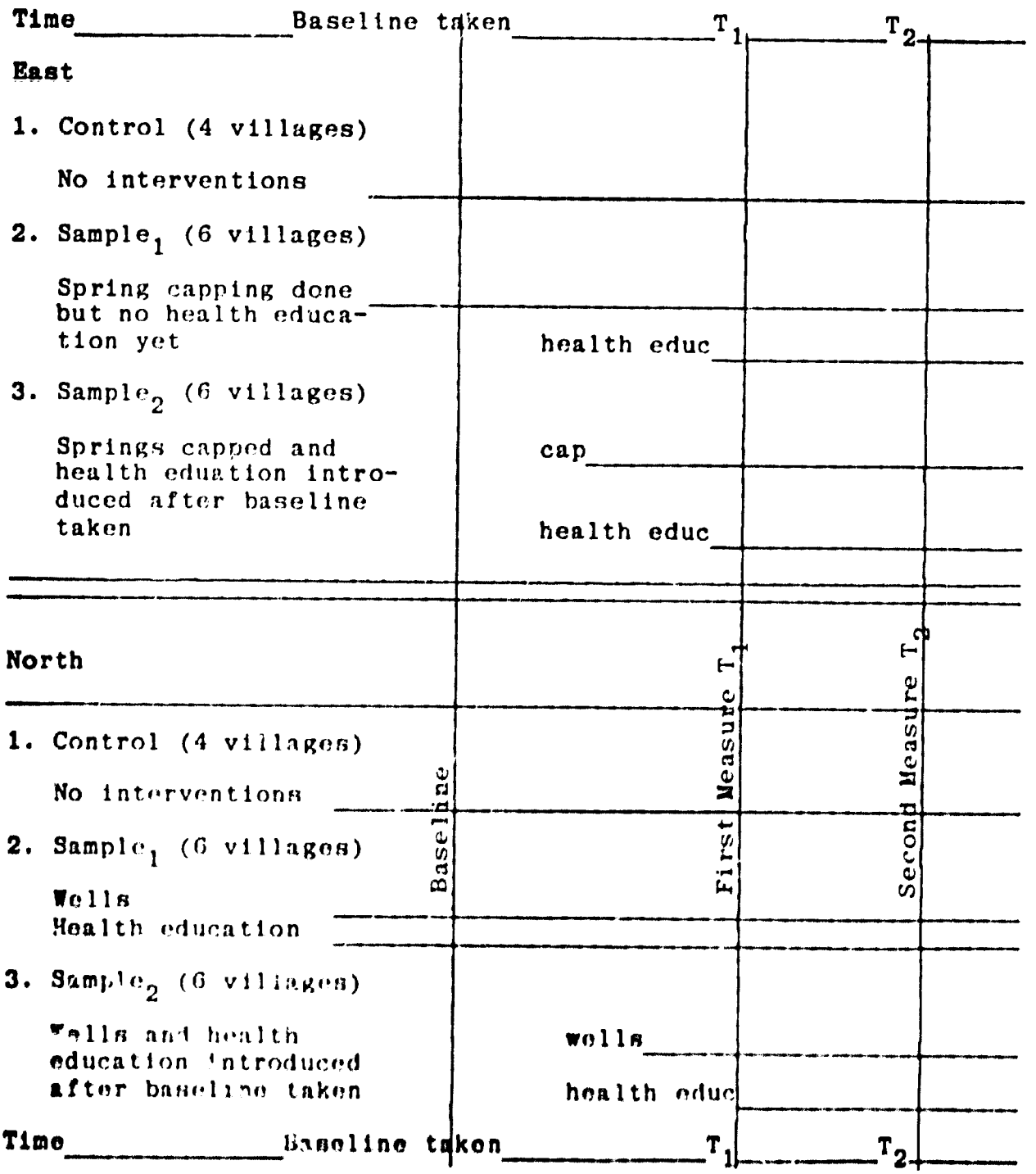
Figure 3

Study Cells for CARE Projects
in Water-supply and Health Education

East		
1. Control Baseline taken - no interventions	2 wealthy villages	2 poor villages
2. Sample$_1$ Baseline taken and health ed. introduced after springs capped	3 wealthy villages	3 poor villages
3. Sample$_2$ Baseline taken before health ed. introduced and springs capped	3 wealthy villages	3 poor villages
North		
1. Control Baseline taken - no interventions	2 wealthy villages	2 poor villages
2. Sample$_1$ Baseline taken after wells dug and health education introduced	3 wealthy villages	3 poor villages
3. Sample$_2$ Baseline taken before wells dug and health education introduced	3 wealthy villages	3 poor villages

Figure 4

Schedule of Baseline and Program Measures
in Relation to the Time that Interventions Began



As the study design suggests, CARE is interested in taking steps to assess the impact of its water-supply and health education activities on the behavior and health status of the recipients. Changes in villagers' knowledge and practices regarding water protection, storage and use, and latrine construction, maintenance, and use have been chosen as process indicators. Indications of impact will be estimated by observing changes in the rates of infant and child mortality and the prevalence of diarrhea among children under five. The study proposed is necessary and could provide meaningful information on CARE's activities in Cameroon. It assumes, however, that assistance would have to be provided to the CARE program in the form of trained personnel and the required financial support.

Chapter 5

CARE FORESTRY PROGRAM

The bulk of the MYP has focused on CARE's water supply program. The place that reforestation holds in the overall development of the north has not been given detailed attention. In many respects water supply programs have been CARE's principal activity since launching operations in Cameroon, and it has been necessary to dwell in detail on activities in that sector as well as to define carefully what needs to be done to ensure that program momentum is achieved and has an impact.

Recently, in response to a request from the Ministry of Agriculture for assistance in the "Green Sahel" Program, and to enhance program activities in the north, CARE designed and began to implement a community forestation program. The project, supported in part by a matching grant from USAID, was developed to address two critical issues: (1) the shortage of wood for fuel and construction and (2) the rapid rate of environmental deterioration in the region. The forestry program is not unrelated to developing water sources since the trees planted in the same areas where wells have been dug will retard run-off and help to retain the level of water in the subsoil. Still, the forestry program is a significant departure from the water projects. It is designed to meet villagers' demands for fuel and building material, their desire to have fertile soil for agriculture, and, by planting fruit trees, their need for improved diets and better nutrition.

Since the forestry program is linked with CD, although under the technical supervision of Fonds National Forestier, the project implementation format follows the community development approach with which CARE is thoroughly familiar. Villagers are expected to participate in site preparation, as well as planting and nuturing the seedlings. A major effort will also be made to motivate villagers to become aware of the ill effects of a deteriorating environment and to enact measures within their means and understanding to reverse environmental degradation.

Over the next three fiscal years (FY 1983-85), a CARE forester will work with a technical counterpart from Fonds Forestier, a Peace Corps forestry consultant, the personnel of CD, and villagers to select 61 communities and to plant trees that will provide fuel, construction material, and fruit, act as windbreaks and enrich the soil. Additionally, the program will implement a village level forestry extension education component that will give villagers the knowledge and skills needed to continue program activities without outside technical assistance.

The CARE forestry program is a pilot program. It will have to be reviewed carefully and constantly to be certain that counterpart commitments are met and that objectives--measured as nurseries established and trees planted--are achieved. Given CARE's small staff and its need to leverage all resources at its disposal, these conditions must be met before any thought can or should be given to extending this program into other areas of Cameroon.

BIBLIOGRAPHY

Accelerated Development in Sub-Saharan Africa: An Agenda for Action. Washington, D.C.; World Bank 1981. (Le Developpement Accelere en Afrique au Sud du Sahara).

Africa South of the Saharan 1981-82, Eleventh edition, Gale Research Company, Book Tower, Detroit, Michigan, 1982.

Agricultural and Rural Development in Cameroon, Marcel Ngue, USAID/Cameroon, 1979.

Annuaire de Statistique Agricole, Ministere de l'Agriculture 1979-80.

Bertoua Post Report, CARE-Cameroon/Bertoua, July 1982.

Bilan Diagnostic du Secteur Agricole de 1960-1980, Ministere de l'Agriculgure, Yaounde, 1980.

Budget de l'Exercice 1982-83, Government of GURC, Yaounde 1981.

Cameroon: Relations entre les Facteurs Demographiques et le Developpement, Washington, D.C., The Futures Group,

Cameroon: Mission Preliminaire. Programme Cooperatif OMS/BIRD, Mai 1981; UNDP.

Cameroon: Rural Water Sector: A Preliminary Study, by Tom Franklin, May 31, 1979, USAID/Yaounde.

Cameroon Background Paper. Integrated Population and Development Planning Project by Costantino, Robert. Carolina Population Center, University of North Carolina, Chapel Hill, May 8, 1981.

CARE/Cameroon FY' 79-83 Multi-Year Plan

CARE/Cameroon: Community Development Wells Construction Project North Province, Revised Implementation Plan, September 1982, by Michael Godfrey, CARE-Mokolo.

CARE/Cameroon, Cameroon Post Report, 1980

Eastern Potable Water Project: Health Education Plan, CARE/Cameroon, n.d.

Evaluation of the Margui-Wandala Water Resources Project, USAID/Cameroon, August 1982.

External Debt of Developing Countries, Paris, October, 1981.

Health Aspects of Excreta and Water Management. Feachem, R.G., D.J. Bradley, H. Garelick, and D.D. Mara. Washington, D.C., The World Bank, 1978, 3 volumes.

La Qualite de l'Habitat, de l'Hygiene du Milieu et de l'Eau Potable dans la ZAPI de l'Est, by Pierre Bachrach, Societe Regionale de Developpement des Zones d'Actions Prioritaires Integrees de l'Est, March, 1981.

L'Essentiel sur le Ve Plan Quinquennal de Developpement Economique, Social et Culturel, Juillet 1981 - Aout 1986. Ministere de l'Economie et du Plan, Yaounde, 1981.

Mandara Mountains Water Resources Project Project, 1979. USAID/Cameroon.

Mandara Water Supply Project, 1980-83. CARE/Cameroon.

Margui-Wandala Water Supply Project: Installation and Maintenance of Moyno Pump and Associated Plumbing, CARE/Cameroon/Mokolo, n.d.

Margui-Wandala Wells Construction, OPG Project, FY 82 3rd Trimester PIE, Health Education Component Narrative, prepared by Susan Greisen, CARE/Cameroon/Mokolo, June 30, 1982.

Margui-Wandala Water Supply 100612, PIE Narrative FY-82 Second Trimester and Third Trimester, CARE/Cameroon.

A Model Health Education Component for Water/Sanitation Projects in Developing Countries", by Helen O'Brien, M.A. Thesis, Goddard College, 1980.

Mokolo Post Report, prepared by Susan Greisen, CARE/Cameroon/Mokolo, July 1982.

Monthly Activity Report, Margui-Wandala Water Supply

MYP Project Proposal: Community Forestation, CARE/Cameroon.

National Nutrition Survey: United Republic of Cameroon. USAID Office of Nutrition, 2 vols. Washington, 1978.

Northern Wells Health Education: Cadre pour le Programme d'Education Sanitaire des Projets d'Eau de Margui-Wandala Monts Mandara. n.d.

Northern Wells (HEED), PIE Narrative, Third Revision, by Ron Shaw.

Northern Wells (HEED), PIE Narrative, by Susan Greisen and Toukour Haman Bayo, October 30, 1982.

Northern Wells Project - Summary of Sites Completed, 18 August 1982, CARE/Mokolo.

Plan Alimentaire National, Ministere de l'Economie et du Plan, Yaounde, 1981.

Practical Training in Health Education Project. PTHE Project 631-009. Prepared for the USAID Mission to the United Republic of Cameroon under Contract No. AFR-C-1432.

Recensement General de la Population et de l'Habitat d'Avril 1976, Directeur de la Statistique et de la Comptabilite Nationale, Bureau Central du Recensement.

Report on the Finance Bill of the United Republic of Cameroon for the 1982/83 Financial Year, presented on behalf of the Committee on Finance, Economic Affaires, Planning and Infrastructure, by Mr. Basile Emah, General Rapporteur, USAID/Yaounde.

Report and Recommendation of the President of the International Bank for Reconstruction and Development to the Executive Directors on a Proposed Loan to the United Republic of Cameroon for a Second Water Supply Project, The World Bank, August 9, 1979.

Rural Water Supply in Developing Countries: Proceedings of Workshop on Training Held in Zomba, Malawi, 5-12 August, 1980. Ottawa, Ont., IDRC, 1981.

Statistical Review, SATA-Helvetas/Yaounde, May 21, 1981.

The Fifth Five Year Plan - GURC - 1981-1986.

USAID Country Development Statement for Cameroon, FY 1980, 1981, 1982, 1983, 1984.

Village Water Supply: Economics and Policy in the Developing World. Saunders, R.J. and J.J. Warford. Baltimore, Maryland, John Hopkins University Press, 1976.

Village Water Supply, Washington, D.C., The World Bank, 1976.

WASH Reports:

#39: "Integration of Health Education in the 'CARE' Water and Sanitation Project in Indonesia" April 1982, by David Drucker.

#53: Recommendations for Initial Water and Sanitation Decade Planning Activities in the Central African Republic" September 1982, by Dennis Warner.

Water for a Thousand Million. New York: Program Press, 1977, by Arnold Pacey.

Water for a Starving World, Boulder, Colorado: Westview Press, 1976. Farlkenmark, Malin, and Gunnar Lindh.

Water Supply and Waste Disposal, Poverty and Basic Needs Series, September 1980, Transportation. Water and Telecommunications, Department of the World Bank, Washington, D.C.

Water, Health and Development, prepared by Richard Feachem, Elisabeth Burns, Sandy Cairncross, Aron Cronin, Piers Cross, Donald Custis, NM. Khalide Khan, Douglas Lamb, Hilary Southall. Tri-Med Books Ltd. London, U.K.

World Development Report 1981, World Bank, Washington, D.C., August 1981.

World Bank Development Report, 1982: Summary. London, Oxford University Press, 1982.

1961-1980, 20 Years Cooperation, Community Development Department SATA-Helvetas in the United Republic of Cameroon.

CARE Community Forestation Project, Chris Kopp, John Michael Kramer and Michael Godfrey, July, 1982.

Project Evaluation: Margui-Wandala Water Resources Project, USAID Project No. 631-0025/CARE/OPG. August 24, 1982.

APPENDIX A

Water and Sanitation for Health (WASH) Project
Order of Technical Direction (OTD) Number 118
September 25, 1982

TO: Dr. Dennis Warner, Ph.D., P.E.
WASH Contract Project Director

FROM: Mr. Victor W. R. Wehman Jr., P.E., R.S. VWW
AID WASH Project Manager
AID/S&T/H/WS

SUBJECT: Provision of Technical Assistance Under WASH Project Scope of Work for USAID/Cameroons and CARE/Cameroons

REFERENCE: A) Yaounde 6838, dated 27 August 1982
B) State 255704, dated 11 Sept 1982
C) Memorandum Isely (WASH)/Wehman (S&T/H/WS) dated 8 Sept 82

1. WASH contractor requested to provide technical assistance to USAID/Cameroons and CARE/Cameroons as per Ref. A, para 1-4. (Scope of Work and timing revised)

2. WASH contractor/subcontractor/consultants authorized to expend up to 56 person days of effort over a 4 month period to accomplish this technical assistance effort.

3. Contractor authorized up to 52 person days of international/domestic per diem to accomplish this effort.

4. Contractor to coordinate with AFR/TR/HNP (J. Shepperd), AFR/TR/ENGR (J.. Snead), Cameroons Desk Officer , USAID/Cameroons (R. Martin), and CARE/Cameroons staff and should provide copies of this OTD along with periodic progress reports as requested by S&T/H and/or AFR BUR staff.

5. Contractor authorized to provide up to two (2) international round trips from consultants home base through Washington DC (for briefing) to Yaounde, Cameroons and return to Washington, D.C. to consultants home base during life of this OTD.

6. Contractor authorized to initiate local travel within Cameroons to view and review CARE field program at selected sites representative of CARE efforts in water and sanitation in the Cameroons. Local travel NTE $1300 without the written approval of the AID WASH Project Manager.

7. Contractor authorized to obtain local secretarial, graphics, reproduction, interpreter or miscellaneous professional services in Cameroons as necessary and appropriate to accomplish tasks. These services are in addition to and above the level of effort specified in para 2 and 3 above NTE $1600 without the prior written approval of the AID WASH Project Manager.

8. Contractor authorized to provide for car/vehicle rental if necessary and appropriate to facilitate effort. Mission and CARE encouraged to support vehicle logistics needs of technical assistance team and provide vehicles support if available and appropriate.

9. WASH contractor will adhere to normal established administrative and financial controls as established for WASH mechanism in WASH contract.

10. WASH contractor should definitely be prepared to administratively or technically backstop field consultants and subcontractors.

11. Contractor to provide an overall final draft coordinated report to CARE/Cameroons and USAID/Cameroons (Health Office) before consultants leave Cameroons. Contractor to provide USAID with final report within 30 days of return of consultants to the U.S.

12. New procedures regarding subcontractor cost estimates and justification of subcontractor and consultants remains in effect.

13. Contractor shall secure a senior sanitary/environmental engineer and a senior public health/programming specialist for the two consultants to be sent. French capability for the public health/programming specialist is especially important.

14. USAID/Cameroons and CARE/Cameroons should be contacted immediately and technical assistance initiated as soon as convenient to USAID and CARE.

15. Appreciate your prompt attention to this matter. Good luck.

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Department of State

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FOR ST/HEA WEHMAN

E.O. 12356: N/A
TAGS:
SUBJ: CARE/CAMEROON REQUEST FOR WASH CONSULTANT

1. FOLLOWING CRAIG HAFNER CONSULTATION WITH CARE DURING JUNE VISIT, CARE HAS REQUESTED USAID VOE THAT A WASH CONSULTANT BE MADE AVAILABLE FOR 30 WORKING DAYS TO ASSIST IN DEVELOPING WATER PROJECT ASPECTS OF CARE'S 1983-87 DEVELOPMENT PLAN, NOW BEING PREPARED. CONSULTANT'S DESIRED NLT OCTOBER 15. ASSIGNMENT WILL INVOLVE APPROXIMATELY THREE WEEKS IN YAOUNDE AND ONE WEEK EACH IN NORTHERN AND EASTERN PROVINCES.

2. QUALIFICATIONS INCLUDE: A) THE CONSULTANT SHOULD HAVE A FULL WORKING KNOWLEDGE OF FRENCH, SPOKEN AND WRITTEN, B) EXPERIENCE IN THE FIELD OF AFRICAN WATER SYSTEMS, WELLS AND SPRINGS, C) STUDIES IN SOCIOLOGY OR CULTURAL ANTHROPOLOGY PREFERRED, D) BACKGROUND IN THE DELIVERY OF SERVICES TO RURAL COMMUNITIES IN THE LDC'S AN ASSET, E) EXPERINCE AND ABILITY IN RESEARCHING AND GATHERING BACKGROUND STATISTICS AND DATA, F) EXPERIENCE AND ABILITY IN ASSEMBLING STATISTICS AND DATA IN THE FORM OF WRITTEN BACKGROUND SECTIONS FOR PROJECT DOCUMENTS.

3. TASK RESPONSIBILITIES ARE: A) RESEARCH AND GATHER STATISTICAL DATA AS REQUIRED TO UPDATE BACKGROUND DATA SECTIONS OF THE 1979 CARE MULTI-YEAR PLAN (MYP). B) RESEARCH AND GATHER STATISTICAL AND OTHER DATA FROM SUCH SOURCES AS THE MINISTRY OF HEALTH, MINISTRY OF AGRICULTURE, COMMUNITY DEVELOPMENT DEPARTMENT, DEPARTMENT OF RURAL ENGINEERING, MINISTRY OF PLAN, ETC., AS REQUIRED TO ESTABLISH BASE LINE DATA FOR CARE WATER AND HEALTH EDUCATION PROJECT DOCUMENTS. C) RESEARCH AND GATHER STATISTICAL AND OTHER DATA ON EXISTING CARE PROJECTS WITH A VIEW TO HELPING DEVELOP REALISTIC PROJECT PLANS FOR THE NEW MYP. D) ASSIST CARE CAMEROON IN THE DEVELOPMENT OF REASONABLE AND PRACTICAL PROJECT TARGETS AND DIRECTIONS DURING THE NEW FIVE YEAR PLAN (MYP). E) ASSIST CARE CAMEROON IN THE DEVELOPMENT OF REASONABLE AND PRACTICAL "INDICATORS" AGAINST WHICH TO MEASURE ITS PROJECT ACTIVITIES IN THE AREA OF WATER AND HEALTH EDUCATION. F) PREPARE A DRAFT OF THOSE SECTIONS OF THE CARE MYP WHICH RELATE TO THE ABOVE NOTED TASKS. G) UNDERTAKE AND CARRY OUT THE ABOVE NOTED TASKS AT THE APPROPRIATE LEVELS, NATIONAL, PROVINCIAL AND LOCAL. H) IN GENERAL, THE CONSULTANT WILL ASSIST IN PREPARING THOSE PARTS OF CARE CAMEROON'S NEW MYP PERTAINING TO WATER AND HEALTH EDUCATION PROJECTS IN THE

YAOUND 06638 2809562 5059 028223 A10

EASTERN AND NORTHERN PROVINCES, AS IT RELATES TO BACKGROUND RESEARCH, THE GATHERING OF REQUIRED STATISTICAL DATA, AND THE EVALUATION OF ACTIVITIES IN THESE AREAS TO DATE, WITH A VIEW TO HELPING ESTABLISH NEW PROGRAMING GOALS AND ACTIVITIES FOR THE UPCOMING FIVE YEARS.

4. CARE IS INVOLVED IN VARIOUS WATER PROJECTS IN CAMEROON, ONE OF THEM AID FUNDED. MISSION ENDORSES REQUEST FOR CONSULTANT. REQUEST NAME, QUALIFICATIONS, AND ETA OF CONSULTANT ASAP FOR CLEARANCE BY MISSION AND CARE.
SHINN

McJunkin
Austin
Wehman WW

Received S/H (Wehman) 8-31-82
Passed to WASH 8-31-82

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APPROVED BY AID ST/H C A PEASE
AID/AFR/CA V FAULKNER (PHONE)
AID/AFR/TR/HNP J SHEPPERD (INFO)
AID/AFR/TR/ENGR J SMEND (INFO)

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AIDAC PASS TO CARE

E.O. 12356: N/A
TAGS:
SUBJECT: CARE CAMEROON REQUEST FOR WASH CONSULTANT
SULTANT

REF: A. YAOUNDE 6238, 27 AUG 82

1. ST/H WS PLEASED WITH INTEREST BY USAID-CARE/YAOUNDE IN WASH PROJECT PLANNING/PROGRAMMING TECHNICAL ASSISTANCE IN WATER SUPPLY AND SANITATION.

2. ST/H WS (WEHMAN) AND WASH STAFF HAVE REVIEWED SCOPE OF WORK AND QUALIFICATIONS FOUND IN PARA. 2-3 OF REF. A AND FIND DISPARITY WITH TIME ESTIMATES IN PARA. 1 OF REF. A. WE HAVE DISCUSSED THIS WITH A. MARTIN C RECENT TDY AID ARE PRESENTLY ANALYZING SCOPE MORE CLOSELY TO PROVIDE MISSION WITH ST/H WS RECOMMENDATIO ON TIME REQUIREMENTS AND NUMBER OF CONSULTANTS NEEDED TO ACCOMPLISH WORK SPECIFIED. WASH CONTRACTOR WILL CALL CARE DIRECTOR TO CLEAR UP SCOPE AND TIME REQUIREMENTS.

3. WILL REPLY SUBSTANTIVELY IN LATER CABLE ASAP. SHULTZ

Rec'd ST/H (Wehman) 9-24-82.
Rec'd to WASH 9-24-82

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MEMORANDUM

TO: Victor Wehman

FROM: R.B. Isely

RE: Request from CARE/Cameroon, Reftel Yaoundé 6383

DATE: September 8, 1982

In the cable a number of subsidiary tasks are detailed, but the overall task appears to be two-fold.

1. Assess the current status of CARE-managed WS&S programs in the Northern and Eastern Regions. This objective would be addressed through several subtasks taken from the cable:

   a. Research and data gathering from CARE files on WS&S projects (Cable task A)

   b. Research and data gathering from relevant Ministries of information related to CARE WS&S projects (Cable task B)

      Research and data gathering from existing CARE WS&S projects (Cable task C)

   The output of this set of tasks will be a 1982 status report of the CARE WS&S Program. This product will feed directly into the second task.

2. Assist CARE/Cameroon to make reasonable and feasible projections of water supply and sanitation activities for the next five years. Subsidiary tasks include:

   a. Assist in the development of reasonable and practical targets (goals) (Cable task D)

   b. Assist in the development of reasonable "indicators" against which to measure progress (Cable task E)

   c. Prepare a draft of relevant sections of the mult-year plan (Cable task F)

   The output of this task is the final product.

MEMO to Victor Wehman
RE: Care/Cameroon
September 8, 1982

The two major tasks could be carried on simultaneously, although it would be preferable to begin the first task about two weeks in advance.

The time for each subtask is estimated as follows:

Task or Subtask	Estimated Person-days
Task 1	
Subtask a	5
Subtask b	10
Subtask c	10
Subtotal 25	
Task 2	
Subtask a	3
Subtask b	3
Subtask c	8
Subtotal 14	
TOTAL	39 Person-days

It would be preferable to send a two person team. Person A should be a person with information-gathering skills related to WS&S project planning. This person would perform subtasks 1a and b alone and assist person B in performing subtasks 1c and 2a though c. Person B should be a senior policy analyst/planner. That person would have responsibility for the whole task as well as the specifics of 2a through c.

WASH proposes as person A a junior level individual with S3R3 French and research skills. For person B, John Tomaro of RTI is proposed.

Person A could go to Cameroon around the 15th of October as requested by the Mission and Tomaro could follow around the 28th or as soon as he is available.

I think we are ready for an OTD. Please let me have your reactions.

T-18

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Department of State

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FOR: S & T/HEA WEHMAN

E.O. 12356 N/A
TAGS
SUBJECT WASH CONSULTANTS FOR CARE-CAMEROON MULTI-YEAR PLAN (MYP) ASSISTANCE

REF: TELCON BETWEEN CRAIG HAFNER AND CHRISTOF SCHEIFFELE OF 9/30/82

1. CARE/CAMEROON CONCURS WITH CHOICE OF TWO (2) CONSULTANTS, ELIZABETH HEILMAN AND JOHN TOMARO, SCHEDULED TO ASSIST DEVELOP CARE/CAMEROON'S MULTI-YEAR PROJECT PLAN.

2. INFORM CARE/CAMEROON THROUGH USAID/YAOUNDE IF HOTEL RESERVATIONS NECESSARY.

3. CABLE ETA WITH SPECIFIC TIME AND DATES.

HORAN

Received S/T (Wehman) 10-21-82
Passed to WASH 10-21-82

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APPENDIX B

Itinerary

1. Itinerary of Elizabeth G. Heilman (Raleigh/Durham - Yaounde - Raleigh/Durham)

October 22, 1982	Depart Raleigh/Durham 11:00
October 23, 1982	Arrive Paris 07:20
October 23, 1982	Depart Paris 12:15
October 24, 1982	Arrive Yaounde 00:50
November 6, 1982	Depart Yaounde 10:05
November 6, 1982	Arrive Mokolo 17:00
November 10, 1982	Depart Mokolo 08:30
November 10, 1982	Arrive Yaounde 16:30
November 16, 1982	Depart Yaounde 08:30
Personal Travel	
December 5, 1982	Arrive Raleigh/Durham 20:00

2. Itinerary of J.B. Tomaro (Raleigh/Durham - Yaounde - Raleigh/Durham)

October 29, 1982	Depart Raleigh/Durham 15:30
October 30, 1982	Arrive Paris 08:30
	Depart Paris 12:00
	Arrive Yaounde 21:15
November 4, 1982	Depart Yaounde 15:00
	Arrive Bertoua 16:10
November 8, 1982	Depart Bertoua 11:45
	Arrive Yaounde 13:05
November 25, 1982	Depart Yaounde 18:35
November 26, 1982	Arrive London 06:00
November 28, 1982	Depart London 12:00
	Arrive Raleigh/Durham 21:35

APPENDIX C

Officials Contacted

Mr. Christof Scheiffele, Director, CARE-Cameroon B.P. 422, Yaounde, Tel. 23-20-54

Mr. Ron Shaw, Project Administrator, CARE-Cameroon, B.P. 42, Yaounde, Tel. 23-20-54

Mr. Botoro A. Ndonho Alexandre, Field Officer, CARE-Cameroon, B.P. 42, Yaounde, Tel. 23-20-54

Ms. Susan Greisen, Health Education Specialist, CARE-Mokolo B.P. 306 Maroua, Tel. 29-51-32

Mr. Michael Godfrey, Project Coordinator Engineer, CARE-Mokolo, B.P. 306, Maroua, Tel. 29-51-32

Mr. Toukour H. Seyo, Health Education Specialist, CARE-Mokolo, B.P. 306, Maroua, Tel. 29-51-32

Mr. Douglas Brindel, Peace Corps Volunteer, formerly with CARE Mokolo, currently with CD/Mokolo

Mr. Bill Edgar, Engineer, Former Project Coordinator-CARE Mokolo

Mr. Gary Filippi, Delegue Provincial and Ingenieur Resident, CARE-Bertoua, B.P. 26, Bertoua, Tel. 24-12-96

Mr. Andre Baillot, Consultant, CARE-Cameroon, Bertoua, B.P. 26, Tel. 24-12-96

Ms. Sylvie Beauchesne, SUCO Volunteer, Health Education Specialist, CARE-Bertoua

Ms. Justin Mengolo, Directeur Adjoint du Developpement Communautaire, Yaounde

Ms. Bouoto Janvier, Chef de Section Provinciale du Developpement Communautaire, Bertoua, Tel. 24-10-79

Ms. Abdoulaye Seni, Chef de Section Departementale du Developpement Communautaire, Mokolo

Mr. Charles Gerhardt, Delegue Provincial, Organisme Volontaire Neerlandai, Bertoua

Ms. Kathy Tilford, Assistant Director, United States Peace Corps, Yaounde, B.P. 187, Tel. 22-25-34

Mr. Victor Sloan, Peace Corps Volunteer (Fisheries), Nguelemendouka

Ms. Lona Jack, Peace Corps Volunteer (Animation), Bertoua

Mr. Bob McCormick, Peace Corps Volunteer with CD/Kousseri

Mr. Jean Lieber, UNICEF, B.P. 1181, Yaounde, Tel. 22-31-82

Mr. William David Cooper, Representative, World Bank/Cameroon, B.P. 1128, Yaounde, Tel. 23-08-36

Dr. Georges Quincke, Regional Representative, World Health Organization, B.P. 155, Yaounde, Tel. 22-29-20

Mr. Jules Frippiat, Regional Representative, UNDP, B.P. 836, Yaounde, Tel. 22-41-99

Mr. Sapock Ndem, Samuel, Sous-Directeur de la Programmation, Ministere de l'Economie et du Plan, Yaounde, Tel. 23-40-40.

Mr. Ronald Levin, Director, USAID/Cameroon, Tel. 23-00-77/22-05-22 x-302

Mr. Herbert Miller, Program Officer, USAID/Cameroon, Tel. 23-00-77/22-05-22 x-343

Mr. Raymond Martin, Health Nutrition and Population Officer, USAID/Cameroon, x-322

Mr. George Vishio, Project Assistant, USAID/Cameroon x-324

Ms. Randal Thompson, Evaluation Officer, USAID/Cameroon, x-377

Ms. Julie Owens, Project Manager/Education, USAID/Cameroon, x-377

Ms. Nina Minka, Librarian, USAID/Cameroon, x-132

Mr. Bill Slocum, USAID/Maroua, Tel. 29-14-34

Mr. Joseph Dorsey, Administrative Operations Assistant, USAID/Cameroon, x-335

Dr. Rosalind Eyben, Consultant to USAID/Yaounde for evaluation of CD draft National Plan

Ms. Helen Vaitaitis, Deputy Program Director, USAID/Yaounde

Mr. Robert Bartolo, Project Leader, Louis Berger/Mokolo

Mr. David Carney, Senior Agricultural Development Advisor, Lake Chad Basin Commission, B.P. 21, Maroua, Cameroon

Mr. Michael Davies, PTHE Project in Cameroon, UNC/Dept. of Health Education, Former Administrator

Mr. Rik Knoop, IFORD (Institut de Formation et de Recherches Demographiques), B.P. 1556, Tel. 22-24-71

Mr. Toby Chamberlain, Program Associate, Save the Children/Community Development Foundation, B.P. 154, Yaounde, Tel. 22-14-95/23-10-07

Dr. Aloysius N. Njinjoh, Provincial Delegate for Health, Bertoua

Dr. Salomon Nfor Gwey, Vice Minister of Agriculture, GURC, Yaounde, Tel. 22-51-66/22-05-53

Mr. Jean-Francois Tschopp, Engineering Analyst, SATA-Helvetas, B.P. 279, Yaounde

APPENDIX D

Cameroon Community Development Coordination Committee (CCDCC)

C'est en septembre 1978 que le Directeur du Développement Communautaire au Ministrère de l'Agriculture a organisé une réunion regroupant tous les organismes de financement et d'assistance technique travaillant en collaboration avec la Direction du Développement Communautaire dans la réalisation de son programme pour discuter avec ces derniers des possibilités d'établir un système permanent mais encore officieux de contact et d'échange de vues.

Suivant les suggestions du Sous-comité, un secrétariat a été mis en place en d'ecembre 1979 pour coordonner les efforts conjoints des organismes concernés, et pour s'occuper en même temps les affaires administratives du Comité.

Les membres participants comprennent :

1. CDF : Fondation pour le Développement Communautaire,
2. AFCA: Association pour la formation des Cadres de l'Industrie et de l'Administration,
3. CRS: Catholic Relief Services,
4. SUCO: Service Universitaire Canadien Outre-mer,
5. BASC: Bureau des Activités Socio-Caritatives,
6. CARE: Cooperative for American Relief Everywhere,
7. ANA: Atelier des Intérieurs pour l'Animation,
8. SATA: Association Suisse d'Assistance Technique,
9. AFVI: Association Française des Volontaires du Progrès,
10. Service des Volontaires Néerlandais,
11. Service des Volontaires Allemands,

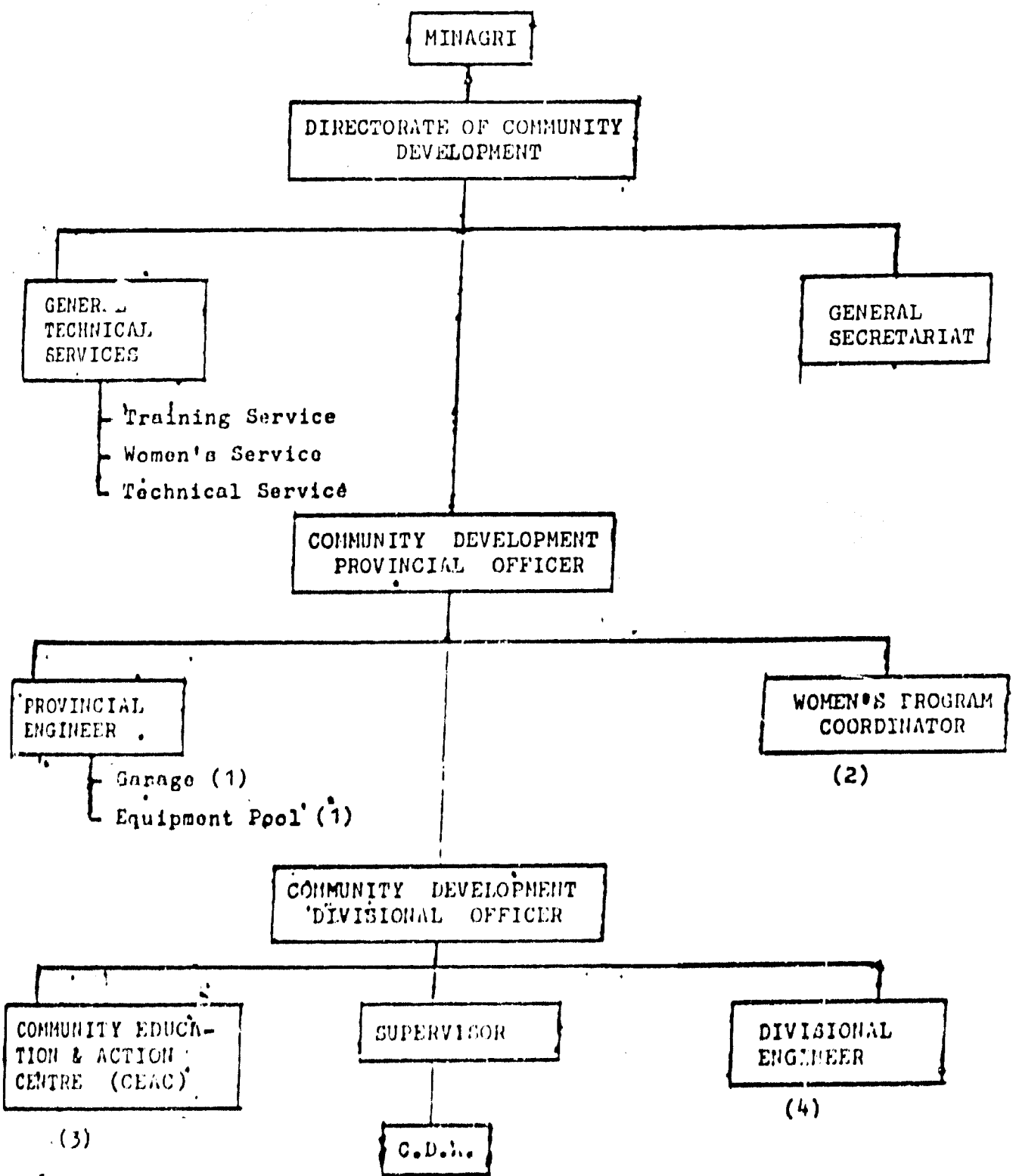
12. Volontaires du Corps de la Paix,

13. Inades-Formation,

14. Direction du Développement Communautaire./-

APPENDIX E

ORGANIZATIONAL CHART



(1) N.W. and South West only
(2) N.W. only
(3) In 17 divisions
(4) In 9 divisions

APPENDIX F

MINISTERE DE L'AGRICULTURE
MINISTRY OF AGRICULTURE

DIRECTION DU DEVELOPPEMENT COMMUNAUTAIRE COMMUNITY DEVELOPMENT DEPARTMENT

SERVICE TECHNIQUE
TECHNICAL SECTION

Q U E S T I O N N A I R E S O C I O - E C O N O M I Q U E

POUR LES BESOINS DU SERVICE TECHNIQUE
(Ce questionnaire doit être rempli sur le terrain par le chef de service départemental avec la participation des ses animatuers)

S O C I O - E C O N O M I C A L Q U E S T I O N N A I R E

FOR THE NEEDS OF THE TECHNICAL SECTION
(This questionnaire has to be filled in by the divisional chief of section in collaboration with his animationg staff)

NOM DU PROJET : ..... NAME OF PROJECT
PROVINCE : ..... PROVINCE
DEPARTEMENT : ..... DIVISION
ARRONDISSEMENT: ..... SUB DIVISION
TYPE DE PROJET: ..... TYPE OF PROJECT
N° CLASSIFICATION :

l'attention du chef de service départemental :
Notice to the divisional chief of section :

A la suite de quel demande, faite par qui, où et quand, entreprenez- vous cette étude socio-économique?
Following which request, made by whom, when and where, do you start this socio-economical study?

.....
.....
.....
.....

A quelle date avez-vous fait cette étude et avec l'aide de quels animateurs?
On which date have you made this study and with the help of which animating staff?

.....
.....
.....
.....

Après avoir fait cette étude et en connaissance de causes, que pensez-vous de ce projet demandé par le village? Donnez les raisons pour et contre!
After having made this study and knowing the facts, what do you think about this requested project? Please note the reasons for and against the project!

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.....

Date : ..... Signature .....

A) L E V I L L A G E / T H E V I L L A G E

A1) Population vivant au village?
Population living in the village?
- hommes/men : .....
- femmes/women : .....
- enfants/children : .....
(16 ans/years)

A2) Population vivant hors du village et qui est sensée revenir un jour?
Population living out of the village, which will come back once?

.....
.....
.....

A3) Nombres de familles vivant au village?
Number of families living in the village?

.....

A4) Nombre de personnes qui ont un emploi rémunéré? (fonctionnaires etc)
Number of people which have a payed salary (officials etc)

.....

A5) Etendue du village / size of the village?

.....

A6 Nombre de cases traditionelles?
Number of traditional huts?

.....

A7) Nombre de maison en dur? / Number of solid buildings?

.....

A8) Le village est-il électrifié? (électrifidation prévue? quand?)
Is the village provided with electricity? (is electrification provided? when?)

.....
.....
.....

Schools and number of scholl-children?

.....
.....
.....
.....

410) Dispensaires et hôpitaux avec nombre de lits?
Dispensories and hospitals with number of beds?

.....
.....

411) Eglises et missions / Churches and missions?

.....
.....

412) Maisons communautaires / Communities halls?

.....
.....

413) Echoppes artisanales? (production, formation etc ?)
Small work shops? (production, formation etc?)

.....
.....
.....
.....

414) Quels équipements techniques peut-on trouver dans le village?
(soudure autogène ou électrique, transports etc)
what kind of technical equipments can be find in the village?
(brazing, oxyacetylene welding, transport etc)

.....
.....
.....
.....

415) Nombres de personnes ayant une formation professionelle technique?
Number of peoples which have a technical job education

.....
.....
.....
.....

A16) Nombre de personnes ayant de l'expérience dans le domaine de la construction?
Number of people having some experience in building?

.....
.....
.....

A17) Route d'accès au village?
Feeder road to the village?
- route annuelle/annual road? .....
- route saisonière du/seasonal road from .....à/to.....
- bonne route/good road? .....
- pour toutes voitures/for all cars?.....
- seulement camions /only lorries? .....

A18) Y'a-t-il des ponts où des gués à traverser?
Are there bridges or fords to cross?

.....
.....

A19) Nom et adresse du chef de village?
Name and adresse of the chief of village?

.....
.....
.....

A20) Nom d'une personne du village pouvant être évent. contactée a la capitale provinciale ou à Yaoundé?
Name and adress of a village member who could eventually be contacted in the provincial capital or in Yaoundé?

.....
.....
.....
.....

B) E C O N O M I E V I L L A G E O I S E
V I L L A G E E C O N O M Y

B1) Quel est le budget annuel de la commune?
Which is teh yearly budget?

.....
.....

B2) Existent-ils des coopératives ou autre formes commerciale dans le village? (union de crédit etc)
Are there any cooperatives or other forms of commerce in the village? (credit union etc)

.....
.....
.....
.....

B3) Cultures agricoles commercialisées? (production de? nombres d'hectare cultivés? récolte par année en tonnes?)
Commercialized agricultures? (production of? number of cultivated hectares? 1 hect. = 2.5 acres, produced in 1 year?)

.....
.....
.....
.....
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.....
.....

B4) Cultures agricoles non-commercialisées? (pour l'autoconsommation) Non-commercialized agricultural culturen? (for self-consumption)

.....
.....
.....
.....
.....
.....

B5) production animale commercialisée? (production de? quantité . de bêtes? revenu?)
Commercialized animal production? (king of production? quantity of animals? income?)

.....
.....
.....
.....
.....
.....

B6) Production animale non-commercialisée (pour l'autoconsommation
Non-commercialized animal production (for the self-consumption

.....
.....
.....
.....
.....
.....

B7) Revenu annuel estimé par famille?
Estimated annual income for a family?

.....
.....

B8) A quelle mois de l'année la commercialisation se fait-elle? (rentrée de l'argent?)
What month of the year are the products commercialized? (income of money?)

.....
.....
.....

B9) Revenus d'exploitations forestières de la commune?
Incomes from forest exploitations for the village council?

.....
.....
.....
.....
.....

B10) Autres revenus de la commune?
Other incomes for the village?

.....
.....
.....
.....

B11) Est-ce-que le village a l'intention de cultiver des champs communautaires pour pouvoir financer le projet? (culture et quant?) Is the village willing to cultivate community fields to finance the project? (what cultures and how much?)

.....
.....
.....

A l'intention du chef de service départemental :
Notice to the divisional chief of section:
Considérez-vous le village comme étant:
Do you consider the village as:

- très riche/ very rich .....
- riche/ rich .....
- moyen/average .....
- pauvre/poor .....
- très pauvre/ very poor.....

Combien de CFA par année pourrait contribuer une famille?
How many CFA do you taink can a family contribute per year?

.....
.....
.....

Quelle peut être la participation totale du village financièrement par année?
How much could be the total of financing by the village yearly?

.....
.....
.....

C) DEVELOPPEMENT DU VILLAGE / VILLAGE DEVELOPMENT

C1) Exist-t-il déjà un comité de développement dans le village et depuis quands?
Is there already a development comity in the village and since when?

.....

C2) Noms et fonctions des membres du comité?
Name and function of the comity members?

....
....
....
....
....
....
....

C3) Comment ce comité a-t-il été formé? (par votation, désignation etc)
How was this comity formed? (by vote, designation, by private init.)

.....
.....

C4) Exist-t-il déjà une liste d'actions de développement envisagées? (se oui, énumération par ordre d'importance et de priorité) Is there already a list of the development projects to be executed? (if yes, enumerate then by order of priority)

.....
.....
.....
.....
.....

C5) Quelles actions ont-elles déjà été entreprises ou achevés et qui a participé à ces actions? (service Gouv., organ. d'entraides etc)
Which projects have already started or are finished and who participated? (Help organisations, states services etc)

.....
.....
.....

C6) Pour ces anciennes actions est-ce qu'un comité de projet avait été formé et quelles sont les experiances faites?
For these old projects has a comity of project been formed and what experiances have been made?

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.....

C7) Est-ce que les villageois ont participé physiquement et financièrement à ces actions et dans quelles proportions?
Have the villagers participated manually and financially in the projects and in what proportions?

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.....
.....

C8) Si des actions déjà entreprises, ont-elles échoués et pourquoi?
Did already started projects fail and why?

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.....
.....

C9) Existe-t-il actuellement un projet en cours, pour lequel les villageois demandent de l'aide au service du développement communautaire?
Is a project actually in construction, what for the villagers are ~~asking help from the community development~~ department?

.....
.....
.....

C10) Pour ce projet spontané ou pour un nouveau projet est-ce que un comité de projet existe? (noms et fonctions des membres)
For this spontaneous project or a new one does a project comity exist? (name et function of the members)

.....
.....
.....
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.....

C11) Les villageois et la commune connaissent-ils le service du développement communautaires et sa philosphie?
Do the villagers and the village council know the community development department and her philosphy?

.....
.....

C12) Sont-ils prêt d'accepter cette philosphie et de ce fait de participer et de contribuer physiquement et financièrement à un projet de développement, si le service les assiste?
Are they willing to accept this philosphy and therefore to participate physically and financially to a development project if they are assisted by the service?

C13) Le comité est prié de formuler exactement sa demande de projet. The comity is asked for formulating exactly the project request.

.....
/.....
.....
.....

Signatures des membres
Members' signatures

C14) Est-ce que des demandes d'aide ont déjà été faites à d'autre lieux? Have aid requests been made to ohters organisations or state services?

.....
..... réponse/answer .....
.....

A l'intention du chef de service départemental:
Notice to the divisional chief of section:
Que pensez-vous de cette demande? l'approuvez-vous ou non? Raisons? What do you think about this request? Do you approve it or not? Reasons?

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APPENDIX F 2

QUESTIONNAIRE AUXILIAIRE POUR UNE DEMANDE D'ALIMANTATION EN EAU POTABLE

AUXILIARY QUESTIONNAIRE FOR A REQUEST OF DRINKING WATER

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1) Quelle sorte d'alimantation en eau potable le comité de projet propose-t-il?

What kind of water-supply does the project commity recommend?

- Adduction d'eau par réseau de distribution.....
  Water supply by distribution net work:
- Point d'eau / water point: .....
- Puits / wells: .....

2) Où est-ce que les villageois s'approvisionnent-ils actuellement? (A quelle distance du village en minutes?)

Where do the villagers fetch water actually? (Which distance from the village, in minutes?)

.....
.....
.....
.....

3) Existe-t-il des doutes sur la qualité de l'eau consommée actuellement?

Are there any doubts about the quality of the drinking water actually?

.....
.....
.....

4) Est-ce que des points de puisage ont été condamnés? Pourquoi?

Have the points been condemned? Why?

.....
.....
.....
.....

5) Quel est le temps investi par jour et par famille pour l'approvisionnement en eau potable?

How much time does a family spend daily for fetching water?

.....

.....

.....

6) Où est-ce que les villageoises lavent le linge actuellement? (distance du village en minutes).

Where do the women wash laundry actually? (distance from the village in minutes?)

7) Est-ce que les villageois ont déjà localisé toutes les sources, tous les rivières etc près du village pour pouvoir les monter aux représentants du service technique, et quels sont les résultats?

Have the villagers already checked all the springs, rivers etc around the village so that can show them the responsible of the technical service, and what are the results?

.....

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.....

8) Item por los lieux d'exploitation pour le sable, le gravier et les pierres?

Item for exploitation places for sand, gravel and stones?

.....

.....

.....

.....

9) Pendant quels mois de l'année les villageois peuvent-ils en principe travailler au projet?

During which months of the year can the villagers work on the project?

.....

.....

.....

10) Combien de personnes peuvent travailler?

How many people can work?

.....

.....

11) Quelle main d'oeuvre qualifiée le village peut-il mettre à disposition du projet? (maçons, charpentiers, plombiers etc)

What kind of qualified man power can the village give to the project? (masons, woodworkers, plumbers etc)

..... nombre/number .....
..... " / " .....
..... " / " .....
..... " / " .....
..... " / " .....

12) Quel autorité du village sera résponsable de l'organisation et de la mise à disposition de la main d'oeuvre pour le projet?

Which village authority will organize and be responsable for the organisation of man power asked by the project?

.....
.....
.....

13) Quels locaux le village peut-il mettre à disposition du projet? (cases pour les techniciens, pour le ciment etc)

Which facilities can the village provide for the project? (technicians lodging, stores etc)

.....
.....
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.....

Lieu, date et signature de l'enquêteur: .....
Place, date and signature of the investigator:

Signatures des membres du comité du projet: .....
Signatures of project cmitiy members: .....
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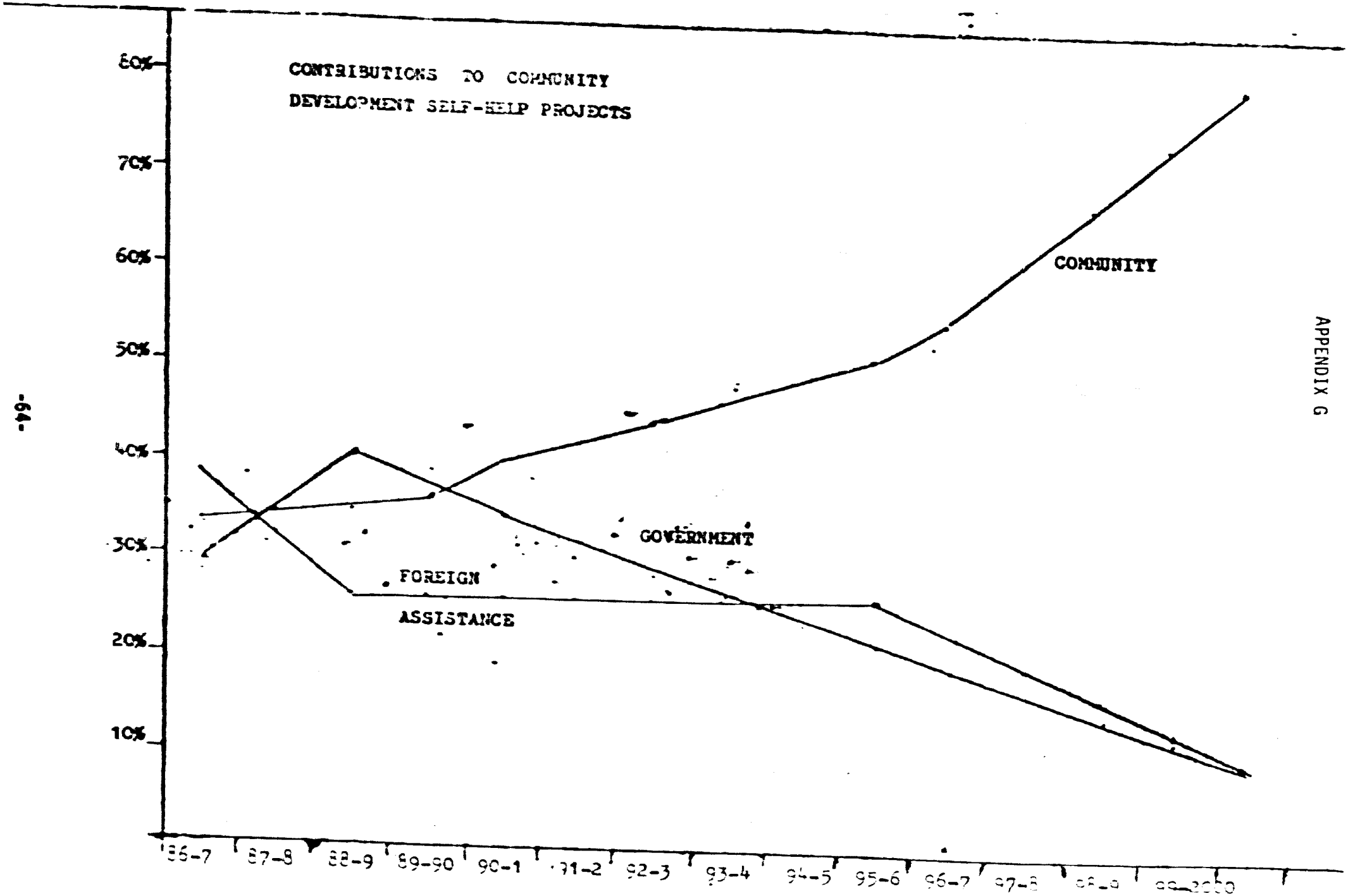

CONTRIBUTIONS TO COMMUNITY
DEVELOPMENT SELF-HELP PROJECTS
80%
70%
60%
50%
40%
30%
20%
10%
COMMUNITY
GOVERNMENT
FOREIGN
ASSISTANCE
86-7
87-8
88-9
89-90
90-1
91-2
92-3
93-4
94-5
95-6
96-7

APPENDIX H

CARE NORTHERN WELLS PROJECT
TECHNICAL STRATEGY 1982 - 84.

INTRODUCTION.

Since its inception CARE's Northern Wells Project has received a great deal of attention, inspection and evaluation. This is fortunate, as a project of this scope and nature is obligated to provide the best services possible and insure their proper functioning after the project's completion. Much of the effort to evaluate the project has come from those involved directly in the project's financing, specifically CARE and USAID. However, a considerable number of recommendations have come from other interested individuals such as local government officials, suppliers of equipment, participating voluntary organizations and CARE/Mokolo employees.

The purpose of this paper is to tie together the recommendations made by these parties, respond to their suggestions and indicate the direction the project will go in its final two years. Because of its depth and thoroughness, this strategy paper is based on a technical evaluation undertaken by USAID/Cameroon in May 1982. This report is authored by Dan Jenkins Hydraulic Engineer, REDSO/WA who personally conducted the evaluations. His conclusions were well founded and his report merits the further consideration given here.

RESPONSE TO TECHNICAL PROBLEMS AND RECOMMENDATIONS.

A. Infiltration Galleries.

To date, the project has installed eight infiltration gallery systems. Depths of these systems vary between 3 and 6 meters, while other characteristics (i.e. surcharge, discharge etc.) vary with the season. These systems were designed to capture relatively shallow groudwater, often in ephemeral watercourses and transmit this to pumps located away from the gallery itself often by a distance of 50 - 100 meters. This was to insure a permanently dry point to distribute the water from.

There are several problems that have been noted with the operation of the CARE infiltration gallery system. These include

1. frequent dewatering due to their shallow depth especially during the dry season.
2. various problems associated with the pump and suction line; i.e. loss of suction, leaking foot valves etc.
3. location of infiltration galleries where wells might have easily served the same purposes.

In addition to these, several points have become apparent during the rainy season.

First the galleries, by design, take water of a very shallow nature. It's evident that some sites are located in basins of continuous inundation over several months (July - September). Although access to the pumps is not blocked, the galleries are collecting water of a questionable quality. Organisms, detritus and silt are readily visible in this water. It seems as though either the sand filter surrounding the gallery is insufficient or the water is entering through concrete seams on the superstructure. Secondly, the watercourses, full during times of rainfall, are experiencing rapid erosion. It is doubtful that, without extensive fortification, the infiltration gallery can withstand the erosion more than two rainy seasons.

Because of these reasons the project has developed the following plans for infiltration galleries. First no more galleries will be designed or installed during the coming construction season. Second, the project will make a serious effort to insure proper functioning of the eight completed galleries. This will include, erosion prevention work, testing and selection of a suitable suction type pump for retrofitting on the galleries (see pumps section) and deepening the present galleries to try to insure a year round water source. The selection of sites where wells could be set on the sides of the drainage is an alternative to infiltration galleries per se and the project intends to test this in at least one location. On the basis of the results from works this year, a decision can be make as to whether infiltration gallery systems are appropriate and dependable enough to warrant further installation.

B. Well Systems.

The C.R.S. water project has completed 14 well systems since beginning work. Well depths range from 6 to 17 meters. The wells are covered and have one or two hand pumps mounted on their concrete closures. Water levels fluctuate greatly over the course of year with minimum surcharge and infrequent de-watering occuring late in the dry season (April - May). Wells are dug in a variety of soils from sand to consolidated weathered granite. Digging presents a variety of technical problems but generally the project is equipped to handle those commonly found.

The primary problem, as noted in the USAID technical evaluation, is that the wells are generally not deep enough. Two reasons generally account for this. First, the digging crews encounter a very difficult layer of rock and at the same time there is apparently sufficient water in the well (> 1 meter). At this time village laborers generally stop aiding the well teams saying there's enough water and it's too much effort to dig. Given this lack of support, continued digging becomes difficult and the

..../...

teams have been withdrawn and the well completed. Another reason is that excess recharge makes digging very difficult. Well teams have then stopped digging and completed the well only to have the water table lower later in the year.

The project proposes to establish a three meter surcharge (measured at lowest water level) criteria for completion of its wells and infiltration galleries. To do this the following points need to be implemented:

1) Full use must be made of the current equipment (compressours and jack hammers) when encountering resistant layers. These have only recently arrived and will be very useful to dig adequately deep wells in difficult terrain.

2) One crew will be trained at CARE expense under the supervision of Genie Rurale in blasting techniques and the use of dynamite. CARE will fulfill the necessary formalities to insure legal and proper use. This will be accomplished by the beginning of the coming dry season (November - December).

3) Caution must be used in digging wells during or immediately after the rainy season. Water tables are very high and can easily recede 3 meters over the year. Wells must be dug deeper than normal at these times or dug at other times of the year.

4) Every effort should be made to use the high capacity pumps for de-watering purposes in the construction phase. CARE currently owns two compressor driven submersible piston pumps and will be purchasing 2 electric operated submersibles. This will allow 4 independent sites to have the capacity to de-water wells under construction.

5) The project will reserve the months of April and May 1983 for redigging and deepening any wells completed up to that point that do not yet meet the 3 meter (at low water) criteria. This will be the driest period and, from a technical standpoint, the easiest in which to do the work.

By following these principles the wells completed by June of 1983 should all retain 3 meters of water during the dryest part of the year or have been noted through pump test to have a high and reliable recharge rate that surpasses any projected daily use.

C. Pumps.

At this point the project has installed only the Robbins and Meyers Lyno Pump. This has been used both on the wells, a system for which the pump was designed, and on the infiltration galleries where the pump was modified to work in a suction mode (i.e the pump cylinder fitted permanently above the static water level).

The pump has so far proven to be durable and successful in its operation on the wells but has experienced difficulty on the infiltration galleries. One reason for this is explained as quality control problems at the factory,. Robbins & Meyers has experienced problems, specifically with the foot valves and is in the process of correcting these. In infiltration galleries foot valves must function correctly to prevent emptying of the suction line when the pumping is stopped. This is not nearly as critical in a well where there is only 10 meters of pipe to fill but it's a nuisance none the less. The manufacturer is assisting in replacing the worn valves and the project will test and/or replace all valves installed to date.

Another reason for problems on the galleries is the pump installation itself. Modification to make a suction pump is not without problems. All seals must be tight over the 50 - 100 meters of delivery pipe. Also care must be observed when cutting down the drop pipe and shaft so that pump integrity is maintained and proper rotor/stator mating is maintained. Finally wear can occur at an accelerated rate when the rotor must frequently turn in a dry cylinder resulting from the leaking foot valves.

Given the realities, the project hopes to undertake the following steps. First the faulty foot valves will be replaced with new ones from the factory. Second, an effort will be made to locate and test some locally available suction pumps. Once this has been done the Lyno pumps on the infiltration gallery will be replaced with the more suitable suction pumps.

Finally, the project will tackle the problem of long term maintenance and care of pumps installed. Already received, are technical materials from Robbins and Meyers in French. A maintenance technician has been engaged by the project to conduct routine inspection and repairs and is already installing all new pumps as wells are completed. Village crews are being trained in cleaning and upkeep of the sites and are encouraged to notify the technician in case of any abnormalities. CARE seeks to complete a maintenance manual for the well and infiltration galleries and install the maintenance technician in the framework of the rural engineering service (Genie Rural). All of this will help insure functioning pumps & well systems after the project completion.

CARE is very interested in locating and developing private sector support for pump and parts procurement. The project has already been contacted by local companies (such as CFAO) who express an interest in stocking the Robbins & Meyers pump. The manufacturer is itself in the process of locating a distributor. Hopefully over the remaining two years a suitable agent will have been found and local procurement begun.

..../.....

D. General.

The USAID Technical Evaluation mentioned three other points that should be considered here. The first concerns the periodic collection of data on the completed sites. All CARE wells and infiltration galleries will have the water levels measured every three months. Two permanent sites will be selected for measurement of consumption and use, also every three months. Consumption studies will be conducted at one other selected site each time which can be compared against the permanent sites to determine relative water consumption rates. This is considerably easier than attempting to gage all sites each of those four months and fits within the framework of existing personnel and equipment. The months for collection of data are September, December, March and June. Such a data base gives the project a solid base for evaluation of its program and as an indicator of potential problem sites.

The second point involved water quality testing of CARE wells. Wells are occasionally tested for total coliform and fecal coliform counts. This determines the need for disinfection. CARE has used 10 counts/100ml as an indicator of contamination. This seems unduly constraining in the face of the realities of supplying water by wells or infiltration galleries. This is especially true when water from local sources often has 50,000 to 100,000 counts/100ml. Therefore it seems more reasonable to use 100 counts/100ml as an indicator of a clean drinking water source and 500 - 1000 counts/100ml as an indicator of need for immediated disinfection.

The third point that needs to be covered here is the recommendation to divide responsibilities between administration and technical coordination. Since the evaluation has been written CARE has hired a person solely for the purpose of project administration. He has began handling those details already and has greatly relieved the burden placed on the technical coordinator.

SUMMARY.

The material presented above represents CARE's response to various suggestions and recommendations presented that concern the Northern Wells Project. The response and planned activities above are considered to be a strategy adopted by CARE for the remainder of the life of the project and are intended to result in the maximum number of soundly designed and fully operational water systems at the end of the project. The experience gained up to this point has indeed been valuable and infact forms the basis upon which the new course of action is adopted.

CARE is certainly grateful to, and wishes to thank, all the parties who contributed to the various evaluations and constructive input thusfar received. It has certainly helped to strenghten the ongoing project. Hopefully, this type of cooperation can continue and will thus insure that the new plans can be implemented and that the greatest possible number of permanent water sources be developed.

Goal: Project agents organizing health and well activities at well site villages.

Indicators: Number of well sites with completed wells animation

Number of well site villages with local leaders attending seminars

Number of schools with teacher representation at seminars

Number of project agent teams making a minimum of two village visit per week

Goal: Trained village leaders and school teachers transferring basic health pratices to villagers.

Indicators: Number of well sites village with trained leaders implementing the following health related activities.

a) Well pump sites properly maintained and with constructed enclosures

b) Increased number and usage of latrines

c) Well sites where CARE wells are main drinking source for a majority of the villagers

d) Improvement in cleanliness of water storage vessels for a majority of the villagers.

e) Improvement in proper storage and usage of

vessels for a majority of the villagers

Number of schools with trained teachers implementing the following health related activities.

a) Health education program in their curriculum

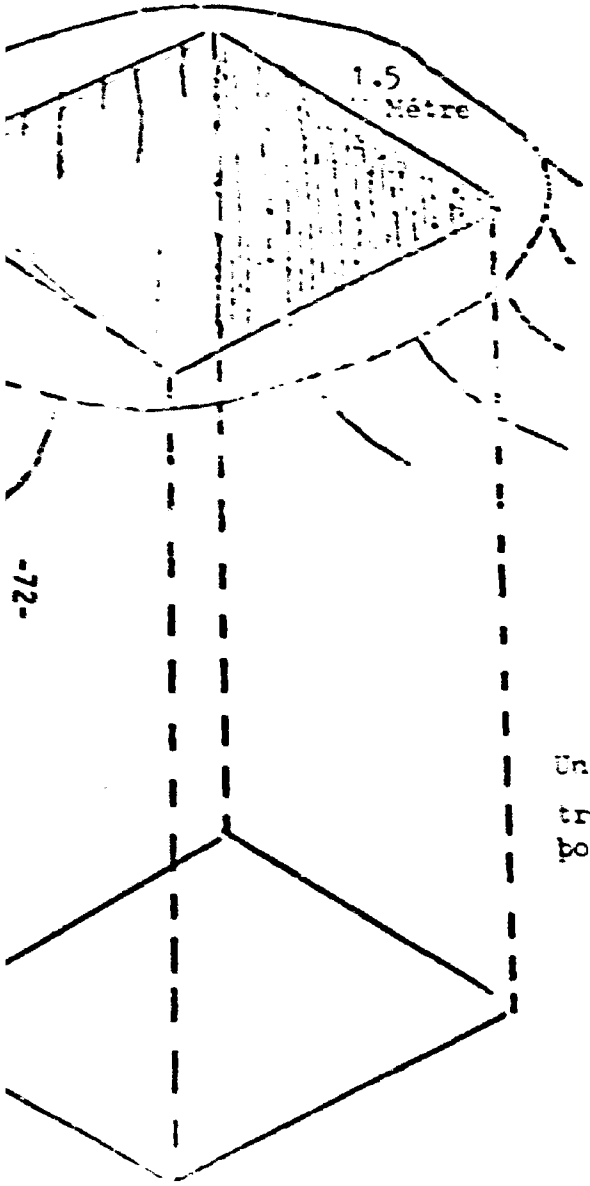
b) Potable drinking water in the school

c) School latrine constructed

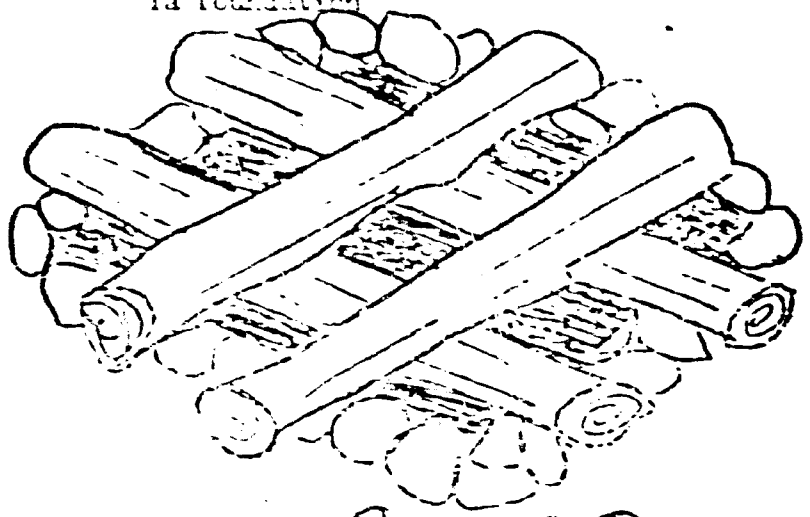
d) School latrine properly maintained

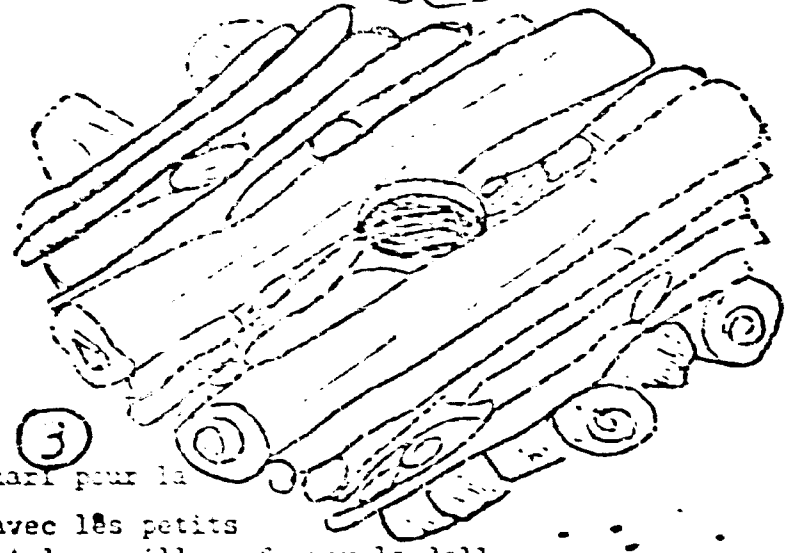
ATRINE

...er un trou de ces dimensions



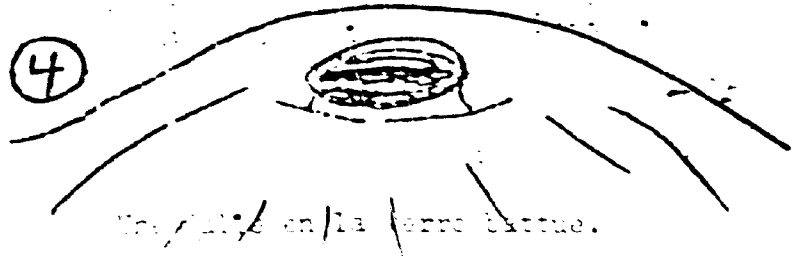
(2) 4 gros bois avec les pierrs pour la foundation





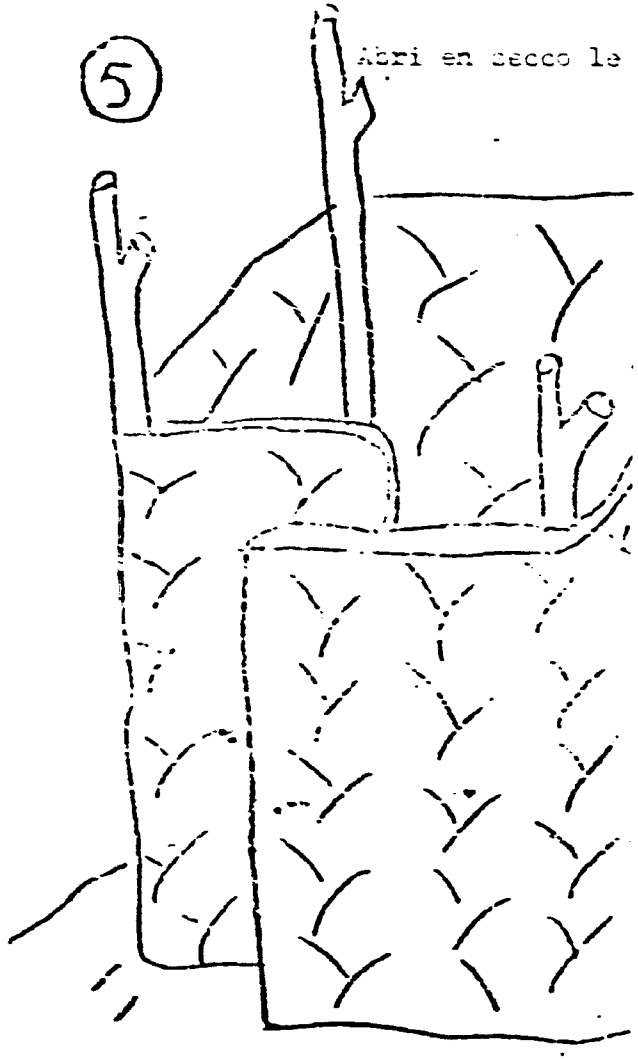
(3) Un canari pour la trou avec les petits bois et les cailloux former la dalle.

(4)



...e en la terre battue.

(5) Abri en secco le



(6) Ccuvercle

cu

- LA LATRINE A FOSSE -

La latrine à fosse est en fait un puisard ou fosse perdue qui est donc susceptible de contaminer toute nappe phréatique sous-jac-cente pour peu qu'elle soit mal située ou que le terrain soit perméable ou fissuré.

La latrine sera obligatoirement construite loin de tout point d'eau (optimum 100 m) loin des cases en contre-bas d'elles sans toute fois qu'elle soit située au point les plus bas d'une dénivellation (ceci pour éviter son inondation en saison des pluies).

En aucune manière la latrine ne devrait atteindre une nappe d'eau souterrain. Si de l'eau apparaît au fond à l'occasion du creusement, il faut interrompre de dernier et choisir un autre endroit. Pour éviter ce risque, on pourra estimer la hauteur de l'eau dans les puits avoisinants, ce qui pourra éviter de commencer le recreusement.

Les dimensions habituelles d'une latrine sont les suivantes:

- Diamètre 1,50 m
- Profondeur 3 à 6 m

- Plus une latrine sera profonde, plus elle pourra être utilisée de façon prolongée; moins les odeurs incommoderont les usagers et les voisins et moins on courra les risques de voir les larves d'ankylostomes remonter jusqu'au sol le long des parois.

- Les parois resteront vierges c'est-à-dire non cimentées, mais le sommet de la fosse sera recouvert d'une dalle simple à base de bois et de la terre battue.

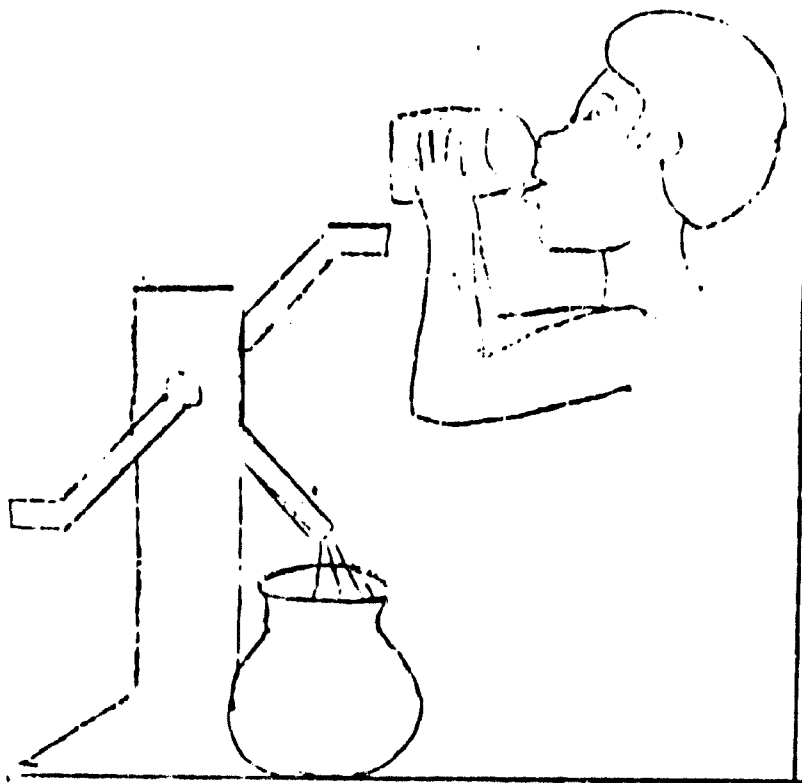
- Un trou sera disposé au centre de cette dalle. Les dimensions du trou seront à peu près les suivantes : 40 cm sur 17 cm.
Un couvercle est indispensable.

- Afin de rendre la latrine praticable en saison des pluies la dalle devra être surélevée de 15 à 40 cm par rapport au sol environnant : Ceci sera rendu possible grâce à la terre extraite de la fosse lors du creusement.

- Le tout sera entouré d'un abri ou isoloir :
Murs de paille ou de secco, toit de paille ou de secco./.-

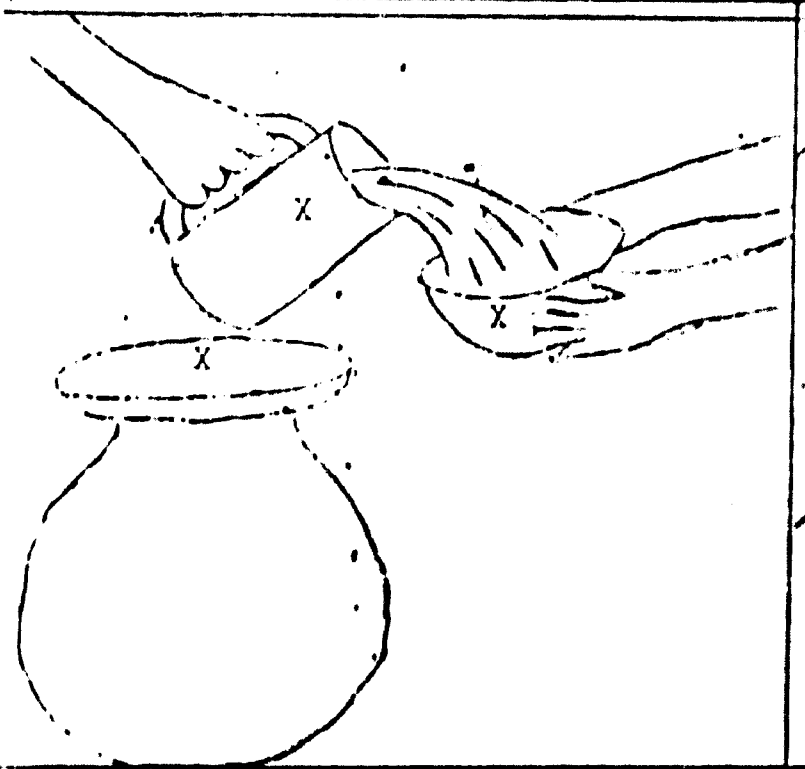
APPENDIX I 3'

VILLAGE_____ LEADER_____ DATE_____



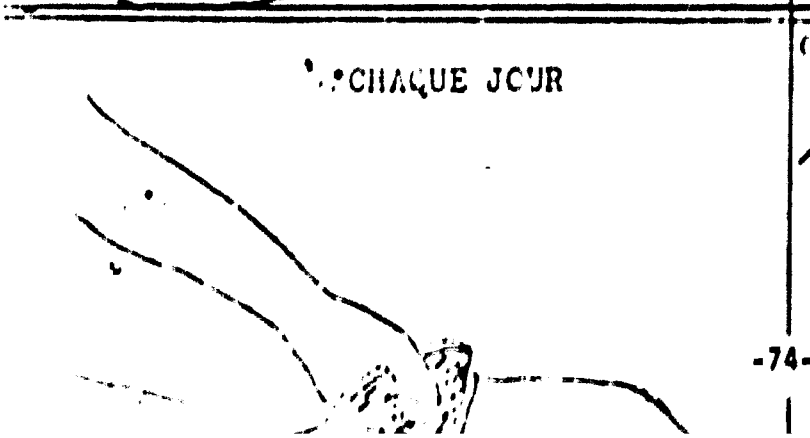
OUI

NON



OUI

NON



CHAQUE JOUR

OUI

Date : 7/10/82 Village : Mada

Nom du Leader : [illegible] Nom de l'Animateur/trice: [illegible]

1. Combien de latrines existent-ils à présent dans votre village ?

2. Est-ce que ces latrines sont utilisées ? Combien ? Par qui ? toute la famille

oui

3. Est-ce qu'il existe un Comité de Santé dans votre village ? oui

4. Combien de Chefs de familles font-ils les jardins en dehors des champs de mil, arachides, coton etc... (par exemple les cultures maraîchères ou les arbres fruitiers) (11)

5. Est-ce qu'ils arrosent leurs jardins avec de l'eau qui vient du puits de CARE ? non

5. Est-ce qu'il y a un puits de CARE déjà réalisé dans votre village ? oui

6. Où est-ce que vous puisez de l'eau à boire ? En saison sèche ? puits CARE
En saison des pluies ? eau des pluies et puits CARE

7. Où faites-vous la vaisselle ? à la maison
Où faites-vous la lessive ? à la maison en saison des pluies
Où puisez-vous de l'eau pour ces activités au puits CARE

8. S'il existe déjà un puits de CARE dans votre village, avez-vous construit une cloture autour de ce puits pour empecher les animaux d'y s'approcher ? non

9. D'habitude, combien de fois lavez-vous vos canaris ? Par exemple dans une semaine ? chaque jour

il y a un gobelet et une tasse

Employez-vous le savon ? oui

10. D'autres activités dans votre village qui concernent la bonne Santé ? [illegible]

APPENDIX K

CONNAISSANCE DU MILIEU

Noms des Animateurs/rices **Nom du village:**

Distance:

Km: Temps: **Moyen de transport:**

Autorités: (Nom & Prenoms - Titre)

Leaders locaux:

Population (estimative)

Langues parlées:

Jour du marché:

Descriptions physiques:

Activités économiques principales:
Alimentation

Voie de transmission des nouvelles

Installations publiques et privées:

.../...

Source d'eau et l'emplacement: (puits, mayo, barrage)

l'utilisation d'eau:

Coutumes et traditions:

Maladies principales:

Autres observations

APPENDIX L

PROJECT EVALUATION EAST

Project Type

) Spring ☐
) Well/Pump ☐
) Pipe Line ☐

Reference

) SCR No. _____
) ICH _____
) Start _____
) Finish _____
) M&E _____
) P&O _____
) Total _____
) Recip. _____
) Kms from Bertoua _____

Photo Identification

_____
_____
_____
_____
_____
_____

Location

13) Village Name _____
14) Department _____
15) Population _____
16) Number of improved water sources in village excluding CARE's _____
17) Number of unimproved water sources in village _____
18) Does Village Have? -School ☐ Closest ____ Kms
-Clinic ☐ Closest ____ Kms
-Post ☐ Closest ____ Kms
-Elect. ☐ Closest ____ Kms
-Piped Water ☐
-Motor Road ☐ Closest ____ Kms
-Police Stat. ☐ Closest ____ Kms
-Reg. Market ☐ Closest ____ Kms
19) Primary Economic Activity of Community _____
_____
_____
_____

Water Point

) Date of Visit _____
) Is Project Complete ☐ Yes ☐ No
) Is It Functioning ☐ Yes ☐ No
) Taps/Pump In Good Repair ☐ Yes ☐ No
) Does Box Leak ☐ Yes ☐ No
) Is Area Well Drained ☐ Yes ☐ No
) Is Area Clean ☐ Yes

28) Villagers Rate Flow ☐ Good ☐ Fair ☐ Poor
29) Evaluator Rates Flow ☐ Good ☐ Fair ☐ Poor
30) Villagers Rate Site Selection ☐ Good ☐ Fair ☐ Poor
31) Evaluator Rates Site Selection ☐ Good ☐ Fair ☐ Poor
32) Water Clarity ☐ Good

33) Have repairs ever been made ☐ Yes ☐ No

34) If no, who made the repairs _____

35) Who, in the village, is responsible for reporting problems or malfunctions _____

Notes and Observations

Please provide full details on any and all points which may require additional explanation. When making such notes please use the question reference number with each list of observations. Additional comments welcomed

PROJECT EVALUATION EAST

Project Type

) Spring ☐
) Well/Pump ☐
) Pipe Line ☐

Reference

) SCR No. _____
) ICH _____
) Start _____
) Finish _____
) M&E _____
) M&O _____
) Total _____
) Recip. _____
) Kms from Bertoua _____

Photo Identification

_____
_____
_____
_____
_____
_____

Location

13) Village Name _____
14) Department _____
15) Population _____
16) Number of improved water sources in village excluding CARE's _____
17) Number of unimproved water sources in village _____
18) Does Village Have? -School ☐ Closest ____ Kms
-Clinic ☐ Closest ____ Kms
-Post ☐ Closest ____ Kms
-Elect. ☐ Closest ____ Kms
-Piped Water ☐
-Motor Road ☐ Closest ____ Kms
-Police Stat. ☐ Closest ____ Kms
-Reg. Market ☐ Closest ____ Kms
19) Primary Economic Activity of Community _____
_____
_____
_____

Water Point

) Date of Visit _____
) Is Project Complete ☐ Yes ☐ No
) Is It Functioning ☐ Yes ☐ No
) Taps/Pump In Good Repair ☐ Yes ☐ No
) Does Box Leak ☐ Yes ☐ No
) Is Area Well Drained ☐ Yes ☐ No
) Is Area Clean ☐ Yes ☐ No
) Hand Washing Present ☐ Yes

28) Villagers Rate Flow ☐ Good ☐ Fair ☐ Poor
29) Evaluator Rates Flow ☐ Good ☐ Fair ☐ Poor
30) Villagers Rate Site Selection ☐ Good ☐ Fair ☐ Poor
31) Evaluator Rates Site Selection ☐ Good ☐ Fair ☐ Poor
32) Water Clarity ☐ Good ☐ Fair ☐ Poor

33) Have repairs ever been made ☐ Yes ☐ No

34) If no, who made the repairs _____

35) Who, in the village, is responsible for reporting problems or malfunctions _____

Notes and Observations

Please provide full details on any and all points which may require additional explanation. When making such notes please use the question reference number with each set of observations. Additional comments welcomed

APPENDIX M 1

PROGRAMME PILOTE DE L'EDUCATION SANITAIRE
DANS LES ECOLES PRIMAIRES
EXAMEN DIAGNOSTIQUE : COURS ELEMENTAIRE

Ecole : _____

Enseignant : _____

Classe : _____

Pour chaque phrase suivante, il faut répondre "oui" ou "non".
Vous allez décider si la phrase est vraie ou fausse.
Si la phrase est vraie, vous allez encercler le mot "oui"
Si la phrase est fausse, vous allez encercler le mot "non".

Par exemple :

Le chien a quatre pattes :
oui
non

C'est vrai que le chien a quatre pattes, donc vous devriez encercler "oui" comme ça :

Le chien a quatre pattes
(oui)
non

1. Pour un enfant comme moi, un bon petit déjeuner est le café et le gâteau sucré.
   oui
   non

2. La cola et les bonbons ne sont pas bons pour les dents
   oui
   non

3. Les aliments qui m'aident à grandir sont les fruits, les oeufs, le lait, les légumes, et les haricots.
   oui
   non

4. C'est dangereux d'utiliser le blé pour nettoyer les oreilles.
   oui
   non

5. Le microbe entre dans le corps par la bouche, le nez, les yeux, et les oreilles.
   oui
   non

6. Je dois nettoyer les dents avant de manger.
   oui
   non

7. Les vaccinations me protègent contre certaines maladies.
   oui
   non

8. Quand je mange, la nourriture passe par l'estomac.
oui
non

9. Le paludisme vient des moustiques.
oui
non

10. Si je mange la nourriture touchée par les mouches, je pourrai tomber malade.
oui
non

11. L'hôpital et le dispensaire sont des lieux où l'on soigne les malades.
oui
non

12. La latrine empêche la pluie et les mouches de porter les selles au village.
oui
non

13. Si je bois l'eau bouillie ou filtrée je pourrai tomber malade.
oui
non

14. Il faut laver les plaies avec de l'eau et du savon.
oui
non

15. Un enfant ne peut rien faire pour éviter les maladies.
oui
non

16. Un enfant sale reste en bonne santé
oui
non

17. Il faut beaucoup d'argent pour rester en bonne santé
oui
non

18. Je suis responsable de ma propre santé
oui
non

19. Il vaut mieux prévenir les maladies que les guérir.
oui
non

20. L'éducation sanitaire est importante pour les grandes personnes mais pas pour les enfants
oui
non

PROGRAMME PILOTE DE L'EDUCATION SANITAIRE
DANS LES ECOLES PRIMAIRES
EXAMEN DIAGNOSTIQUE : COURS MOYEN

Ecole : _____

Enseignant : _____

Classe : _____ Date : _____

Pour chaque phrase suivante il faut répondre "oui" ou "non".
Vous allez décider si la phrase est vraie ou fausse.
Si la phrase est vraie, vous allez encercler le mot "oui".
Si la phrase est fausse, vous allez encercler le mot "non".

Par exemple :

Le chien a quatre pattes
oui
non

C'est vrai que le chien a quatre pattes, alors vous devriez encercler "oui" comme ça :

Le chien a quatre pattes
(oui)
non

1. Les mouches portent beaucoup de maladies.
oui
non

2. En utilisant une latrine, j'aide à prévenir les maladies.
oui
non

3. Les aliments infestés par les mouches sont dangereux pour ma santé
oui
non

4. Les maladies des poumons et du cœur peuvent être causées par les cigarettes.
oui
non

5. Je devrais prendre les médicaments seulement quand mes parents me les donnent.
oui
non

6. La nourriture que je mange passe par l'œsophage et entre dans les poumons
non

7. La bière et le vin pourraient empêcher le cerveau de bien travailler.
oui

8. Le meilleur moment pour nettoyer mes dents c'est juste avant de manger.
oui
non

9. Quand je coupe mon doigt, je doit le laver avec du savon et de l'eau
oui
non

10. C'est une bonne idée d'utiliser un bic ou une allumette pour nettoyer les oreilles.
oui
non

11. Il faut soigner les dents seulement quand elles font mal.
oui
non

12. On prend la nivaquine pour traiter les vers intestinaux.
non

13. Les moustiques peuvent porter le paludisme.
oui
non

14. La tuberculose est une maladie des poumons.
oui
non

15. Les déchets non protégés peuvent causer des maladies intestinales.
oui
non

16. Si j'enlève autour de ma maison des objets cassés comme des bouteilles et des boîtes de conserves, je préviens le tétanos.
oui
non

17. Pour rester en bonne santé, je dois manger beaucoup de nourriture non variée.
oui
non

18. Les aliments qui aident à former des dents fortes sont le café et le p
oui
non

19. Si on est vacciné contre la rougeole, on sera protégé contre la rougeo et la variole.
oui
non

20. Une latrine sans danger doit être au moins à 4,5 mètres de profond
oui
non

21. Une personne qui dépose les selles partout facilite la transmission des oeufs de parasites.

22. Une des conséquences du manque d'hygiène dans la communauté est l'épidémie.

oui
non

23. Il y a un comité villageois dans mon village qui s'occupe des problèmes sanitaires.

oui
non

24. Je suis trop jeune pour suivre les règles d'hygiène pour rester en bonne santé.

oui
non

25. Quand je vais chez les vendeuses, je n'achète pas les aliments non-protégés.

oui
non

26. Quand je tombe malade, ce n'est pas ma faute.

oui
non

27. Les villageois ne peuvent rien faire pour résoudre les problèmes d'hygiène au village.

oui
non

28. Pour prévenir les maladies, il faut beaucoup d'argent.

oui
non

29. L'éducation sanitaire m'apprend comment éviter les maladies.

oui

non

30. Je suis capable d'améliorer et de maintenir ma propre santé.

oui

non

APPENDIX M 2

FICHE DE NOTATION - CONCESSION

Nom de la Famille _____

Nom du village _____

Centre de Santé _____

1. Source d'Eau

   Cette famille se procure de l'eau dans une source notée à _____

   Le conteneur d'eau est propre et couvert _____

   TOTAL _____

2. Latrine (Un point pour chaque réponse positive)

   1. Latrine d'au moins 4 mètres de profondeur _____
   2. Dalle _____
   3. Dalle définitive _____
   4. Trou avec couvercle _____
   5. Trou de 30 x 10 cm de secteur _____
   6. Abri _____
   7. Latrine située à au moins 50 mètres de la source d'eau _____
   8. Latrine éloignée de pas plus que 8 mètres de la maison _____
   9. Latrine propre _____
   10. Latrine utilisée _____

   TOTAL _____

3. Fosse à ordures (Un point pour chaque réponse positive)

   1. Présente _____
   2. Pas remplie à plus de 50 cm du bord _____
   3. In.^{2} de secteur _____
   4. Ordures couvertes avec de la terre _____

   TOTAL _____

4. Enclos pour bêtes (excluant les volailles)

Cette famille a des bêtes _____

Les bêtes sont dans un enclos _____

N.B. : S'il y a des bêtes en liberté (hors de l'enclos), enlever 5 points du total.

Propreté générale de la concession (Un point pour chaque réponse positive) _____

1. Maison crépie _____

2. Maison peinte _____

3. Cour débroussée _____

4. Cour balayée _____

5. Cour débarrassée d'animaux errants (sauf volailles) _____

TOTAL _____

Total des points de la concession _____

(Moins 5 pour les bêtes errantes) _____

TOTAL _____

DATE _____

Noms des membres du jury : _____

_____

_____