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SEVEN WEST AFRICAN CASE STUDIES OF
COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY

REGIONAL WATER AND SANITATION GROUP
WEST AFRICA

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COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY

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INTRODUCTION

This discussion paper is part of an exercise of the UNDP/World Bank Water Supply and Sanitation Program to document community management approaches world-wide and to refine models for community management of water and sanitation services through demonstration projects. The report is presented in two parts. The first part is a discussion of the current practices affecting community management of rural water supply systems. It is based on experience gained over the past few years, particularly in Francophone West Africa, and raises issues which have implications on the future development of the sub-sector. The second part summarizes information obtained during a study conducted on community management of rural water supply systems in seven projects in Francophone West Africa. The seven projects were chosen as representative of successful demonstration of community management of Rural Water Supply and the lessons learned from them have contributed to the discussion in Part 1. Although the document focusses on water supply, many of the principles and lessons learned are equally applicable to sanitation; the successfully established community management of water supplies can subsequently, or in parallel, be expended to sanitation and other community initiatives as well an annex presents a tabular overview of the projects. It is hoped that the comments in Part 1 of the report will generate further discussion and that the information presented in Part 2, will give insight and ideas to project staff responsible for preparing and implementing similar projects.

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Some of the Lessons Learned from the Projects

Decision Making: The projects were successful in establishing community management primarily because the communities wanted their water points and were prepared to ensure that they stayed in operation. The details of how a water point is managed are best worked out by the individual communities themselves. They decide how and when to collect funds and they decide the rules of water point use. For project management to be effective, the project approach must be flexible and staff dedicated to the task of assisting the communities. Furthermore, as has been demonstrated by these projects, the main project input required to ensure sustainability, is the provision of an enabling environment to the communities so that they themselves can keep their water points in operation.

Community Involvement: Communities can own and manage their water points and this management is sustainable and replicable. The main elements of the management system demonstrated by the seven projects are: an effective extension service supportive of community capacity; the willingness of the community to have and own an improved water supply (possibly exhibited by up-front financial commitment); the establishment of a representative water committee and community fund for management of repairs and maintenance of the pump surrounds; the establishment of a good maintenance system which uses trained community and local artisans and which is as autonomous as possible from the project and/or government; an effective spare parts distribution system.

Extension Service: Projects are likely to be a success in areas where there is a high demand for water, especially in the dry season. Consequently, the approaches used by the projects in mobilizing communities to establish community management of water supplies may not be replicable in areas where alternate water sources are readily available. Hygiene education can only be effectively implemented by extension agents involved in mobilizing and training communities if they are given the mandate, resources and time to do so. The willingness of the communities to manage their water points is the critical factor of sustainability; extension services only serve to support that willingness and build internal capacity.

Maintenance and Spare Parts Distribution: Community and area mechanics are capable of maintaining certain pumps without central back-up. Community mechanics can maintain the Volanta pump with minimal support from area mechanics. Community mechanics could also take more responsibility for repairing pumps, if given the tools, training and the right type of pump. Private spare parts distribution is important, as demonstrated by the fact that all the projects already have or are in the process of establishing distribution directly to communities through local retailers.

PART 1

SOME OF THE LESSONS LEARNED

A. Decision Making Process within the Communities.

1. Management of water supplies by rural communities is sustainable and replicable if the willingness exists in these communities to take primary responsibility for constructing and monitoring an improved water supply; the decision to get an improved water supply therefore has to be made by the communities. In order to avoid construction of water points which become non-functioning after projects are completed, it is important that government agencies and/or projects become "promoters of community water supplies" rather than "suppliers of water points". This means that the traditional "top down" approach often followed in the past, whereby government agencies decided which communities should receive what water services, should be replaced by a "bottom up" approach in which a community makes a request for assistance to obtain an improved water supply.

2. The strategy should be to find ways of enabling communities to manage their water points, and will differ depending on the institutional, financial, cultural, social and technical considerations which have to be taken into account in each country. The capacity to keep a water point in operation by the communities is all that is meant by system sustainability. For a water point fitted with a handpump, this implies that a pump which is maintainable at the village level is installed, funds are collected from the community members to maintain it, spare parts are readily available at a reasonable cost, and reliable local mechanics are located within a reasonable distance of the community so that they can provide a maintenance service if and when required. The same approach is needed for other point sources and for small piped water systems. The details of water point management can and should be worked out by the communities themselves with the assistance of the extension service.

B. Extension and Mobilization Activities.

3. Extension services need to be provided before, during and after construction and should, if possible, not be tied to specific projects. If extension services are not specifically tied to projects, hygiene education and other environmental health activities can be incorporated into a long term extension process. Again, the willingness of the communities to manage their water points is the critical factor for sustainability. Extension services only serve to support that willingness and help build the internal capacity for management.

4. Projects are likely to be more successful in areas where there is a high demand for water, especially during the dry season. The approaches used in mobilizing communities to opt for improved water supplies and to establish community management in water scarce areas, may not be replicable in areas where alternate water sources, such as streams and rivers, are readily

available. In that case, mobilizing a community may not be accomplished just by offering the water point, requesting a financial participation, and providing basic hygiene education and training. Other methods of communication and mobilization are often needed.

5. Ownership of the water point by communities is a primary component of community management. The extension system must assist communities with the decision making process, construction, training, hygiene education and other aspects of establishing management of the water supply. An effective extension system, whether following a "cookbook" approach, appropriate for a campaign type of extension, or a "flexible" approach, more adapted to extension agents living and working within or near the communities, ensures that community management of a water point can occur. The keys to this effectiveness are:

- (a) good communication between the extension agent and the community;
- (b) a mandate to transfer management responsibility to the community and away from the project;
- (c) the desire to support the community in establishing management of its water point(s); and
- (d) a willingness to work together before, during and after construction.

6. The need for developing appropriate materials to train extension staff, communities, pumps caretakers and mechanics cannot be over emphasized. Participatory methods for training of extension agents and for mobilization and training of communities and artisans should be encouraged. Most projects currently prepare written or audio visual materials which are used to train extension agents. These can in turn be simplified and used by the extension agents to train water committees and artisans.

C. Water Committees and Women

7. Another key to community management is the establishment of a functioning water committee. Some communities establish their water committees after pump installation and as the project evolves, but for the majority the establishment of the water point committee is usually the initiation of the water point management. Once communities have organized their committees, they should function with little input from the outside. Training, although usually limited, provides the necessary skill for the committee members to fulfil their different roles. The collection of funds is a responsibility which is willingly carried out by communities who are determined to keep their water points in operation. Furthermore, sustainability of the committee is facilitated by the fact that appropriate channels (the whole community, the traditional and the political leadership) for decision making are used in electing and replacing committee members.

8. Although much has been said about the importance of the participation of women in the management of rural water supply, projects which demonstrate active involvement of women are scarce; women pump mechanics, water committee accountants and presidents are the exception rather than the rule. The main reason for this is not that women cannot manage funds, or repair pumps, but rather that the environment which will enable them to participate fully in managing the water point does not exist. Technology choice, social and cultural conditions, often make their full involvement difficult and it is up to the extension agents to find innovative ways to facilitate their participation. Various mechanisms, such as involving women through existing groups or requiring their participation in water committees, can be utilized to initiate an increase women's involvement.

D. Water Supply, Sanitation, Hygiene and Health.

9. Rural Water Supply projects often have the broad objective of improving the health of the population; however even though improved water supply contributes towards, and is a prerequisite to achieving this goal, full health benefits cannot be realized without other interventions such as primary health care, improved hygiene practices and environmental sanitation. Experience has shown that although community management of water supplies may be achieved, hygiene and environmental sanitation aspects are usually not adequately addressed. It is common to find a situation where alternative sources of water are used together with the protected water point source, where water is contaminated during collection and storage, and where personal and household hygiene are inadequate and do not allow the health benefits of clean water to be realized. An understanding of a community's priorities and needs, well designed and clear messages on all aspects of environmental sanitation and hygiene, effective communication and interaction with communities and sufficient time for changes to be effected are all key to achieving the goal. Long term extension is a way of ensuring an effective hygiene education program; it can be implemented by extension agents involved in mobilizing and training communities if they are given the mandate, proper training, resources and time to do so. Alternatively or in addition, specific community members, for example women in the water committee, can also be trained to be focal points for information and promotion of good hygiene practices such as the construction and use of latrines, cleanliness of the environment, and proper collection, storage and use of water.

10. Public latrines, especially in health centers, markets and schools, if properly maintained and managed, are a useful way of promoting improved sanitation. Efforts to reduce the costs of improved family latrines, through the use of local building materials and simplified designs which maintain all the advantages of privacy and cleanliness, should be continued. The popularity of community latrines as opposed to family ones will vary according to the preferences and culture of the potential users. Hygiene education in schools, clinics, and with women's groups could also increase community awareness of the need for improved sanitation practices. Well defined marketing strategies are needed to get families and communities to build and use latrines properly.

E. Financing.

11. The willingness to have an improved water supply is best demonstrated by a significant up-front financial contribution. Nowadays, an initial contribution from beneficiary communities, to serve either as an initial deposit into the water committee account or to finance part of the investment, is often required. Communities almost always make the contributions required of them. These may range from US\$100 to US\$1,200, and are usually set by projects somewhat arbitrarily. It is fair to say that these sums are usually below communities' "willingness to pay" for improved water supplies. If this "willingness" were identified, larger contributions to investment costs would probably be obtained. Governments cannot continue to provide free or heavily subsidized water and expand service coverage to the whole population. They therefore have a key role to play in ensuring that consistent cost recovery policies are applied within the country, preferably based on the actual willingness of communities to pay for water supply.

12. In the past, communities have not usually been asked to buy their pumps, although the initial financial contribution is sometimes comparable to what a local retailer would charge for the delivery of a pump. A community's financial contribution could therefore be used to finance all or part of the purchase of the pump by the project so that they more easily accept the notion of ownership and responsibility for monitoring the pump. Communities are increasingly being requested to take full financial responsibility for maintenance of their water points. Communities which have solar pumps or other small piped water supply systems may be requested to pay for part or all of the distribution system and the maintenance costs.

F. Technology Choice.

13. Communities, rather than projects, should be responsible for the selection of technology, with government agencies and/or projects providing guidance on the basis of technical and financial selection criteria. The confidence that is established between the communities and the extension agents needs to be extended to confidence in the technology and in its suppliers.

14. For groundwater, technologies which have an application in West Africa include hand dug and hand drilled wells, drilled boreholes on which handpumps are installed, or drilled boreholes with solar, diesel, electric or wind pumps. If groundwater levels and accessibility are favorable, hand dug or drilled wells fitted with VLOM handpumps are options which can provide a more reliable and financially comparable source of water than open wells using ropes and buckets. Choice of handpumps should be based on cost, lift, performance, availability of spare parts and ease of maintenance; issues such as their suitability in corrosive waters must also be taken into account. Handpumps have too often been imposed on communities as a result of selection being tied to funding arrangements. Solar pumps which are becoming very popular, (over 300 currently operating in West Africa) seldom break down but are not affordable to all; effective use of electrical and diesel pumps are limited by their availability to the community.

G. Construction.

15. In Francophone West Africa, the average cost of a water point fitted with a handpump is in the range of US\$18,500, including all overhead costs. While the maintenance systems implemented by projects seem to be both replicable and sustainable, the high construction costs preclude replicability. Improved assessment of hydrogeological factors; adequacy of technical specifications for boreholes and drilling equipment, market organization and increased competitiveness and limitation of project overheads are factors to be looked into to help identify ways of reducing these costs.

16. Construction of hand dug and hand drilled wells could certainly be carried out by local private contractors and artisans supervised by local government agencies, if the contracts were sized to fit the local capacity to plan, construct and manage. Contracts should be awarded through competitive bidding, with local contractors given a fair chance to compete, including a reasonable margin of preference. Local contractors should also have access to adequate training for their staff and financial assistance to purchase equipment and secure working capital.

17. The absence of a local drilling industry in many countries results from both a still widespread use of force account with government agencies operating their own drilling rigs, and an organization of the market which excludes local contractors from the competition, because of the size of the contracts. Handpump installation has already been successfully contracted out to private area mechanics after proper training.

H. Spare Parts Distribution.

18. Even if a community is willing to pay for and manage its water supply, nothing will be achieved unless there is a means of ensuring adequate maintenance and reliable spare parts distribution. This can be achieved through the establishment and strengthening of a system independent of the project organization. Handpump selection, along clear technical and financial criteria, is a critical factor in simplifying the design of the maintenance system. Although this does not always appear to be a major concern of projects, it is clear that community and area mechanics, if given the tools and training, are capable of maintaining certain pumps without central back-up. VLOM pumps have an advantage in especially if manufactured locally, as they can be repaired by community and area mechanics.

19. Many communities now pay for their spare parts. In projects where the sale of spare parts is with private local retailers, the system functions independently as long as parts are reliably received from the manufacturers or their representatives; prices are controlled since there is usually only one distributor, but this control is not necessary if parts are readily available. The non-availability of spare parts distributed through private retailers in remote areas seems to be linked more to the national distribution system from the capital city to the retail outlet and to the very limited financial interest this type of business generates, than to the non-availability of parts from the (mostly international) manufacturers to the whole-salers in the capital city. The balance between reasonable pricing of spare parts,

resulting for example from non-monopolistic private retailers, and sufficient turnover so that the latter can stay in business is an issue which could possibly find solutions through an opening of the market, rather than through strict standardization, and direct commercialization of handpumps sales to the communities as is already the case for spare parts.

J. Project versus Program Approach.

20. Most of the proceeding discussion has been about projects and the relationship between project staff and communities. The "project approach" has been used extensively in the last twenty years and will continue to be a common means of providing water supply to communities. Governments however are increasingly employing a "program approach" (which can include any numbers of projects) with the perceived advantages of a more consistent approach to sector development longer term perspective for extension services, a more demand driven provision of water supplies and therefore better chances for sustainability.

PART 2

COMMUNITY MANAGEMENT IN SEVEN RURAL WATER SUPPLY PROJECTS

21. This section presents a description of seven rural water supply projects highlighting successful components. The study focusses on community management of handpump water supplies, extension services, maintenance arrangements and spare parts distribution. Tables 1 to 11, which are presented in the annex, describe components of each of the seven projects.

A. Description of Projects.

22. The seven projects, which have all had a duration of at least six years, are: Mouhoun and Yatenga in Burkina Faso; Aqua Viva, Mali Sud and Kita in Mali; and Plateau-Savane and Maritime in Togo. They were selected on the basis of an initial review of project documents, progress reports and evaluations as well as discussions with persons familiar with rural water supply projects in Francophone West Africa. Subsequently, each project was visited for about three days and questionnaires completed. The questionnaires included information on: the background of the projects and of the beneficiaries; water resources; financing mechanisms; construction arrangements; extension activities; water committee organization; maintenance; and spare parts distribution. Community management of water supplies has been achieved to differing degrees by all of these projects, demonstrating the ability of rural communities to manage their own water systems. Table 1 summarizes the background of the different projects, and table 2 their main characteristics.

23. The areas covered by the projects visited range from 8,500 km² to 80,000 km², and the number of people served from 65,000 to 600,000. The water supply systems surveyed are handpump-based, although in some projects there were open wells and motorized pumps. The costs per person served range from \$24 to \$128 and the cost per water point from \$14,000 to \$27,000.

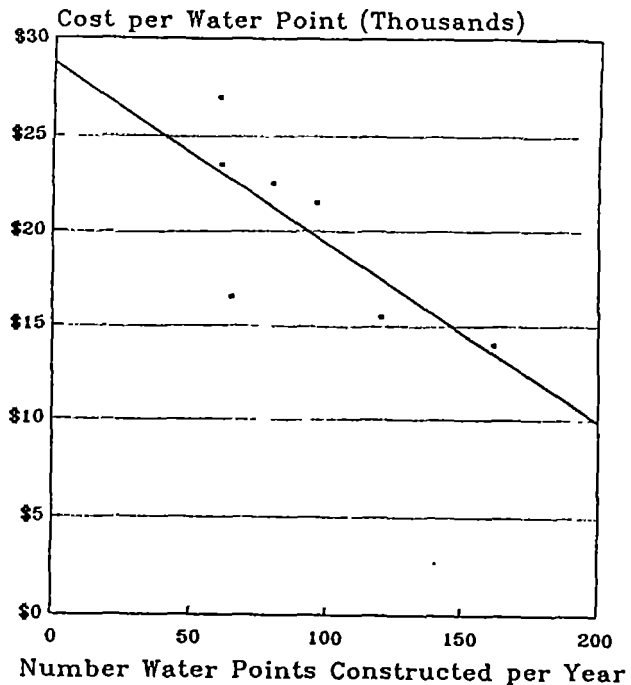
24. The projects are subject to similar environmental conditions, characterized by a lack of surface water but with shallow aquifers; during the dry season the demand for water is high, as traditional sources are generally between one and 15 kilometers away. This no doubt has a strong influence on the willingness of communities to participate in the projects and contribute to their success. In all project the majority of communities have alternative sources of water (eg. traditional wells) in the rainy season which they use as supplements to the handpump water. These others sources are usually polluted but people do not mind this since their priority is to have water in quantity.

Analysis of Project Costs.

25. On average, the projects construct 100 boreholes per year at a cost of US\$18,500 each (US\$14,000 to US\$27,000). 80% of this cost is directly related to well construction and pump installation, 15% to management and administration and 5% to extension service. For an individual water point, this works out to US\$14,500 for construction, US\$3,000 for management (administrative overheads) and US\$1,000 for extension. Expatriate inputs to management average about 3.5 staff years per 100 water points or about US\$3,000 per water point.

26. It is clear that construction dominates project costs and that expatriate labor adds substantially to costs. As indicated in the figure, economies of scale also are a determining factor. For example, project costs per borehole have been about US\$25,000 if 40 wells are constructed per year and half that if 170 are constructed per year. This study does not investigate the reasons for well construction being so high; there are certainly other factors influencing costs beside the number of water points constructed per year. It is clear, however, that while the maintenance systems appear to be both replicable and sustainable, the extremely high construction costs limit replicability. Ways of reducing construction costs must be found if widespread coverage is to be attained.

PROJECT COST



Project Management.

27. The majority of the projects are managed by expatriates with national counterparts, or by nationals with expatriate advisers. Most projects have two to six international staff who remain throughout the project. One of the projects does not employ international staff but has external consultants and another has eliminated international positions after a few years. Nationals are most actively involved in the supervision of extension and construction activities and to varying extent in planning and reporting. Administrative experience, particularly in budgeting, is limited. The projects all take an approach in which mobilization activities and conditions for community participation are pre-specified in a project document. They differ, however, in terms of the involvement of national staff in project planning of such activities, as some project teams are simply presented with an implementation recipe that they are to carry out, while others are involved in developing and modifying it. Those projects that involve staff in planning tend to be more flexible and have refined their implementation strategy over time. But it is interesting to note that all communities ended up with very similar management systems.

B. Community Mobilization.

28. Community mobilization and organization are important components of all the projects. However the process of selecting communities as beneficiaries of the water points varies among the projects. In some cases, a survey is used to help with selection of communities. Fewer are the projects where a request for a new water supply has to be made by communities prior to construction. All communities have strong leadership structures, with elected officials sometimes existing alongside traditional leadership groups, and all also have other existing community organizations; therefore the formation of water committees is not new to them.

Water Committees.

29. All the projects have established water committees for the management of the water points; in one or two cases, committees have been established after construction of the water points (table 3). In all cases, project staff describe the roles of the committee members, who subsequently are chosen by the communities or selected by the traditional leaders; in some projects, community leaders also become committee members. Projects do not have a role in the committee selection process, but occasionally, in response to complaints, extension agents intervene to confirm that the committee members are acceptable to all community members; committee members who do not perform satisfactorily are replaced. It appears that on the whole, communities have readily established their water committees.

30. There is usually one water committee per water point or pump, and therefore, a community can have more than one committee. Water committees all comprise the following basic members: president, treasurer, secretary-accountant, community mechanic and a woman responsible for cleaning the pump surrounds. In all projects, efforts seem to have been made to ensure that women are part of the committees, however they usually have little decision

making power, except in two projects, where extensive participation by women occurs; none of the committees visited have women mechanics. Committees sometimes have two people per job in order to reduce the possibility of the job not being done because the person responsible is not available.

31. Communities have established their own criteria for selection of committee members, and projects provided assistance as needed. The most important are that the committee members are respected members of the community, married and literate (for secretaries-accountants). Committee members are not paid for their services and some have been members for quite some time. Most of the committee members take their jobs very seriously.

Training of Water Committee Members.

32. Once committee members are chosen, they are trained by the project, usually the extension workers. Those who receive the most training are the community mechanics, the secretary-accountants and the treasurers. In almost all cases, this training is limited, but appears to enable the committee members to carry out their various duties adequately. Community mechanics typically receive at least one day of training followed by on-the-job training. Secretary-accountants receive instruction on how to take minutes of meetings, to keep simple records of community accounts, and to keep records of repairs made. If relevant, treasurers and secretary-accountants also receive special training on managing the bank accounts. Women responsible for water-point surrounds are usually just given basic instructions on how to avoid and control conflicts and promote cleanliness at the pump site. More time spent training these women would allow them to assist their communities to better address other issues such as environmental sanitation and hygiene.

Responsibilities of Water Committee Members

President:	chair meetings and lead the committee;
Treasurer:	collect and keep funds;
Secretary-accountant:	keep a record of meetings, accounts, pump repairs, and spare parts used;
Community mechanic:	make repairs on pump and do preventive maintenance;
Woman caretaker:	supervise pump users and keep pump surrounds clean.

Water committees are trained by the extension agents and supported in maintenance activities by the mechanics.

33. Different training materials used in these projects have been collected as part of the review. The majority pertain to community mobilization and training of the water committee members. They describe how to hold community meetings, keep accounts, repair the various pumps, conduct extension, monitor progress, and prepare contracts. They are mainly in the form of written materials (pamphlets, short guides, etc.). Only one project made use of audio visuals in its meetings with the communities.

Collection of Funds.

34. In all projects, the primary task of water committees is to collect funds, initially for the pump installation and subsequently for the purchase of spare parts and payment of area mechanics (table 4). Amounts to be collected by communities before they can receive their water points are always determined by the project, and range from 50,000 CFAF to 300,000 CFAF (US\$200 to 1,200). All communities are willing and able to collect amounts requested of them; however it is difficult to establish a willingness to pay level since each project sets its own rates more or less arbitrarily, and since all communities accept to pay the required amount.

35. Several communities have previous experience in fund raising as they have collected or borrowed (from banks or loan agencies) much larger sums for the purchase of mills or motors, for example. Many communities have been in the past or are currently involved in some income generating activity but not necessarily for water supply activities. There are examples of agricultural and women's groups which have been very effective in generating funds.

36. Communities establish set dues for each community member or household and monitor the collection process with various types of penalties for defaulters. Some communities have regular monthly dues, and others only call for funds when a repair has to be carried out; it is often much easier to collect money when the pump breaks down, than on a routine basis. In most projects, funds are used for water point maintenance, but some communities also use these funds for other community development activities. Funds, once collected, are in most cases kept within the community, usually with the treasurer. In Togo however, the majority of funds are put in banks, with small amounts kept in the community. Where there are no banks in rural areas, communities often do not like to collect and keep large amounts of money within the community.

C. Extension Service.

37. Extension Agents (EAs) involved in the projects are responsible for mobilizing and organizing the communities, training water committee members, and ensuring the establishment of community management of the water supplies (table 5). EAs are each responsible for approximately 15 water points per year. There appears to be little difference among the approaches used by the seven projects to provide an effective extension service, with on the whole, limited financial resources put into extension services only. Except for one project, in which extension is made the responsibility of health workers

working in the region as an addition to their other activities, EAs are recruited specially by the projects. The number of EAs employed on each of the different projects ranges from 3 to 120.

Selection and Training of Extension Agents.

38. All EAs have a minimum of six years of school, and are hired either from ministries associated with development or health work or specifically by the project. Those hired by the projects are often community or agricultural development agents, or occasionally health workers. Most EAs are male, since project staff feel that the need to travel across harsh terrain on mopeds would discourage many women from considering the job; the few female EAs interviewed however do not consider this a constraint and are just as effective and efficient as their male colleagues. EAs are usually given a written or oral test prior to recruitment, and language skills and willingness to work in the communities are also taken into account in the selection process. They receive monthly salaries comprising a minimum of 30,000 CFAF (US\$100), supplemented by various benefits for health care, field trips etc. Most of them are extremely dedicated to their work.

39. All the projects provide training for their EAs and follow up with refresher courses or additional courses as required. Some EAs are trained at schools specializing in extension work and others are trained by the projects. There are basically two variations on the approaches used by the projects in preparing their EAs for their work:

- (a) in the first, EAs are given intensive training on a very well defined system and procedure (cookbook) for extension designed specifically for the project, and then left to implement it without much deviation from the planned procedure. They receive some follow-up training or refresher courses at various times during the implementation of the project;
- (b) in the second, EAs are given general training on the project and its objectives, and then develop messages and procedures for extension work together with their supervisors. There is follow-up training or a refresher course provided at various times during the implementation process and there are also opportunities to try out new ideas. Periodic work planning meetings which all the EAs attended also provide an opportunity for further training.

Interaction with Communities.

40. One or more meetings are held with communities who are to receive the water points and the following activities are usually undertaken:

- (c) communities are identified to be included in the project either through a socio-economic survey or a community request to the project;
- (d) a series of meetings are then held to mobilize the communities;

- (e) communities are organized to select committees, raise some initial contribution and provide local material and labor during construction;
- (f) some form of commitment is sought from communities prior to beginning construction activities (financial outlay, formation of committees, etc.);
- (g) water committee members are trained; and
- (h) often but not always, a contract is signed either at the beginning of the mobilization process, or when the installation is completed to signify that the water point now belongs to the community.

41. The timing between the different meetings depends on the number of EAs, the number of communities they have to work in, the speed with which the communities do what is expected of them and the availability of the drilling teams. EAs provide a good liaison between the construction teams and the committees; there is no point in preparing the people and then letting them wait for several months before they receive their water point. In some projects, the entire mobilization process occurs within a one to two month period. In others, it takes several months. In one project, there is a one year long period after the initial community mobilization prior to the identification and training of committees.

Meetings with Communities.

42. Projects determine their own extension process. The number of meetings however ranges from a total of three to a meeting once a month during several years, for the duration of the project. Where there are fewer EAs, the project usually follows a campaign type of approach, rapidly mobilizing the communities within a short period to prepare them for the construction activities and then moving on to a new area. The subject matter covered includes the following:

- (a) first meeting: general presentation of the project, proposed activities and inputs to be made by all, (ie. the community and its representatives, the project staff and the local government). Often this meeting is held at a district or a regional level, bringing together only community elders and leaders;
- (b) second meeting: more detailed discussion of various aspects of the project with the entire community, for example selection of type of water point (handpump or open well) to be installed, reiteration of the need to collect funds and provide construction materials, water point siting, and selection of committee;
- (c) third meeting: discussions with committee members to ensure that all the labor input required by the project from the community had been provided;

- (d) additional meetings: these are held to continue mobilizing and organizing the community and if necessary to solve conflicts, to organize specific activities such as construction of animal watering troughs, or to run special campaigns such as for specific health campaigns (oral rehydration therapy, for example);
- (e) training of committees: individuals of the water committees receive appropriate training for their different duties; and
- (f) monitoring of progress: each project has established a system for monitoring community progress in establishing management of the water points. Sometimes monitoring continue for up to one year after installation of the water point. Discussions on progress with the establishment of committees, maintenance of water points or collection of funds, are held during monitoring meetings.

Transport/Housing.

43. All projects ensure that the EAs have access to some form of transport. EAs are given mopeds, or motorbikes and occasionally project vehicles to do their work. In some projects, EAs have motorbikes and stay with the communities for the duration of the project, whereas in others they move from one area to another. The transport and fuel are provided by the projects. In all projects, EAs are expected to find their own housing. Some have to stay in central communities during campaigns and work in the surrounding area, others live in the project area, whilst others live and work out of nearby towns, when distances were far. One interesting approach to dealing with the transportation problem, is to take the EAs along with their mopeds in a project vehicle to a central village and leave them there for about 20 days. EAs use their mopeds to travel in surrounding villages and are then picked up by the project vehicle at the end of the period. This enables the project to provide the EAs with lower cost transportation.

Hygiene Education and Latrines.

44. None of the seven projects have a specific health education component (table 6). Projects have tended to address this issue through the efforts of the EAs, but unfortunately they are usually inadequately trained to handle this subject and never given enough time to devote to it. The basic messages, given to the women responsible for the pump surrounds, are on keeping the water point area clean and ensuring that the soakaway for the waste water at the water point is functioning properly. Sometimes the EAs work with the health departments in delivering hygiene education messages to the communities and in promoting proper environmental sanitation and the use of latrines.

45. Only three of the projects have components for the provision of limited numbers of community or family latrines (table 7). In all cases, masons have been trained in latrine construction. For family latrines, part of the pit construction costs and all the superstructure costs including labor are paid for by the beneficiaries. Community latrines, for which labor is the only contribution required, have not been very popular.

D. Maintenance and Spare Parts Distribution Systems.

46. All but one of the projects employ a tiered maintenance system comprising combinations of community mechanics, area mechanics and project back-up with area mechanics being relied upon for most below ground repairs.

Community Mechanics.

47. Each community selects its own community mechanics (CM) as part of the water committee, mostly on the basis of mechanical ability of the candidates (table 8). There are two CMs per pump, usually males, but one project encourages selection of a woman as one of the mechanics. All receive a small number of tools (mainly wrenches and spanners), to help them carry out the repairs. CMs are only allowed to repair the above ground parts of the pumps and are trained for that purpose; there is one exception where they are allowed to repair specific below ground parts of Volanta pumps. The training takes the form of a specific course of one or more days and on-the-job training. Additional duties includes preventive maintenance, acquisition of spare parts from the project or a retail outlet and monitoring of pump use. CMs are not paid for their services but in some projects they are reimbursed for travel to purchase spare parts.

Area Mechanics.

48. All but one of the projects have area mechanics (AMs) who are available to repair the pumps when requested by the communities. Some AMs have their own jobs and therefore do not have to depend on pump repair for their livelihood. The number of pumps served by AMs ranges from 5 to 40. Criteria for their selection include mechanical ability, literacy, stability in community, interest in job, and availability (table 9). AM training courses range from a period of five days to one month. Both theory on pump parts and operation as well as practical skills in installation and repair are taught.

49. AMs are trained to install new pumps, repair the pumps including all below the ground parts, at the request of the communities including all below the ground parts, occasionally to sell spare parts and, if they are part of the project team, to train CMs. In all cases they are given tools, either paid for by the community in which the AM lives or paid for in part by the AMs over a period of time. AMs carry out repairs in response to community requests and are paid for the service by the communities. Transport to and from the water point is the responsibility of the AM; in some cases transportation is paid for as part of the repair. Some AMs are reasonably autonomous from the projects and others are an integral part of the project teams.

Centralized Maintenance.

50. Only one project has centralized maintenance support to CMs, with no AMs. Central mechanics are assigned from the parent ministry to the project area, and receive a monthly salary for their services; the project provides the vehicles when communities or extension agents request repairs (table 10).

Back-up Support.

51. In four projects, there is either project back-up or ministry support to the AMs to help with difficult repairs, use of tripods, distribution of spares and monitoring of pumps. Support to the communities is therefore provided by a combination of AMs and the project or Government. In the other two projects, this type of back-up has been or is being phased out. One project has central maintenance and no AMs to back up; central mechanics therefore provide full support to communities served by this system. The need for back-up support depends also on the type of pump being provided to the communities; for example lifting tackle required by India Mark II pumps justifies extensive back-up support, while Vergnet and Volanta pumps are better suited to a combination of CM and AM service.

Pumps.

52. Pumps provided by projects are the Volanta, Vergnet, India Mark II (including local versions), and UPM models. Vergnet and UPM pumps are the only ones solely manufactured overseas. Except for the Volanta, CMs are only allowed to repair above ground parts, government agencies or projects usually consider that below ground repairs are beyond the capabilities of the CMs. For the Volanta, CMs are able to make below ground repairs except for work on the rising main for which AMs are the only ones trained.

Spare Parts Distribution.

53. All seven projects require communities to pay for spare parts. Three of the projects procure the parts and sell them through the EAs or the area mechanics; in the four other projects, local distributors sell the spare parts to the communities (table 11). In two projects, agricultural outlets are involved in the distribution process. Those projects which have not yet done so plan to get out of the loop of spare parts distribution as soon as they can find suitable distributors. Sometimes communities buy and keep a small stock of the parts in order to reduce the visits into town. The projects all try to ensure that the spare parts are readily available, but when spare parts are not available locally, enterprising distributors in some cases get them directly from the manufacturers overseas. Prices for the spares are always controlled by the projects, manufacturers, distributors or the Government (table 8).

TABLE 1
BACKGROUND INFORMATION ON THE PROJECTS

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI-SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Location	Mouhoun Region, Burkina Faso	Ouahigouya Region, Burkina Faso	San Region, Mali	Bougouni Region, Mali	Kita, Bafoulabe and Kenebe Regions, Mali	Maritime Region, Togo	Plateaux and Savanes Regions, Togo
Principal Donor	The Netherlands	EDF	France	Switzerland	IDA/World Bank	Canada	USA
Project Duration	1979-1991	1981-87	1975-81 as NGO, 1981-89	1977-89	1984-89	1985-89	1979-87
Project Area	80,000 km ²	12,300 km ²	70,650 km ²	39,100 km ²	35,250 km ²	6,900 km ²	17,000 km ² and 8,470 km ²
Communities Served	600	479	500	487	294	240	850
People Served	390,000	331,000	158,000	292,000	160,000	65,000	600,000
Total cost, US\$	\$13 M	\$14.5 M	\$4 M in phase II	until 12/89: \$17.5 M	up to 1988 \$10.8 M	\$8.3 M	\$17.2 M
Cost Per Person Served	\$33	\$44	\$51	\$48	\$68	\$128	\$24
Cost per Water Point	\$16,500	\$21,500	\$14,000	\$23,500	\$22,500	\$27,000	\$15,500

TABLE 2

MAIN CHARACTERISTICS OF THE PROJECTS

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI-SUD Mali	KITA Mali	MARITIME Togo	PLATEAU SAVANE Togo
Project Profile	<ul style="list-style-type: none"> ■ Initial focus on hand-dug, open wells ■ Formation of water committees ■ Shift to drilled wells with Volanta handpumps. ■ Development of effective extension activities. ■ Establishment of maintenance system. ■ Development and improvement of Volanta handpumps. ■ Rehabilitation of pre-project water points. 	<ul style="list-style-type: none"> ■ Pilot activities in latrine and health education. ■ Provision of boreholes with Vergnet pumps. ■ Some hand dug, open wells and well/borehole combinations. ■ Project transfer to national staff. ■ Formation of water committees. ■ Establishment of maintenance system. 	<ul style="list-style-type: none"> ■ Drilled boreholes selected by local government. ■ Installation of Vergnet handpumps. ■ Formation of water committees. ■ In some cases, 2 pumps are installed per borehole. ■ Installation of solar pumps. ■ Maintenance system (since 1987). 	<ul style="list-style-type: none"> ■ Project executed by national staff. ■ Upon community request, boreholes and Vergnet pumps installed and project provides maintenance for 1 year. ■ Since 1984, decentralized maintenance unit. ■ Formation of water committees. 	<ul style="list-style-type: none"> ■ Drilled boreholes. IMII/Mali pump installation and maintenance training contracted to national company. ■ Establishment of maintenance system. ■ Formation of water committees (by agents from an associated health project). 	<ul style="list-style-type: none"> ■ Formation of Village Development Committees ■ Opening of Community Bank Accounts ■ Drilled boreholes equipped with IMII/Togo pumps. ■ Coordinated planning with national institutions ■ Development of effective extension and maintenance systems. ■ Community income-generating micro- projects. ■ Household and community latrines. ■ Hygiene education. 	<ul style="list-style-type: none"> ■ Drilled boreholes with Vergnet and UPM handpumps. ■ Formation of Village Development Committees. ■ Opening of Community Bank Accounts. ■ Development of extension system using government agents. ■ Health education (especially ORT). ■ Rainwater catchments with cisterns. ■ Household and community latrines
Systems Installed	<ul style="list-style-type: none"> ■ 503 open wells, 277 boreholes. 	<ul style="list-style-type: none"> ■ 443 boreholes, 13 well/ borehole combinations, 88 rehabilitated wells, 126 open wells. 	<ul style="list-style-type: none"> ■ 1,185 boreholes, 51 open wells, 60 solar pumps. 	<ul style="list-style-type: none"> ■ 740 boreholes. 	<ul style="list-style-type: none"> ■ 478 boreholes. 	<ul style="list-style-type: none"> ■ 200 boreholes. 104 rehabilitated wells. 	<ul style="list-style-type: none"> ■ 1,048 boreholes, 59 rainwater catchment systems.
Initial Community Contribution	<ul style="list-style-type: none"> ■ \$167 paid for slab construction, training and tools prior to pump installation. 	<ul style="list-style-type: none"> ■ \$167 paid for construction, training and installation. 	<ul style="list-style-type: none"> ■ Since 1985: \$167 paid prior to drilling, \$167 prior to pump installation and \$700 to be repaid over next 2 years. 	<ul style="list-style-type: none"> ■ Since 1987: \$400 collected prior to pump installation. 	<ul style="list-style-type: none"> ■ \$450 collected prior to drilling 	<ul style="list-style-type: none"> ■ \$117 in bank account prior to pump installation 	<ul style="list-style-type: none"> ■ \$167 supposed to be in bank account prior to pump installation

MAIN CHARACTERISTICS OF THE PROJECTS (CONTINUED)

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI-SUD Mali	KITA Mali	MARITIME Togo	PLATEAU-SAVANE Togo
Extension Service	<ul style="list-style-type: none"> ■ There are 3 groups of EAs. One group is responsible for mobilization, (8-10 communities per EA), the second for training the water committees (8-10 communities per EA), and the third for monitoring community progress (30-40 communities per EA) ■ Campaigns last 9 months 	<ul style="list-style-type: none"> ■ Each EA works with a group of 10 communities during campaigns which last 6 months each. ■ The water committees are trained during this time and monitoring follows the training. 	<ul style="list-style-type: none"> ■ Each EA works with about 20 communities during campaigns which last 3 months each. ■ The water committees are trained during this time. 	<ul style="list-style-type: none"> ■ Each EA lives within a central community during a campaign and works with a group of 6 communities. ■ After a year, committees are formed ■ The committees are trained during this time and their activities monitored. 	<ul style="list-style-type: none"> ■ There are three types of EA (community development workers, health workers and technicians). ■ EAs live in central community and work in 20 of them at a time. 	<ul style="list-style-type: none"> ■ The EAs conduct the mobilization during a 2 month period in which each EA works with 4-8 communities. ■ Training of committees and community monitoring follows. 	<ul style="list-style-type: none"> ■ EAs are grouped in teams of 3 or 4. Each team of EAs works with 30 communities and visits each one at least once a month throughout the project period.
Maintenance System	<ul style="list-style-type: none"> ■ Community Mechanic. Area Mechanic. 	<ul style="list-style-type: none"> ■ Community Mechanic. Area Mechanic. 	<ul style="list-style-type: none"> ■ Community Mechanic. Area Mechanics not yet in place. Project backup. 	<ul style="list-style-type: none"> ■ Community Mechanic. Area Mechanic. Project backup. 	<ul style="list-style-type: none"> ■ Community Mechanic. Area Mechanic. Project backup. 	<ul style="list-style-type: none"> ■ Community Mechanic. Area Mechanic. Project supervision and back-up. 	<ul style="list-style-type: none"> ■ Community Mechanic. Central Mechanic with government maintenance.
Spare Parts Distribution Network	<ul style="list-style-type: none"> ■ Project stocks and sells parts through EAs. Local distribution to be established. 	<ul style="list-style-type: none"> ■ Local distributor stocks and sells spares. 	<ul style="list-style-type: none"> ■ Local distributor stocks and sells spare parts 	<ul style="list-style-type: none"> ■ Project now stocks and sells spares through area mechanics. Local distribution to be established. 	<ul style="list-style-type: none"> ■ Project stocks and sells spares through area mechanics or agriculture agents. 	<ul style="list-style-type: none"> ■ Project stocks and sells spares and is go-between for local distributor of IMII/Togo parts. 	<ul style="list-style-type: none"> ■ Local distributor stocks and sells Vergnet parts. Project provides spares for UPM

TABLE 3

WATER COMMITTEES

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Traditional decision makers/leaders.	<ul style="list-style-type: none"> ■ Revolutionary committee (CDR) leader has ultimate authority. ■ Traditional leaders accept this. 	<ul style="list-style-type: none"> ■ Revolutionary committee in charge ■ Chiefs and CDR coexist. 	<ul style="list-style-type: none"> ■ Community chiefs have strong authority. 	<ul style="list-style-type: none"> ■ Tradition still has strong influence. ■ Area chief has ultimate power. 	<ul style="list-style-type: none"> ■ Chief and elders. 	<ul style="list-style-type: none"> ■ Hierarchy of chiefs in charge. 	<ul style="list-style-type: none"> ■ Strong traditional chieftaincy structure.
Existing community organizations	<ul style="list-style-type: none"> ■ Many committees representing different interest groups 	<ul style="list-style-type: none"> ■ Women's groups. ■ Agricultural groups. 	<ul style="list-style-type: none"> ■ Collective farm work. 	<ul style="list-style-type: none"> ■ Agricultural groups. 	<ul style="list-style-type: none"> ■ Development groups. ■ Agricultural groups (women only and mixed). 	<ul style="list-style-type: none"> ■ Women's groups. ■ Cotton committees. 	<ul style="list-style-type: none"> ■ Women's groups. ■ ORT committees.
Criteria for committee member selection	<ul style="list-style-type: none"> ■ Members live in community. ■ Members have family. ■ Accountant speaks French and is literate. ■ Representatives of young, old and women. ■ Treasurer is wealthy 	<ul style="list-style-type: none"> ■ Communities choose members after project explains roles. ■ Accountant must be literate. 	<ul style="list-style-type: none"> ■ Secretary must be literate in French/Bambara. ■ Committee members must be married and respected by villagers. 	<ul style="list-style-type: none"> ■ People who take initiative are chosen. ■ All must be married. ■ Secretary must be literate. 	<ul style="list-style-type: none"> ■ Treasurer must be literate. ■ Members must be reliable. 	<ul style="list-style-type: none"> ■ Members must be respected by community. ■ 30% women quota. ■ Secretary must be literate in French. 	<ul style="list-style-type: none"> ■ Members must be dynamic. ■ Members must be respected residents. ■ Women are encouraged. ■ Secretary must be literate.
Member selection process and number of members	<ul style="list-style-type: none"> ■ Traditional leaders and elders select members ■ There are least 7 members 	<ul style="list-style-type: none"> ■ Community votes for nominees. ■ Each part of the community is represented on the committee. ■ There are 7 members. 	<ul style="list-style-type: none"> ■ Members are selected by chiefs and elders. ■ Community gives approval. ■ There are 7 members. 	<ul style="list-style-type: none"> ■ Members are assigned by elders ■ There are at least 7 members. 	<ul style="list-style-type: none"> ■ Members are chosen by village council. ■ There are 3 members. 	<ul style="list-style-type: none"> ■ Members are nominated in open meeting. ■ There are at least 8 members. 	<ul style="list-style-type: none"> ■ Choice is left up to community. ■ There are 5 members. ■ There is an associated women's ORT committee.

WATER COMMITTEES (CONTINUED)

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Roles and Responsibilities.	<ul style="list-style-type: none"> ■ President chairs meetings. ■ Treasurer keeps money and receipts. ■ Secretary/accountant writes minutes of meetings. ■ Mechanics do preventive maintenance and all repairs except on rising main. ■ Women keep pump area clean. 	<ul style="list-style-type: none"> ■ President leads committee. ■ Treasurer keeps and disburses funds. ■ Secretary/accountant keeps minutes of meetings and accounts. ■ Community mechanics do preventive work and repair above ground parts only. ■ Women keep pump area clean, prevent fighting. 	<ul style="list-style-type: none"> ■ President calls meetings. ■ Treasurer keeps money. ■ Secretary accounts for and keeps funds. ■ Women caretakers clean pump area. ■ Mechanics prime pump and change above ground parts. 	<ul style="list-style-type: none"> ■ President leads committee, honorary position. ■ Treasurer keeps and collects funds. ■ Secretary maintains records. ■ Caretakers (man and woman) keep pump area clean. ■ Mechanic primes pump, repairs above ground parts 	<ul style="list-style-type: none"> ■ Treasurer keeps funds. ■ Secretary accounts for funds and keeps records. ■ Pump repairer repairs pumps. 	<ul style="list-style-type: none"> ■ President chairs meetings has deputy. ■ Secretary keeps records has deputy. ■ Treasurer does collection, accounting, banking, has deputy. ■ Pump caretakers ■ Optional members: health and micro-project advisors. 	<ul style="list-style-type: none"> ■ President calls/presides over meetings. ■ Secretary keeps minutes and documents ■ Treasurer collects and banks money. ■ Mechanics repair above ground parts and buy spare parts. ■ Woman caretaker keeps pump area clean
Training	<ul style="list-style-type: none"> ■ Committee training is in groups of 6 to 10 during a one week period ■ The president and treasurer each receive 2 days training, the women one day, the secretary 4 days and the mechanics 2 days plus on the job training. 	<ul style="list-style-type: none"> ■ The committees are trained in groups during a one week period. ■ All the members except the mechanics receive a total of 2 days training. ■ The mechanics receive 3 days training. 	<ul style="list-style-type: none"> ■ 80 committee members are trained at one time. ■ All receive training during 4 day period. This is partly paid for by the communities. 	<ul style="list-style-type: none"> ■ Only the mechanic receives a special 4 day training. 	<ul style="list-style-type: none"> ■ Individual committees are trained by the EAs. 	<ul style="list-style-type: none"> ■ Committees are each trained separately on the job. 	<ul style="list-style-type: none"> ■ Committees are each trained separately on the job.
Methods for conflict resolution	<ul style="list-style-type: none"> ■ Peer pressure ■ Take goods to pay dues ■ Refuse access to water point. 	<ul style="list-style-type: none"> ■ Older men settle disputes. ■ Offenders fined ■ Peer pressure ■ Verbal warning 		<ul style="list-style-type: none"> ■ Use traditional village court. ■ Fines for offenders. 	<ul style="list-style-type: none"> ■ Meetings 	<ul style="list-style-type: none"> ■ Leaders resolve conflicts. 	<ul style="list-style-type: none"> ■ Chief arbitrates ■ Prefect arbitrates.

TABLE 4

COMMUNITY FUNDS

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
How much collected (FCFA)	75,000/pump	50,000/pump	300,000/pump	120,000/pump	135,000/pump	35,000/pump	50,000/pump
How are funds collected?	<ul style="list-style-type: none"> ■ Community decides ■ Community members sometimes pay in groups 	<ul style="list-style-type: none"> ■ Each adult gives a fixed amount each month. 	<ul style="list-style-type: none"> ■ Traditional methods. ■ Fines. 	<ul style="list-style-type: none"> ■ Each community member pays something. ■ Revenue from hiring out a work group. ■ Wealthy relatives help. 	<ul style="list-style-type: none"> ■ Community decides on a sum to be contributed by each member. 	<ul style="list-style-type: none"> ■ Community decides. ■ Committee encouraged to collect 2000/month. 	<ul style="list-style-type: none"> ■ Door to door collection. ■ Collective farms.
Who keeps and accounts for funds?	<ul style="list-style-type: none"> ■ Treasurer keeps funds ■ Secretary/accountant keeps records 	<ul style="list-style-type: none"> ■ Treasurer keeps funds ■ Secretary/accountant keeps records. 	<ul style="list-style-type: none"> ■ Treasurer supposed to keep often with chief. ■ Secretary keeps records. 	<ul style="list-style-type: none"> ■ Treasurer keeps funds. ■ Sometimes funds taken out of community account held by chief. 	<ul style="list-style-type: none"> ■ Treasurer keeps funds. ■ Secretary accounts for funds. 	<ul style="list-style-type: none"> ■ Funds kept in Bank. ■ Small amounts kept in community with treasurer. 	<ul style="list-style-type: none"> ■ Majority of funds are kept in bank. ■ Small amounts kept in community.
Who establishes rates (FCFA)?	<ul style="list-style-type: none"> ■ The water committee and the village elders establish rates. ■ Usually 100-150 is collected per adult. 	<ul style="list-style-type: none"> ■ Community determines rates. 25 per man and 15 per woman each month. 	<ul style="list-style-type: none"> ■ Water committee informs heads of households when additional funds are needed. 	<ul style="list-style-type: none"> ■ Rates are established by community. 	<ul style="list-style-type: none"> ■ The village council. 	<ul style="list-style-type: none"> ■ Community. 	<ul style="list-style-type: none"> ■ Treasurer and president.
What regulations are put on money use?	<ul style="list-style-type: none"> ■ Village water committee decides. ■ Usually only used for pump repairs, purchase of cement etc 	<ul style="list-style-type: none"> ■ Community urged to use money for water point related activities only, but not enforced. 	-----	-----	-----	<ul style="list-style-type: none"> ■ Money can only be withdrawn from bank with 2 of 3 signatures. ■ 1/3 funds used for micro projects, 1/3 for other activities and 1/3 for pump repairs. 	<ul style="list-style-type: none"> ■ 2 out of 3 committee members need to be present for withdrawal of funds. Extension agent has to co-sign. ■ Money usually used for pump repairs

TABLE 5

EXTENSION SERVICE

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Recruitment	<ul style="list-style-type: none"> ■ Recruitment is from private sector ■ Job advertised through media. 	<ul style="list-style-type: none"> ■ Recruited by various means from public and private sector. 	<ul style="list-style-type: none"> ■ Recruitment is from private sector. ■ Recruited by the project. 	<ul style="list-style-type: none"> ■ Recruitment is from private sector. ■ Recruited by the project. 	<ul style="list-style-type: none"> ■ Agents engaged in other development projects in the region. ■ Agents of public sector working within the scope of other projects 	<ul style="list-style-type: none"> ■ Extension agents in public sector in the region and new recruits by project. 	<ul style="list-style-type: none"> ■ Extension agents of that zone belonging to the public sector.
Number of Extension Agents (EAs)	<ul style="list-style-type: none"> ■ A total of 19 EAs and 4 supervisors. 	<ul style="list-style-type: none"> ■ A total of 3 EAs and 1 supervisor. 	<ul style="list-style-type: none"> ■ A total of 4 EAs 	<ul style="list-style-type: none"> ■ A total of 5 EAs and 6 masons. 	<ul style="list-style-type: none"> ■ A total of 22 EAs. 	<ul style="list-style-type: none"> ■ A total of 45 EAs and 1 supervisor per 6-8 EAs. 	<ul style="list-style-type: none"> ■ A total of 120 EAs 1 supervisor per 12 EAs.
Employer	<ul style="list-style-type: none"> ■ Project and ONPF. 	<ul style="list-style-type: none"> ■ Project and ONPF. 	<ul style="list-style-type: none"> ■ Public service. ■ Project. 	<ul style="list-style-type: none"> ■ Public service. ■ Project. 	<ul style="list-style-type: none"> ■ Public service. ■ Health project. 	<ul style="list-style-type: none"> ■ Public service. ■ Project. 	<ul style="list-style-type: none"> ■ Public service.
Selection Criteria	<ul style="list-style-type: none"> ■ 8 years of school required. ■ Speaks Dioula. ■ Written test and interview. 	<ul style="list-style-type: none"> ■ A minimum of 6 years school required. ■ Recruited through interview. 	<ul style="list-style-type: none"> ■ Local language skills required. ■ Willingness to work in the community. 	<ul style="list-style-type: none"> ■ 6 to 9 years schooling required. ■ 4 years work as Community Development Technician (CDT). 	<ul style="list-style-type: none"> ■ CDT with 9 years schooling. ■ 4 years training or 6 years schooling and in Bambara. ■ Health workers - 9 years schooling and 3 years at health school. ■ Technician - 4 years training at college and experience. 	<ul style="list-style-type: none"> ■ More than 2 years training in social affairs required. ■ Many have university degrees. ■ Written test and interview. ■ Women preferred. 	<ul style="list-style-type: none"> ■ 6 to 9 years schooling. ■ 3 years technical training. ■ Some university degrees.
Training for Project	<ul style="list-style-type: none"> ■ 2 months training by project. ■ Refresher course at the start of the campaign 	<ul style="list-style-type: none"> ■ 15 days at CESAO (Burkina Faso). 	<ul style="list-style-type: none"> ■ 1 month with consultant (BURGEAP). ■ 2 months during project. 	<ul style="list-style-type: none"> ■ 1 week with follow-up after 1 month. ■ New EAs get on the job training. ■ Some go to CESAO. 	<ul style="list-style-type: none"> ■ 10 days training at Kita and 5 day refresher course. 	<ul style="list-style-type: none"> ■ 5 days information on project for orientation; ■ 5 days motorcycle training; ■ 5 days planning of village meetings. ■ Periodic training on campaign themes ■ Day of reflection. 	<ul style="list-style-type: none"> ■ 1 week seminar at the beginning of project. ■ 3 day regional seminar on next campaign themes. ■ 2 weeks training in latrine and cistern construction. ■ Training assured by USAID or national supervisors.

EXTENSION SERVICE (CONTINUED 1)

PROJECT NAME	MOUHOUN <i>Burkina Faso</i>	YATENGA <i>Burkina Faso</i>	AQUA VIVA <i>Mali</i>	MALI SUD <i>Mali</i>	KITA <i>Mali</i>	MARITIME <i>Togo</i>	PLATEAU-SAVANE <i>Togo</i>
Responsibilities	<ul style="list-style-type: none"> ■ There are 3 groups of EA: 9 EAs for mobilization of 8-10 communities each per 9 month campaign, 4 EAs for water committee training, each with 8-10 communities; 6 EAs for monitoring and follow up, each with 30-40 communities during year. 	<ul style="list-style-type: none"> ■ The EAs mobilize the communities, train the water committees and monitor progress after water point is in operation ■ Each EA works with 10 villages during campaign. 	<ul style="list-style-type: none"> ■ Each EA has 20 communities per campaign. ■ Activities include: <ul style="list-style-type: none"> - 1 meeting per district, - 2 meetings per community; - signing of contract with community; - 4 days training of water committee; - evaluating community borehole needs; settling of community and drilling team disputes; ■ EAs do three campaigns a year 	<ul style="list-style-type: none"> ■ Provide information to communities, 2 days for each one. ■ 1 EA based in "center" village during 20 days and serves 6 villages. Activities include: health education; treasurer training; and monitoring after pump is in place. 	<ul style="list-style-type: none"> ■ Hold community meetings: <ul style="list-style-type: none"> - 1 meeting/district and - 1 meeting/village. ■ Research existing structures for the management of the water point. ■ Training of the treasurer and secretaries. ■ 1 EA lives throughout the year in one village and serves 20 villages. 	<ul style="list-style-type: none"> ■ Conduct socio-economic and sanitation survey. ■ Provide community information for contracts signing ■ Train water committee. ■ Help committee open bank account. ■ Give technical advice on guiding new activities. ■ Lead 3 health education campaigns. ■ Lead latrine construction ■ 1 EA works with 4 to 8 communities. 	<ul style="list-style-type: none"> ■ EAs conduct 1 visit per month to community during installation. ■ Train committee members chosen by community. ■ Help open bank account. ■ Health campaigns (ORT, latrines, rainwater catchments). ■ Inform water supply service in case of break-down. ■ A team of 3 to 4 EAs serve 30 villages.
Sequence of Community Mobilization and Committee Training	<ul style="list-style-type: none"> ■ Each campaign lasts 9 months. ■ There are three meetings for mobilization after which contract is signed. ■ Other meetings for slab construction etc. ■ Selection and training of committee. ■ Monitoring 6 - 12 months after pump is installed. 	<ul style="list-style-type: none"> ■ Each campaign lasts 6 weeks. ■ There are 5 meetings in all for mobilization. The first has an audio-visual show and the other 4 are used to organize and select the committees. ■ Training of committee. ■ Monitoring 	<ul style="list-style-type: none"> ■ Each campaigns lasts three months. ■ Mobilization started late in the project. ■ There are three meetings for information, committee formation and contract signing. ■ Training of committees. 	<ul style="list-style-type: none"> ■ There is a 2 day mobilization using a slide show. ■ A contract is signed and a site is chosen. ■ Other mobilization activities occur. ■ 1 year later, there is a 3 day training session using a flannelograph (GRAAP method) in which a water committee is formed. ■ During the year before this happens, the community manages on its own. 	<ul style="list-style-type: none"> ■ The campaign continues throughout the year. ■ Meetings are held with family heads to take decisions. ■ The committees are chosen and trained. 	<ul style="list-style-type: none"> ■ There are 8 meetings per community and campaign which result in the formation of a committee and signing of the contract. ■ There are education campaigns on health etc. ■ The committees are trained. 	<ul style="list-style-type: none"> ■ There are three meetings per community and campaign followed by the signing of contracts. ■ The committees are trained.

EXTENSION SERVICE (CONTINUED 2)

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Average No. of Meetings with each Community	<ul style="list-style-type: none"> ■ About 8 meetings and 2 monitoring meetings after 1 year. 	<ul style="list-style-type: none"> ■ 5 community meetings. 	<ul style="list-style-type: none"> ■ 3 meetings. 	<ul style="list-style-type: none"> ■ 4 meetings plus 1 follow-up. 	<ul style="list-style-type: none"> ■ Three 1 hour sessions per community. 	<ul style="list-style-type: none"> ■ Every 2 weeks, for 4 years (ongoing). 	<ul style="list-style-type: none"> ■ Once every month for project duration.
Reporting by EAs	<ul style="list-style-type: none"> ■ Each group of EAs weekly reporting on activities. ■ Bi-weekly workplanning sessions for each group. ■ Monthly meetings for all ■ 3 day semi-annual meetings. ■ Annual self evaluations 	<ul style="list-style-type: none"> ■ Weekly meetings with reports by EA or supervisor. ■ Monthly and quarterly reports by supervisor to project director. ■ Annual reports by supervisors 	<ul style="list-style-type: none"> ■ Annual report by EAs to chief hydrogeologist. 	<ul style="list-style-type: none"> ■ Monthly reports by the EAs. ■ Reports by EAs after each village meeting. ■ Semi-annual evaluation with project director. 	<ul style="list-style-type: none"> ■ Monthly meeting with project director. ■ Project report at end of annual campaigns. ■ Quarterly reports by supervisor. 	<ul style="list-style-type: none"> ■ Weekly meeting with supervisors. ■ Meetings every two weeks with regional head of social affairs department. 	<ul style="list-style-type: none"> ■ Monthly meeting at regional headquarters. ■ Seminar with unit head.
Transport	<ul style="list-style-type: none"> ■ Project provides motorbike (Honda), renewed every 3 years. 	<ul style="list-style-type: none"> ■ Project provides motor scooter. 	<ul style="list-style-type: none"> ■ Project provides 1 vehicle for 3 of EAs and a motorcycle to the fourth. 	<ul style="list-style-type: none"> ■ Project transports EAs to central village and provides motor scooter with fuel. 	<ul style="list-style-type: none"> ■ Project provides motorcycle on a hire-purchase basis with fuel allowance. 	<ul style="list-style-type: none"> ■ Project provides motorcycle with fuel allowance 	<ul style="list-style-type: none"> ■ Project provides a motorcycle.
Accommodation	<ul style="list-style-type: none"> ■ None provided by project. ■ 3,000 FCFA/month allowance for EAs who sell spare parts 	<ul style="list-style-type: none"> ■ None provided by project. ■ Lodged by village during project. 	<ul style="list-style-type: none"> ■ None provided by project. ■ Lodged by village during the project. 	<ul style="list-style-type: none"> ■ None provided by project. ■ Lodged by central village. 	<ul style="list-style-type: none"> ■ None provided by project. ■ Lodged by central village. 	<ul style="list-style-type: none"> ■ None provided by project. 	<ul style="list-style-type: none"> ■ None provided by project.
Payment per EA (FCFA)	<ul style="list-style-type: none"> ■ Monthly salary: 60,000. ■ Health insurance 80%. 	<ul style="list-style-type: none"> ■ Monthly salary: 35,000. ■ 6% risk, 25% work, and 5% bonus are added. ■ 10,000 per month for transportation. ■ Free medical consultation. 	<ul style="list-style-type: none"> ■ Monthly salary: 45,000. ■ 1,000 bonus per work day. ■ 50 kg of rice ■ 4 liters of kerosene. 	<ul style="list-style-type: none"> ■ Monthly salary: 30,000. ■ 1,250 allowance per day and 2,000 per night spent in field. 	<ul style="list-style-type: none"> ■ Monthly Salary: 31,000. ■ 15,000 bonus. ■ Fuel. ■ Per diem for training: 2,000 per day and for refresher course 1,000 per day. 	<ul style="list-style-type: none"> ■ Monthly salary (public): 47,000. ■ Project bonus 8,000. ■ Monthly salary of project staff: 60,000 to 88,000. ■ Per diem for training. 	<ul style="list-style-type: none"> ■ Monthly salary 50,000. ■ Per diem for training: 2,100 per day.

TABLE 6
HYGIENE EDUCATION

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Organization	■ No planned hygiene education (HE) component	■ No hygiene education.	■ No hygiene education.	■ Part of extension responsibility of health workers in region.	■ Part of extension.	■ 3 campaigns led by EAs on 3 specific themes. ■ Vaccination campaign.	■ ORT campaign.
Training	■ 1 day	----	----	----	■ Included in the training and retraining.	----	■ EAs train women who in turn train other women.
Who is Responsible	■ 2 village women.	----	----	■ Project EA.	■ Project EA.	■ Project EA.	■ Project EA.
Materials Used	-----	----	----	■ GRAAP methods.	■ Box of pictures drawn by national graphic designer.	■ No specific material.	■ Handbook distributed to women.
Health Facilities	■ 1 community health centre.	----	----	----	----	----	----
Other Activities	■ Contact with department of health to improve HE in future.	----	----	----	----	■ Health survey on prevalence of diseases, treatment, traditional beliefs and needs and on what is expected of project.	-----

TABLE 7

LATRINES

PROJECT NAME	MOUHOUN Burkina Faso	MARITIME Togo	PLATEAU- SAVANE Togo
Summary of Activities	<ul style="list-style-type: none"> ■ Since the start of the project in September 1987, a total of 225 family/community latrines have been constructed in the project area (15 communities). ■ The superstructure is built by the family or community with local materials. The communities pay the masons, the project is subsidizing the slab production. Two community masons are chosen by the health committee and trained on latrine construction. ■ During the training, the project feeds the masons. The health agents attached to the project have a widespread sensitization program in latrine, use and health education. 	<ul style="list-style-type: none"> ■ The initial campaign to build community latrines has been replaced by building family latrines. 200 latrines have been built. ■ Two EAs per project zone have been trained by technical assistants and two GOT sanitation specialists. They promote latrines, help select sites, supervise brick construction, oversee construction of pits, monitor masons' work and vent pipe installation. ■ Two masons have been trained to make pre-fabricated slabs which are transported by the project to the communities. ■ Superstructure design is left to individuals. The families recruit local diggers and masons and negotiate payment. 	<ul style="list-style-type: none"> ■ A total of 473 VIP community latrines have been built in 26 communities ■ The community is responsible for unskilled labor construction while the project hires and trains masons to assist them. ■ Masons have had difficulties getting communities to help as communities by far prefer family latrines. ■ EAs have spent much time in supervising this contribution, ensuring that masons are housed and fed.
Type of latrine	<ul style="list-style-type: none"> ■ The type of latrine is a modification of the Mozambique slab with footrests, a reinforced circular slab, and a keyhole shaped concrete plug. The pit is 3 m deep and 1 m in diameter. The superstructure is built with local materials. 	<ul style="list-style-type: none"> ■ Lined or unlined pit latrines. Superstructure design is left to individuals. No other information is available. 	<ul style="list-style-type: none"> ■ Ventilated, improved double pit latrines. The pits are fully lined.
Costs	<ul style="list-style-type: none"> ■ Actual cost per slab is 7,000 FCFA, the project is subsidizing the production. ■ The community pays the masons 300 FCFA/slab, the cement is provided by the project. There is no information on who pays for the sand, the gravel and the steel used for the reinforcement. 	<ul style="list-style-type: none"> ■ The cost of unlined pit latrine is about 20,000 FCFA : the project pays 16,000 FCFA, household provides 1 bag cement for foundation, pays for labor and provides necessary local materials. ■ The cost of lined pit latrine is about 30,000 FCFA: the project pays 21,000 FCFA, household provides 2 bags cement, mason and superstructure. Mobilized towns must collect 1/3 of material costs. . The family recruits local diggers and mason and negotiates payment (project guidelines: 2,000 FCFA for pit-lining and 2,000 FCFA for superstructure). 	

L A T R I N E S (CONTINUED)

PROJECT NAME

MOUHOUN
Burkina Faso

MARITIME
Togo

PLATEAU
SAVANE
Togo

Training of Masons

- Two community masons are chosen by the health committee and are given one day training on how to make latrine slabs, one day for the well collars, and one day general training.
- The project feeds the masons during the training.

- Two masons have been trained to make pre-fabricated slabs in Tsevie. The slabs were then transported by the project to the communities. Trained EAs supervise brick construction, oversee construction of pit, monitor the mason work (foundation slab installation) and vent pipe installation.
- Superstructure design is left to individuals, and that is why the construction is done by local masons.

- Project hires and trains masons, who assist the unskilled labor contribution of the communities.

Participation of the Communities

- The communities pay the masons 300 FCFA per slab. They build the superstructure of the latrines with local materials.
- In 1987, 25% of the communities worked on building latrines.

- Mobilized towns request project assistance and must collect 1/3 of material costs.
- The family recruits local diggers and masons and negotiates payment. For lined pit latrines household provides 2 bags cement, mason and superstructure.

- Community is responsible for unskilled labor contribution. Masons have had difficulties getting communities to help as they prefer family latrines.

Promotion of Latrine Use

- The project decided to improve the sensitization by collaborating closely with the health department workers in the communities.
- With regard to the sanitation sector, the project focuses on the following areas: health education in primary schools and latrine construction.
- Retraining of health agents on environmental conditions. Health education to provide preventive health care.

- Health education campaigns were carried out by EAs. In the sanitation sector the sensitization focuses on the following areas: principal diseases, village cleanliness, latrine construction and utilization, drainage and excreta disposal.

- EAs mobilize women to sensitize the population in the project areas in health education.

TABLE 9

MAINTENANCE: AREA MECHANICS

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Selection Process	<ul style="list-style-type: none"> ■ Community mechanics given practical test by project to assess their mechanical ability. 	<ul style="list-style-type: none"> ■ Each community nominates 5 local mechanics, those mentioned most often are interviewed. 	<ul style="list-style-type: none"> ■ EA asks communities for recommendation. ■ Often selected because of previous training on other projects. 	<ul style="list-style-type: none"> ■ Selected by training unit following village mechanic training course. 	<ul style="list-style-type: none"> ■ Blacksmiths. ■ Motorcycle repairers 	<ul style="list-style-type: none"> ■ Nominated by EAs. ■ Initial screening based on ability to select tools and repair a simple mechanical device. 	<ul style="list-style-type: none"> ■ No area mechanics.
Selection Criteria	<ul style="list-style-type: none"> ■ Mechanical ability. 	<ul style="list-style-type: none"> ■ Mechanical ability. ■ Interest in the job. 	<ul style="list-style-type: none"> ■ Literate. 	<ul style="list-style-type: none"> ■ Best pump caretaker. 	<ul style="list-style-type: none"> ■ Stability in village. 	<ul style="list-style-type: none"> ■ Mechanical ability. ■ Permanent resident. ■ Married. ■ Available to do work. 	
Responsibilities	<ul style="list-style-type: none"> ■ Carry out all repairs in their area when requested by water committee ■ Contract with project to install new pumps and train community mechanics. 	<ul style="list-style-type: none"> ■ Repair below ground components and any above ground that community mechanic cannot make. ■ Install pumps and train community mechanics. 	<ul style="list-style-type: none"> ■ Repair pumps on request. Plans are for AMs to install new pumps. ■ Some stock and sell spare parts. 	<ul style="list-style-type: none"> ■ Repair pumps when requested by community. ■ Sell spare parts to community. 	<ul style="list-style-type: none"> ■ Repair pumps. 	<ul style="list-style-type: none"> ■ Inspect pump when requested by community and repair it after community obtains required spare parts. 	
Training	<ul style="list-style-type: none"> ■ One month training at project headquarters, half theory and half practical. Refresher course given after two years 	<ul style="list-style-type: none"> ■ 5 days of training provided by Centre National de Promotion d'Artisan Ruraux. Receive certificate. 	<ul style="list-style-type: none"> ■ 5 to 10 days training in groups of 10 to 15 given by project pump technician. 	<ul style="list-style-type: none"> ■ 1 or 2 AMs join project team for 3 to 4 weeks for on the job training in installation and repair of pumps. 	<ul style="list-style-type: none"> ■ 5 days training in theory and 5 days practical training. 	<ul style="list-style-type: none"> ■ Two week course (theory and practical) given by central mechanic and project technical advisor. 	

MAINTENANCE: AREA MECHANICS (CONTINUED)

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Payment (FCFA)	<ul style="list-style-type: none"> ■ 25 for transport and 400 per hour plus 1,500 per 9 meters of rising main removed (3 x 3m sections). ■ 10,000 for pump installation and training of community mechanic. ■ Small per diem given during initial training course. 	<ul style="list-style-type: none"> ■ 1,500 to 10,000 per repair. ■ Community pays. 6,000 to AM to install their pump. 	<ul style="list-style-type: none"> ■ 2,500 per repair plus transport, negotiable with community. 	<ul style="list-style-type: none"> ■ 2,500 per repair plus parts cost. Transport included. 	<ul style="list-style-type: none"> ■ Payment set by considering distance travelled to repair site 	<ul style="list-style-type: none"> ■ 1,000 for Vergnet. ■ 1,000 plus 200 per pipe length after first 5m for India Mark II. 	
Tools	<ul style="list-style-type: none"> ■ Tools purchased by community in which AM lives on condition that he repairs pumps in his community for free ■ Project subsidizes portion of the cost. 	<ul style="list-style-type: none"> ■ Tools cost 55,000 FCFA (1981). ■ Money earned during installation used to repay cost of tools 	<ul style="list-style-type: none"> ■ Presently loaned by project to AM on an as needed basis. 	<ul style="list-style-type: none"> ■ Tool set provided by project. 60% of cost repaid over two year period. 	<ul style="list-style-type: none"> ■ 350,000 FCFA kit given after training is complete. 	<ul style="list-style-type: none"> ■ 30,000 to 50,000 FCFA (half price of tools) repaid by AM over a three year period on monthly basis 	
Transport	<ul style="list-style-type: none"> ■ Own arrangements Usually by bicycle or public transport. 	<ul style="list-style-type: none"> ■ Own arrangements: usually motorbike. 	<ul style="list-style-type: none"> ■ Own arrangements. 	<ul style="list-style-type: none"> ■ Bicycle provided by project. 60% of cost repaid over two years. 60,000 FCFA paid by AM for bicycle and tools. 		<ul style="list-style-type: none"> ■ Own arrangements. Usually private motorcycle or taxi. 	
Communities served	<ul style="list-style-type: none"> ■ 5 to 10 pumps per AM Distances up to 25 km 	<ul style="list-style-type: none"> ■ At least 10 communities per AM. Community can call on any AM to make repair. 	<ul style="list-style-type: none"> ■ 10 pumps per AM. 	<ul style="list-style-type: none"> ■ 15 to 40 pumps per AM. 		<ul style="list-style-type: none"> ■ 30 pumps per AM. Distances up to 60 km. 	

TABLE 10

MAINTENANCE: CENTRAL MECHANICS

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Selection Process	<ul style="list-style-type: none"> ■ Central mechanics not needed. ■ Little project back-up. 	<ul style="list-style-type: none"> ■ Central mechanics have been phased out. ■ No project back-up. 	<ul style="list-style-type: none"> ■ Shift to area mechanic system. ■ Project back-up. 	<ul style="list-style-type: none"> ■ No central mechanics. ■ Project back-up team is provided. 	<ul style="list-style-type: none"> ■ No central mechanics. ■ Project provides back-up. 	<ul style="list-style-type: none"> ■ Ministry of Hydraulics provides back-up. 	<ul style="list-style-type: none"> ■ Central mechanics assigned by Ministry of Hydraulics.
Selection Criteria	-----	-----	-----	<ul style="list-style-type: none"> ■ Section head, Accountant, stockroom clerk, repairer and driver. 	-----	<ul style="list-style-type: none"> ■ 2 staff of the Ministry of Hydraulics work 5 years on project. 	<ul style="list-style-type: none"> ■ Two mechanics per region. Four in total.
Responsibilities	<ul style="list-style-type: none"> ■ After training of area mechanics in 1985, central mechanics available for back-up but not needed. Now doing experimental work such as installing motors on Volanta pumps and handpumps in hand dug wells 	-----	-----	<ul style="list-style-type: none"> ■ Install and repair pumps during period of warranty. ■ Train community and AMs. ■ Procure and distribute spare parts. ■ Monitor AMs. 	-----	<ul style="list-style-type: none"> ■ Monitor all pumps quarterly, inform EAs of problems. ■ Visit AMs monthly, collect payments for tools. ■ Provide technical assistance to AMs on request, e.g fishing downhole components. 	<ul style="list-style-type: none"> ■ Repair pumps when requested by community.
Training	-----	-----	-----	-----	-----	<ul style="list-style-type: none"> ■ Training in hydrogeology. 1 month with local handpump manufacturer. 	-----
Payment	-----	-----	-----	-----	<ul style="list-style-type: none"> ■ DNHE salary plus field bonus. 	<ul style="list-style-type: none"> ■ Monthly GOT salary. 	<ul style="list-style-type: none"> ■ Monthly GOT salary.
Tools	-----	-----	-----	-----	-----	<ul style="list-style-type: none"> ■ Full set provided by project, including two tripods that project will transport to site for CM to make India Mark II below ground repairs. 	-----
Transport	-----	-----	-----	<ul style="list-style-type: none"> ■ Two vehicles provided by project. 	-----	<ul style="list-style-type: none"> ■ Motorcycle and fuel provided by project. 	<ul style="list-style-type: none"> ■ Project vehicles.
Communities served	-----	-----	-----	<ul style="list-style-type: none"> ■ 740 pumps served by team. 	-----	<ul style="list-style-type: none"> ■ 150 pumps per person Distances up to 75 km 	<ul style="list-style-type: none"> ■ 250 pumps per mechanic.

TABLE 11

MAINTENANCE: SPARE PARTS DISTRIBUTION

PROJECT NAME	MOUHOUN Burkina Faso	YATENGA Burkina Faso	AQUA VIVA Mali	MALI SUD Mali	KITA Mali	MARITIME Togo	PLATEAU- SAVANE Togo
Distribution system	<ul style="list-style-type: none"> ■ Project procures parts from suppliers and distributes to community based EAs ■ Manufacturer in Ouagadougou has agreed to supply spare parts to farmers' cooperative that will sell spares 	<ul style="list-style-type: none"> ■ Local distributor in the project area gets spares from Vergnet representative for Burkina Faso in Ouagadougou. ■ Monthly sales are about 500,000 FCFA with profit of about 15%. He plans to expand supply region wide through his other stores. 	<ul style="list-style-type: none"> ■ An auto-parts distributor in San took over project stock but now obtains parts from Vergnet representative for Mali located in Bamako. ■ No arrangements yet made for Mark II parts distribution. 	<ul style="list-style-type: none"> ■ Project purchases parts from manufacturers and distributes to area mechanics for sale every 3 months. ■ Project considering establishing independent distribution Network. 	<ul style="list-style-type: none"> ■ Project stores spares and has 2 technicians in charge. ■ Spares are also available in districts through agriculture agents. ■ Government will be responsible for stocking and selling parts for 2 years after project ends. 	<ul style="list-style-type: none"> ■ UPROMA parts available at major retail outlet in project area. ■ Vergnet parts procured from France by project and available at headquarters. ■ Community member goes to Tsevie to get parts from project or distributor. 	<ul style="list-style-type: none"> ■ SGGG, a major chain of retail outlets in Togo, procures Vergnet parts from France and distributes them in country. Local store had few parts in stock. ■ Project provides spares for UPM pumps. Some villages stock spares.
Where manufactured	<ul style="list-style-type: none"> ■ Volanta. Ouagadougou (green colored pumps) Netherlands (red pumps). 	<ul style="list-style-type: none"> ■ Vergnet: France. 	<ul style="list-style-type: none"> ■ Vergnet: France India Mark II: Mali 	<ul style="list-style-type: none"> ■ Vergnet: France India Mark II: Mali 	<ul style="list-style-type: none"> ■ India Mark II, EMAMA factory, Mali. 	<ul style="list-style-type: none"> ■ Vergnet: France UPROMA India Mark II, Togo 	<ul style="list-style-type: none"> ■ Vergnet: France UPM: France
Price control	<ul style="list-style-type: none"> ■ Prices set by project. 	<ul style="list-style-type: none"> ■ Established by manufacturer and distributors. 	<ul style="list-style-type: none"> ■ Government agents monitor prices in outlets around country every two months. ■ Initial project stock sold at 10% profit. 	<ul style="list-style-type: none"> ■ Project sets prices charged to villagers. 		<ul style="list-style-type: none"> ■ Project holds periodic discussions with UPROMA concerning prices. 	<ul style="list-style-type: none"> ■ Project reviews prices periodically.





