PD-ABL-079
PD-ABL-079
-04-03
136
94699

MID-POINT INTERNAL EVALUATION

of the

NIASSA PROVINCE RURAL WATER AND SANITATION PROJECT

being performed by

MEDICAL CARE DEVELOPMENT INTERNATIONAL & AGUA RURAL

December 26, 1994
final version March 27, 1995

Evaluators:

John Niewoehner, WATER For PEOPLE
Julieta Felicidade Afonso, PRONAR

(Under Mozambique PVO Support Project, 656-0217)

TABLE OF CONTENTS

EXECUTIVE SUMMARY . . . . . page 1

I. INTRODUCTION . . . . . page 4
- A. Background to Evaluation Assignment . . . . . page 4
- B. Members of Evaluation Team . . . . . page 4
- C. Scope of Work . . . . . page 4
- D. Methodology . . . . . page 5
- E. Project Background . . . . . page 5

II. PROJECT EFFICIENCY . . . . . page 6
- A. Inputs . . . . . page 6
- B. Implementation Activities . . . . . page 7
- C. Outputs . . . . . page 9

III. PROJECT EFFECTIVENESS . . . . . page 11
- A. Effective Use . . . . . page 11
- B. User Behavior Change . . . . . page 11
- C. Sustainability . . . . . page 11
- D. Institutional Viability . . . . . page 12

IV. PROJECT IMPACT . . . . . page 14
- A. Data Base . . . . . page 14
- B. Health and Health Education . . . . . page 15
- C. Water Resources and Systems . . . . . page 16
- D. Sanitation . . . . . page 17
- E. Community Development/Organization . . . . . page 18
- F. Social . . . . . page 19
- G. Economics . . . . . page 19
- H. Women . . . . . page 20
- I. Institution Building . . . . . page 20
- J. Environment . . . . . page 20

V. LESSONS LEARNED . . . . . page 21
- A. Relevance of Project Concept . . . . . page 21
- B. Sustainability . . . . . page 21
- C. Replicability . . . . . page 22

VI. SUMMARY/CONCLUSIONS . . . . . page 23
- A. Conclusions of Project Design . . . . . page 23
- B. Conclusions of Project Implementation . . . . . page 23
- C. Recommendations . . . . . page 24

VII. ANNEXES . . . . . page 26

Project Evaluation Summary Sheet . . . . . page 26

Translation of IEC evaluator's report from Portuguese . . . . . page 27

Logical Framework . . . . . page 36

IEC evaluator's report in Portuguese . . . . . page 38

LIST OF ACRONYMS

IEC	Information, Education, and Communication
KAPB	Knowledge, Attitudes, Practices, and Beliefs
MCDI	Medical Care Development International
NGO	Nongovernment Organization
PRONAR	National Rural Water Program
RNA	Rapid-needs Assessment
USAID	U.S. Agency for International Development

EXECUTIVE SUMMARY

Purpose

This mid-point evaluation of the MCDI/AGUA Rural Niassa Province Water and Sanitation Project was prepared to determine if project goals were being met and to offer MCDI guidelines for the future of the project.

Project Summary

The Niassa Rural Water and Sanitation Project is a two-year project being coordinated by MCDI and funded by USAID. The objective of the project is to construct 65 new hand-dug wells, rehabilitate 35 existing wells, promote latrine construction, and educate project beneficiaries in diarrhea prevention and well maintenance. The project's central theme of sustainability is to be achieved by involving the local people in the implementation of the project and strengthening Agua Rural. This concept of self-help is new to the local people who are accustomed to emergency assistance programs that provide services without requesting a local contribution to the project.

The lack of sustainability of the emergency assistance programs is exemplified by a well project that took place in Cuamba between 1988 and 1990. Of the 35 wells that were installed by that project, only five are still operating.

In the ongoing project, communities are first approached by MCDI/Agua Rural animadoras (village extension workers) who help mobilize the village in preparation for well and latrine construction. The Agua Rural technicians and masons then assist the villagers with construction. The villagers form water committees and contribute labor for well excavation and the collection of sand and rocks. The animadoras are also responsible for training village water committee members and providing health education in the importance of safe water and latrines, water storage and use, and hygiene.

Major Findings

Between May and December 1994, thirty (30) new wells have been constructed, one existing well was rehabilitated, and two spring catchment tanks were constructed. In ten villages demonstration latrines were constructed. In all of the villages water committees were established and local people donated their labor to the project.

The wells were constructed in accordance with Mozambican government (Pronar) standards for well construction. The wells were dug to a depth of two meters below the static water table and the wells were lined with pre-formed concrete rings and stone masonry. On each

well an Afridev pump was installed.[1] All wells and spring catchments were located a sufficient distance from latrines or other potential sources of ground water contamination.

The strength of the project is the strong team that has been formed between MCDI and Agua Rural/Cuamba. Frequent staff meetings assure that both Agua Rural and MCDI are involved in project organization and decision making. Thus far the two major obstacles encountered by the project were the delay in getting the vehicles from customs and reluctance of some communities to provide in-kind contributions

The evaluators observed that there was need to better define the pre- and post-construction health education program to focus on the link between water, sanitation and diseases, to place more emphasis on a participatory training approach incorporating the results of the KAPB (Knowledge, Attitudes, Practices and Beliefs) study and better utilization of the health education materials available from PRONAR. The evaluators did note that the project had recently taken steps to improve the health education component through staffing changes that included the hiring of a Mozambican trainer as a counterpart to the new IEC supervisor. The evaluators also noted that several of the recommendations contained herein are already planned for implementation.

Recommendations

Of the recommendations listed in the evaluation the following are deemed the most important:

1. A local source of pump parts should be established in order that the villagers can purchase replacement pump parts after the project is complete. A store or shop needs to be found in Cuamba that will sell replacement pump parts. Among options to investigate could be a) sales by Agua Rural--at least at first, b) sales by an established shop keeper, c) sales by an area mechanic or garage.

2. The project conclusion date for field work should be extended in order to take advantage of optimal months for hand-dug well construction at the end of the dry season. The project construction phase should be extended from the existing plan of finishing in September 1995 to finishing in December 1995. The time between September and December represents the optimal time to construct hand-dug wells since the water table is at its annual low.

3. There needs to be greater communication between the Agua Rural technicians and the animadoras so that the animadoras will be able to better explain to the villagers the technical criteria for well construction.

4. The IEC component of the project has to date been focused on community participation and involvement in the self-help well construction program. The project

[1] editor's note: All pumps, except at Joao, were functioning at the time of this evaluation. The pump at Joao was repaired within two days by the Agua Rural technicians.

must now more clearly define its pre- and post-construction IEC activities to reinforce the connection between water, sanitation and disease using a participatory style of learning. Revising the project conclusion date will assure that communities surrounding the last wells constructed will receive adequate post-construction health education. Extending the education component beyond the end of the construction phase for three to six months will assure that communities surrounding the last wells constructed will receive post-construction health education.

5. An additional year of technical support should also be considered for Agua Rural/Cuamba to implement a village level operation and maintenance program and to reinforce the health messages that were imparted during the well and latrine construction project phase.[2]

6. The quality of the well masonry should be improved to enhance project sustainability. Additional training should be given to Agua Rural staff and the builders in the area of cement mixing and curing.

Lessons Learned

The project's self-help approach has been successful in involving the benefiting communities in the project. Evidence of the responsibility that many villages are taking for their wells is demonstrated by the locks that villagers are putting on well pumps to prevent misuse.

The project is teaching the villagers to repair their own wells since the Mozambican government does not always have the capacity to maintain village wells. In order for village level maintenance to be successful, a local supply of replacement pump parts must be available and technicians and animadoras must be assigned to support the villagers in maintaining wells after the well construction is complete. MCDI is interested in responding to this need by working with AR in developing a well maintenance and spare parts distribution program that can be replicated by PRONAR in other areas of the country.

The Mozambican staff in Cuamba is highly motivated and technically capable of implementing the community development and well construction. The primary responsibilities of the MCDI expatriates are to manage the overall project, handle finances, encourage quality work and report to donors. In time, these responsibilities will need to be handed over to the local staff.[3]

---

[2] editor's note: The additional year of support referred to is based on the assumption that MCDI would still be in the area (implementing other project(s)) and it's personnel could provide technical assistance to Agua Rural in programming activities, assistance in setting up goals for the maintenance program, and on-going managerial guidance and training.

[3] editor's note: The evaluator's remarks pertaining to the transfer of responsabilities of MCDI to be handed over to the local staff relate primarily to managerial functions; establishing goals for the maintenance and health program, preparation of work schedules, time and personnel management, etc. The evaluator's assumption that MCDI's role is to pass on financial management authority to Agua

I. INTRODUCTION

A. Background to Evaluation Assignment

The long-term purpose of the project is to enable target villages in the Cuamba District to recognize and resolve individual and community health problems related to the availability and use of drinking water and sanitation services. This purpose will be achieved through (1) community development and education programs, (2) the establishment of village water committees, and (3) hand-dug well and latrine construction.

The project schedule requires that two evaluations be performed during the course of the two-year project; an internal evaluation at the mid-point of the project and an external evaluation at the end of the project. The mid-point evaluation is to determine how closely the project goals are being met and to offer suggestions.

B. Members of Evaluation Team

The two-person evaluation team consisted of a team leader/water and sanitation engineer and an expert in community participation and education.

John Niewoehner served as the team leader/water and sanitation engineer for the evaluation. Mr. Niewoehner has a masters degree in environmental engineering and has extensive experience in water and waste water engineering in the U.S. and overseas. Mr. Niewoehner worked with Peace Corps as a volunteer and technical training coordinator in Nepal. He also worked one year with the American Refugee Committee in Malawi as the water and sanitation coordinator in two Mozambican refugee camps. Mr. Niewoehner is currently employed by the organization WATER For PEOPLE and coordinates water and sanitation projects in developing countries.

Julieta Felicidade Afonso served as the community participation and education expert for the training evaluation and education. Ms. Afonso was educated at the Mozambican Centro de Formaçao Profissional da Direcão Nacional das Aguas in the topics of civil construction and hydraulics. Ms. Afonso is currently serving as the Sector chief of the PRONAR Community Education and Participation Program. Ms. Afonso has received additional training in community and health education in Uganda, Swaziland, and Guinea-Bissau.

C. Scope of Work

The evaluation consisted of two parts: (1) a review of the project to date, its implementation actions and impact, and (2) recommendations to change the project design as necessary. The evaluation team reviewed the level, quality and timeliness of project inputs (staff,

commodities, technical assistance and training) and assessed the impact of the project in meeting the project's water and sanitation goals.

The evaluation has made several recommended changes to the project design that will promote the attainment of the project goals and assure project success.

D. Methodology

Between December 5th and 9th, 1994, the evaluators visited the MCDI field office in Cuamba and many of the villages that are benefiting from the project. During the one-week evaluation, the evaluators interviewed representatives of the MCDI field staff, Agua Rural staff and project beneficiaries.

E. Project Background

In Niassa Province less than five percent of the population has access to safe drinking water and less than 50 percent of the population uses latrines. In the rural areas there is little understanding of the benefits of safe water and sanitation and a corresponding low motivation of the local population to contribute to water projects. The long term provision of emergency aid to the local population has also increased people's reluctance to provide in-kind contributions to projects since they know that people have been paid to participate in past projects.

The MCDI/Agua Rural water and sanitation project attempts to increase project sustainability by promoting community ownership of the completed project. Initially, animadoras enter the community and provide health education and explain the aspects of the project. If the community decides to participate in the project, Agua Rural technicians will begin well construction. The village contribution to the project is to hand-dig the well and provide the sand, gravel and rocks for the masonry.

It is the responsibility of the animadoras to promote latrine construction in the villages that receive wells. For latrine construction, the project will provide the villagers with cement in order that they can construct a small concrete slab to serve as part of the latrine floor.

The overall objectives of the project are to construct 100 new or rehabilitated wells and increase latrine coverage to 75 percent in all project target communities.

II. PROJECT EFFICIENCY

A. Inputs

1. Personnel

MCDI:

* 1 chief of party (Peter Macy, expatriate)
* 1 IEC Specialist (post vacant at time of evaluation)
* 1 administrator and information and education coordinator (Edward Aldrich, expatriate)
* 1 supervisor of animadores
* 8 animadores (village outreach workers)
* 5 - 10 builders
* 1 secretary/cashier
* 1 logistician
* 1 secretary
* 1 stores clerk
* 2 drivers

AGUA RURAL:

* 1 head of district Agua Rural
* 2 technicians
* 2 animadores
* 1 tractor driver
* 1 stores clerk
* 1 guard

2. Commodities

MCDI:

* 2 pickup trucks
* construction materials

AGUA RURAL:[4]

* office in Cuamba
* storeroom
* tractor and trailer
* construction materials (motorized pumps, caisson mold, tripod, field tents, etc.)

---

[4] editor's note: The building was provided by Agua Rural and renovated by USAID grant and counterpart funds. Agua Rural Lichinga provided AR Cuamba with a new tractor.

3. Financial (expenditures as of November 1, 1994):

The evaluators obtained from MCDI in Cuamba a budget summary of project expenditures through the end of September 1994. In the first thirteen months of the project 49 percent of the budget had been expended. The percentage of the budget expended compares favorably to the fact that 54 percent of the two-year project duration had elapsed. Furthermore, major expenditures, such as vehicles, have already been made.

The table below compares budgeted amount to expended amount for individual budget items.

Budget Item	Total Project Budget	Expended to Date	Percent Expended
TOTAL DIRECT AND INDIRECT COSTS (excluding Subtotal C)	$1,213,122	$590,851	49
Subtotal A: Personnel Compensation	$270,903	$134,955	50
Subtotal B: Consultant Fees	$10,272	$10,272	100
Subtotal C: Local Currency Subgrant to Agua Rural (approved but not activated)	$15,500	$0	0
Subtotal D: Travel and Transportation	$126,302	$65,731	52
Subtotal E: Allowances (housing and per diem)	$166,561	$74,313	45
Subtotal F: Equipment	$316,789	$130,092	41
Subtotal G: Other Direct Costs (workers' compensation, medical, communications, etc.)	$56,536	$38,560	68
Subtotal H: Indirect Costs	$265,761	$136,929	51

B. Implementation Activities

The field phase of the project has identified the most needy locations through the rapid-needs assessment (RNA), placed animadoras in these villages to help prepare the villagers for the well and latrine construction, and constructed new wells or spring catchment tanks in 30 of the villages.

The Information, Education, and Communications (IEC) aspects of the project are being implemented by the ten project animadoras. At the beginning of the project the animadoras received training to perform responsibilities that include: (1) promoting community participation in the project, (2) educating the community in hygiene and health topics, (3) assisting with technical components of well installation and well construction, and (4) managing human, material and financial resources.

At the time of the evaluation, the rainy season had begun. The water table rises during the rainy season and delays the construction of new wells since it is difficult to know how deep to excavate new wells. Therefore, the project will use the rainy season (December 1994 to March 1995) to rehabilitate 34 existing wells. Rainy season can also be used to reinforce health messages and promote latrine construction in the villages that have already participated in the water project.

During the rainy season a second RNA will be conducted to identify the remaining villages that will receive new wells as part of the project. The community education and construction activities will be started in the last 33 villages after the RNA is complete. The field phase of the project is currently slated to end in August 1995. However, it would be ideal for the project to continue until the beginning of the next rainy season (December 1995). The end of the dry season is the optimal time to construct hand-dug wells since the water table has reached its lowest point of the year. In addition, the extra project time can be used to provide additional training to villagers in well repair, turn over the project materials to Agua Rural, and develop a local managed and marketed supply of well spare parts which the villages committees can purchase.

The status of implementation activities based on the project's detailed implementation schedule are as follows[5]:

	1. Planning and Start-up	timeframe/month	Status
a.	Official contracts/agreements with Agua Rural		Completed mo. 1
b.	Find housing*	1-2	Completed mo. 3
c.	Rehabilitate housing		Completed mo. 5
d.	Find office and guarantee*	1-2	Completed mo. 9
e.	Rehabilitate office		Ongoing
f.	Purchase vehicles		Completed mo. 1
g.	Get vehicles out of customs		Completed mo. 6
h.	Purchase supplies and equipment		Ongoing
i.	Prepare and conduct RNA*	2-3	Completed mo. 4
j.	Assess related training materials*	1-3	Completed mo. 4
k.	Prepare and conduct KAPB*	2-3	Completed mo. 5
l.	Preliminary selection of target villages*	3	Completed mo. 5
m.	Establish cost recovery system*	3	Ongoing
n.	Develop workplan	1, 12	

[5] editor's note: * items indicate the workplan activities and timeframe as indicated in the grant agreement. The list has been expanded by the field personnel to include additional detail. Field has been queried to verify completion dates.

	2. Implementation		
a.	Select animadoras and prepare for mobilization*	2-3	Completed mo. 3
b.	Agua Rural and animadora training for latrines*	15-18	Completed mo. 7
c.	Community mobilization*	5-20	Ongoing
d.	Training villagers on latrine construction*	18-23	Ongoing
e.	Evaluation of in-kind from villagers		Ongoing
f.	Final village selection		Ongoing
g.	Water quality lab set-up and training*	4-5	Completed mo. 6
h.	Water hydrology examination		Completed mo. 6
i.	Prepare diarrhea prevention training*	12-13	Ongoing
j.	Train Community in Diarrhea Prevention*	15-23	Ongoing
k.	Complete latrine construction		Not Completed
l.	Prepare/train on latrine use and maintenance*	18-20	Completed mo.
m.	Prepare water community training materials*	5-6	Completed mo. 14
n.	Train animadoras for community training*	7	Ongoing
o.	Train water committees*	7	Ongoing
p.	Animadora training for wells and pumps		Begun mo. 8
q.	Train villagers on wells and pumps		Ongoing
r.	Complete well/pump construction*	8-22	Not completed
s.	Prepare/implement final KAPB	22	Not completed
t.	Technical assistance to Agua Rural*	8-22	Ongoing
u.	Prepare/train water storage/transport*	10-11	
	3. Workshops and Evaluations		
a.	Prepare and conduct start-up workshop*	1	Completed mo. 3
b.	Prepare and conduct mid-term workshop*	12,23	Ongoing
c.	Complete mid-term internal evaluation*	13	Ongoing
d.	Complete final internal evaluation		Not Completed
e.	Complete final external evaluation*	24	Not Completed

C. Outputs

The following outputs for the project were established in the logical framework (see appendix) for the project. The outputs are divided into the categories of non-quantitative outputs and quantitative outputs.

1. Non Quantitative Outputs

The project objective of developing an accurate data base of the communities in the project area has been completed as part of the RNA and the Knowledge, Attitudes, Practices, and Beliefs (KAPB) studies.

An objective of the project is to establish a model for coordination between non-governmental organizations (MCDI) and governmental agencies. MCDI and Agua Rural are working closely in planning and implementing the project. MCDI supplements the capacity of Agua Rural by providing Agua Rural with personnel, construction materials and vehicles.

Another objective of the project is to produce a model for community participation in well and latrine projects. For well construction, the local people have contributed labor for digging the well and have transported sand and rock. For latrine construction, the local people must contribute all labor and materials except for three-quarters of a bucket (10 liter) of cement that is provided by the project for the construction of a small concrete slab.

2. Quantitative Outputs[6]

Output	Completed to Date	Project Goal	Percent Complete
New Wells and Spring Catchments	30	65	49
Rehabilitated Wells	1	35	3
Latrine Coverage	35% (avg.)	75%	50
Village Water Committees	33	100	33
Beneficiaries	16,500	50,000	33

[6] 1.Original estimate of the number of new wells and rehabilitated wells to be constructed was 60 wells and 40 wells, respectively. The output goal was modified based on field findings.
2.Existing percentage of homes with latrines in the project area ranges from 10 to 100 percent with an average latrine use of approximately 35 percent. The project will attempt to raise the level of coverage to greater than 75 percent in all target villages. Although, the latrine construction phase has not officially started, in 10 villages several concrete latrine slabs were constructed.

III. PROJECT EFFECTIVENESS

A. Effective Use

Traditional water sources for the project villages are distant and susceptible to contamination. So far, the project has provided services to more than 15,000 people with the 30 wells and catchment systems. Based on the cost for the entire project and the projected number of beneficiaries, the average cost to assist each of the 100 project villagers will be approximately $12,000 or $24 per beneficiary.

B. User Behavior Change

As a result of having a new, close water source, it would be expected that people will begin to use more water. However, with the completion of the wells, an increase in water consumption has not been observed. Families are still collecting two buckets of water per day (40 - 50 liters) for five to eight family members. The water carried to the house is mostly used for cooking and drinking with very little available for personal hygiene. In the villages visited, it was observed that water is carried from the well in a bucket with a gourd inside to prevent excessive water loss during transport. Water for drinking purposes is stored in pitchers and in general are covered. Hygiene in the area surounding the water storage needs improvement.[7]

It is anticipated that the recommendations made by the evaluators during the mid term evaluation and summarized in the executive summary of this report will be acted upon by the project IEC personnel and quickly integrated into the current work plan.

C. Sustainability

Community involvement in well construction forms the basis for the community to accept responsibility for maintenance of the completed well. In order for the project to be sustainable, the villagers must be capable and willing to collect money to purchase spare parts and must have the technical capabilities to perform repairs.

1. Availability of Spare Parts

The spare pump parts needed by local people to maintain their well pumps are currently not sold locally. Therefore, the current project needs to develop a method by which well parts can be sold in Cuamba either by Agua Rural or a local shop owner. Unfortunately, supplying

[7] editor's note: The evaluator's report unfortunately makes no mention either if the buckets and gourd are washed and cleaned prior to filling at the well or if and how often the water storage jars are cleaned.

pump parts through a local shop owner may not be feasible since shop owners will probably not want to invest capital into well parts for which demand and turnover are low. Therefore, initially Agua Rural must accept the responsibility of selling replacement well parts. If Agua Rural in Cuamba is given the responsibility to sell spare parts, the ongoing MCDI well and sanitation program should help Agua Rural in Cuamba develop, facilitate and monitor a spare parts sales/marketing program to be implemented, monitored and adjusted by June 1995, or six months before the project completion date.

2. Village Spare Parts Fund

The spare parts distribution program is dependent on the ability of the local communities with pumps to collect money from the well users to buy parts. Each village water committee should be provided with a price list for pump parts. Then, assuming the villagers properly diagnose the problem with the pump, the committee will divide the cost of the new pump part among the village members. Possible problems with this approach are that villagers may not trust the committee to use the money correctly and that villagers who live further away from the well may prefer using traditional water sources instead of contributing to purchasing the spare part. These issues demonstrate the need for a continuing dialogue between the water committees and Agua Rural.

3. Continuing Agua Rural Technical Support

Agua Rural must be prepared to provide the water committee with technical support for pump repair if necessary, and insist on the implementation and operation of a user-fee system to collect funds to purchase requisite spare parts. Agua Rural animadoras should meet monthly with water committees at pre-arranged times to find out any problems that the water committees are having. At least annually the Agua Rural technicians should provide refresher training to the water committees in pump operation, maintenance and repair.

D. Institutional Viability

1. Village Water Committees

It is too early to determine the viability of the village water committees. Realistically, some water committees will fail and others will survive. One of the ways to increase the number of viable committees is for Agua Rural technicians and animadoras to provide minimal but appropriate guidance on a regular basis.

2. Agua Rural

The project has provided the staff of Agua Rural with technical and managerial training, equipment and direction. Agua Rural in Cuamba will require continued funding resources

from the Mozambican government or outside sources since the villagers that benefit from Agua Rural's efforts do not now have adequate financial resources to pay for the service offered by Agua Rural in Cuamba.

The installation of 100 wells around Cuamba does not satisfy the need for drinking water in the Cuamba area. Additional wells are needed. After MCDI leaves Cuamba, there will be a leadership vacuum in the Agua Rural/Cuamba office. As resources will surely remain scarce for the continuation of well development in the area, efforts should be made at interesting local associations or a local NGO to help fill the vacuum.

IV. PROJECT IMPACT

A. Data Base

Completed			Remaining
Wells Constructed	**Spring Catchments Constructed**	**Villages with Demonstration Latrines**	**Wells and Latrines to be Constructed**
Nampacala Maniua Maniua 2 Mepica Titemane Titemane 2 Joao Silva Rimbane Matia Njacto Silva 2 Chilico Chilico 2 Manganga Manganga 2 Manganga 3 Matuane Matuane 2 Changameir Mipusta Chipone Cruzamiento Media Tobola Matia 2 Mujaua Matia/AC 2 Nahache 2 Nahache Maniua(Rehab)	Morera Matia/AC	Nampacala 3 Maniua 3 Mepica 5 Titemane 7 Joao 4 Silva 1 Matia 2 Chiponde 1 Cruzamento 1 Tetereane 1	Additional 33 new wells to be determine by second RNA **Rehabilitation:** Maganga 9 Maganga 2 Quitana Quitana 2 Njacto Tetereane Tetereane 2 Cruzamento Matuane Mepica Mepica 2 Silva Nacaca Tobola Mujaua Mujaua 2 Mujaua 3 Mujaua 4 Adine Adine D Adine 2 Adine C Adine 3 Adine 4 Adine 5 Rimbane Rimbane 2 Joao Minas Minas H Matia Mutxora unknown (TBD)

B. Health and Health Education

Prior to and during the construction of wells and latrines, the 10 animadoras spent time in the project villages providing health education and preparing their communities for well and latrine construction. In 1994, each individual animadora was responsible for providing health education in three villages. The health education topics covered with the villagers included diarrhea prevention, water use, personal hygiene and prevention of water contamination.

During the evaluation villagers were asked questions to determine their health awareness. Everyone asked said that the cause of diarrhea was drinking dirty water. However, they did not relate washing hands with diarrhea or the incidence of other diseases with drinking dirty water. The villagers said that their biggest health problems were diarrhea, scabies, conjunctivitis and malaria.

During the one or two months that an animadora focuses on a single village, their activities include familiarizing themselves with the village leadership structure, helping form the water committee, and participating in well planning and construction. Concurrently with the aforementioned activities the animadoras are responsible for providing health education to the 500 beneficiaries of the well project. The KAPB study illustrated that people do not necessarily connect the consumption of dirty water with diseases. It is unlikely that the one or two months spent by the animadoras in each village prior to well construction is adequate to alter people's existing beliefs pertaining to the cause and prevention of waterborne diseases.

The evaluators observed that there was need for the project to define the pre- and post-construction education program activities. The pre-construction activities should be well defined and realistic in their objectives due to time limitations and the existing health beliefs of the population. The pre-construction health education should focus on convincing people of the link between bad water and poor sanitation and diseases. The pre-construction health education should also include a more participatory approach using teaching methods discussed in the KAPB study (i.e. the formation of drama groups, songs, and games). In addition, the program should more fully utilize the health education materials like posters that are available from PRONAR.

Post-construction health education should continue to reinforce the initial health education messages. With the completion of well construction people should have access to more water and will be able to practice improved hygienic practices that include hand washing after defecation. For the wells that have already been constructed, post-construction health education is scheduled to take place during the rainy season (December to March). Similar to pre-construction health education, the post-construction health education should have realistic, well-defined activities and use a participatory approach. For wells that will constructed after the 1995 rainy season and finished just prior to the end of the project contract period, it is unclear when post-construction health education will occur.

Clearly, the current education needs of the project beneficiaries can not fully be met under the current scope of the project. Although pertinent health messages are being imparted over the course of the program, the effectiveness of these health messages is dependent on these health messages being reinforced over a longer time period than is available in the project.

At the time of the evaluation, the IEC specialist had already departed. The health education workplan and the materials developed by the IEC specialist were reviewed. The education program taught in the villages is directed at exposing the dangers of consumming contaminated water and the necessity of maintenance of the well. Other education modules taught are on diarrhea, scabies and water contamination. Several posters, brochures and other education materials have been developed locally but need further improvement. Results of the KAPB studies were not being used to direct and orient the community interventions. Improvement in the health education lessons, extension methodology and in coordination of the technical and community extension/education activites is needed.[8]

C. Water Resources and Systems

The objective of the project is to construct 65 new hand-dug wells, rehabilitate 35 existing wells, promote latrine construction, and educate project beneficiaries in diarrhea prevention and well maintenance. Of the wells constructed, the depth to water table ranges from 2 meters to 12 meters below the ground surface. The construction of most wells required some digging through rock. Wells were dug to a depth of two meters below water table. The 2-meter depth below water table will allow water to be obtained if the water table drops during

---

[8] Editor's note: Home office discussions with the project team indicated that they were already aware of many of the observations noted by the evaluators. The project director informed the evaluation team that after lengthy discussion with Agua Rural and MCDI on the subject of the health education component, the project recently initiated staffing changes for the IEC activities and a new position had been created for a Mozambican trainer to serve as a counterpart to the new IEC coordinator. The chief of party of the project and the Agua Rural personnel indicated that they felt that the recent changes seemed to be a positive move. The evaluator felt that it was too early to evaluate the progress of the new individuals leading the IEC program as they were new in Cuamba and still in their integration phase.

The evaluator's reviewed Anne Marie Jurg's report in which many of the deficiencies of the education program were pointed out; ie. lack of well defined workplan, problems in coordination between well construction and education/animation activities, poorly exploited study results, etc.

The newly arrived IEC team conveyed to the evaluator's that certain corrective measures to reinforce the education component were already underway. Project personnel were also very receptive to the observations, suggestions and recommendations. They plan to immediately integrate the recommendations into their current work plans. They were particularly cognizant of the need to make better utilization of the findings of the KAPB studies in the development of the health education and village organization activities.

a drought year. There was resistance by the villagers to dig deeper once ground water had been reached. In traditional open wells, villagers dig only to the water table. Villagers said that they feared that the walls of the well would collapse when digging below the water table. A hand-operated bladder pump was used to remove water during construction.

Below the water table, wells were lined using pre-formed caissons that were constructed on-site by Agua Rural. The sand and gravel for the concrete were provided by the villagers. Above the caissons the wells were lined with stone masonry. The stone masonry continued to a height of approximately 50 centimeters above the ground. The wells are fitted with an Afridev pump which is the standard pump throughout Mozambique.

A cement floor surrounds the well and a masonry drainage channel directs water away from the well. According to accepted Agua Rural practices, the floor slab surrounding the well is constructed by placing cement plaster over a base of crushed stone. In Cuamba well projects, as elsewhere, this construction technique leads to premature cracking of the floor slab. Floor slabs in the older wells in the area that were constructed during the late 1980s also have deteriorating floor slabs. This evaluation recommends that the floor slab be concrete with a thickness of 6 to 8 centimeters. During the evaluation there was also a demonstrated lack of awareness by masons of proper methods for curing of cement and concrete. Hot, dry weather is especially harmful to the curing of masonry.

Drainage exist to channel the excess water away from the well. Agua Rural standards require a 5-meter long masonry drainage channel that empties into a "soakaway" or to a natural drainage course. A soakaway is a small pit that is supposed to allow the excess water to infiltrate into the ground. In the Cuamba project area, the soil contains a lot of rock and clay. Therefore, the soakaways are only marginally effective in absorbing the water that comes through the drainage. Many of the newly-constructed soakaways were also filling up with dirt which further limits their effectiveness. A recommended improvement for the wells is to eliminate the soakaways and to have the villagers channel the water to a natural drainage channel or garden.

Besides the wells constructed by the project, two spring catchments tanks were also constructed. Both of these tanks capture springs located on the hillside outside of villages. Currently, piping has not been attached to either spring catchment tank in order to pipe water to the villages.

D. Sanitation

The sanitation aspect of the project is to promote latrine construction in the villages that receive wells. The success of the latrine construction component of the project is dependent on the ability of the animadoras to impart health education messages that motivate the local people to construct latrines. Under the project the only construction materials provided to the

villagers for latrine construction are three quarters of a pail of cement and the loan of picks and shovels.

The villagers are instructed to construct the latrine according to national standards. This consists of digging a pit 1.5 meters long, 0.8 cm wide, and 2 meters deep. Logs are placed across the pit, leaving a small hole. The logs are covered with dirt to make the floor. The villagers are assisted in constructing a 60 cm by 60 cm concrete slab with a hole in it. This slab is placed on top of the latrine's earthen floor. As was discussed in the KAPB study, people reportedly urinate in the bathing room instead of in the latrine. The concrete slab allows people to urinate in the latrine without damaging the earth floor. The concrete slab also increases the cleanliness of the latrine. The latrine buildings observed during the evaluation were either mud brick or stucco with thatched roofs.

One possible improvement to the latrine construction program is to provide the villagers with cement in order for them to make a small slab that will cover the hole in the latrine's concrete slab.[9] This will prevent flies from entering the pit and will reduce odors emanating from the latrine. The project is currently requesting that the villagers construct this cover out of fired clay. However, the fired clay cover will likely not last very long.

At the time of the evaluation, the project had not officially begun its promotion of latrine construction program. However, ten latrines had been constructed as demonstrations. The demonstration and education activities were used to show villagers how to build latrines on their own.

E. Community Development/Organization

Water committees have been formed in all of the villages in which wells were constructed. Through the water committee, the villagers are involved in the placement and construction of the well.

In most of the project villages there are four people who make up the water committee, who are selected at large from the village by consensus. At least two member must be female and most committees are made up of two women and two men. In order to select the water committee members, the animadoras explain to the villagers the role and responsibilities of the water committee and the recommended size and makeup of the committee. Then, the water committee candidates are nominated by villagers. Through general consensus the potential committee members are rejected or accepted by the population.

---

[9] editor's note: The project is also experimenting in constructng covers out of wood and baked clay.

Committee members are trained in a broad number of topics which include health education (prevention of diarrhea, hygiene, etc.), latrine construction, and well usage and maintenance. In the second year of the project this training will be refined to develop specific responsibilities for the water committee members and specific training for the treasurer, secretary and maintenance person.[10]

During the well construction phase, the committee members work with the animadoras to organize community meetings pertaining to well and latrine construction and health education. The water committee members also work to mobilize the community and encourage all members of the community to contribute to the project. The water committee members are trained by the project to fulfill the following roles and responsibilities after the well construction is complete:

- mobilize the community for maintaining the well area.
- provide health education to the community focusing on the causes of waterborne diseases, hygiene, the use of latrines, and the correct storage and transport of water.
- train the community in pump care and usage.
- collect and keep track of money used for the repair and maintenance of the well.
- hold meetings with the villager to discuss repairs and finances pertaining to the well.
- maintain contact between the community and Agua Rural.

Although approximately 100 families benefit from the installation of the well, but generally only about one-fifth of these families participated in the construction of the well. Those that participate most actively in the construction are primarily those that lived closest to the well. It would appear that villager participation in well construction can be correlated to the distance they must travel to obtain water. This behaivor may later result in those further from the water source to feel less responsibility for well maintenance and may resist contributing time and money for well upkeep.

F. Social

No social impacts were observed as part of the evaluation.

G. Economics

No economic impacts were observed as part of the evaluation.

---

[10] editor's note: Training up to this point has been very general. Specific training activities for committee members roles is under development to include specific training for each members function; treasurer, secretary, pump maintenance, etc.

H. Women

The KAPB and RNA studies demonstrated that women in the project area may walk over ten kilometers to fetch water. The construction of a well in the village has decreased the time spent by women fetching water. The time that used to be spend in the transportation of water may now be used in more productive activities such as agriculture or more time for women to rest.

Of the four members of the water committees, two are generally women. The importance of having women on the water committee is that women are traditionally responsible for the collection and use of most of the water used by the community. If the well is not operating it is the women who must return to walking long distance to collect water. In addition, health messages presented by the women committee members may be better received by other women of the community. MCDI's IEC coordinator has stated that the health program for the next year will more specifically target women.

For the most part, men collected rocks for the well and entered the well hole during excavation. During the well construction, women carried sand and helped pull buckets of excavated dirt form the well hole.

Half the animadoras working on the project are women. These animadoras may demonstrate to villagers the potential of women to do more than traditional household chores.

I. Institution Building

Institution building that results from the project is discussed in Section III--Project Effectiveness; Institutional Viability.

J. Environment

The well and latrine construction project being undertaken by MCDI/Agua Rural has no discernible negative effect on the local environment. The excess water being discharged at the well drainage is minimal, and drains into 5 meter long drainage channel with a soakaway pit at the end and does not cause erosion. To minimize collection of stagnant water that could create sites for mosquitoes to breed, it would be preferable to channel the water to garden. The construction of wells does not require the destruction of vegetation or the felling of trees.

The program to motivate latrine construction does contribute to deforestation as wood is used for the latrine floors and structures. However, the wood for latrine construction is nominal as compared to the amount of wood used for home construction and firewood. All of the

constructed latrines that were observed as part of the study used mud bricks and stucco and therefore minimized the use of scarce wood.

In the project area, forests are almost nonexistent. Recharge of the ground water may be adversely affected by deforestation as runoff increases due to the lack of vegetation. The concept of self-help that has been introduced to the villages by the project can be used as a basis for future reforestation programs.

V. LESSONS LEARNED

A. Relevance of Project Concept

The project concept can be defined as improving local people's health through the introduction of safe, sustainable drinking water supplies and sanitation. Sustainability of the local project is dependent on local people contributing to the project and feeling ownership of the project. A primary obstacle to eventual sustainability of project achievements was that the local people were not required to contribute to prior projects that were considered emergency relief.

The RNA demonstrated that both safe drinking water supplies and sanitation are sorely lacking in the project area. The project assumes that the national government cannot maintain the large number of village wells or provide household latrines. This concept is sound considering the lack of financial resources of the Mozambican government. Similarly, the project recognizes that the local people must learn from the start that the success of the well project and future maintenance is their own responsibility.

The original project proposal indicated that water quality testing and the establishment of a water quality testing laboratory would accompany the well construction program. The water quality testing performed on the traditional water sources demonstrated that all of these sources were polluted. The introduction of sealed wells with hand pumps has resulted in an improved of the quality of water used by the project beneficiaries. Initial testing of the well water has indicated that no contamination of the groundwater is occurring. Instead of a regular water testing, the wells will be disinfected with chlorine each time the well is opened for repair.

B. Sustainability

The well program performed around Cuamba in the late 1980s resulted in the construction of 35 wells with miscellaneous handpumps. These wells were constructed without involving the local community. The local community did not maintain these wells and 30 of them are no longer useable.

Much more important than the number of wells that are constructed by this project is whether or not the wells will be maintained by the villagers. In the second year of the project, emphasis should be placed on not only constructing the remaining wells and the rehabilitation of unused/under used wells, but also in developing a long-term program which will ensure the supply of replacement well parts to the villagers. A new/renewed campaign of village awareness should be directed at insuring that the villagers undertake the initiative in maintaining the well and taking care to repair the pump as necessary with purchased parts.

The project appears to be successful in placing ownership and responsibility for the wells in the hands of the villagers. The water committees formed are to monitor pump use, although they are limiting access to water by placing locks on the pumps in order to ensure that the wells will be used only during designated times of the day. Although locking the pumps detrimentally hinders people's access to water in the short-term, it does demonstrate that people are taking responsibility for caring for their wells over time.

C. Replicability

At the beginning of the project, there was much skepticism about whether a self-help well construction program would work in Cuamba due to a local long term reliance on emergency aid projects. The project demonstrated that local people will voluntarily contribute their labor to a project that benefits the community. The construction of hand-dug wells instead of drilled wells requires a commitment from the community that will enhance the likelihood that the community will maintain the wells.

The project has provided a successful example of how an nongovernment organization (NGO) and Agua Rural can work together. Other NGOs that are starting well projects could learn from this example. The final obstacle that the project will have to overcome is training the Agua Rural staff in the activities of maintaining the office and sustaining a cost-effective program of well construction and pump maintenance.

MCDI is interested in working together with PRONAR to develop a "Maintenance and Spare Well Parts Distribution Program" that can be tested in Cuamba. This model program can be refined and replicated in other areas of the country in the future.

VI. SUMMARY/CONCLUSIONS

A. Conclusions of Project Design

The project design is to construct communal hand-dug wells and family latrines by motivating the villagers to help themselves. An important component of the project is the work performed by the project animadoras in motivating and educating the local people to participate in the project. The hand-dug wells being installed by the project have the advantage over drilled wells in that they require community participation and thus promote local ownership of the project. Ownership of the project has been demonstrated as villagers lock the pump when it is not being used to prevent misuse. Besides promoting community participation, hand-dug wells have the advantage over drilled wells in that the villagers can deepen the well if the water table drops during a drought. One of the obstacles during the construction of the wells was in convincing people to continue digging after the water table was reached. Animadoras should inform the villagers early on of the importance of digging two meters below the water table.

The project criteria is for each well to serve 500 people. This is the maximum number of people that should be served by a well. Although the well will produce sufficient water to provide over 40 liters per person per day, the feeling of ownership of the well is diluted as the number of beneficiaries increases. Water consumption per person also decreases as women have to wait a long time in line for water.

The local people are receptive to having latrines as is demonstrated by the number of people who already have latrines. Thus, it is expected that when education is provided by the animadoras in latrine construction and cement is provided for a small latrine slab, an increase in latrine coverage will result.

Health education is a very important aspect of the project in that it helps alter unhealthy practices and results in the benefitting community appreciating their new wells and latrines. Without the community appreciating the health importance of their well and latrines, the project would have little chance of sustainable success.

B. Conclusions of Project Implementation

Actual well construction project was not started on schedule due to the delay in having the vehicles released by customs. However, well construction could not have begun earlier than May since the water table was still high from the 1993-1994 rainy season. Two wells that were constructed by the project early in the 1994 dry season became nearly dry as the water table dropped. Ideally, the scheduling of a two-year well project should allow for two well construction periods that span May through November. The remainder of the year should be used for intensive village education and communication activities, training of animadoras, water technicians and builders, the latrine program and planning activities related to well construction.

According to the current project schedule, the project's field activities will end in September 1995. Unfortunately, this schedule will result in the project losing the best two months for hand-dug well construction (October and November). In addition, the schedule does not allow the opportunity for an additional refresher maintenance training of the villagers who have received wells. However, this training could be accomplished by Agua Rural after the project is complete.

Extending the duration of the project is also advisable in order to perform adequate post-construction health education that will reinforce earlier health messages and encourage improved hygienic uses of water that are possible with the new, closer source of water. As indicated by the KAPB study, poor health and hygiene practices are deeply imbedded in the culture and a follow up program with health education is necessary to improve local knowledge and practices pertaining to hygiene and the source of disease.

C. Recommendations

1. With regard to long-term maintenance of the wells by the villagers the following activities should be undertaken:

   a. A store or shop needs to be found in Cuamba that will sell replacement pump parts. Among options to investigate could be a) sales by Agua Rural--at least at first, b) sales by an established shop keeper, c) sales by an area mechanic or garage.

   b. At the end of the project a refresher training should be given to village water committees in repair of pumps. Villagers should be given an indicative price list of replacement parts and be reminded that the responsibility for keeping pumps repaired and operating rests with them.

   c. An indicative plan should be developed by which Agua Rural will provide assistance to the village water committees during the project and after MCDI's departure.

2. Well construction techniques should be modified in the following areas:

   a. Reinforced concrete should be used instead of cement for the floor that surrounds the wells. Thickness of the concrete should be six to eight centimeters.

   b. Agua Rural staff and builders should be instructed in proper techniques for mixing and curing cement work. Keeping the concrete wet and cool for one week after construction results in more durable masonry.

3. Continue to investigate the possibility of constructing spring-fed gravity water systems for villages that are close to escarpments.

4. The idea of establishing a long-term water quality testing program should be abandoned. Water quality testing consumes scarce staff time and financial resources and has few benefits.

5. The project construction phase should be extended from the existing plan of finishing in September 1995 to finishing in December 1995. The time between September and December represents the optimal time to construct hand-dug wells since the water table is at its annual low. The project/grant completion date could be extended an additional three months (till March 31, 1996) to allow for follow-up to health education, to monitor village water committee maintenance and repair capacity, and to track the operation of the pump part supply and sales scheme. The continued project support of MCDI will be helpful to Agua Rural in 1996 as it establishes a cost-effective village level operation and maintenance program.

6. There needs to be greater communication between the Agua Rural technicians and the animadoras so that the animadoras will be able to better explain to the villagers the technical criteria for well construction.

7. The IEC component of the project has to date been focused on community participation and involvement in the self-help well construction program. The project must now more clearly define its pre- and post-construction IEC activities to reinforce the connection between water, sanitation and disease using a participatory style of learning. Revising the project conclusion date will assure that communities surrounding the last wells constructed will receive adequate post-construction health education.

VII. ANNEXES

PROJECT EVALUATION SUMMARY SHEET

Project Name and Number:
Niassa Province Rural Water and Sanitation Project; Project No. 6560-0217

Date of Authorization:	September 3, 1993
PACD:	October 31, 1995
Date of Report:	December 26, 1994 (DRAFT)
Obligation Amount and Number:	$1,213,123
Amount of Funding Expended:	$590,851 (to end of September 1994)
Amount of Funding Outstanding:	$622,271
Total Funds Available:	$622,271

Project Achievements: Training of Agua Rural technicians and animadoras, establishment of new Agua Rural office, implementation of self-help approach to village well construction, construction of 31 new water sources.

Noteworthy Problems:(1) Project was without vehicles for six months due to problems with Mozambican customs; (2) villagers were not accustomed to having to contribute to a project; and (3) Agua Rural staff in Cuamba has not fully compensated its staff for work performed.

Major Outputs:

A. Training:
Ten animadoras were trained in the areas of motivating the villagers and promoting health education. The project goal was to train six to eight animadoras.

Animadoras performed training in 33 villages on the topics of community participation and health education in preparation for well and latrine construction. The project goal is to complete 100 training.

B. Technical Assistance Provided: Between April 1994 and December 1994, 30 new hand-dug wells with Afridev handpumps were installed. One old well was rehabilitated and two spring catchments were constructed. In ten villages, villages were fitted with demonstration concrete slabs.

C. Commodities Provided:
2 pickup trucks
Miscellaneous construction materials
286 IBM computer/dot matrix printer

D. Other: None

IEC evaluation report
Julieta Felicidade Afonso

Translation of IEC evaluator's report from Portuguese

MIDTERM EVALUATION OF THE MCDI - CUAMBA NIASSA PROVINCE RURAL WATER AND SANITATION PROJECT

INTRODUCTION

Based on agreements signed between the Ministry of Cooperation and MCDI with the knowledge of PRONAR, a project is being implemented in Niassa, titled Rural Water and Sanitation Project.

The purpose of MCDI is to give technical assistance in the water supply area to the local population in rural areas in collaboration with the rural water sector in Niassa Province with activities in Cuamba District.

SPECIFIC OBJECTIVES OF THE PROJECT

Reduction of the current incidence of diseases related to the consumption of contaminated water through education of the beneficiaries to the existence knowledge of the problem and its solution.

The project was planned to accomplish the following activities:

- Assess of the water supply situation in the project area.
- The construction of 100 wells equipped with the manual pump (AFRIDEV) in the District of Cuamba
- Hold three workshops for coordination and planning.
- Reinforce the capacity of Agua Rural in Cuamba with the objective to ensure the continuation of activities after the project has ended.

OBJECTIVE OF THE MIDTERM EVALUATION

The mid-term evaluation of the Niassa province water and sanitation project prescribes a detailed analysis of the accomplished activities, the progress towards meeting project objectives as well as to describe problems and propose improvements.

The evaluation is divided into two parts:

1 - Evaluation of project implementation and its technical aspects.
2 - Evaluation of the attitude and perception of the community with respect to water and sanitation.

The present document covers the second part of the evaluation or rather the component of community participation. The evaluation was taken after elections and the electoral

campaigns greatly contributed to the attitude of the local population in relation to the government and the donors.

APPLIED METHOD

The evaluation took place from the fifth to the eighth of December, 1994. The field visits were preformed over three days. A detailed program Is presented in the annex

The traditional method was applied for the evaluation: attitude, study of the documents, interviews with all involved in the community work, interviews with villagers; individuals in the field as well as groups working In the field and our own observations on the ground.

COMMUNITY EDUCATION COMPONENT

The of community education component is composed of 11 people out of which 10 are community development\education workers ("animadores"). It is important to note they also count on support from an element that works simultaneously for the administrative sector and PEC. Presently the head of this component, Mr. Alberto, is supervised by Mr. Ed Alddch. The leaders of the component have recently arrived and are still in their integration phase.

The community education component objective is to encourage the local population to participate in the construction of their wells. Local population participation is required on the selection of the construction site , excavation of the well and the final details (construction of the apron and putting the cap on the well with the assistance from the masons. In addition to that the local population must gather rocks and transport sand and supply the animadora and the mason who does the cement work and completes the well.

The animadora remains in the village until the well is completed. During this period the animadora discusses sanitation with the local population. The MCDI project functions by a method called self-help and development.

ACTIVITIES FOR COMMUNITY INVOLVEMENT.

A general survey is conducted of the needs through the RNA survey (Rapid Needs Assessment). In principle the results of the survey should guide the activities of the project.

Parallel to this survey, KAPB study (knowledge, attitudes practices and beliefs) is conducted. The RNA and KAPB are done in the villages by animadores. Although these activities were done there is no relationship between the obtained results and the activity that is being done in the area of the survey. At the moment a single form has been prepared that embodies both the KAPB and RNA surveys.

EDUCATION FOR HEALTH

Sanitary education programs are taught in the villages in order to educate the local population of the dangers that happen in consuming contaminated water and the maintenance of the well.

The modules taught in sessions of Sanitary Education are:

- Diarrhea, scabies and contamination of wells.

Posters, brochures and other materials have been prepared locally for the programs. However these materials need to be developed.

COMMUNITY PARTICIPATION

In most cases an animadora is capable of mobilizing part of the local population (20 to 40 people per village) for excavation of the well. However, during the visits in the village they all shared the complaint of weak participation from the rest of the community members. It was also possible to observe that a major part of the participants were those who live near the well, usually no more than 15 minutes away. This behavior relates to the willingness of the villages to participate in relation to the distance they have to walk.

The division of tasks between men and women is as follows:

- Men excavate the well, they haul the buckets of earth and collect rocks for the apron.
- Women carry sand and haul the buckets of earth during the excavation.

A well takes an average of 45 days to be constructed. In some cases the local population shows a lack of desire to deepen the well more than 2 meters below the static water level. Some of the reasons the villagers give are;

- We are afraid to dig in the water
- We are tired
- It is not our work

The result is that some of the constructed wells do not supply water during the whole year. As the water table drops until the end of the dry season.

RELATIONSHIP BETWEEN TECHNICAL AND COMMUNITY WORK

A lack of participation in some villages occasionally compromises activities designed for other areas villages. This has resulted in termination of the work in villages with low participation who can't seem to reach the aquifer depth yield specifications of the Agua Rural technical criteria.

Some villagers are willing to admit that they are to blame for not having dug to a sufficient level but the large majority feel only the Agua Rural technicians are trained for the work and are the ones who should have continued to the proper level. They also feel it is the duty of the government to supply drinkable water to the rural populations.

When well construction is terminated in a non-cooperating village, this causes the villagers to continue the use of their traditional wells.

In almost all of the villages we visited we found the villagers going to the traditional wells, leaving the ones they constructed under utilized.

BASIC STRUCTURES IN THE COMMUNITY

Water committees and maintenance groups are formed in almost all the villages which have the responsibility to ensure proper use of the well so that its potential may be maximized.

The groups are made up of men and women who presented themselves as the more dynamic during the construction. Inauguration of the maintenance groups is done in a public meeting to certify that people accept the elements of the group. This is a positive aspect to be pointed out in that the elaboration of local guidance that translate into the profile of the basic community.

MAINTENANCE OF THE WELLS

All the wells that were visited were equipped with AFRIDEV hand pumps. However, a major part of the wells have maintenance groups only to keep watch over the cleaning of the well. The pumps are installed by technicians. Sometimes they are accompanied by animadores who at that time talk about the necessity of buying spare parts in the future.

There is still not a finalized plan for pump maintenance at village level in accordance to the maintenance requirements of the installed pump.

AFRIDEV is not a VLOM pump and it is important that the local people be organized early on for routine maintenance and repair in case of breakdowns and above all give the local population responsibility to purchase spare parts.

SANITATION

People carry an average of 2 (two) buckets of water per day in a family of 5 to 8 people. During the visits it was clearly noted In the homes that water is mostly used for cooking food and drinking, leaving very little for personal hygiene (washing hands, bathing, etc.).

Sanitation activities within the MCDI project are synthesized in advising people to construct latrines with local materials and their correct use. Village dwellers with exception of displaced people have latrines. Normally they have a bathroom near the latrine that makes it possible to wash hands after using the latrine. In many families this practice is not observed due to lack of water.

Generally the houses are swept and they have a small wooden shelf where they put their plates after washing them.

TRANSPORTATION AND WATER STORAGE

People carry water in normal buckets with a gourd inside as to not lose water. Drinking water is stored in pitchers and the rest remains in the bucket and is used by getting it directly from the bucket. Generally the pitchers that contain water are found covered, depending on the individuals economic status, but hygiene in the adjoining area is still needed.

RELATIONSHIP BETWEEN WATER AND HEALTH

A large number of people who were contacted reported problems of health in the community. This is a prioritized list of the complained health problems:

- Diarrhea
- Scabies
- Conjunctivitis
- Malaria

They were all unanimous about the causes of diarrhea in saying that it is the water that they drink. They did not relate washing hands with diarrhea. They did not relate other diseases with water.

SOCIAL ECONOMIC IMPACT

In areas where the wells have been constructed with the aid of the project, all wells are functioning. This translates into time that used to be wasted in the transportation of water to more productive activities such as agriculture or even just letting the women rest. Generally people are very happy with the new wells.

As the wells were recently constructed it is too early to evaluate the improvements on the lives of the people. Their behavior in relation to consumption of water has not changed, this

is to say that people use the same quantity of water they consumed before the construction of a new well even considering the reduced distance for transportation of water.

IMPORTANT FINDINGS

Preliminary information

- people who are leading the IEC program are still new in Cuamba and are still in their integration phase.
- The community education component works with the local population with the aim to improve their level of health, and construct and maintain the well.
- All well excavation is done with the assistance of animadores.
- Technicians supervise the construction of the well. However it is the technicians responsibility to conduct surveys, give orders of where to install caissons and install pumps.
- People are taught sanitary education lessons in order to help them for the construction of a well.
- Materials are prepared locally and drawings are ample.
- Animadores take an average of 45 days on the construction of a well.
- Topics dealt with in sanitary education are: Diarrhea, Malaria and care of the well.

At present the idea of well maintenance is not fully understood by the population.

OBSERVATIONS

1- Animadores from town as well as those recruited in the villages preform acceptable work. In fact there are advantages to each type of animadora.

Animadores recruited in rural environments are less literate but can much more easily identify with the community. Animadores from the city with better academic training are capable of understanding more easily the objectives of the program, preparing materials for teaching and using new methodologies.

2- The method used (self-help) shows that an interested community can to a great degree participate in the construction of a well, from the transportation of materials, excavation of the well itself and maintaining it. For this type of work it is necessary to identify the people who are interested.

3- It is still too early to think of expanding the methodology of work in use in this project. Evaluating the methodology should go on while listening to opinions of all those interviewed (from the government to the beneficiary).

4- It is necessary that healthy sanitary education lessons be identified for the period before the construction of a well and after the construction since the subjects to be discussed have different objectives.

RECOMMENDATIONS

a- Improve the coordination of technical and community activities.

b- Find a feasible solution in case people do not want to deepen the well in accordance to the technical criteria.

c- Encourage more open debate within the communities about the objectives of the program.

d- Improve health education lessons and mobilization methodology of the community.

e- Use the results from the study of KAPB and RNA in a better way.

f- based on the progress to date, the well completion schedule and the recent changes to the health education component, a three to six month extension of the health education program is recommended to provide adequate follow-up with the newly formed committees.

Schedule of visits

5-12-94
Preliminary meeting for program presentation. Visited the village of Titimane.

6-12-94
Visited the village of Maniua, Cruzamento, Chilico and Murrera.

7-12-94
Visited the village of Silva, Matuane 2 and Matuane 1. Participated in the official delivery of a well.

8-12-94
Meeting to present the observations.

FAX

MINISTERIO DE OBRAS PÚBLICAS E HABITAÇÃO
DIRECÇÃO NACIONAL DE ÁGUAS
PROGRAMA NACIONAL DE ÁGUA RURAL,
C.P. 2847
MAPUTO
TEL: 424102, 423269,
FAX: 430110
TELEX: 6-521 ÁGUAS MO
Nº FAX:___/95
Nº PÁGINAS:1

DATA 16/03/95

DE: Srª. Julieta Felicidade / PRONAR

PARA: Sr. Lee Wellott

Assunto: Documento de avaliação

Conforme solicitação de Vossa Exª, eis o fax propondo a extenção do projecto MCDI- Cuamba por mais 3 à 6 meses, com objectivo de prestar maior atenção aos assuntos de Participação e Educação Comunitária.

Esta informação deverá estar contida no documento de avaliação de 26 de Dezembro de 1944.

Sendo tudo quanto tenho de momento, as minhas saudações.

atenciosamente

Julieta Felicidade Afonso

JF/jf

Logical Framework

Project Title: Mozambique Rural Water and Sanitation

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Goal: To reduce the incidence of diseases related to impure/inadequate water supply and poor sanitation in rural Niassa Province.	Measures of Goal Achievement: Mortality and Morbidity statistics Health Center Records	MOH Statistics Special Reports	Effective Service delivery is possible in spite of Civil strife. Donor assistance continues at present levels.
Purpose: To enable villagers in project areas to recognize and resolve individual and community health problems which are related to the provision and use of water for consumption and sanitation.	EOPS: – Increased public understanding of factors contributing to improved water and sanitation practices. – Fuctional model of water/sanitation and community education/mobilization service delivery systems.	Project Reports Agna Rural records Work Plans Final Evaluation	Testing, Implementation and supervision are possible in climate of civil strife. Project can be replicated. Project is sustainable.
Outputs: Accurate data base established. Coordination model for GRM agencies established. Effective Community Participation Model.	Magnitude of Outputs: 60 New wells 40 Rehabilitated wells 75% latrine coverage 100 Village committees 50,000 Beneficiaries 6–8 Extension workers trained	Supervisor's Reports Health/Sanitation Reports	Various GRM agencies donors and MCDI collaborate. People will change behavior Consultants can transfer new ideas.
Inputs: 1 Project Manager/Engineer 1 Project IEC/Long term coordinator Short term TA Commodities MCDI Support USAID Project Manager	Level of Effort: 24 p/m Long term assistance 24 p/m Long term assistance Construction Materials Field Equipment Office supplies/software Vehicles 100 hours flying time	– MCDI work orders – Site checks – Regular Project Reports – Inventory Records – Flight logs	Satisfactory working relationships Security Increases Timely Procurement

IEC evaluator's report in Portuguese

AVALIAÇÃO INTERMEDIA DO PROJECTO MCDI - CUAMBA NA ÁREA DE ABASTECIMENTO DE ÁGUA

ANTECEDENTES

Com base em acordos assinados entre o Ministério de Cooperação e do MCDI com conhecimento do PRONAR, está em curso em Niassa um projecto com o título Rural Water and Sanitation Project.

O propósito do MCDI é de dar assistência técnica na área de abastecimento de água à população rural em colaboração com o sector de água rural na província do Niassa com acções no distrito de Cuamba.

Tem como objectivos específicos:

A redução do índice da ocorrência de doenças relacionadas com o consumo de água imprópria através da sensibilização dos beneficiário para o conhecimento do problema e na solução da mesma.

Resumidamente o projecto Previa a realização das seguintes actividades:

- Inventariação da situação do abastecimento de água na área do projecto;

- A construção de 100 poços equipados com bombas manuais AFRIDEV em várias aldeias do Distrito de Cuamba.

- Realização de três seminários para a coordenação e planificação;

- Reforçar a capacidade do estaleiro de água Rural em Cuamba com objectivo de garantir a continuidade das actividades depois do projecto findo.

Objectivo da Avaliação Intermedia

A avaliação intermedia do projecto MCDI- Cuamba prescreve uma análise detalhada das actividades realizadas a luz dos objectivos preconizados pelo projecto, bem como descrever problemas e propor melhoramentos.

A avaliação está dividida em duas partes:

1- Avaliação dos aspectos técnicos e de funcionamento do projecto

2- Avaliação do comportamento e percepções da comunidade nos assuntos de água e saneamento.

população em relação a governo e doadores.

Método Aplicado

Realizou-se a avaliação no período de 5 a 8 de Dezembro. Foram utilizados três dias para visitas ao campo. Apresenta-se em anexo o programa detalhado.

O método aplicado para a avaliação foi o tradicional, que comportou, estudo de documentos, entrevistas com todos os envolvidos no trabalho comunitário, entrevistas com aldeões tanto em grupos focados como individualmente no campo e observações no terreno.

Componente Educação Comunitária

A componente Educação Comunitária é composta por 11 pessoas dos quais 10 são animadores. Importa realçar que também contam com apoio de um elemento que simultaneamente trabalha para o sector administrativo e PEC. Existe actualmente um responsável desta componente, Sr Alberto que é cuadjuvado pelo Sr Ede. Os quadros lideres da componente são recém chegados pelo ercontram-se ainda na fase de integração.

A componente Educação comunitária tem como objectivo promover a participação da população na construção da sua fonte. A Participação da população é requisitada para a seleção do sitio de construção, na escavação do poço e no acabamento (construção do passeio e colocação da tampa com ajuda do pedreiro). Alem disso a população deve reunir pedra transportar areia e fornecer alojamento para a animadora e para o pedreiro que faz o revestimento e acabamentos.

A animadora permanece na aldeia até que o poço seja concluído. Está previsto que durante este período a animadora discuta com a população alguns aspectos sanitários.

O projecto MCDI funciona com o método chamado auto-assistência e desenvolvimento.

Actividades para o envolvimento comunitário

Em geral faz-se um levantamento de necessidades através do inquérito RNA (Avaliação Rápida de necessidades). Em principio os resultados do levantamento deveriam nortear as actividades de produção.

Paralelamente a este levantamento, faz-se o estudo CAP. Os levantamentos RNA e CAP são feitos nas aldeias pelos animadores. Embora estas actividades tivesse sido feito não existe nenhuma relação entre os resultados obtidos e a actividade que está sendo

realizada nas áreas de levantamento.

Neste momento foi elaborada uma única ficha que engloba o CAP e RNA.

Educação para a Saude

Os programas de Educação Sanitária são dadas nas aldeias no sentido de sensibilizar a população dos perigos que correm em consumir água imprópria e dos cuidados a ter com o poço.

Os temas dados na sessões de Educação Sanitária são:

- Diarréia, Sarna e Contaminação do poço.

Para o efeito são utilizados cartazes brochuras e alguns materiais elaborados localmente para o efeito.Contudo estes materiais precisam ser desenvolvidos.

A Participação Comunitária

Na maioria dos casos a animadora é capaz de mobilizar parte da população (20 a 40 pessoas por aldeia) para a escavação do poço. Contudo durante as visitas efectuadas nas aldeias foram uniformes em reclamar a fraca participação dos restantes membros da comunidade. Foi também possível observar que a maioria dos participantes eram os que moravam perto da fonte (5 a 15 minutos de distancia). Este comportamento permite relacionar a vontade de participar dos aldeões com a distancia que eles precisam caminhar.

A divisão das tarefas entre homens e mulheres é feita da seguinte maneira:

- As mulheres carregam areia e puxam o balde durante a escavação
- Os homens entram no poço para a escavação puxam o balde durante a escavação reunem a pedra para o revestimento.

Um poço dura em média a ser construido 45 dias. Em alguns casos a população tem mostrado fraca vontade de aprofundar 2 (dois) metros abaixo do nivele freático.

As justificações apresentadas pelos aldeões resumem-se:

- Temos medo de escavar dentro da água;
- Estamos cansados
- Não é nosso trabalho

Isto resulta que alguns poços construidos não forneçam água durante todo o ano.

Relação Entre o Trabalho Técnico e Comunitário

Devido a fraca participação da população na escavação da população que compromete acções a serem desenvolvidas noutras áreas tem resultado a que se dê por terminado obras que não tenham atingido a espessura de água conforme critérios técnicos.

Alguns aldeões reconhecem como sua a culpa de não ter escavado o suficiente, mas outros (uma grande maioria) acham que só os técnicos treinados para efeito é que deveriam fazer o trabalho a

esse nível.

Acham também que é dever do estado abastecer de água potável a população rural.

Isto implica que os aldeões continuem a utilizar as suas fontes tradicionais. Em quase todas as aldeias visitadas encontramos pessoas recorrendo as fontes tradicionais deixando o poço por eles construido sem nenhum utilizador.

Estruturas de Base na Comunidade

São formadas em quase todas as aldeias comitês de água e grupos de manutenção que tem a responsabilidade de garantir a correta utilização da fonte e aproveitar o melhor possível a fonte então construida.

Os grupos são formados por homens e mulheres da aldeia que se apresentarem mais dinâmicos durante a construção da obra. A oficialização do grupo de manutenção é feita numa reunião popular para assegurar que os mesmos então de acordo com os elementos do grupo.

Há a salientar o aspecto positivo no concernente a elaboração local de guias que traduzem o perfil das estruturas de base

Manutenção de fontes

Todas obras visitavas encontravam-se apetrechadas de uma bomba manual do tipo AFRIDEV. Contudo a maior parte das fontes tem grupos de manutenção apenas para velar da limpeza da fonte. As bombas são montadas pelos técnicos. Algumas vezes as animadoras tem acompanhado e nessa altura falam sobre a necessidade de compra de peças sobressalentes no futuro.

Não existe ainda um plano definido para a manutenção da bomba no nível da aldeia conforme exige a bomba instalada.

A bomba AFRIDEV é VLOM e é muito importante que se prepare a população logo de inicio para a manutenção de rotina, reparação no caso de avarias e sobretudo responsabilizar a população para a compra de peças.

Saneamento

As pessoas transportam em média 2 (duas) lata de água por dia para famílias de 5 a 8 pessoas. Durante as visitas as casas notou-se claramente que o consumo de água é mais dirigido a cozinhar os alimentos e beber restando muito pouco para a higiene pessoal (lavar as mãos tomar banho ,lavar as crianças)

As actividades em saneamento dentro do projecto MCDI, resumem-se no aconselhamento das pessoas em construir latrinas com material local e a sua correta utilização. Com exceção de algumas pessoas (deslocados) os moradores das aldeias possuem uma latrina. Normalmente possuem uma casa de banho perto da latrina que possibilita lavar as mãos depois de utilizar a latrina. Na maioria das famílias esta prática não é observada devido a falta de água.

De um modo geral as casas encontram-se varridas e fazem uma

pequena tarimba onde colocam seus prato depois de lavados

Transporte e Armazenamento de Água

As pessoas transportam a água através de latas normais (com uma cabaça por dentro para não perder água). A água para beber éarmazenada em bilhas e a restante fica na lata e vai sendo utilizada tirando directamente desse recipiente.

As bilhas onde contem água para beber encontra-se em geral tapados (dependendo do poder econômico) mas a higiene na área adjacente deixa muito a desejar.

Relação Água e Saude

Com um grande numero de pessoas com quem contactou-se apresentaram os problemas de saude na comunidade como fosse por ordem de prioridades:

- Diarréia
- Sarna
- Conjuntivite
- Malária

Sobre as causas da diarréia todos foram unanimes em dizer que era água que bebiam. Não relacionaram lavar as mãos com a diarréia. Sobre outras doenças não as relacionaram com a água.

Impacto Socio-Económico

Nas área onde as fontes construidas com o apoio do projecto estão a funcionar em pleno é notório um certo desenvolvimento, que se traduz num aproveitamento do tempo que era gasto em transporte de água em actividades produtivas (agricultura), ou mesmo para as mulheres descansarem.

De uma forma geral as pessoas estão satisfeitas com a nova fonte.

Devido a recente colocação das obras é ainda permaturo avaliar o melhoramento da vida da população. O seu comportamento em relação ao consumo de água ainda não mudou, quer dizer a população utiliza a mesma quantidade de água que consumia antes da construção da nova fonte mesmo com a distancia reduzida.

Constatações Relevantes

Informação preliminar - as pessoal que lideram o programa PEC são ainda muito novos em Cuamba pelo que ainda estão na fase de integração.

- A componente de Educação Comunitária trabalha com a população no sentido melhorar o seu nível de saude, Manter o poço e construir o poço.
- Toda a escavação do poço é feita pelos aldeões com o acompanhamento da animadora.
- Os técnicos supervisão a construção do poço. Contudo éresponsabilidade dos técnicos a pesquisa a orientação da localização das manilhas, montagem das bombas.
- Para a mobilização da população para a construção de fontes

são dadas aulas de educação Sanitária.

- Os materiais são elaborados localmente. Os desenhos são ampliados
- As animadoras levam em média 45 dias na construção de uma fonte
- Os temas tratados na Educação Sanitária são : Diarréia, Malária e cuidados a ter com o poço.

Actualmente não está sendo abarcada a área de manutenção da fonte.

Observações

1- Tanto animadoras da cidade como as recrutadas nas aldeias tem apresentado um trabalho aceitável. De facto em cada tipo de animadoras podemos encontrar vantagens.

As animadoras recrutadas no meio rural muitas vezes são pouco alfabetizadas mas tem muita facilidade de identificação com as comunidades.

As animadoras da cidade com uma melhor formação acadêmica são capazes de mais facilmente compreender os objectivos do programa, preparar material educativo, utilizar novas metodologia.

A continuação dos dois tipos de animadora promete um completar de actividades.

2- O método utilizado (auto-assistência) demonstra que uma comunidade com interesse pode participar em grande medida para a construção do poço, desde o transporte dos materiais, escavação do próprio poço e manutenção. Quer dizer que para este tipo de trabalho é necessário identificar claramente as pessoas que estão interessadas.

3- É ainda muito permaturo pensar em espandir esta metodologia de trabalho em função deste projecto. Avaliações sobre a metodologia deveram continuar auscultando as opiniões de todos os intervenientes (desde o Governo ao Beneficiário).

4- Faz-se necessário identificar aulas de Educação sanitária para antes da construção do poço e depos da construção do poço, pois os temas a serem abordados têm objectivos diferentes.

Recomendações

a) Melhorar a coordenação das actividades técnicas e comunitárias.

b) Estudar uma solução mais viável no caso de a população não aceitar aprofundar o poço conforme critérios técnicos.

c) Possibilitar mais debates com as comunidades sobre os objectivos do programa.

d) Melhoras as aulas de Educação Sanitária e as metodologia de mobilização da comunidade

e) Utilizar melhor os resultados do estudo CAP e RNA

anexo

dia 05/12/94

Encontro preliminar para apresentação do programa.
Visita a aldeia de Titimane

dia 06/12/94
Visita a aldeia de Maniua, Cruzamento, Chilico e Murrera

dia 07/12/94
Visita a aldeia de Silva, Matuane 2 e Matuane 1
Participar na entrega oficial de uma fonte.

08/12/94
Encontro para apresentação das observações.