PD-ABH-170
85242

Project Assistance Completion Report

Project Title:	Benin Rural Water Supply
Project Number:	680-0201
Country:	Benin
Project Amount:	$8,682,000
Initial Obligation:	1980
Final Obligation:	1992
Final Evaluation:	August 1992
Final Audit:	Planned for FY 1994

I. Introduction

The initial grant agreement was signed on August 30, 1980 for a five year life of project grant sum of $6,707,000. Project start-up was begun in late 1980 and the full amount of the project funding was obligated in December 1980. The project was subsequently suspended in December 1981 as a result of difficulties in US-Benin relations. A total of $457,000 was committed to fund the 1980-81 activities.

Upon lifting of the suspension in 1984, the project was redesigned and reactivated in 1985. An amended program agreement was signed on December 6, 1985 extending the original project activity completion date (PACD) from September 30, 1985 to December 31, 1990, using the remaining $6,250,000. Another series of difficulties in US-Benin relations delayed actual start up until mid 1987.

The original PACD was amended three times[1] as a result of the initial project suspension and later due to delays in start-up to the final PACD of September 30, 1992. The life of project grant funding was increased by a total of $1,975,000 through three amendments for a final total of $8,682,000. A final evaluation was conducted in November 1991 and a sustainability assessment carried out in August 1992. An in-country close-out financial review was conducted by the Mission Controller along with the Financial Director of the US contractor in August of 1992. A final audit of the US prime and sub-contractors in the US is planned for FY94.

Technical assistance to the Ministry of Energy, Mines and Hydraulics, Ministry of Health and the Ministry of Labor and Social Affairs was provided through a cooperative agreement with the United Nations Children's Fund (UNICEF) for well drilling operations, a contract with the Pragma Corporation for technical and management services and the Peace Corps for community health education and pump maintenance.

The purpose of the project was to assist the government of the Republic of Benin (GRB) to improve the health and living conditions of the rural population of the northern Zou

[1] December 1985, July 1991, October 1991

department through improvement of their health practices and the adequacy and quality of water supply and sanitation facilities available to them.

II. Contributions of the Parties

The total A.I.D. grant to the project was $8,682,000. The project received additional assistance from the Government of Benin (GRB), UNICEF, the United Nations Development Program (UNDP) and the Peace Corps. The Pragma Corporation (Pragma), Medical Care Development International (MCDI), and the Bryler Corporation (Bryler) provided technical assistance to the project.

UNICEF was responsible for training GRB technicians of the Ministry of Energy, Mines and Hydraulics while implementing the well drilling and pump installation activities. UNICEF was also responsible for training villagers and mechanics for pump maintenance, establishing a spare parts logistics system, and conducting a complementary latrine construction and environmental sanitation effort.

Pragma had overall responsibility for project administration and management, management of local costs, community mobilization and health education, latrine construction and sanitation, epidemiological surveillance and base-line study and construction of the project headquarters. Three long term technical assistants and several short term consultants were provided by Pragma and their two sub-contractors, MCDI and Bryler.

Peace Corps provided volunteers to serve as health education supervisors for community mobilization, health education and data collection, pump repair supervisors and trainers of pump repair artisans, and later, volunteers in the project zone for Guinea worm disease surveillance.

GRB - The GRB guaranteed more than $1,395,200 of in-kind contributions to the project in the form of operating costs, salaries, office space and land. The GRB provided personnel directly involved with the implementation of the project activities at national and district level for the management, supervision, and extension activities as well as staff for the drilling activities. Land for the construction of the Bohicon headquarters was provided by the GRB as well as office space for the extension teams in the districts.

UNDP - The United Nations Development Program provided an in-kind contribution of drilling equipment to the project valued at an estimated $400,000.

UNICEF - The United Nations Children's Fund provided an estimated $1,092,000 in salaries, technical back-stopping, short term consultants fees, and materials for Guinea Worm and sanitation activities.

Peace Corps - Peace Corps provided more than 450 person months of technical assistance, estimated at $495,000, for the community mobilization, latrine construction, pump maintenance and Guinea Worm activities.

USAID - The total USAID expenditures for the life of the project is estimated at $8,458,130. USAID's contribution can be broken down into several categories:

technical assistance (Pragma, MCDI, Bryler)[2]	$4,775,121
grant agreement (UNICEF)	$2,198,000
US and third country training	$ 62,784
construction	$ 152,833
pumps and drilling equipment	$ 579,933
vehicles, workshops, travel	$ 66,231
evaluation	$ 58,381
commodities and services committed during the initial project	$ 457,505
Audit[3]	$ 90,000

III. Accomplishment of the Project Objectives

An important project objective was to develop a model for the implementation of subsequent integrated rural water projects in Benin. The project's participatory community development approach has had a major impact, leading the GRB to state its intention to promote this approach as a model for future water supply and sanitation projects.

The Ministry of Energy, Mines and Hydraulics has concluded a structural readjustment program with The World Bank for the reorganization of the Hydraulics Division. The sector policy document incorporated many of the experiences of the Rural Water Supply (RWS) project. The strategy does not go as far as the inclusion of all the heath education themes (potable water, evacuation of fecal material, public and domestic hygiene and Guinea worm prevention) carried out by the RWS project, but does emphasize health education in potable water and latrine construction.

The success of the RWS project has shown that intensive, integrated community mobilization campaigns have had a positive impact in changing village health/hygiene and in enhanced pump maintenance. In the Hydraulics Division's new strategy, they intend to rely heavily on local non-governmental organizations (NGO) to undertake and carry out community organization and health education campaigns.

At the time of the preparation of this report the two ongoing well drilling programs in the Zou department, one in collaboration with UNICEF and the second with the Japanese government, are using materials and methodologies developed under the RWS project for the creation and training of the village pump committees. The programs currently do not use local NGO's but rather depend on either Hydraulics Service personnel or local

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[2] $1,005,917 in local costs was included in the TA contract for vehicles, motorcycles, in-country training, workshops, travel, extension activities, local personnel, etc.

[3] actual obligation is for $30,000 which will be completed from uncommitted funds in TA element n°1

government agents as animators. These programs unfortunately do not include health education.

Reduction of Guinea worm in the project zone by 30% was intended to be used as an general indicator of the success of the project. At the onset of the project's activities the annual incidence of guinea worm in the six project districts was estimated at 286.5 cases per 100,000 inhabitants in 1988. During the last survey conducted by the project the incidence was reduced to 55.8 per 100,000 inhabitants in December 1991 or a reduction of more than 30%. Although the project was not originally designed to eradicate Guinea worm disease, it took the lead in Benin in efforts to promote the 1986 World Health Assembly resolution to eliminate dracunculiasis in light of the growing world medical attention. The project assisted the GRB to hold a National Guinea Worm Eradication Conference and develop a National Guinea Worm Eradication Plan.

The drastic reduction in the number of cases of Guinea worm is a good indication that the communities within the project zone adopted improved health practices through the abandonment of traditional water sources in favor of potable water for drinking and through the use of filters. The degree of success of the improved health practices related to good hygiene practices in the project villages does not have as good an indicator as the incidence of Guinea worm, but evaluation reports do indicate a seemingly improved sanitary environment. Quantitative targets for latrine construction were achieved and although the program revealed that demand exists, cost of construction is still a limiting factor to individuals installing family latrines.

More than the targeted number of villages in the project zone were provided with reliable potable water sources, 309 compared to 275 previewed. Villagers are maintaining their pumps from funds collected for this purpose although the annual renewal of the pump maintenance fund has been low as initial maintenance costs are minimal for the India Mark II pump.

All participating villages in the project zone have received training in social mobilization, pump maintenance and health education as well as health education materials on village hygiene, excreta disposal, latrine construction and Guinea worm prevention. These aids have been used by the village committees in conducting either house to house demonstrations or organizing public presentations to explain health messages. During evaluations conducted in 1991 and 1992 and at the time of this report, health/hygiene improvement and pump maintenance practices of the participating villages has continued.

The reader should refer to sections VI and VII of this report for tables containing additional information on the end of project status indicators and project outputs.

IV. Lessons Learned

Multi-donor projects require the coordinated fielding of the implementation teams. Where USAID is the prime funding agency, its project design cycle should govern the timing of team deployment. This is particularly relevant for Peace Corps involvement where it would be preferable for volunteers to arrive later in project start-up rather than earlier as implementation is often slow in the initial phases.

Peace Corps participation in A.I.D. financed projects requires it to be responsive to its partners' project development cycle so as to avoid fielding volunteers prematurely. They should not arrive before their jobs, logistics and counterparts are defined, agreed upon and in place.

Multi-donor projects require greater specificity in planning. Careful attention and sufficient documentation should be provided on the participating agency roles, authorities, and responsibilities to avoid project management conflict.

Where UNICEF participates in a project predominately funded by USAID, the coordinating responsibility must be shared equally by both. Even though cooperative agreements are not considered suitable given the basic nature of AID's relationship with Public International Organization's (PIO), when substantial involvement of AID in the management of the project is expected, the notion of "shared" responsibility must prevail. To preserve the ability to mount and fund joint projects, PIOs must ensure that all participating agencies receive due recognition and credit for their contributions.

V. Financial Close-out

Project Authorized Amount	$8,682,000
Total Obligations	$8,682,000
Total Commitments	$8,458,130
Total Estimated amount to be de-obligated	$ 103,667[4]
Estimated Final Project Total	$8,638,130

[4]

element n°1	$13,050
element n°2	$18,288
element n°4	$ 6,000
element n°8	$18,710
element n°9	$44,000
element n°11	$ 1,619

VI. End of project status indicators

	End of project objective	Status at end of project
1.	The project will be used as a model for implementation of subsequent integrated rural water development projects in Benin	The project promoted the creation of community health committees (CDSS), training members in their responsibilities and basic health and hygiene; this system was adopted by Benin as a national strategy for all village water projects
2.	Improved health practices regularly followed: abandonment of traditional contaminated water sources, potable water is exclusive water used for drinking, when necessary, water cloth filtered against guinea worm, 10 percent of participating village populations have access to and use family latrines, good hygiene practices (hand washing, proper garbage disposal, improved livestock logistics), preventive health measures, and improved dietary practices followed regularly as a part of village life.	Significant reduction in the annual incidence of Guinea worm and increased use of filters[5] by the end of the project are indicative of changes in the use of contaminated sources in favor of potable water. Evaluators reported finding villagers participating in village hygiene that had been taught.
3.	30% decrease in incidence of Guinea worm	The annual incidence of guinea worm in the six project districts decreased from an estimated 286.5 per 100,000 inhabitants in 1988 to 55.8 per 100,000 inhabitants in December 1991 or a reduction of more than 30%.
4.	Participating villages have reliable water source year round	309 positive wells were drilled for a success rate of 78% and hand pumps installed on all wells.

[5] Annex F. Benin Rural Water and Sanitation Project. Final Report. Pragma/MCDI. September 30, 1992.

	End of project objective	Status at end of project
5.	Participating villages implement maintenance/repair programs for their pumps and rainwater catchment systems, and collect financial resources to support these	A hand pump maintenance system, village watchmen and artisan repairmen are in place and spares are supplied through a private supplier. All 309 villages complied to the collection of initial maintenance fund amount and establishment of an account. All villages have sufficient funds for repairs for the initial years while the annual contribution to the maintenance fund appears to be excessive in relation to the immediate needs for repairs/maintenance.
6.	Participating villages, through village health committees and schools, continue health education programs focused on preventative health and sanitary excreta disposal	All villages received flip charts for health education and have used the materials at least once; monitoring will be provided by the GRB to assure their continued utilization
7.	Participating village personnel know the indicators of contaminated water and know how to obtain water quality testing from DANA or other sources	All old and new wells in the project zone were bacteriologically tested. New wells were tested chemically. The high cost of bacteriological testing does not permit institutionalization at this time.
8.	Institutionalized collaboration among concerned GRB extension services and between them and village health committees, for improved village health	Four to six member multi-disciplinary teams were created in each of the six project districts under the supervision of the chief medical officer of the district. These teams worked closely to conduct pre- and post well construction training and follow-up of the CDSSs

	End of project objective	Status at end of project
9.	District and departmental GRB personnel continue to use their enhanced skills	The provincial level core staff remain actively involved in the implementation of an ongoing drilling and guinea worm eradication program. District level teams have visited participating villages within the last three to four months and the departmental supervisors have provided IEC and training of trainers workshops for the southern Zou.
10.	Regional hydraulics personnel trained on-the-job as drilling team members capable of understanding well drilling/pump installation on their own	The personnel trained by UNICEF continue to carry out a program of well creation in the Zou department. The drillers, geologists and mechanics are fully capable of implementing a wells program although UNICEF continues to assist in planning.
11.	Additional time available to villagers for productive enterprise, and to mothers for socializing children	No base line data nor current statistics are available for comparison
12.	School absentee rate drops as a function of a nearby, reliable water source	No base line data nor current statistics are available for comparison

VII. Project Outputs

Outputs	Indicators /targets original	Indicators/ targets revised	Total cumulative	Percentage achieved
functioning, replicable system for coordinating integration of health interventions into all water supply development and sanitation projects	1		1	80%
provincial and district social affairs, health and sanitation agents, and other village level workers trained in village mobilization and conduct of village health campaigns	50		40	100%
functioning village health committee in each participating village	225	275	459	167%
active relations between village health committees and rural extension services for integration of all project components	n/a		459	100%
active collaboration among concerned GRB rural extension services for village health improvement	n/a		in 5 of the six project districts	83%
reliable, clean village water supplies developed and improved wells with pumps	225 wells	275	309	112%
	100 rain water systems	rain water systems[6]	0	
master pump maintenance plan	n/a		1	100%

[6] modified and eliminated in amendment no. 3

Outputs	Indicators /targets original	Indicators/ targets revised	Total cumulative	Percentage achieved
upgrade technical competence of hydraulics personnel assigned to drilling/pump installation teams	20		20	100%
warehouse and repair shop for equipment and vehicles, and project headquarters office	1		1	100%
adequate village-based capacity to construct and maintain rainwater catchment villages systems	150	0 see footnote 2	0	
sanitary excreta disposal facilities constructed and maintained	100	100 community 300 family	109 community 261 family	109% 87%
adequate village based capacity to construct and maintain sanitary excreta village disposal facilities	225		11 hygiene agents 13 district masons 100 village masons	90%[7]
upgrade skills of rural sanitarians	6	11	26	236%

[7] includes training of masons

Outputs	Indicators /targets original	Indicators/ targets revised	Total cumulative	Percentage achieved
water quality testing of each new well, with subsequent testing as needed	1500		180 physical/ chemical 457 bacteriological	42%
upgraded skills of all personnel receiving long and short term participant training	n/a		2 long term, 5 short term	100%
training plan of training needs, recommended training facilities, and schedule	1		1	100%
commodity and equipment procurement plan	1		1	100%
AID-UNICEF coop agreement	1		1	100%
Evaluations	3		3	100%