

PD-AAU-288
47129

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE Shaba Refugee Health (Evaluated jointly with Roads and Water Projects)			2. PROJECT NUMBER 660-0114	3. MISSION/AID/W OFFICE Kinshasa
4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 86/11			5. REGULAR EVALUATION <input checked="" type="checkbox"/> SPECIAL EVALUATION <input type="checkbox"/>	
6. KEY PROJECT IMPLEMENTATION DATES		6. ESTIMATED PROJECT FUNDING		7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equivalent FY 85	B. First Obligation Expected FY 85	C. Final Input Delivery FY 91	A. Total \$ 4.8	From (month/yr.) March 1985
			B. U.S. \$ 2.5	To (month/yr.) August 1986
8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR			Date of Evaluation Review September 1986	

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., telegram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
Recommendations 1. USAID will proceed with its plans to prepare a revised Project Description with up-dated sub-project descriptions for the Refugee Health Project (660-0114). Financial, procurement, and implementation plans will be prepared by the 114 Project Director. USAID will encourage and support ISROS action to complete proper planning and scheduling of the estimated \$2 million worth of construction work being contemplated under the project. ISROS will devise a plan to ensure proper O&M of equipment purchased by the project.	USAID/DEO ISROS	Dec. 31, 1986
2. ISROS and SANRU will collaborate on training in O&M, on primary health care, and on equipment standardization.	ISROS SANRU	Dec. 31, 1987
3. USAID will prepare an Amplified Project Description to be made part of the Project 115 PROAG. This will be done following planning for the Road Improvement Program scheduled to be done by OR this fall. Planning for implementation and funding requirements for Project 115 should take into account the recent Belgian agreement to support manual road maintenance in the Sandoa zone.	USAID/DEO ORT OR	March, 31, 1987

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify)	A. <input type="checkbox"/> Continue Project Without Change	
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T		B. <input type="checkbox"/> Change Project Design and/or	
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify)	<input checked="" type="checkbox"/> Change Implementation Plan	
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P		C. <input type="checkbox"/> Discontinue Project	
11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)			12. Mission/AID/W Office Director Approval	
Mr. Albert Baron, Team Leader Ms. Lauren Greenberger, Health Specialist Mr. John Barton, Engineer Mr. Leon S. Waskin, Project Manager Mr. Tim Born, Project Manager			Signature 	
			Typed Name Arthur S. Lezin	
			Date Acting Director	

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE Shaba Refugee Roads (EVALUATED JOINTLY WITH THE HEALTH AND WATER PROJECTS)			2. PROJECT NUMBER 660-0115	3. MISSION/AID/W OFFICE Kinshasa
4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) <u>86/12</u>				
<input type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION				
7. PERIOD COVERED BY EVALUATION From (month/yr.) <u>September 1984</u> To (month/yr.) <u>August 1986</u> Date of Evaluation Review <u>September 1986</u>				
5. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR				

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., telegram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
4. The Orientation Committee of Project 116 will consider reducing the number of tubewells in order to liberate resources to construct piped water supply systems. Priority will be given to providing water to health care facilities receiving assistance from companion Shaba Refugee Health Project.	AIDR/Z USAID/DEO SNHR	Sept. 30, 1986
5. A revised Project Implementation Plan for Project 116 will be submitted by AIDR/Z to the Committee for approval.	AIDR/Z	June 30, 1987
6. USAID will help AIDR/Z to expedite procurement of pumps and drill, and pay amounts overdue to AIDR/Z under Project 116.	USAID/DEO	Dec. 31, 1986
7. USAID will increase its access to professional procurement advice and assistance, possibly by engaging a full-time, experienced professional or by a stand-by arrangement for such part-time services.	USAID/DEO	Dec. 31, 1986
8. USAID will consider sponsoring a study of the measures to foster improved agricultural marketing in Lualaba sub-region and to introduce a banking and credit program and will consider planning pilot demonstrations and eventual marketing of improved corn seed there.	USAID/DEO USAID/ARD	Dec. 31, 1986

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper <input type="checkbox"/> Financial Plan <input type="checkbox"/> Logical Framework <input type="checkbox"/> Project Agreement	<input type="checkbox"/> Implementation Plan e.g., CPI Network <input type="checkbox"/> PIO/T <input type="checkbox"/> PIO/C <input type="checkbox"/> PIO/P	<input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Other (Specify) _____	A. <input type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project	

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)	12. Mission/AID/W Office Director Approval Signature _____ Typed Name _____ Date _____
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KD-AAU-288-E
47176

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

PROJECT TITLE Shaba Refugee Water (EVALUATED JOINTLY WITH THE HEALTH AND ROADS PROJECTS)			2. PROJECT NUMBER 660-0116	3. MISSION/AID/W OFFICE Kinshasa
4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 86/13			5. REGULAR EVALUATION <input checked="" type="checkbox"/> SPECIAL EVALUATION <input type="checkbox"/>	
6. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equivalent FY 85	B. Final Obligation Expected FY 85	C. Final Input Delivery FY 91	A. Total \$ 6.25 B. U.S. \$ 2.25	From (month/yr.) March 1985 To (month/yr.) August 1986
8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR			Date of Evaluation Review September 1986	

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., program, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
9. USAID will explore an arrangement with the University of Lubumbashi's Center Interdisciplinaire pour le Developpement for a modest program to help monitor the socio-economic impact of Projects 114, 115 and 116.	USAID/DEO	March 31, 1987

8. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS <input type="checkbox"/> Project Paper <input type="checkbox"/> Implementation Plan e.g., CPI Network <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Financial Plan <input type="checkbox"/> PIO/T <input type="checkbox"/> Logical Framework <input type="checkbox"/> PIO/C <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Project Agreement <input type="checkbox"/> PIO/P	10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT A. <input type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project
11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)	12. Mission/AID/W Office Director Approval Signature _____ Typed Name: _____ Date _____

EVALUATION COST DATA

USAID/ Zaire . . . or Bureau/Office

1. No. and Title of Project/Activity: Shaba Refugee Health, Water
(or Title of Evaluation Report) and Roads Project (660-0114, 660-
0115, 660-0116)

2. Date of Evaluation Report: September 1986
Date of PES (if different):

3. Purpose of Evaluation: This initial evaluation constitutes a Routine
Implementation Evaluation. The evaluators will assess project progress
vis-a-vis project objectives as identified in the Project Paper to determine
if the project is on track.

4. Mission Staff Person Days involved in this Evaluation (estimated):
- Professional Staff 37 Person Days
- Support Staff 14 Person Days

5. AID/W Direct-Hire or IPA TDY support funded by Mission (or office) for
this evaluation:

<u>Name</u>	<u>Period of TDY</u> <u>(Person -Days)</u>	<u>Dollar Cost: (Travel,</u> <u>Per Diem, etc.)</u>	<u>Source of</u> <u>Funds*</u>
NA			

6. Contractor Support, if any, for this evaluation:**

<u>Name of Contractor</u>	<u>Contract #</u>	<u>Amount of</u> <u>Contract</u> <u>(US Dollars)</u>	<u>Source of</u> <u>Funds*</u>
Mr. Albert Baron	PIO/T No. 660-0116-3-50123	\$10,955	Project Budget
Ms. Lauren Greenberger	PIO/T No. 660-0115-3-40154	\$ 6,440	" "
Mr. John Barton	PIO/T No. 660-0115-3-40154	\$ 7,350	" "

*Indicate Project Budget, PDS, Mission O.E. or Central/Regional Bureau fund

**IQC, RSSA, PASA, PSC, Purchase Order, Institutional Contract,
Cooperative Agreement, etc

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SHABA REFUGEE PROJECTS START UP EVALUATION

Executive Summary

I. Project Titles and Numbers:

Shaba Refugee Health (660-0114)
Shaba Refugee Roads (660-0115)
Shaba Refugee Water (660-0116)

II. Project Description

The three projects were conceived in 1984/85 and have been under implementation for 17-24 months. They were designed to rehabilitate and improve the rural health, water and road infrastructure of the Lualaba sub-region of Eastern Shaba and in the case of health facilities of the Kolwezi sub-region in southern Shaba. This is a war torn area in which over half the population has suffered displacement and repatriation in recent years and which has seen a large influx (300,000) of Angolan refugees.

The goal of the projects is to reintegrate the Lualaba sub-region repatriates and refugees into regional socio-economic development. The health project is to move toward this goal through capital improvements to local public health and curative medical programs, which are part of existing and viable, but undercapitalized, programs of voluntary agencies. The road project is to contribute to this goal by assisting the Shaba Bureau of Roads in rehabilitating to appropriate standards the national and regional roads in the project area, in addition to key feeder roads. The water project will benefit the local population through improved water supply resulting from capped springs and tube wells in villages and through gravity feed systems in several rural agglomerations.

III Evaluation Purpose

This initial evaluation of projects 660-0114, 660-0115, and 660-0116 constitutes a Routine Implementation Evaluation. It assesses project progress vis-a-vis project objectives as identified in the project papers to determine if the projects are on track.

IV. Evaluation Methodology

The evaluation took place August 19 - September 15, 1986. August 19 - 24 was spent in Kinshasa on a documentation review and interviews with project officers. August 25 - 26 and September 3 - 5 were spent in Lubumbashi with meetings with UMC/ISROS project management (project 114), the acting Director of the Office des Routes/Shaba, representatives of the U.S. and Belgian Consulates, and officers of the Center for Interdisciplinary Studies for Development at Lubumbashi University. The field visits took place August 27 to September 3rd and included visits to project base camps in Kasaji (projects 114 and 115) and in Sandoa (project 115). The team visited most major health

facilities in the area, observed conditions of roads and work accomplished on village water supplies. Visits in this fashion were made to Kanzenze, Katoka, Dilolo Post, Dilolo Gare, Sandoa, Kafakumba Mission, Kafakumba Post and Lake, Musumba and Kapanga. In Kolwezi, a call was paid to the Catholic Bishopry and a meeting was held with the Bishop's secretary concerning the proposed sub-grant agreement under project 114.

V. Findings

A. Project Management is adequate to effect proper implementation of the refugee projects.

B. USAID management and support of these projects (Health, Roads and Water) has generally been satisfactory and in some respects excellent. The USAID/ADO office in Shaba has been effective in supporting implementation of the projects and in monitoring them.

C. Each of the refugee projects has experienced significant delays in start-up and implementation compared to the PP. To some extent, the PP schedule of implementation was over ambitious. Progress in start-up is sufficient to conclude that they can be successfully completed by or before their PACDs. Their combined impact on the reconstruction and socio-economic impact of the area promises to be extremely significant. This is an exciting program.

D. Each of the projects requires redesign. In each case a revised project description is needed.

E. An adequate plan for the renovation and construction of health facilities under project 114 has not been developed.

F. The lack of adequate water supplies at major health facilities is a serious concern in terms of care of patients and control of disease.

G. The development of spring catchments and installation of tubewells with hand pumps are cost effective methods for developing rural water supplies in the project area. It will be prudent and more realistic for AIDR/Z to reduce the schedule for installation of village tubewells to about 100 per year. There is scope for a desirable expansion of gravity flow water systems installed by project 116 using existing resources of the project. Urgent action is required to expedite procurement of hand pumps plus spare parts and tool kits for the fillage well program.

H. The community action involved in village participation in building and maintaining their own water systems holds promise for other self-help community action in the project area.

I. The projects will contribute to institutional development through strengthening the Office des Routes and the National Rural Hydrology Service (SNHR), and by contributing to a more effective health program in the six national health zones in the project area.

J. Targets of opportunity exist to reinforce the impact of the projects, for example: the use of an existing project (660-0011 or 660-0105) to introduce and demonstrate on a pilot scale use of improved corn seed; and closer cooperation between project 114 and SANRU II to enhance the impact of both these activities in the project area.

K. There is a need to provide baseline data and annual surveys to monitor the impact of these projects. A cost-effective mechanism can likely be developed at modest cost with Lubumbashi University to carry out such surveys.

VI. Recommendations

A. A revised Project Description with up-dated sub-project descriptions and financial, procurement, and implementation plans should be prepared by the ISROS Project Director (114). USAID should encourage and support ISROS action to: (a) complete proper planning and scheduling of the estimated \$2 million work of construction being contemplated under the project (114); and (b) to plan measures to help ensure proper O&M for the investments in equipment and facilities.

B. USAID should foster increased cooperation between SANRU II and ISROS in training for O&M and primary health care and in the standardization of equipment for health centers and dispensaries.

C. USAID should prepare an Amplified Project Description to be made part of the project 115 (Roads) PROAG. This would be done following planning for the Road Improvement Program scheduled to be done by OR this fall. Planning for implementation and funding requirements for project 115 should take into account the recent Belgian agreement to support Road Improvements in Sandoa zone.

D. The Orientation Committee of project 116 (water) should consider an expanded development of gravity flow water supply systems should endorse the prepared revision in the schedule for village tubewell water supply systems and with a view to including it in the work program. A revised Project Description should be submitted by AIDR/Z to the Committee for approval.

E. USAID should help AIDR/Z expedite procurement and pay amounts overdue to AIDR/Z under project 116.

F. USAID should increase its access to professional procurement advice and assistance, possibly by engaging a full-time, experienced professional or by a stand-by arrangement for such part-time services.

G. USAID should consider sponsoring a study of the measures to foster improved agricultural marketing in Lualaba sub-region and to introduce a banking and credit program there and should plan pilot demonstrations and eventual marketing of improved corn seed there.

H. USAID should explore an arrangement with the University of Lubumbashi, Center for Interdisciplinary Studies for Development, for a modest program to help monitor the socio-economic impact of projects 114, 115, and 116.

START-UP EVALUATION
OF
SHABA REFUGEE PROJECTS

660-0114; Health
660-0115; Roads
660-0116; Water

August 29 - September 15, 1986

Prepared for the USAID Mission to the Republic of Zaire

Albert R. Baron, Team Leader

John Barton, Construction
Specialist

Lauren Greenberger, Public
Health Specialist

Kinshasa
September 10, 1986

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Acronyms

ADO	Area Development Office
AID	Agency for International Development
AIDR	Association Internationale de Développement Rural (Belgian International Rural Development Association - No longer exists.)
AIDRZ	Association Internationale de Développement Rural au Zaïre (International Rural Development Association in Zaïre)
CDW	Community Development Worker
CHW	Community Health Worker
CID	Centre Interdisciplinaire d'Etudes Pour Le Développement (University of Lubumbashi)
CPF	Counterpart Funds
CPS	Consultation Pré-scolaire
CY	Calendar Year
DOA	Department of Agriculture
DEO	USAID/Design and Evaluation Office
ECZ	Eglise du Christ au Zaïre
EoPS	End of project Status
FBI	Fonds du Bien-Etre Indigène
GOZ	Government of Zaïre
ISROS	Projet pour l'Infrastructure de la Santé Rurale dans l'Ouest du Shaba
IVS	International Voluntary Services
L/C	Local Currency
MPR	Mouvement Populaire de la Révolution (Peoples' Movement for the Revolution)
O&M	Operation and Maintenance
PACD	Project Assistance Completion Date

PHC	Primary Health Care
PP	Project Paper
PROAG	Project Agreement
PVO	Private Voluntary Organization
OR	Office des Routes (National Roads Office)
ORT	Organization for Rehabilitation Through Training
REGIDESO	Régie de Distribution de l'eau de la République du Zaïre (National Urban Water Distribution Agency)
SANRU	Projet de Soins de Santé Primaires en Milieu Rural
SNHR	Service National d'Hydraulique Rurale
SOW	Scope of Work
TA	Technical Assistance
UMC	United Methodist Church
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations International Childrens Emergency Fund
USAID	U.S. Agency for International Development Mission to Zaïre
VL0M	Village Level Operations and Maintenance
WASH	Water and Sanitation for Health project

START UP EVALUATION OF SHABA REFUGEE PROJECTS

I. Background and Project Purpose

The Shaba Refugee projects were conceived as six-year endeavors designed to rehabilitate and improve the rural health, water, and road infrastructure for refugees and displaced persons of the Shaba Region of Zaire. The project area experienced widespread fighting, population displacement, and devastation in 1977-78, and heavy refugee influx from the Angolan conflict in the 1980s. The process of recovery and reconstruction began in the early 1980s with the reestablishment of security, postal services, and telecommunications and the repatriation of the population, over half of which was displaced. Approximately 30,000 refugees are being resettled in the project area. The Health project (660-0114) extends into the Kolwezi sub-region. All three projects are financing activities in the Lualaba sub-region, which has a population of about 400,000 sparsely distributed throughout a rural area of about 80,000 sq. km. The Lualaba sub-region includes three zones, Dilolo in the south, Sandoa in the center, and Kapanga to the north. The goal of the projects is to reintegrate repatriates and refugees into regional socio-economic development.

The health project is to move toward this goal through capital improvements to both local public health and local curative medical programs, most of which are part of existing viable but undercapitalized programs of voluntary agencies. This is to be done by relying on existing networks and private voluntary organizations, primarily church groups. The road project is to contribute to this goal by assisting the Shaba Bureau of Roads in rehabilitating to appropriate standards the entire national and regional road network in the project area, in addition to key feeder roads. The water project will benefit the local population through improved water supply resulting from capped springs and tube wells in villages, and through gravity flow systems in several large centers. Water supply improvements will also be made to area institutions such as hospitals, health centers, and schools.

Three evaluations were slated: one in September of 1986, one in 1988, and one in 1991. This first was a start-up evaluation, the second will be a mid-point, and the third a final.

The evaluations are to cover each of the three projects. This initial evaluation of the projects constitutes a Routine Implementation Evaluation. It is to assess project progress vis-a-vis objectives as identified in the project Papers, to determine if the projects are on track. Implementation of road improvement under project 660-0115 has not yet begun, though some manual maintenance work has been done. The evaluation of this project will determine if appropriate elements are in place to permit mechanized road rehabilitation to proceed in a timely and effective manner. Annex A provides a copy of the evaluation team's scope of work (SOW), including specific issues raised for review.

II. Evaluation Methodology and Program

The procedure followed was document review, interviews with project staff, visits to the project area, formulation of findings and recommendations, review of findings with project staff to verify the accuracy of our data base and observations, and to test and push our analysis as far as possible. Any evaluation is an interactive process. The evaluation team considered that these interactions constitute a contribution as significant as the final report may be.

The evaluation took place August 19 - September 15. August 19 - 24 was spent in Kinshasa on a documentation review and interviews with project officers. August 25 - 26 and September 3 - 5 was spent in Lubumbashi with meetings with UMC/ISROS project management (project 114), the acting Director of the Office des Routes/Shaba, representatives of the U.S. and Belgian Consulates, and officers of the Center for Interdisciplinary Studies for Development at Lubumbashi University. The field visits took place August 27 to September 3rd and included visits to project base camps in Kasaji (projects 114 and 115) and in Sandoa (project 115). The team visited most major health facilities in the area, observed conditions of roads and work accomplished on village water supplies. Visits in this fashion were made to Kanzenze, Katoka, Dilolo Post, Dilolo Gare, Sandoa, Kafakumba Mission, Kafakumba Post and Lake, Musumba and Kapanga. In Kolwezi, a call was paid to the Catholic Bishopry and a meeting was held with the Bishop's secretary concerning the proposed sub-grant agreement under project 114.

The team was accompanied by Ms. Kate Newman, a project officer in USAID/DEO for project 116 and Mr. L.S. Waskin, USAID's Area Development Officer in Lubumbashi. Thanks are due to Mr. Waskin for untiring efforts to organize these visits and keep the team on track.

The evaluation team is appreciative of the time and friendly cooperation received from many persons interviewed including staff of the Office des Routes, the SNHR, the UMC, Catholic and Garanganze Missions, AIDRZ, USAID, and others. A list of persons interviewed is attached Annex B.

Detailed observations and findings with respect to each project are presented in Annexes C, D, and E. The following sections treat general issues raised in the SOW and specific issues raised with respect to each of the projects. The final section summarizes the main findings and recommendations of the team.

III. General Issues

A. Project Management. Are the projects being effectively managed? Are reporting systems adequate? Are project accounts up-to-date and accurate?

In general, project management has been satisfactory. In recent months there has been a strengthening of financial management and an improvement in reporting. An exceptionally well qualified management group has been constituted by AIDRZ and the SNHR for the water project. The UMC has set up a small project management office which, with the return of the director after a prolonged leave of absence, has approached implementation of that project effectively. Management of the roads project has been handled by OR effectively to date. Its project management will be strengthened by the arrival in October of the ORT TA team. The evaluation team concludes that management structures in place and being developed are adequate to insure proper implementation of the projects.

B. USAID Support. Is USAID providing adequate support to the projects? Has the placement of an USAID project officer in Lubumbashi facilitated project implementation? Discuss.

USAID management and support for these projects has been satisfactory and in some respects excellent. In particular, USAID has been innovative and successful in supporting start-up and implementation of the roads project (115) and in the water project (116) - despite the unexpected cancellation of the AIDR Cooperative Agreement four months after its execution. The USAID/ADO office in Shaba has been effective in supporting implementation of the projects and in monitoring them. project execution would have been facilitated by improved USAID performance in funding. Sections III, IV, and V below discuss the question of US supporters in more detail, by project.

C. Procurement. Is procurement for each of the projects on a schedule that will lead to achievement of outputs by project PACD?

Dollar-funded procurement has been a problem in the health project because UMC/ISROS was obliged to change its established procedures and procurement channels to conform to AID regulations. The necessary adjustments have been made and it may be expected that future dollar-funded procurement by ISROS will proceed more smoothly. There is a current concern over dollar-funded procurement of hand pumps for village wells under the water project. USAID should give priority attention to supporting AIDRZ's efforts to expedite this procurement so as not to delay the village well development program. (Ref. Annex E, Section 6(c), p. 23). The team observed that USAID did not always enjoy adequate access to professional expertise for procurement. USAID should consider increasing its access to such expertise by engaging an experienced professional for full-time or stand-by part-time service.

D. Project Redesign. Is any redesign of the projects necessary? If so why? Describe necessary revisions.

Each of the three projects requires redesign. In each case a revised project implementation plan is needed. The reasons are presented in Sections IV, V, and VI below and at greater length in Annexes C, D, and E.

E. Project Monitoring. Future evaluations of these projects should allow at least 14 days in the project area. This will allow closer examination of sub-projects and better data collection. Arrangements should be made to ensure that key personnel are available to the evaluation team. (Mr. Hoover was available only for the last two days of the evaluation and Mr. Thomas was not available at all). USAID has successfully used the University of Lubumbashi for geographic surveys in Shaba and the University has a functioning Center for Interdisciplinary Studies for Development (CID) which is monitoring village development in one area. The surveys should be socio-economic in scope and could include a sample of representative villages. CID is interested in doing such survey and work and it is recommended that USAID explore an arrangement for a modest program to monitor the socio-economic impact of the three projects. (Ref. Annex C, Section XIII).

IV. Shaba Refugee Health project (114).

A. Status of Start-up and Implementation

A Cooperative Agreement was signed with the United Methodist Church (UMC) on March 17, 1985. project administrative offices were established in Lubumbashi. The project Director left on furlough in August and returned in March 1986. During his absence his Administrative Assistant took his place. The Engineer/Construction Specialist arrived in March 1986. A construction supervisor was hired locally to oversee construction in the Kolwezi area. A nurse-doctor team was hired in August 1986 to fill a Health Specialist position. They will arrive mid-September. Procurement of medical supplies, vehicles and equipment began in August 1985. Commodities began arriving in October 1985. Construction activities began in Kolwezi in January 1985 by the Methodists. The two health facilities there plus the base station in Kasaji should be finished by December 1986. A sub-grant for three sub-projects with the Plymouth Brethern/Garenganze was signed in April 1985. Another with the Catholic Diocese of Kolwezi is still pending - awaiting the accord of the Bishop. Eventually the project will repair and re-equip 74 local health care centers, two hospitals, and a nursing school. An air ambulance system will be expanded and two public health outreach projects will be funded.

B. Status of Funding and Planning

The project is fully funded. A U.S. grant of \$2.5 million was obligated by the Cooperative Agreement for procurement of equipment and supplies. By August 1986, \$790,000 was committed for overseas procurement and technical assistance. \$860,000 is expected to be committed by end CY86. Dollar funded procurement requirements have not been established for 1987.

According to the Cooperative Agreement, host government (counterpart) funding will be at least \$2.3 million equivalent (almost Z140 million) to cover construction, local procurement, transportation, project management, TA and training. Some counterpart funds have been used for local

procurement in lieu of dollar procurement to expedite sub-project implementation. Through August 1986 \$65 million has been advanced to the project. \$55 million will be expended or committed by end CY86. The 1987 budget will be prepared once sub-project modifications have been determined. Some increase may be required to meet proposed outputs.

Detailed implementation plans are not available for most of the 21 sub projects covered by the PP and Cooperative Agreement (There is no PROAG).

C. Evaluation Issues

1. Need for Project Redesign

The following changes have occurred in the project:

- a TA component was added;
- drug procurement was eliminated;
- one public health sub-project was dropped;
- a sub-grant accord has not yet been and may not be signed for the Catholic sub-projects; and
- sub-project plans need to be up-dated and revised to take into account changing requirements since they were drawn up, in haste, two years ago.

Due to these changes coupled with a delay in start-up there is a need for a revised implementation plan and budget. When determined, this should be formally agreed upon with USAID.

2. Adequacy of Management

During start-up the project had difficulty adjusting to USAID regulations on financial management and procurement procedures. These problems seem to have been rectified and the project office is functioning smoothly. An initial workshop for project staff in USAID procedures would have greatly facilitated implementation. The first report submitted to USAID was an annual one, however, the project has now also submitted a quarterly report and plans to continue this practice. Reports are well-organized and informative. Financial reporting has been improved.

3. Project Staff: Health Specialists

In August 1986 the project hired a nurse-doctor couple through International Voluntary Services to fill a Health Specialist position (one salary). There are many elements of the project that very much need coordination that this team will be able to provide. The evaluation team recommends the following activities:

- Provide or facilitate training in use, maintenance, and repair of medical equipment furnished by the ISROS project.
- In conjunction with Zone Medical Directors, develop training and supervisory activities for zone personnel in PHC activities and administration.

- Develop a training session for nurses in conjunction with the water project (116) staff to promote community education programs in appropriate water usage and maintenance of improved water supplies.
- Collaborate with the SANRU national office to assure standardized information dissemination on current PHC practices and procurement, use, maintenance, and repair of standardized equipment.
- Set up a workable communications network among interdenominational health care providers for use and payment of air ambulance.
- Provide follow-up supervision and support to dispensary nurses who have participated in training workshops.
- Collaborate with project evaluation team and Zone Medical Directors to develop and implement project evaluation studies.

4. Selection of Health Facilities

All the health facilities selected to be included in the project are PVO assisted: UMC-66, Catholic-7, and Garenganze-3. This represents virtually all the PVO facilities that exist in the area. They were selected because they are considered viable, sustainable institutions. The only ones that are self-sustainable without donor subsidies are the dispensaries (63 of the 76 institutions). If there were state-run dispensaries these might conceivably have been included in the project.

Since the PP was written in 1984 many changes have occurred within these institutions. Some of the dispensaries have closed or changed locations. It is now necessary to update the assessment made of all facilities to determine actual construction, equipment, and budgetary needs. Each site should be visited.

Up to the writing of this evaluation, Bishop Songasonga has failed to execute the proposed sub-grant agreement with UMC to provide project assistance to Catholic institutions. If this issue is not resolved by the end of December 1986 it is recommended that the project reschedule the use of those funds.

Many of the health facilities visited by the evaluation team have additional needs which could then be met. Funding could be partially used to provide water distribution systems to health facilities and, as the health zones develop, state-run rural dispensaries might be assisted.

5. Construction

Construction is approximately a year behind the schedule laid out in the PP. This is due to delays in hiring technical staff and procuring supplies and the seven-month absence of the project Director during its start-up.

Work currently being done, which should be finished by the end of 1986, includes the following:

- Rehabilitation by contractors of the Mama Mobutu Methodist Hospital and;
- Rehabilitation by force account of the Methodist Medical Center, Maternity, and Pharmaceutical Depot in Kolwezi. Oversight is provided by the project Construction Supervisor.
- Construction by force account of the base camp at Kasaji consisting of two houses and a project depot. Supervision is provided by the project Engineer/Construction Specialist.
- Fabrication of bricks by the local population to be used to build several local dispensaries.

The quality of the work is mixed. This is partially due to the fast pace of the work and also a loose agreement with the contractors. Standards of performance and specific material requirements were not included in the contract.

A contractor has been chosen for the Katoka Medical Center and another is being considered for the Samuteb Memorial Hospital in Kapanga. In both these locations expatriate construction supervisors and local work crews are available. It is recommended that, whenever possible, the sub-projects provide construction and financial oversight and use force account work crews.

When contractors must be used, detailed contracts with minimum standards specified should be drawn up.

A project-wide construction plan including material, personnel, and financial requirements needs to be established. This will require site checks to each sub-project to determine specific needs and resources locally available. Assistance in workplan preparation might be sought through an organization such as the ECZ Office of Architecture.

6. Extension

The only concrete outreach activities planned in the project are the three rural development/public health sub-projects (16, 17, and 18). One of these projects, at Kasaji, will have to be dropped due to the departure of the Franciscan priests who had developed the plan. The Kapanga project now has three public health nurses based in rural health centers who coordinate preventive and promotive activities in their service areas while each of their counterparts provides primary curative care. The Katoka project is in the conception stage. Village chiefs and church leaders have been asked to identify candidates to be trained as voluntary CHWs. These workers will perform both rural development and public health activities under the supervision of medical center personnel. The Katoka and Kapanga sub-projects should meet regularly, with each other and with Zone Medical Directors, to share problems encountered and lessons learned.

Another expected outcome of the ISROS project is the extension of preventive and promotive activities in all dispensary service areas. The project is providing bicycles, teaching aids and access to solar refrigerators to all dispensaries. If the project supports training and follow-up supervision in PHC activities there should be a tremendous increase in vaccination, pre-school and prenatal coverage.

7. Sustainability: Operation and Maintenance

As the primary function of the ISROS project is to rehabilitate and resupply health facilities with needed equipment, the project can only have an impact on the population if this equipment is maintained in good working order. The project currently has no O&M plan. It is therefore recommended that ISROS consider as a priority the insurance of a strong maintenance and repair program for each sub-project.

The health specialist team should determine maintenance needs of the equipment being distributed and then either provide or organize training for personnel from each facility who have been identified as maintenance and repair persons.

ISROS staff should collaborate with SANRU and ECZORT for training in equipment O&M whenever possible.

8. Coordination with National Health Zones, the SANRU Project, 115 and 116.

a. National Health Zones and SANRU

Since the writing of the PP in 1984 national health zones have been defined and Zone Medical Directors have been named. Without outside assistance to cover investment costs and start-up operating costs, however, these new entities are virtually non-functional. Of the seven health zones in which the ISROS project is active, only Kapanga Zone has received outside assistance (through the SANRU project). Because ISROS is also very active in Kapanga the two projects have divided up assistance such that ISROS provides all building, equipment and local training and SANRU provides national training, guidelines for implementation of PHC, and TA.

In the other six health zones collaboration between ISROS and the Medical Directors has been minimal. Health facilities were chosen because of their viability which forcibly excluded all state-run hospitals (PVO-run hospitals receive subsidies of approximately \$100,000 annually). State-run dispensaries, which might have a better chance of being self-sufficient, virtually do not exist.

Although it is outside the purview of the ISROS project to create new health infrastructures, it would be quite appropriate to collaborate with the health zones in already planned activities. The ISROS health team could well work with Zone Medical Directors to design and carry out training activities in PHC including health personnel from both state and project-supported institutions. Supervision of rural dispensaries, vaccine distribution, and impact evaluation (utilization rates and health status), might also be done in collaboration with the health zone offices.

During the period 1987-1989 SANRU plans to extend its assistance to three more zones: Sandoa, Dilolo, and Kisenge. It is therefore recommended that ISROS coordinate with SANRU so that equipment supplied to health facilities be standardized thereby facilitating its correct use, maintenance, repair, and spare part procurement.

SANRU should further be used as a resource for training materials, standing orders for service delivery, visual aids, and training and expertise in equipment maintenance.

b. The Roads Project 115

This project will facilitate supervision of rural dispensaries, regular resupply of basic drugs and community outreach activities.

c. The Water Project 116

Ten major medical facilities are to receive assistance through 116 to improve their water supply. Villages with dispensaries should also be considered priority locations for improved water sources and wells. Dispensary nurses and outreach workers should be trained in conjunction with 116 personnel in water usage so that they may do regular community education.

9. Progress of Project and Likelihood of Achieving Project Objectives by PACD

The project had a slow start-up and is about a year behind its initial construction and supply implementation plan. Nonetheless, it now has its technical staff on the ground and working, has its administrative systems (financial management and procurement) running smoothly and has nearly completed work at three major construction sites. If a well-organized construction plan can be established and followed making maximum use of construction expertise locally based with sub-projects, work should be able to be completed by early 1989 as opposed to the PACD of 3/91.

D. Conclusions

Overall, this is a good project. There have been some initial delays but it now appears to be on track. Construction work should even be completed early. There is a very real need for rehabilitation of the area health facilities and the impact on health service delivery in the Kolwezi and Lualaba sub-regions should be great. Through the collaborative efforts of the Health Specialists, the Zone Medical Directors and the two public health/rural development sub-projects, the quality of care - curative, preventive, and promotive should increase significantly.

V. Shaba Refugee Project Roads Project

A. Introduction

The goal of the project is to make significant improvements to the transportation facilities in the Lualaba sub-region of Shaba thereby increasing economic opportunities for returning Zairian refugees as well as Angolan refugees settling in the area.

This is to be accomplished through renovations, repairs, and maintenance of 3291 km of national and regional roads which includes 1500 km of agricultural feeder roads and repairs or improvements to approximately 32 bridges and river crossings. USAID will work through the Office des Routes/Shaba to achieve these objectives.

USAID is providing equipment along with spare parts, bridge and culvert materials, and funding for a technical assistance team.

The GOZ through OR/Shaba is absorbing basic administration costs, counterpart is funding operating costs of the production unit including salaries, utilities, fuel, and the construction of the base camp at Kasaji.

A new roads project in the area is planned with the Belgian government working with OR/Shaba in the Sandoa Zone. This is a three year project with expected outputs of improved maintenance of 400 km of national roads and 600 km of agricultural feeder roads. The Belgians are providing a technical advisor, materials for bridges on the road between Sandoa and Kapanga, and equipment (see annex D). OR is expected to pay workers' salaries.

B. Status of Funding

The PP called for total project funding of \$12.6 million, a \$7.5 million grant and a \$5.1 million host government contribution, mainly counterpart and unquantified in-kind contributions by the OR. The US grant of \$3.5 million was obligated by the PROAG which specifies GOZ contribution of not less than \$5.1 million. Subsequently USAID agreed with OR to provide 2.41 million (\$860,000) for dollar procurement of heavy equipment under the CIP program. USAID and AID/W has provided additional dollar funding for the project of \$500,000 in FY 86 and will provide \$1.3 million in FY 87. The total funding plan therefore is in US funds of \$5.3 million, counterpart funding of \$0.86 million equivalent for dollar procurement of heavy equipment and \$5.1 million equivalent of CPF for OR operations and local procurement of road building materials and supplies. This totals \$11.2 million, representing a 10% decrease over the original plan. Realization of project funding is critically dependent on future counterpart fund availability. The 11.2 million does not include the in-kind contribution of OR which includes use of existing earth moving equipment (annex D) and basic salaries of key OR personnel.

Summary: Funding Status

	<u>\$ Grant</u>	<u>Host Country</u>	<u>Total</u>
PP.	\$7.5m	\$5.1m	\$12.6m
FY 85	\$3.5m obligated	\$5.1m	
FY 86	\$.5m obligated	\$0.86	
FY 87	<u>\$1.3m</u> planned	<u>\$0.00m</u>	
	<u>\$5.3m</u>	<u>\$5.96m</u>	<u>\$11.26m</u>
		Difference	\$ 1.34m

C. Implementation Status

Implementation during the first two years of the project has focused mostly on start-up activities. The following is a brief summary of activities:

1. Most of the equipment has been ordered. Bids and technical specifications are being reviewed for the vibratory compactor and agricultural tractors/trailers. The Landrovers have been purchased and are in service. Four road graders are due to arrive in Kolwezi in September. All other equipment is expected to arrive by the end of the year (1986). Existing equipment has been repaired and is in service.

2. OR/Shaba has negotiated and signed a host country contract with ORT for the provision of technical assistance. The TA team, composed of a senior roads engineer and a master mechanic, is expected to arrive in October 1986.

3. Staffing of the roads production unit, based in Kolwezi, has begun.

4. Construction has started on a base camp in Kasaji. This camp will consist of a renovated warehouse, an office building, three staff houses, a mechanic shop and a generator house. The construction work is about 35% complete. If construction materials are available, the camp could be complete by the end of the year (1986).

5. Road Maintenance in Dilolo zone has begun using manual labor.

D. Evaluation Issues

1. Need for Project Redesign

In light of the new Belgian road project in the area and the expectation that total funding for the project may not attain the \$ 12.5 million proposed in the PP, the project needs some redesign. This should include revisions in the expected outputs and implementation schedule, a revised equipment list, financial plan, and staffing plan. The TA team is expected to arrive in October 1986. Its first task will be the preparation of an implementation plan. This plan, along with a revised financial and management plan to be prepared by OR/Shaba, will serve as the basis for a revised project design.

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2. Location of Base Camp

The base camp has been located in Kasaji for the following reasons:

- 1) the availability of a large parcel of land with an existing warehouse shell,
- 2) its location next to the railroad thus easing delivery of materials and equipment, and
- 3) the major government offices for the sub-region are located in Kasaji.

Although a more centrally located base camp such as Sandoa might have been preferred, construction has already begun in Kasaji and if this is supplemented by a sub-base camp in Kapanga and station offices in Sandoa and Dilolo it appears to be a feasible arrangement.

3. Adequacy of Management

OR/Shaba has demonstrated its commitment to this project by assigning well-qualified engineers to the project. These include the chief of the production unit, head of the technical department for the production unit, and head of the construction brigade in Kasaji. Their efforts in organizing the start-up activities (construction of the base camp and development of manual maintenance program) without the assistance of the TA team have demonstrated their management abilities. Previous USAID-funded projects in the Shaba Region demonstrate the abilities of this organization to manage this project.

The shared project management responsibilities between DEO in Kinshasa and the ADO in Shaba appear to be working well. Good cooperative working relationships exist between the Area Development Officer, DEO, project Officer, OR/Shaba, and the production unit personnel in Kolwezi. U.S. support has been instrumental in expediting the start-up despite the absence of the TA team and delays in procurement.

4. Progress achieved vs. objectives

The PP does not present a work plan that allows easy comparison with progress achieved to date because start-up activities are not included in the work plan. The PP does forecast a five-year period for the completion of road work and bridge repairs. The project is currently about one year behind schedule. However, timely arrival of the TA team and equipment coupled with carefully coordinated implementation planning could recoup much of the lost time during the remaining life of the project and bring it in line with the proposed schedule by 1990.

5. Likelihood of achieving objectives by PACD

The OR production unit is fully operational and is currently working on minor maintenance unit until the equipment and TA team arrive. Hence all equipment is expected to be in place by the end of this year (1986). The team should be arriving in October 1986, and should have an implementation plan prepared by the end of the year. The OR production unit is ready.

All elements should thus be in place by the end of the year and serious mechanized road maintenance should proceed in a timely fashion.

E. Conclusion

Although the project has experienced delays in start-up it is moving along at an acceptable pace. The arrival of the technical assistance team will provide the opportunity for detailed implementation planning. The foundation exists for a very successful project.

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VI. Shaba Water Project (116)

A. Status of Start-up and Implementation

The project was designed in 1984 with the assistance of the International Association for Rural Development (AIDR), a private voluntary organization which did extensive rural water development in Shaba in the 1960s. The project Paper was signed in September 1984 and the project Agreement in May 1985. Project activity began shortly thereafter following the execution of a Cooperative Agreement between USAID and AIDR dated June 5, 1985 and the simultaneous execution of a Memorandum of Agreement between SNHR and AIDR. In effect the three documents constituted a tripartite agreement. The first project personnel were furnished in August 1985. Construction of the Sandoa base station began in September 1985. A major disruption occurred when AIDR went into liquidation early in October 1985 (as a result of events external to Zaire) and USAID voided the Agreement in November. USAID in consultation with SNHR was able to make interim arrangements to maintain the TA team in place and continue implementation. During this interim period, a new PVO, the International Association for Rural Development in Zaire (AIDRZ) was formed. In August 1986, USAID signed a new Cooperative Agreement with AIDRZ naming it as Implementing Agent.

The work in the first year has proceeded well. The major set back has been in dollar-funded procurement which was delayed as much as 6-8 months as a result of the AIDR liquidation. This in turn delayed start-up of the village well program.

Delayed procurement has been a major factor in slow start up of the well program but in any event some delay would have been needed to reinforce the community extension activities (as has been done) of the project to insure establishment of satisfactory O&M systems for villages opting to participate in the program.

B. Status of Funding and Planning

A total of \$4 million was originally estimated required to carry out the project. Revised estimates of input requirements and costs have raised the estimate of total costs to \$6.25 million. A revised funding plan was worked out by USAID and SNHR in mid-1986 and incorporated in the Cooperative Agreement executed by USAID with AIDRZ in August, 1986. Under this plan, the U.S. dollar grant remains at \$2.25 million as provided in the PROAG. The estimated requirement for local currency (in the form of counterpart funds) has been raised from "not less than the equivalent of \$1.8 million" to not less than \$4.0 million equivalent (Z 240 million).

A consensus has developed that the village program should be geared to a pace of approximately 10 spring catchments and 10 tubewells per month leading to about 500 catchments (as originally planned) by end of project and to about 370 village wells (vs 570 originally planned).

It is recommended that the project implementation plan be revised to take advantage of opportunities to install gravity flow systems in selected areas thus meeting needs of several medical centers, a considerable number of villages and a number of larger rural agglomerations/trading centers.* A revised implementation plan and project description is needed reflecting these output changes.

In the opinion of the Director General of SNHR, this change as well as other modifications in the project Description should be reflected in an amendment in the PROAG as well as in the Cooperating Agreement and in an AIDRZ-GOZ Memorandum of Agreement.

C. Evaluation Issues

1. Need for Project Re-design

Some modifications in project design have been made such as the decisions to eliminate dug wells from the program and to modify the schedule for drilled well installation. Others are needed, such as decisions dealing with the issue of water supply for medical centers and for major rural agglomerations. Several other adjustments in design are also planned (see Annex D, section 4). There is a need to incorporate such design changes in a revised project Description to the PROAG.

2. Adequacy of Project Management and USAID Support

A well organized and staffed project management structure has been put in place. The work carried out so far in installing the Rural Hydrology Station in Sandoa and in carrying out site surveys, spring capping and studies for water systems confirm the adequacy of the project Management to carry out the project successfully (Annex D, section 5).

USAID support has been effective in providing support to the project and particularly, in arranging interim measures to maintain implementation after the cancellation of the AIDR Cooperative Agreement. The establishment of the USAID Area Development Office in Lubumbashi has been an important and necessary instrument for effective USAID support and monitoring of this and the other Refugee projects.

The lack of adequate water supplies for major health facilities has been a concern. Planning for the health project has assumed that the water project would deal with this problem and the current work plan for the water project specifies that in a first phase studies will be undertaken to supply institutions such as hospitals, schools, health centers, etc., with water systems... and that the first evaluation will decide whether the studied systems are to be implemented. The problem is not only a matter of water to insure proper treatment of patients but one of adequate sanitation in medical facilities to prevent contamination and spread of disease. Annex A, Section C(viii) provides an analysis of how the need for water supplies for ten major health facilities might be met. In addition, the location of dispensaries is judged a major factor in site selection for village water supplies (Annex A, Section 7(a)).

Dollar funded procurement has been a problem. An immediate concern is the provision of pumps before next March when drilling operations are planned. It is recommended that USAID accelerate necessary decisions and AID documentation to enable AIDRZ to expedite pump procurement (Annex A, Section D (2) and Section 6 (c)).

3. Site Selection

Criteria for selection of villages for assistance under the program are set forth in Annex A, Section 7(b). Criteria relate to: need, a fact in most villages; accessibility of villages by road; logistics and requirements for efficient work organization; popular participation by villages; capability of villages to manage and finance necessary O&M.

4. Water Systems

Analysis of conditions in Lualaba indicate that the water systems proposed under the project to provide potable water - spring catchments, tubewells equipped with rugged hand operated pumps, and gravity flow systems for larger rural agglomerations are cost effective and appropriate to the area (Annex A, section 7(c)).

5. Community Development Workers (CDW)

The CDW have been well trained and are effectively supervised by the Head of the Community Development Division. Villages in which CDWs have worked appear to understand the importance of clean water and the need and obligation to maintain their water supply systems (capped springs so far). Villages have accepted the responsibility of managing and maintaining their spring catchments. A socio-economic survey indicates that many villages are prepared to contribute and pay for repairs of the more expensive and maintenance heavy tubewell systems. The effectiveness of the CDWs will be tested when the program for well drilling commences, as well as the willingness and ability of villages to pay for the O&M pumps. These questions needs continued monitoring by the parties concerned (AIDRZ, SNHR, and USAID).

The team has a concern lest CDWs oversell the pump program and lest they present the program as a Government endeavour which requires village assistance as opposed to a village community endeavour enjoying Government assistance. Project Management should ensure this concern is taken into account.

6. Village Maintenance System

The three tiered system for village maintenance which was designed by a consultancy team in November 1985 has been accepted by project Management. The evaluation team reviewed the proposed plan and considers it is workable. However, experience may well indicate the need for substantial modifications. The system for repairs in event of breakdowns and for spare part procurement provision is fully described in the consultant's O&M report. A question to be pursued is the possibility of requiring or encouraging the pump supplier to arrange for local procurement of spares through an importer in Kinshasa. This question is also of concern to USAID's SANRU II project. A french version of this report should be provided to SNHR and AIDRZ as soon as possible.

7. Progress Achieved vs Planned Objectives

The original work plan (PROAG) had scheduled installation and renovation of 170 wells and development of 140 spring catchments in the first two years. Under the revised schedule included in the agreement with AIDRZ it is projected that about 70 drilled wells and about 150 springs would be capped by the end of year 2. Progress on studies of gravity flow systems and installation of a system for the town of Musumba is on schedule.

8. Likelihood of Achieving Project Objectives by PACD

The objectives set forth in the PP and PROAG have been modified in the recent Cooperative Agreement with AIDRZ (Annex A, section 4). Further modifications are under review as noted above. As revised, the project is considered very likely to achieve its objectives by PACD. This assumes assured provision of planned inputs, as revised; that is that the revised financial plan will be realized. The achievement of the objectives is likely to lead to a somewhat greater number of persons benefiting from potable water than calculated in the PP.

D. Findings

This is a well conceived project. Some delays have been experienced in the first year. Some (desirable) redefinition of objectives and planned outputs has taken and is taking place. The Evaluation Team found a strong project Management structure and competent personnel in place, strongly supported by the head offices of SNHR and AIDRZ. USAID support has been effective.

The project does require some redesign and this should be undertaken in the next 4-5 months. The redesign should take into account the scope for expansion of gravity flow systems.

The Community Action component of the project is essential to the issue of sustainability of village water systems. It also holds promise for other self-help community action in the project area. The project clearly will have the added benefit of strengthening the capacity and effectiveness of the SNHR.

ANNEX A

STATEMENT OF WORK

I. The objective of this contract is to hire a health specialist and construction engineer to assist the Team Leader in conducting the Refugee Projects Evaluation.

II. Project Description

The Shaba Refugee Projects were conceived as six-year endeavors designed to rehabilitate and improve the rural health, water, and road infrastructure of the Lualaba sub-region, a refugee area of the Shaba Region of Zaire. Their goal is to reintegrate the Lualaba sub-region repatriates and refugees into regional socio-economic development.

The health project is to move toward this goal through capital improvements to both local public health and local curative medical programs, most of which are part of existing viable but undercapitalized programs of voluntary agencies. This is to be done by relying on existing networks and initiatives of private voluntary organizations, primarily church groups. The road project is to contribute to this goal by assisting the Shaba Bureau of Roads in rehabilitating to appropriate standards the entire network of national and regional roads in the project area, in addition to a network of key feeder roads. The water project will provide benefits to the local population through improved water supply resulting from renovated wells and capped springs in villages, and through piped water systems in several large centers. Improvements will also be made to area institutions such as hospitals, health centers, and schools.

III. EVALUATION PURPOSE

This initial evaluation of Projects 660-0114, 660-0115, and 660-0116 constitutes a Routine Implementation Evaluation. The evaluation will assess project progress vis-a-vis project objectives as identified in the Project Papers to determine if the projects are on track. Implementation for Project 660-0115 has not yet begun, though some manual maintenance work has been done. The evaluation of this Project will determine if appropriate elements are in place to permit mechanized road rehabilitation to proceed in a timely and effective manner.

IV. EVALUATION TEAM AND QUALIFICATION CRITERIA

The evaluation team will comprise three members. The Team Leader must have a graduate degree in economics, sociology, or some other related field and several years' experience managing projects in lesser developed countries. He must also be able to write English well and speak French fluently. The Team Leader will be assisted by a construction engineer and health specialist. The engineer must have a bachelor's degree in engineering and several years' construction experience in Africa; the health specialist must have a master's in Public Health and five years of experience working with African health systems. Both evaluators must speak french fluently.

IV. EVALUATION REPORT

The contractors will assist the Team Leader in submitting a final evaluation report before September 25, 1986. This report will be limited to 15 pages and will be prefaced by an executive summary of no more than two pages. (Additional comments and analyses may be appended to the report.) The evaluators will address the questions and issues listed below, as well as pertinent evaluation issues listed in the Zaire FY87 ABS.

V. EVALUATION ISSUES

A. General Issues

1. Project Management. Are the projects being effectively managed? Are reporting systems adequate? Are project accounts up-to-date and accurate?
2. USAID support. Is USAID providing adequate support to the Projects? Has the placement of an USAID Project Officer in Lubumbashi facilitated project implementation? Discuss.
3. Procurement. Is procurement for each of the projects on a schedule that will lead to achievement of outputs by project PACD?
4. Project Redesign. Is any redesign of the Projects necessary? If so why? Describe necessary revisions.

B. Shaba Refugee Health Project (660-0114)

1. Coordination. Do the Project's activities fit into the National Health Program? Does the Project coordinate its activities with other Shaba-based PVOs working in health? Is the project's collaboration with the GOZ's national health zone program appropriate?
2. Project Staff. Is a health specialist required for this Project? If so, outline this person's responsibilities.
3. Selection of Health Facilities. List the facilities that are to be built or rehabilitated under this Project. Consider what other facilities might be included under this Project should additional funds become available.
4. Construction. Is construction on schedule? Is construction work being properly supervised? What is the quality of work being done?
5. Extension. Has the outreach system been effectively planned?

C. Shaba Refugee Road Project (660-0115)

1. Base Camp. Will the present proposed location for the base camp permit mechanized road work to be done effectively and efficiently?
2. Managment. Does the local Office des Routes unité de production seem capable of implementing this project? Discuss.

D. Shaba Refugee Water Project (660-0116)

1. Water systems. Which of the three basic water systems (tube-well, capped spring, or gravity feed) performs best under project area conditions? Which system is the most efficient? Develop site-specific criteria for system selection.
2. Construction. Is construction of planned water systems on a schedule that will permit achievement of Project Paper outputs by PACD and within budget? Assess the quality of work being done.
3. Site Selection. Review criteria for site selection. Discuss.
4. Community Development Workers. Review the effectiveness of community development workers. Have they adequately explained the importance of clean water? Have they generated enough enthusiasm in the village to elicit villagers' involvement in the construction and long-term maintenance of the water system? Are villagers prepared to contribute to installation and pay for repairs? Are local missions willing to support the maintenance and repairs of the water systems?
5. Village Maintenance System. Review how village water committees will manage the improved water systems. Is the scheme developed by WASH for village-based maintenance workable? How will the systems be repaired when they break down? How will spare parts be procured?

ANNEX B

LIST OF PERSONS CONTACTED

KINSHASA

USAID

Cit. Mulamba Wakabasele, Engineer, USAID
Mr. L. Braddock, Chief, USAID/DEO
Mr. Timothy Born
Ms. Katherine Newman
Mr. Debra Rectenwald, USAID Evaluation Officer
Mr. David Leong, Deputy, USAID/DEO
Mr. Richard Dreiman
Mr. Robert Harrelson
Mr. John Bierke, Chief, USAID/Program
Mr. John Wiebler, USAID/Program
Mr. Donald Brown, Chief, USAID/Agriculture & Rural Development
Mr. Brian Therrien, Assistant, USAID/Controller
Mr. Dennis Chandler, Director, USAID
Mr. Arthur Lezin, Deputy Director
Mr. Max Walton, Chief USAID/Management
Dr. Glenn Post, Chief, Public Health Office, USAID
Dr. Franklin Baer, USAID/PHO

AIDRZ

Mr. Guy Petit, Administration Delegeue

GOZ

Mr. Lukono Sowa, Director General, SNHR

LUBUMBASHI

Mr. L. Skip Waskin	Area Development Officer, USAID
Mr. David Williams	Logistics Officer
Mr. Thomas D. Gradisher	Acting Chief, US Consulate
Dr. Jeffrey Hoover	ISROS Project Director
Cit. Ishmael Mukengela	ISROS Admin. Assistant
Cit. Mwela	ISROS Accountant/Secretary
Cit. Mande	ISROS Admin. Assistant
Prof. Kilanga Musinde	Scientific Advisor to the President of the University of Lubumbashi
Prof. Kamwiziku Wozol Apangi	Director, Centre Interdisciplinaire pour le Developpement
Dr. Tshiula wa Tshiula	Professor of Pediatrics, University of Lubumbashi, Ruashi Zone Medical Director
Dr. Talleyrand	University of Lubumbashi, Founder, Centre Interdisciplinaire pour le Developpement
-----	Belgian Consulate
Cit. Kambale	Administrative Director, Office des Routes

Kolwezi

Father Phillip

Dr. Hugh Frazer

Cit. Kayij

Mr. Niels French

Cit. Mutombo Munung

Cit. Mbumbe

Cit. Mbongo Mpassi Matondo

Cit. Bukolabwabu Kazadi

Cit. Ngandu Tshilumda

Secretary to the Bishop, Catholic
Diocese of Kolwezi

Medical Director, Mama Mobutu Hospital

Administrator, Mama Mobutu Hospital

Construction Supervisor, Kolwezi

Sub-Projects

Director, Methodist Medical Center

Head nurse, Methodist Dispensary

Director of Production Unit - O.R.

Technical Director of PU Office des Routes

Engineer for Construction Brigade "

Kanzenze

Father Phil

Dr. Therese Reyzabel

Kanzenze Catholic Mission

Kanzenze Catholic Medical Center

(usually at Kafakumba)

Kasaji

Sister Godille,

Rev. Momo Tambulananga

Cit. Ngandu Tshilunda

Mr. Tin Sy Nguyen

Cit. Tshinga Tshikwata

Dr. Kingwaga Kabeta

Kasaji-Lueo (Catholic) Medical Center
Deputy Commissaire de la Sous-Region de
Lualaba

United Methodist Church

Chief de Construction, OR

Chief, Production Unit, OR

Adjoint Technique, PU, OR

Engineer and Construction Specialist, ISROS

Administrator, Mama Mobutu Garenganze

Hospital (Chisengama)

Military Doctor, Chisengema Hospital

Katoka

Ms. Sandra Mai

Cit. Moke

Nurse, Katoka Medical Center

Head Nurse, " "

Dilolo

Dr. Muhemeri Bizibu

Mr. Kaba

Sister Therese

Cit. Balebale

Cit. Ntontolo Ngiekama

Dilolo Zone Medical Director,
Lualaba Sub-Region Medical Director

Director, UNHCR Dilolo base

Director, Dilolo Post Medical Center

Commissaire de Zone

Engineer for Dilolo Zone, Office des Routes

Sandoa

Cit. Nsingi zi Nkanu

Mr. Maurice de Bachere

Cit. Mudahama Towa

Cit. Bigwi Kabagema

Commissaire de Zone

Water Project Director, AIDR/Z

Chief of Station, Water Project, SNHR

Head of Community Development Water

Project, AIDR/Z

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Cit. Muteba Kazake	Deputy Head of Community Development Water Project
Cit. H. Muzimbe	Water Project Administrator, SNHR
Mr. David Zielke	Water Project Assistant Administrator
Mr. Georges Appelmans	Head of Technical Services Water Project, AIDR/Z
Cit. D. Nsimba	Deputy Head of Technical Services Water Project, SNHR
Cit. U. Mishitu	Head of Well Capping Crews, Water Project
Cit. Kasil Kanyok	CDW, Water Project
Cit. Mutombo Malaz	" " "
Cit. Hungisa wa Hungisa	" " "
Cit. Manyingu Kasongo	" " "
Cit. Kadish Swan Kakom	Head of Sandoa Road Brigade, OR
Cit. Bongl Bomua	Zone Medical Director and Hospital Director
Dr. Kandal a Karumb	
<u>Kafakumba</u>	
Mr. & Mrs. Ken Enright	UMC
Sister Begonia	Catholic Mission, Kafukumba Medical Center
<u>Tshimbungu</u>	
	Chef de Groupement Dirigeant Water Committee Members
<u>Tshipog</u>	
	Water Committee Members
<u>Saka ji</u>	
Cit. Saka ji	Village Chief Water Committee Members
<u>Musumba</u>	
	Chef de Groupement, Mutij Village Elders
<u>Kapanga</u>	
Cit. Kanyinda Mvunda Mpumina,	Commissaire de Zone
Sister Caroline	Director, Ntit Medical Center
Dr. Stephen Bradley	Director, Samuteb Hospital and Chisambu Medical Technical Institute
Mr. Martin Hartog	High School Principal and Construction Head, Methodist Mission
Cit. Bhingoz Yau	Chief of Administration, Samuteb Hospital
Cit. Kalende Yau	Chief Nurse Samuteb Hospital Dispensary

Dr. Emanuel Bitsch-Larsen
Dr. Val Bitsch-Larsen
Dr. Mwembo
Ms. Geraldine Allen
Cit. Ndola

Samuteb Hospital
Samuteb Hospital
Kapanga Zone Medical Director
Assistant Director, Chisambu Medical
Technical Institute
Public Health Nurse, Kapanga Health Center

ANNEX C

SHABA REFUGEE HEALTH PROJECT
START-UP EVALUATION

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I. STRATEGY

The strategy adopted in the Project Paper (PP) is to help reconstruct and improve the existing network of PVO-supported (Methodist, Catholic, Garenganze) health-care delivery systems in Lualaba sub-region over a relatively short period of time and without the necessity of creating new agencies or bureaucracies. The modus operandi is by cooperative agreement with the Field Treasury of the United Methodist Church (UMC) to reinforce the existing health infrastructure. The strategy assures sustainability since it may be expected that the PVOs will continue support required to subsidize hospitals and medical centers as they have for many decades. State hospitals are excluded under the project because of (1) limited budget support and administrative capacities to insure sustainability and proper use of assistance, and (2) because institutional development assistance to these hospitals will be channeled through the SANRU project.

The ISROS project (Infrastructure de la Santé Rurale dans l'Ouest du Shaba) is a special program of the Southern Zaire Annual Conference of the UMC. It is the executing agency for the Shaba Refugee Health project, number 660-0114, with additional funding in local currency from USAID in conjunction with the Republic of Zaire Ministry of Planning.

Although the project is managed by UMC it is essentially 21 separate sub-projects of the three major PVO health care providers in the area: UMC, the Catholic Church and the Plymouth Brethern, also known as the Garenganze Mission in Zaire.

An area assessment was done of viable health institutions to determine their material and renovation needs. The ISROS project now procures and distributes all materials and supplies for the 21 sub-projects. In collaboration with each of the chosen health facilities the project staff determines the best method of completing the work to be performed. Project staff oversee and coordinate construction and health care improvement activities to assure an appropriate and timely implementation.

The evaluation team considered that the project strategy is sound. However, as noted below, it recommends increased cooperation between the project and SANRU and national health zones which have been established since the Project Paper was approved.

II. OBJECTIVES

The goal of this project is to improve the health and socio-economic status of the resident population of the Lualaba and Kolwezi sub-regions (includes permanent residents, Angolan refugees and repatriated Zairians recently returned to the country) through the

1. rehabilitation and renovation of the existing, viable health facilities;
2. re-equipping of health facilities with the most cost-effective material and equipment (excluding drugs) in order to deliver adequate care;
3. rehabilitation and expansion of an air ambulance referral system; and
4. expansion of a PHC outreach network.

III. DESIGN CHANGES

A. PERSONNEL

There is no technical assistance programmed in the Project Paper. The project has now hired three expatriate staff members: the Director, a construction engineer, and a construction supervisor; and is in the process of hiring a nurse/doctor couple to fill a health specialist position.

B. DRUG PROCUREMENT

It was found that drugs could be purchased in Europe at half the price of those available from American suppliers so this component was eliminated from the project. These funds are to be channeled to provide more equipment and construction.

C. PUBLIC HEALTH SUB-PROJECTS

These sub-projects are designed to equip community health worker (CHW) programs; including training materials, vehicles for supervisor and CHW transport and actual training costs. One of the three does not actually exist as there are no longer personnel available to plan and carry out the program at the chosen site (Kasaji).

D. CATHOLIC HEALTH SERVICES PARTICIPATION

Eight sub-projects are planned for Catholic-run health facilities. The bishop for this area, Bishop Songasonga, has, thus far, refused the assistance of USAID-funded projects. If he, in fact, does not authorize assistance, these funds will have to be rechanneled.

E. IMPLEMENTATION PLAN

- Due to:
1. delays in hiring TA staff,
 2. changes required by USAID in procurement methods, and
 3. a seven-month absence of the project Director,

the project is at least a year behind its initial implementation plan. Much equipment has come in and more is still on order. In only three sites has construction begun: Mama Mobutu Methodist Hospital, the Methodist Medical Center, Maternity, and depot, both in Kolwezi, and the project base camp in Kasaji (two houses and a depot).

Equipment and construction needs have also changed in many health facilities since the Project Paper was written in 1984. Some have found other sources of supplies and others have additional needs. A current needs assessment and implementation plan including current cost information has not yet been done.

IV. SELECTION OF HEALTH FACILITIES

All health facilities were chosen on the basis that they be (1) within the project area and (2) viable functioning institutions which would thus provide a good assurance that the capital investments made in them would be cost-effective and long-lasting. Unfortunately, given these criteria, no state-run health facilities were included and this has created some bad feelings. All major project health facilities visited met these criteria.

V. SUSTAINABILITY

All the major health facilities visited appear to be viable, sustainable institutions given the continued support of their respective PVO donors. None of the medical centers or hospitals is self-sustaining without this support. It is estimated, for example, that the two major hospitals in the project, Mama Mobutu in Kolwezi and Samuteb in Kapanga each receive about \$100,000 - \$130,000 per year from the Methodist Church to cover operating expenses. This figure does not include expatriate salaries.

VI. PROJECT ORGANIZATION AND MANAGEMENT

Coordination and oversight of the 21 sub-projects is done through two project bases.

The project Director and his administrative staff are based in Lubumbashi. From here supplies are procured and received and general project administration is performed. All major financial transactions are performed through this office. This site provides easy access to the USAID regional office which is also based in Lubumbashi.

The project field station is located in Kasaji, in the heart of the Lualaba sub-region, the area of project activities. The project Engineer/Construction Supervisor and Health Specialists are based here.

For construction and rehabilitation activities the project uses, whenever possible, local builders and technicians who are already working for the sub-project health facility. If there is not a local capability either a contractor is hired or one of the project construction supervisors oversees the work by force account.

Health activities will be coordinated by a nurse-doctor team who will be arriving in mid-September 1986. They will facilitate collaboration among health care providers and the Rural Health Zone offices, plan training activities in primary health care (PHC), equipment use and maintenance and health center management and they will oversee activities in the rural dispensaries.

As this project is essentially one of material support, the control of the use of goods received is an important component. Up to the present there has been little monitoring on the end use of goods distributed to the sub-projects. As more supplies come in and distribution becomes wider, the importance of complete files of materials received for each sub-project and actual field verification of the receipt and use of these supplies will become evident. End use control should be performed on a regular basis, perhaps by one of the two project administrative assistants.

ISROS Project

Organigram

United Methodist Church, Southern Zaire Annual Conference

Field Treasurer
Dennis Hanneman

Project Director
Jeffrey Hoover

Project Engineer
Tin Sy Nguyen (IVS)

Health Specialists
Mary and Scott Endsley
(IVS)

Construction Supervisor
Neils French (IVS)

Accountant/Secretary
Mwela

Admin Assistant
Mukengela

Admin Assistant
Mande

Sub-projects

Methodist
Jeffrey Hoover

Catholic
Nsongasonga

Garenganze
Mary Ratter

Sub-projects:
1,2,3,4,5,15,16,19,20

Sub-projects:
9,10,11,12,13,14,17,21

Sub-projects:
6,7,8,18

A. CORE STAFF

1. Jeffrey Hoover, Project Director.

Provides oversight of project planning and implementation, liaison with USAID, procurement, overall management and accounting. 75% time LOP. Based in Lubumbashi.

2. Tin Sy Nguyen, Engineer/Construction Supervisor.

Schedules construction, oversees construction or work of contractor. Evaluates and determines actual construction needs; solicits, receives and evaluates bids from contractors. Oversees work of other project construction supervisor. Hired through International Voluntary Services (IVS). 100% time LOP. Based in Kasaji.

3. Niels French, Construction Supervisor.

Oversees force account work crews in Kolwezi on Mama Mobutu Hospital, the Methodist Dispensary, Maternity and Pharmaceutical Depot. May oversee some local dispensary construction. Hired through IVS 100% time. Contract ends 12/31/86. May extend to May 1987. Based in Kolwezi.

4. Scott Endsley and Mary McGrory-Endsley, Health Specialists.

Contract signed with IVS in August 1986. Couple arriving in-country mid-September 1986.

Although a full scope of work has not been prepared for this position (one salary), the evaluation team recommends the following:

- Provide or facilitate training in use, maintenance and repair of medical equipment furnished by ISROS project. As the purpose of this project is to rebuild a sustainable health infrastructure, this is perhaps the single most important activity the health team can perform.
- In conjunction with Zone Medical Directors, develop training and supervisory activities for zone personnel in PHC activities and administration.
- Develop a training session for nurses in conjunction with the water project (116) staff to promote community education programs in appropriate water usage (collecting, storing, washing, cooking, drinking) and maintenance of improved water supplies.
- Collaborate with the SANRU national office to assure standardized information dissemination on current PHC practices and procurement, use, maintenance and repair of standardized equipment.
- Set up a workable communications network among interdenominational health care providers for use and payment of air ambulance.
- Provide follow-up supervision and support to dispensary nurses who have participated in training workshops.
- Collaborate with project evaluation team and Zone Medical Directors to develop and implement project evaluation studies. Some of the information needed for this analysis could quite appropriately be collected in conjunction with the health zone (health and nutritional status and practices).

VII. USAID MANAGEMENT SUPPORT

Until August 1985 the project was managed out of the Design and Evaluation Office of USAID/Kinshasa. In August, a branch, partly financed by the project, was opened in Lubumbashi. Since then management support has come from there through the Area Development Officer, Mr. Leon S. Waskin, who is also the Project Officer. The proximity of this office has greatly facilitated the smooth implementation of the project. Project staff are quite satisfied with the backup they have received. Because the implementing agency, UMC, has been well established for many years in this region it has not required much of the assistance AID is often asked to provide. The project has essentially used its own procurement sources and done its own customs handling, for example.

Project staff have, however, spent a great deal of time trying to conform to AID accounting and procurement regulations. For organisations who have cooperative agreements with AID, especially those which are working with it for the first time, as is the case with UMC, it would be extremely useful to provide them with a regulations manual and an initial workshop on procedures as they apply to the project.

VIII. COORDINATION WITH NATIONAL HEALTH PROGRAMS AND SANRU

When the ISROS Project Paper was written in 1984, Rural Health Zones had not yet been defined in the Lualaba sub-region except for Kapanga Zone. The national health zone plan is now complete and Medical Directors (Médecins Chefs de Zone) have been named to coordinate activities in each of these zones. They have each developed plans for an integrated referral system of primary, secondary and tertiary health facilities and for training of personnel in PHC and community outreach activities. Without initial financial assistance, however, these activities cannot get started.

The Kapanga Zone is part of the SANRU assistance program although currently it is only receiving technical assistance and participates in national training activities because the ISROS project has picked up the other capital cost requirements. Dilolo, Sandoa and Kisenge Zones are scheduled for SANRU assistance beginning sometime in 1987-1989.

Although it is outside the purview of the ISROS project to provide the extensive infrastructure building assistance that the SANRU project does, it would be quite appropriate for it to collaborate with the health zones whenever possible. The following list provides some specific recommendations for collaborative activities:

a. ISROS would like to develop and expand PHC activities. This is also the goal of the national health program. SANRU has developed training materials, standard orders for implementation, and visual aids in this area. It is only reasonable that the ISROS health team (Endsleys) work with the Medical Directors in their respective zones to plan and carry out training activities (using SANRU materials) for personnel in all health facilities, not just those with ISROS funding. ISROS might also assist with training and transport costs.

b. In purchasing equipment for health centers, coordinate with SANRU so that the make and model be standard throughout the region. This will facilitate appropriate maintenance, repair, and spare parts procurement.

c. Arrange a training in equipment use and repair that all appropriate zone personnel can attend. Where possible, send personnel to training that has been organized by SANRU or ECZORT in the area. For example, ECZORT is offering a training in solar equipment usage in October 1986.

d. Coordinate supervisory visits with Zone Medical Directors to rural dispensaries. It is a marginal additional expense to ISROS to pick up the Medical Director and it will allow the two programs to evaluate problems and work out solutions together.

e. Vaccine procurement and distribution could be coordinated with the health zones.

f. As the health zones will want to do a basic needs assessment survey (demographic data, nutritional and health status) this might coordinate well with, at least part of, the ISROS impact evaluation. This would again lead to increased collaboration as well as manpower building.

IX. COORDINATION WITH THE ROADS (115) AND THE WATER (116) PROJECTS

The Project Paper states that 8 of the 13 major medical facilities will receive assistance through 116 to improve their water supply and quality. It is strongly recommended that this plan be carried out. Without an adequate supply of clean water cross-contamination can easily occur within the health facility and then be brought out to the surrounding community. Given this same line of reasoning it is recommended that villages in which there are dispensaries or health centers be priority locations for improved water sources and wells.

For the water project (116) to have maximum impact, users must be well educated in proper water management and maintenance of the water source. They have to have a strong belief in the value of clean water. This requires community outreach and training. It is recommended that ISROS work in conjunction with AIDRZ, SNHR and the Zone Medical Directors to develop a training program for rural nurses that will address these needs. Nurses will already be equipped with bicycles and many will begin working with village health committees and community health workers so they are the ideal candidates for this outreach work. Water education can also be incorporated into preschool clinics (CPS).

The village committees which have recently been formed to supervise water source maintenance might well be expanded to become village health/development committees.

The roads project (115) will facilitate supervision of rural dispensaries, regular resupply of basic drugs and community outreach activities. As the village road workers (cantonniers) will be receiving a salary for their work this added income will give the villagers more cash for maintaining the water facilities and purchasing needed drugs.

X. STATUS OF PROJECT IMPLEMENTATION

A. Sub-grant agreements.

The obligating instrument for the project is the Cooperative Agreement executed by USAID with the Field Treasury of United Methodist Church (UMC) on March 19, 1985 providing for a US grant of \$2.5 million in support of the project. The Standard Provisions of the Cooperative Agreement specifies the provisions for sub-grants. In this project two sub-grant agreements were required: one with the Plymouth Brethren (Frères en Christ - Garenganze) for implementation of sub-projects Nos. 6, 7, 8 and 18; and one with the Roman Catholic Diocese of Kolwezi for implementation of sub-projects Nos. 9, 10, 11, 12, 13, 14, 17 and 21.

The sub-grant agreement between the UMC and the Garenganze represented by Gillian Raymond became effective on May 1, 1985. Implementation has begun on the 3 sub-projects.

A sub-grant agreement between the UMC and the Catholic Diocese of Kolwezi was drafted following the return of the Project Director from the United States in March. The draft agreement was to enter into effect on May first for the period extending to March 31, 1991 (the PACD). As noted elsewhere in this report, agreement on this sub-grant has been held up. A meeting with the bishop, Bishop Songasonga, on September 9 is scheduled to determine when and if the Diocese will execute the agreement.

Both sub-grant agreements provide that all assistance shall be in-kind and that the grantees will provide full accounting for the assistance received. The agreements also provide:

- . ISROS will study and approve in advance each sub-project to be financed by ISROS under the project;
- . ISROS reserves the right of inspection and remedy against irregular uses of the assistance; and
- . USAID, through ISROS, reserves the right to direct the activities of the project to assure mutual reinforcement with other development projects in the project area.

B. Sub-project implementation plans.

Since the Project Paper was written in 1984, needs of the sub-projects have changed significantly. A detailed review of each sub-project is needed before additional supplies can be ordered. This would include an up-to-date budget for each sub-project and an implementation schedule so that funding, distribution and training can be planned.

Two sub-projects in Kolwezi and the base-camp in Kasaji should have construction completed by the end of 1986. Some plans have been made to begin work on the Samuteb Hospital in Kapanga and the Garenganze Medical Center in Katoka. Apart from these, however, no overall construction schedule has been established since the PP was written. A detailed analysis of construction needs and resources available must be done for each sub-project site. This should include each of the 63 dispensary sites as well. Although the evaluation team was able to visit 12 of the 14 major health facilities in the project it only saw two dispensary sites. One of these, Chimbang, did not have a nurse, had not functioned for two years and although it has a very solid building, it is slated in the PP to have a completely new building constructed. This clearly indicates the need for replanning based on physical checks to all sites.

C. Financing provided.

A U.S. grant of \$2.5 million was obligated by the Cooperative Agreement between the USAID and the United Methodist Church (UMC) dated March 19, 1985 for procurement of equipment and supplies according to the following schedule:
(1)

- Materials for construction/renovation	\$ 250,000
- Hospital equipment	\$ 500,000
- Electric/solar power equipment	\$ 800,000
- Vehicles and trucks	\$ 500,000
- Inflation/contingency/training	\$ 450,000

	\$ 2,500,000

A technical assistance component was added by agreement with USAID in 1985.

As of August 1986, USAID had advanced \$817,000 to UMC/ISROS, \$407,000 in April 1985 and \$410,000 in July and August 1986. Of this total \$790,000 was committed for overseas procurement and technical assistance. In the opinion of the Project Manager, Mr. J. Hoover, a further dollar advance of \$120,000 will be required in 1986, bringing the total advanced for the project to \$910,000 of which, at year's end, it is projected that \$860,000 will have been expended or committed by letters of credit, leaving a cash reserve of \$60,000 on hand. Dollar requirements have not been established for 1987 and the previous estimates of annual expenditures require revision to take into account revisions and modifications in the sub-projects on which work has been started and implementation of the eight sub-projects foreseen under the sub-grant with the Catholic Diocese of Kolwezi.

(1) USAID, Cooperative Agreement, Kinshasa, March 19, 1985.

The Cooperative Agreement also provided for a host government/local currency (counterpart funding) contribution of at least \$2.3 million equivalent.

At current exchange rates this contribution amounts to nearly Z140 million. This local currency is to fund construction and renovation of medical facilities, local procurement and local costs of transportation of goods and services, and local costs of project management, technical assistance and training. Counterpart funding has been used for local procurement in lieu of dollar procurement in order to expedite sub-project implementation. Examples of such procurement include procurement of roofing materials with counterpart funds in order to ensure supplies before this year's rainy season, the procurement of a computer urgently needed for project management and the procurement of a used ambulance on very good terms.

Counterpart funding is provided by USAID on the basis of annual (calendar year) budgets and advances by the USAID controller as required for project execution. USAID advanced a total of Z 20,000,000 for project implementation in CY1985 which has been expended. The counterpart budget for the project for CY1986 was established at Z 57,260,000 (\$0.95 million equivalent). Through August 1986, USAID had advanced Z 45 million to UMC/ISROS, of which Z 35 million were reported by the project Director as expended or fully committed to be advanced in toto by December 1986. The budget for 1987 will be prepared in October/November 1986 and will reflect modifications in the Implementation Plan.

Proper financial planning for the remaining years of the project will require full review and revision of sub-project implementation plans and funding requirements. USAID and ISROS have delayed such review and revision pending the start-up evaluation scheduled for August 1986 and the hoped-for execution of the second sub-grant. It will now be important to undertake it in the period September-October 1986.

D. Procurement.

Both overseas and local procurement has been carried out in accordance with the initial procurement plan drawn up in 1985 and in the spring of 1986 for implementation of 13 of the 21 sub-projects proposed and for project management, including project base station in Kasaji.

Procurement planning and implementation for the other 8 sub-projects will be undertaken with the execution of the sub-grant agreement with the Catholic diocese.

Overseas procurement initiated through August 1986 (and expected to be completed by January 1987) includes:

	<u>\$000s</u>
. Vehicles and trucks	218
. Aviation equipment and spares	38
. Computers, photocopiers, typewriters, office equipment	51
. Electric/solar power equipment	308
. Medical/health equipment and supplies	103
. Laboratory equipment and supplies	-
. Communications equipment	34
. Cement (Zambia), construction materials	53
TOTAL	<u>805</u>
* Ordered in 1985 \$ 176	Z 9,039
* Ordered in 1986 \$ 629	Z 20,491

Local procurement has included:

	<u>Z000s</u>
. Vehicles and trucks	1,059
. Cement and other construction materials	16,000
. Hospital and Health facility furnishings	9,337
. Office supplies and equipment	2,350
. Aviation maintenance facilities equipment	620
. Electric/solar power	164
TOTAL	<u>29,530</u>

Additional procurement is planned for the fourth quarter of 1986 as follows:

Aviation equipment	\$ 3	
Office supplies and equipment		Z 500
Construction materials		Z 10,000
Communication equipment		Z 100
Medical equipment	\$ 50	

Local procurement to be initiated in 1987 will be based on the revised implementation plan to be drawn up in the fourth quarter of 1986.

E. Construction Activities.

1. Scope of Construction Activities.

Sixteen of the twenty one proposed sub-projects involve some form of construction, either new construction, renovation or repairs to existing facilities or completion of structures begun before the start of this project. In addition there is a major project to construct a base camp at Kasaji. Eleven of these sub-projects involve major renovations and repairs with two of the eleven also requiring new construction. The remainder of the sub-projects require new construction or completion of existing buildings.

Sub-projects 2 and 3 involve construction of 48 new dispensaries, completion of six, and renovation of nine others for a total of 63. Construction of these dispensaries is to be carried out by the project with the local villages providing the bricks. Roofing materials, doors, windows and cement are to be provided by the project.

RECOMMENDATIONS.

All sub-project sites should be revisited to assess current needs and a revised list of sub-projects established. The scope of work for each sub-project should be clearly defined.

2. Implementation Methods.

Construction and renovation work is currently being implemented using force accounts and contractors. The force account system uses technical staff for overall supervision with a site foreman supervising masons, carpenters, and daily paid laborers. This system, if properly managed, is cost effective and allows greater flexibility and quality control than using contractors. Flexibility is particularly desirable with renovation work where additional needs are discovered after the work has begun. Using contractors these additional needs are met by renegotiating the contract.

Using contractors is more costly because of added overhead and profits. Flexibility is not as readily available as with a force account system because additional needs are met by amending a contract that often vastly increases time and material costs. Contracting also requires more detailed and lengthy preparations on the part of the technical advisor before the contract is signed to ensure that the quantity and quality of the work desired is clearly understood by all parties.

At present all the construction work at Kasaji is being completed using the force account system. Kolwezi has used the force account system for most of the work completed to date. The project has recently begun using a contractor for major renovation work on the hospital. A contractor has been selected for the renovation and construction work at Katoka.

The practice of using the contractor's estimate as the basic contract document can result in costly misunderstandings and poor quality work. Because simple specifications are not included, the contractor is free to use whatever materials and methods of construction he wants. A case in point is the sewer line being installed at the Kolwezi Hospital. Because it was not specified the contractor will probably use concrete pipe because it is cheaper when PVC pipe would last longer and be almost maintenance free.

It will be difficult for the present staff, consisting of one engineer and one construction supervisor, to provide adequate supervision of these sub-projects without careful planning and assistance. Some assistance appears to be available. At two of the sub-project sites we visited, Kapanga and Katoka, there were locally based expatriates with previous construction experience who could supervise the work in their area. The engineer could be available to provide backup support when needed. This would allow the engineer to concentrate his efforts in planning and supervising work in areas where this capability does not exist.

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RECOMMENDATIONS.

A force account system should be used wherever possible. Minimum standards of quality and materials used should be established and enforced.

The major sub-project sites should be encouraged to provide sub-project supervision and financial management, supported by the technical assistance team, whenever possible.

If contractors are to be used the scope of work should be clearly defined and basic specifications established. A more detailed contracting document should be designed.

3. Construction Planning.

A construction schedule or work plan has not been developed other than the general schedule appearing in the Project Paper despite changes in needs. The general concept seems to be that Mr. French will complete the work at the Kolwezi Medical Center (SP4) while supervising contractors working on the Mama Mobutu Hospital (SP5). He will then begin hiring contractors and supervising their work in constructing dispensaries in the Kolwezi area. Mr. Tin will complete the base camp at Kasaji and build the dispensary there while supervising a camp at Kasaji and build the dispensary there while supervising a contractor working on the Katoka Medical Center (SP7). The Samuteb Memorial Hospital at Kapanga is scheduled to begin renovation work soon. Although Mr. Tin envisions hiring a contractor from Kolwezi a final decision on the implementation method has not been made. A local construction crew which recently completed the mission secondary school at Kapanga is also available to do this work.

Some of the sub-project sites visited by the team revealed a need for reassessment of the scope of work. Some sub-projects have completed renovation work planned for in the project paper. One dispensary site scheduled to have a new building is not functioning but has an adequate empty building available for use if and when dispensary services are reestablished in the village.

The new dispensaries to be built under sub-projects 2 and 3 use a standard plan. Thirty-four of the dispensaries are classified as large and fourteen are smaller (shorter) versions of the same plan. This standardization suggests the possibility of prefabrication to lower the costs, speed the implementation, and reduce supervision requirements. The quality and quantity of housing construction observed suggests that local masons could be hired to build the masonry structure of the dispensaries followed by a "prefab" team to install roof structure, doors and windows. The construction supervisors involvement would consist primarily of a site visit to help layout the foundations and deliver cement with occasional follow up inspections. The "prefab" team could be trained in advance and would require minimum supervision.

Detailed planning at the beginning phases of this project can result in better quality work at possibly lower cost and increase the chances of achieving the expected end of project outputs.

RECOMMENDATIONS.

A detailed construction plan and time frame should be developed. This could be accomplished using the following steps for all sub-projects before beginning individual ones.

- o Preliminary site inspection. A preliminary visit should be made to determine:
 1. scope of work
 2. availability and skill of contractors and skilled workmen in area
 3. quality, cost and availability of local materials in the area - sand, gravel, etc.
 4. availability of sub-project supervisors at each site.
- o Prepare detailed designs, specification and cost estimates of each sub-project with return visits to sub-project sites as needed.
- o Decide on an implementation method for each sub-project, i.e. force account locally supervised, force account project engineer supervised, local contractor, or outside contractor.
- o Prepare master work schedule and set up procurement schedule.
- o Prepare and prioritize a list of additional sub-projects which might be implemented if time and resources become available.

The project engineer should be encouraged to develop the detailed implementation plan outlined above. If time constraints do not permit the engineer to prepare a work plan, consideration should be given to engaging the services of an organization or individual such as the ECZ Bureau d'Architecture to assist in preparing a plan. This could be a short term agreement with the engineer serving as the implementer.

A study should be made on the feasibility of using prefabricated modules in building the dispensaries.

4. Quality of Construction.

Work completed so far, using a force account system, has had mixed results partly because of the fast pace of the construction. Renovation work at the Kolwezi Medical Center uses black iron fitting and galvanized pipe for the plumbing work. Proper galvanized fittings were probably not locally available but in this case speed in implementation will, in the long run, greatly reduce the expected useful life of this renovation work. In the base camp at Kasaji concrete has been mixed using unwashed and unscreened sand and gravel. Organic material found in the concrete significantly reduces its strength. Although washing the sand and gravel may not be practical because of poor water supply, screening the materials can reduce the organic material. The time saved by not washing the sand reduces the strength of the concrete.

The maternity ward at the Kolwezi Medical Center, funded by the Danish, was built by a contractor using plans and specifications prepared by the ECZ Bureau d'Architecture. The result is what appears to be a well built building using relatively maintenance free materials. None of the contracted sub-projects funded under this project have been completed so a determination of the construction quality can not be made. With the type of construction contracts currently being signed it will be difficult to enforce any sort of quality control.

RECOMMENDATIONS.

Using force account, work quality should be preferred over speed of implementation. Minimum standards should be developed and enforced. Contracts for construction should include detailed specifications as well as plans and material quality lists.

5. Maintenance Considerations.

Over two-thirds of the sub-projects involve major renovation to buildings. Most of the renovations required are due to a lack of ongoing maintenance programs. In an area where just providing for the basic human needs is a struggle maintenance is one of the first things to be eliminated from the budget. This is understandable in many ways but is also a false economy. Though proper design, construction techniques, and selection of materials can reduce maintenance costs they do not totally eliminate them.

The project is also providing a large number of vehicles and equipment. Maintenance of these items is not only expensive but also requires sophisticated skills to operate and maintain.

RECOMMENDATIONS.

Construction designs and materials should be selected which contribute to lower maintenance costs.

Communities should be encouraged to participate in the construction of health facilities to instill an element of community pride and responsibility in their facilities.

Vehicle and equipment purchases should be standardized and selected for their low maintenance requirements.

The engineer should propose simple maintenance programs for each sub-project to include not only building maintenance but also preventive maintenance for equipment.

Consideration should be given to training a few people in maintenance of some of the basic equipment. Instructions should also be provided in where and how to get more sophisticated equipment repaired.

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F. Level of Community Participation.

One of the requirements for building dispensaries is that the community provide the bricks and some manual labor for the building. This is entirely appropriate and should be strictly adhered to. As the government has no plans for subsidizing such health care it is essential that the communities recognize from the beginning that it is their health center and their responsibility for its maintenance. In Kasaji the evaluation team saw community brick-making in action. 6,000 of the 40,000 needed bricks had been made.

The only community participation envisaged for the major health facilities is the hiring of local technicians and laborers. This is by far the more appropriate course than hiring an outside contractor. It provides employment to the local population, gets community members involved and creates a cadre of local people with knowledge and experience in working on these facilities who can be called on at a later date for maintenance and repair.

G. Rural Development Programs.

Three of the original sub-projects involved public health and community development outreach programs. The one at Kasaji has been cut due to the departure of the Franciscan priests who had conceived the idea.

The program at Katoka is in the planning stages. Ms. Mary Ratter and Ms. Rachel Newby, nurses at the Garenganze Medical Center, have discussed plans to train community health workers (CHW) with Dr. Muhemeri, the Zone Medical Director. They have recently contacted village chiefs and church leaders to help them identify candidates for the CHW positions. The CHWs will work voluntarily in integrated development. They will have paid supervisors based in the Katoka Medical Center.

The program in Kapanga presents another model of outreach activity and offers the opportunity for an interesting comparison of approaches to community development. In this program, three trained nurses have been placed in large health centers to work exclusively on preventive and promotional activities in the communities surrounding their centers. Another full-time nurse provides curative care in each of these centers. They are equipped with motorcycles so they can cover a large area and easily transport vaccines.

It is recommended that the supervisors of these two projects meet periodically to exchange information and analyse their programs. They could also provide a great service to Zone Medical Directors as they attempt to establish their community outreach programs.

H. Prospects for Achieving Planned Outputs.

The achievement of planned outputs is contingent, more than anything else on proper maintenance of the facilities and equipment being produced and procured. It is reasonable to assume that the building and renovation schedule can be met, that equipment will be procured, that airstrips will be repaired and the communications network will be in place by the end of the project. Not only will this add to better and expanded curative care but the preventive and promotional activities of the area should increase significantly. With the addition of bicycles to every dispensary, motorcycles and vehicles to supervisors, solar refrigerators and cold boxes, quality and extent of preventive care will increase tremendously.

However, the real impact on the health status of the population will not be achieved in the first year after the ISROS project is completed. The desired impact will only occur once this investment has been made and the improved facilities become functioning. As long as they remain functioning there should be a very positive impact on the population. This is dependant, however, on the correct use, maintenance and repair of equipment and facilities. At this time there is no concrete plan for protecting this investment, i.e. training technicians to use and maintain the equipment and procure spare parts. Individuals need to be identified, trained and supervised to perform this function for buildings, plumbing, electricity, motors, solar equipment, vehicles, X-ray machines, autoclaves, microscopes, radio equipment and computers. No piece of equipment should be supplied without a mechanism identified for maintaining that equipment. Significant project funds would very appropriately be spent in the initial training of technicians in equipment maintenance and repair.

It must be added that the assessment that project outputs will be achieved is contingent on the participation of the Catholic health facilities. If these eight major health care providers were not included in the project it would be a considerable blow to its effectiveness as a whole.

XI. PROBLEMS AND CONSTRAINTS

The major problems encountered have been discussed elsewhere in this paper. They are summarized below.

- A. Possible Catholic non-participation.
- B. No detailed planning for construction needs or specific construction scheduling.
- C. The loss of sub-project number 17, the Kasaji Rural Development Program.
- D. The need for an equipment and facility maintenance and repair program.
- E. The difficulty in finding suitable suppliers that conform to US government regulations. Most American medical equipment suppliers do not have equipment adapted to Third World needs.

XII. IMPACT EXPECTED

The ISROS project will certainly raise the quality and extent of both curative and preventive health services in the target area. These should, in turn, have an impact on the health status of the population. They will directly affect health status through the prevention and cure of illness and indirectly affect it because with a healthier population less work time will be lost allowing for more production and therefore more revenue and a higher standard of living.

A. CRITERIA FOR EVALUATION.

In measuring the impact of the project we can look at three levels: inputs, outputs, and effects.

1. Inputs include:

- a. number of facilities built, completed and renovated
- b. number of vehicles, motorcycles, bicycles distributed
- c. number of refrigerators, cold boxes, cold dogs distributed
- d. number of water systems installed
- e. number of solar electricity systems installed
- f. number of other equipment received.

2. Outputs include:

- a. number of vaccinations given
- b. number of children participating in the CPS
- c. number of inpatients
- d. number of outpatients
- e. number of births
- f. number of visits per population served
- g. number of village health committees formed
- h. number of public health workers trained.

3. Effects include:

- a. amount of diarrheal disease
- b. extent of malnutrition
- c. extent of immunizable diseases
- d. infant/child mortality rates.

Inputs and outputs can easily be monitored and recorded within the structure of each of the sub-projects (see Table I for output estimates collected during the course of this evaluation). To facilitate data collection a standardized form could be distributed to each sub-project. Over the five-year IOP this information will provide good information on the extent of expansion of health services and coverage.

T A B L E I

Estimated Utilization Rates of Health
Facilities Visited by Evaluation Team.

	beds	in-patients per day	out-patients per day	births per month	operations per month	cost (fiches) Z	meds Z
Methodist Med. Center + Maternity, Kolwezi	40		100-150			70	30
Mama Mobutu Meth. Hosp., Kolwezi	100	200		185	55	70	30
Kanzenze Med.Center			70-100	30		10	0
Chisengama Garenganze Hosp., Kasaji	194	80-100	110	50	25	15	5-10
Kasaji-Lueo Medical Center	200			50			
Katoka Medical Center	70	120	250	50		10	2-5
Dilolo Poste Med. Center	200	200	150	50			
Samuteb Hosp., Kapanga	250	170	90	45			

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The effects of the project are more difficult to determine. Changes in the health status of the population will not necessarily be due solely to the efforts of the ISROS project. Nonetheless, significant changes in indicators can at least, in part, be attributed to the work of this project. The collection of this information would require a household survey of a representative sample of villages, one group within a sub-project area, another group in a control area. This survey might be carried out on a yearly basis in collaboration with the Health Zone Office and public health workers who are to be trained in sub-projects 16 and 18.

Recommendations for the evaluation of the impact of the three area projects Health (114), Roads (115), and Water (116) can be found in the main evaluation report.

XIII. SUMMARY OF FINDINGS AND RECOMMENDATIONS

A. Since the Project Paper was written in 1984, many changes have occurred in the actual needs of the sub-projects. Project staff have held off updating the sub-project lists until (1) there is a resolution with Bishop Sorasonga on whether or not the Catholic health facilities will participate in the project, and (2) the start-up evaluation team has presented their findings. It is recommended that this detailed assessment of current needs in terms of both construction and equipment be carried out in the fourth quarter of 1986. It is essential that an implementation plan with an accompanying budget be made.

B. In planning construction activities there should be physical checks of each site. A scope of work for each should be clearly defined along with a detailed construction plan including an assessment of locally available materials and personnel. For the major work sites this assessment could take one to two weeks each.

C. If project staff is not able to complete detailed specifications for each site, due to time constraints or otherwise, it is recommended that an outside group such as the ECZ Office of Architecture be called in to assist.

D. In carrying out rehabilitation and construction, cooperation in terms of supervision and financial management should be encouraged on the part of the sub-projects. Many have capable supervisors and work crews on location. Using a local work force is by far preferable to using a contractor because (1) expenses on overhead and fees are saved, (2) quality control is better assured, (3) local capability is developed, and (4) a sense of community ownership and responsibility is instilled.

E. If contractors are used, detailed contracts need to be written establishing minimum standards of performance required and materials to be used.

F. Construction designs and materials should be selected based on the criteria that they will require the least maintenance possible. Less construction of higher quality is preferred.

G. A plan to insure continued building maintenance should be drawn for each health facility. This may require a series of initial workshops for personnel in basic maintenance.

H. Much of the same sort of equipment which will be ordered for the ISROS project is also being ordered for the SANRU assisted health zones. It is recommended that ISROS staff collaborate with SANRU in both choice of essential equipment for health centers and make of equipment. This will facilitate maintenance, repair and spare part procurement in the future.

I. As the primary function of the ISROS project is to rehabilitate and resupply health facilities with needed equipment, the project can only have an impact on the population if this equipment is maintained in good working order. It is therefore recommended that ISROS consider as a priority the insurance of a strong maintenance and repair program for each sub-project. The following are some specific recommendations to achieve this end.

1. The health specialist team should determine the maintenance needs of the equipment being distributed and then either provide or organize training for personnel from each facility who have been identified as maintenance and repair persons.
2. ISROS staff should contact SANRU to determine what it is doing in terms of training in equipment O&M and coordinate activities wherever possible.
3. ECZORT is offering a course in solar equipment usage in October 1986. Perhaps project personnel could attend this.
4. REAP International does training in use of radiology equipment and possibly others as well. This should be considered a source of training.

J. It is recommended that an end use control monitoring plan be established for all sub-projects through the central ISROS office.

K. If funding is available due to the non-participation of the Catholic health facilities, project staff should consider assisting some state-run institutions which have begun and been supervised within the health zone system since after the Project Paper was written in 1984.

L. The health specialists should plan and deliver training activities for health personnel in preventive, promotive and primary health care in full collaboration with the Medical Directors of each of the health zones. Personnel working in state-run institutions should be included in such training.

M. Personnel working on the two public health outreach sub-projects in Kapanga and Katoka should meet periodically with each other and with the Zone Medical Directors to discuss findings and recommendations for improving outreach activities.

N. In collaboration with personnel from the Water Project (116) and Zone Medical Directors, a training program should be developed for dispensary nurses in water education and management. All nurses will be equipped with bicycles through the project so they could periodically visit improved source sites, do community education and oversee use of the source.

O. In designing and implementing the impact evaluation it is recommended that the evaluation team work in conjunction with the Zone Medical Directors, personnel from the two public health sub-projects and possibly dispensary nurses to carry out the surveys. Including health care providers in the evaluation effort helps them to see the reasons for their work and the progress they have made.

APPENDIX A

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SANRU Rural Health Zones in the Shaba Region

The Health Zone of Kapanga

The Health Zone of Dilolo

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Annex D

SHABA REFUGEE ROADS PROJECT (660-0115)

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1. Project Strategy, Objectives, Design

A. Strategy

The strategy outlined in the project paper is designed to take advantage of the increasingly effective Bureau of Roads organization (Office des Routes, O.R.) in the Shaba Region that is rehabilitating and improving the rural road system in the Lualaba sub-region. The strategy involves strengthening the production unit in the sub-region by providing technical assistance, new road equipment, bridge materials and culverts, and counterpart funding for maintenance of agricultural feeder roads using local manual labor.

B. Objectives

The goal of the Shaba Refugee Roads project is to make significant improvements in the transportation facilities in the Lualaba sub-region. The project is expected to improve access to markets for agricultural produce thereby reducing the shortage of agricultural produce in the industrialized areas of Shaba and increasing economic opportunities for returning Zairian refugees as well as Angolan refugees settling in the area.

Specific objectives of the project include:

Repair and maintenance

Roads

- 683 Km first priority national roads
- 485 km regional priority roads
- 694 km regional second-priority roads
- 1429 km farm-to-market roads

Bridges

- 29 first priority bridges - 364 linear meters
- 13 second priority bridges - 98 linear meters
- 1 new ferry constructed

Construct Flood-plain causeways and install additional culverts.
Train and equip crews capable of continuing repairs and maintaining improvements after the completion of the project to include

Resurfacing crew

Grading crew

Mobile team for manual maintenance

Although the basic objectives of the project are valid the specific outputs need revision in light of the new Belgian road project in the area and the expectation that total funding for the project may not attain the \$12.5 million proposed in the project Paper. The "Cooperation Technique Belge" office in Lubumbashi is providing assistance to the Sandoa Zone of Office des Routes over a three year period. The equipment, except for trucks, has arrived and the project is expected to begin immediately. Assistance is provided in the form of materials, equipment, and the services of one technical advisor for three years.

The following is being provided:

- . Technical advisor for three years.
- . Pickup trucks/4 wheel drive - 2
- . Motorcycles - 10
- . Bicycles - 50
- . Six ton dump trucks - 6
- . Materials for bridges on road between Sandoa and Kapenda.

The expected output for the Belgian project is maintenance work on 400 km of RN39 (Route National) and 600 Km of agricultural feeder roads in the Sandoa zone. OR is expected to pay the costs of the workers. The U.S. technical advisor should collaborate with the Belgian TA to determine the kind of coordination possible in reassigning project inputs.

C. Design Assumptions

The project design assumes that the Bureau of Roads is committed to and capable of implementing improvements. Results to date seem to confirm this assumption. OR/Shaba has assigned a core staff of apparently well qualified and enthusiastic people to the project. Previous USAID funded projects in the Shaba Region also demonstrate the strong capabilities of this organization.

The project also assumes there are significant quantities of laterite in the area to provide road surfacing materials. Although this assumption may be true there are reported to be long sections of the road between Dilolo and Sandoa where such deposits do not exist. Trucking the material over long distances will considerably slow the resurfacing of this road. After the technical assistance team has studied potential borrow pit sites a redesign of the expected project output in this area may be necessary.

D. Sustainability

The issue is whether the investments in improved roads can be sustained, that is whether adequate maintenance and repair can be expected to be continued after the project's completion.

The response is a qualified yes because of positive economic policy measures taken by the GOZ in recent years to strengthen O.R. and provide financial resources for road O & M. The most important source of funding is the national tax on petroleum which the GOZ by agreement with the World Bank has making available to the OR to cover most operating costs (except fuel) of road maintenance. It should be observed that a substantial component of the projects' investment will be in bridge structures and culverts which have relatively low O & M costs and a very high impact on facilitating transport. Secondly, the GOZ has agreed again at World Bank behest to make available a larger portion of the national investment budget for equipment renewal. The present project will in any event insure the investment needs for equipment, taking into account Belgium assistance also planned until 1995 when the U.S. donated equipment will be largely amortized. The financing of the maintenance of a agricultural feeder roads is a problem throughout the country. The World Bank is planning a joint study of this problem with the GOZ and pilot efforts to address it. These are expected to take place in the next 2-3 years and hopefully will produce an answer applicable to the Lualaba sub-region.

The project may also be expected and intended to result in strengthening OR/Shaba institutionally by improving the quality of its staff trained on the job in a major program. Increased productivity of OR/Shaba, which is already considered the most effective regional road office in the country will contribute to lower O & M costs and longer equipment life. The establishment of efficient base camp facilities in Kasaji should also contribute to reduce OR operational costs and equipment maintenance capabilities.

Continued sustainability of the project will depend on the level of activity of the Zairian economy and, importantly, the Shaba economy which in turn depend to some extent on the state of the transport network. Other factors, as noted in the PP, include the price of copper in World markets, the war in Angola and the eventual reopening of the RR to the Angolan port of Benguela, and the continued success of the GOZ's economic stabilization program.

2. Project Management System

A. Organization of Office des Routes

O.R. in Shaba is composed of four production units (UP). UP652 is currently based in Kolwezi and is responsible for roads in the project area. The Kolwezi production unit is currently composed of road brigades in Lubudi and Sandoa plus a construction brigade in Kasaji and a brigade for asphalt road work.

At present there are only two brigades working in the project area - a construction brigade in Kasaji and a road brigade based in Sandoa.

The brigade in Kasaji is charged with the construction of the base camp and is composed of three departments - administration, interior works, and extension works. Fifty people work in this brigade. The road brigade based in Sandoa is composed of a resurfacing crew, a leveling crew, and a crew of mechanics. The present staff level of the road brigade is 47. In addition there are engineers for Dilolo and Sandoa zones who are responsible for supervising maintenance of agricultural roads using local manual labor. The project paper calls for increasing the number of work crews serving the region from four to six and increasing the number of local missions and companies contracted to manually maintain agricultural feeder roads.

The general consensus seems to be that once the base camp is finished and the equipment arrives, the brigade at Sandoa will be moved to Kapanda and a new brigade will be formed at Kasaji. Mr. Thomas, the technical director and regional planner for OR/Shaba, was on vacation so the team was unable to determine what staff changes and organization are planned and/or needed.

B. Technical Assistance

A technical assistance team composed of a senior engineer/team leader and a master mechanic is to be provided under terms in the grant agreement. The senior engineer will provide overall supervision of the project, technical design and support, and on-the-job management training. The master mechanic will ensure that equipment is properly operated and maintained. He will assist with on-the-job training for selected OR personnel. OR/Shaba has executed a contract with American ORT Federation to provide the technical assistance team (Agreement was signed in June, 1986). Detailed job descriptions are spelled out in the contract. The project team is expected to arrive around October, 1986.

C. USAID Management Support

A USAID project officer and small support staff have been established in Shaba to monitor and evaluate the project activities and maintain a liaison with relevant host country officials. Project management is shared with DEO/Kinshasa. USAID provides assistance for equipment procurement, and liaison with OR offices in Kinshasa.

This shared management arrangement appears to have worked well. The project officers' efforts to date have been appropriate and professional. Good relationships have been established between the project officer, OR/Shaba and government officials. As a result, the project is progressing at a good pace despite the absence of the technical assistance team. Once the technical assistance team and the equipment arrives the project officer may require increased technical backstopping-support from the USAID/Kinshasa engineer to monitor technical aspects of the project.

D. Implementation Methods

The Kolwezi production unit of O.R. uses a variety of implementation methods. Major resurfacing, leveling, and bridge and culvert work is done by the unit using a force account system. Manual maintenance is accomplished through contracts with "collectivités", missions, and private enterprises. Some manual maintenance is also done by force account. The production unit also has one contract with a private enterprise for resurfacing a small section of asphalt highway between Kolwezi and the unit's border. This approach appears to work well for this area but with the increased activities of this project additional work crews of manual labor contracts will be needed. If the OR training Center in Lubumbashi can supply the additional trained manpower, the implementation schedule can be achieved. If not, then adjustments to the implementation schedule will have to be made to provide training.

E. Manual Maintenance

There are approximately 890 km of agricultural roads currently being manually maintained by OR and eight contractors. The average yearly cost of this maintenance work is Z 2244 per km in 1984. OR uses the rule of thumb of one worker per 2 km per year. The number of workers needed to manually maintain the roads can be expected to increase from the current level of about 450 to around 750 by the end of the project. Based on past inflation rates and the fact that current manual laborers are underpaid, a minimum of a 50% increase in the wage rate is required.

The zone engineers in Dilolo and Sandoa are responsible for the manual maintenance work within their zones. Apparently an engineer has yet to be assigned to the Kapanga zone. A major constraint to manual maintenance work is lack of transport for the zone engineers. The zone engineers must have a means of transport to organize and inspect the work and to pay the workers. There is also an occasional need to transport workers, equipment and materials to remote sites. The low population density of the region means that there are long stretches of roads where there are no villages. Thus local labor to manually maintain these roads must be transported to the road sections needing maintenance. The project should provide a motorcycle for the engineer and when vehicle or truck transport is needed it should be requested from the nearest road brigade.

F. Coordination with other Projects

This project supports and complements other area projects by providing increased access to services as well as development projects. For example, some road work has begun by OR in order to improve road access to the UNHCR refugee camps in the Dilolo zone.

In addition the Shaba Refugee Health project (660-0114) is building dispensaries along roads that are not currently being maintained by OR. This project's proposed roads and bridges rehabilitation and maintenance Program will help to provide easier access to these health services.

The Shaba Refugee Water project (660-0116) is currently having difficulty reaching many of the villages in need of improved water sources and improved roads and bridges will increase the ability of the water project to provide spring capping and drilled wells to remote villages.

3. Project Implementation Status

A. Overview

Implementation of the project during the first two years has focused on procurement of equipment, arrangement for a manual road works program in Dilolo zone, repair and rehabilitation of existing equipment, construction of a base camp in Kasaji, establishment and staffing of a Road Production Unit headquarters at Kasaji and negotiation and execution of a hard country TA contract between OR and ORT (see Figure 1).

The manual road work has been underway in the Dilolo zone of Lualaba since mid 1985 and is on-going. The existing equipment has been repaired and is in service. The heavy equipment is being shipped and most of it is expected to arrive before the end of the year (1986). Base camp construction started in April and is scheduled to be completed in October. Zonal engineers are assigned to Dilolo, Sandoa and OR's Production Unit for the project area has a Brigade established in Sandoa. The TA team (engineer and mechanic) are scheduled to arrive in Kolwezi in October.

A revised implementation plan for the road improvement and maintenance program is scheduled to be drawn up by December. Implementation of this program is scheduled to start in January.

B. Financing

Total financing of \$12.6 million was planned: a US Grant of \$ 7.5 million and a host government contribution of \$4.6 million. (project Paper dated August 31, 1984). The project agreement dated September 27, 1984 obligated a US grant of \$3.5 million. In addition, it provided that grantee resources for the project would not be less than \$5.1 million including costs borne on an in-kind basis. Annex A to the project Amplified Project Description was never prepared so there is no agreed financial plan for the execution of this project. In the absence of an agreed financial plan, the financial plan presented in the PP is the guiding document. It provides the following budget for expenditures of proposed \$US dollar funding.

	1985	1986	1987	1988	1989	Total
Road Building Equipment	2,500	-	-	-	-	2,500
Spare Parts, Tires	500	150	157	165	175	1,147
Bailey Bridge elements	800	500	-	-	-	1,300
Culverts	80	30	31	33	35	209
TA	200	220	242	266	292	1,220
POL	90	94	99	104	109	496
Equipment Renewal	-	-	-	-	629	629
Total	4,170	994	529	568	1,245	7,501

The financial plan for the host government contribution of not less than \$5.1 million was not specified in the PROAG. Annex 6 of the PP deals with host country contributions and estimated local currency requirements for estimated costs of operations, 1985-1989, to amount \$4.4 million equivalent.

The \$3.5 million US grant has been sub-obligated and expended as follows:

	\$000
.Road Building Equipment	\$1,064
.Shaba Area	
.Development Officer 160+41+115	316
.Technical Assistance - ORT	950
.PIO/T -Evaluation	10
.Procurement of Surplus Bailey Bridge (diverted to Bandundu)	71
Total	\$2,411

An additional \$0.5 million was obligated by PROAG amendment in September 1986. Additional dollar funding of 1.3 million in FY 88 is planned by USAID and the Africa Bureau of AID raising total dollar funding to a maximum of \$5.3 million, or a shortfall of \$2.2 million in relation to requirements set forth in the project Paper.

Counterpart funds amounting to \$ 1.3 million (Z 79 million) were advanced to Office des Routes in 1986. Of this total, Z47 million (about \$860,000 equivalent) was used under the Commodity Import Program (CIP) to procure additional road building equipment. The balance of Z 32 million was transferred to an Office des Routes account in Shaba to defray local costs of the project including construction of the OR Base Camp in Kasaji, repair and maintenance of existing equipment and to finance manual labor on the roads in the Dilolo area of the project zone. The counterpart budget for CY 1987 is to be prepared in the fall of 1987.

Because of changes in total funding planned and to take into account Belgian and funding roadwork in Sandoa Zone, a revised and up-dated financial and implementation plan is needed for the project. Key persons for this planning will be the Technical Director/Regional Planner for OR/Shaba (M. Thomas) the ORT Engineer and the Chief of the Production Unit UP 652. The evaluation team was unable to meet with the Technical Advisor to the OR (Mr. Thomas) who drew up the original program and who is the key person in OR/Shaba for this road planning. The ORT contract (signed June 1986) provides, however, that an implementation plan will be drawn up this fall following the arrival of the ORT road engineer and consultation with the OR/Shaba.

C. Base Camp

A base camp is currently being built in Kasaji on land given to OR by the government. Kasaji is located at a major road intersection and is almost equal distance from Dilolo and Sandoa. Kasaji is served by both road and railroad from Kolwezi and Lubumbashi. It is well situated to supply the road maintenance needs of the sub-region.

Construction of the base camp consists of renovation of an existing warehouse and construction of a new office building, three houses, mechanical shop, generator houses, and a wall to enclose the compound. A smaller existing building has been renovated to serve as the temporary construction camp office and storage facility.

Total funding for the project is now planned as follows:

	\$ Funding \$000	Counterpart Funding \$000 equiv.	Total \$000
FY85	3.500		
FY86	500	5,960	11.260
FY87	1.300		
Total	<u>5.300</u>	<u>5.960</u>	<u>11.260</u>

The office building shell is complete to the top tie beam. Renovation work on the warehouse is awaiting roof trusses and roofing materials. Foundation for the enclosure wall and one house are nearly complete. Construction of the base camp has been slow because of delays in obtaining construction materials.

The quality of the construction work appears to be minimally adequate. Screening sand and gravel will improve the quality of concrete work. Some reinforcing steel being used in column bases appears to be too small and lowers the structural integrity of the building. Larger diameter steel should be used before concrete is poured for these columns. These matters were discussed with the site engineer and he agreed to take the necessary corrective steps. Follow-up inspections should be made to ensure that steps are taken.

D. Other camps

If the implementation plan decides on transferring the brigade in Sandoa to Kapanga facilities will have to be constructed or renovated to store and repair brigade equipment. Since Sandoa will serve as a convenient sub-base for road work in that area and as a base for the zone engineer, basic renovations should be considered for the existing facilities in Sandoa.

E. Existing Equipment

Most of the existing road building equipment being used the Sandoa brigade was donated some years ago under a project funded by Japan. Most of this equipment has been renovated recently with funds from project 115, and is now in good working order. Negotiations are reported to be taking place for Japanese funding of a large quantity of spare parts to service the Japanese equipment. This will increase the life of this equipment and lessen funding needs of project 115. Existing equipment consists of a bulldozer, two loaders, four dump trucks, a compactor and two graders. One grader was procured in 1973, the other equipment is 6-7 years old.

F. Procurement

1. Dollar-funded, including counterpart-financial procurement under the CIP Program procurement under this category has amounted to about \$1.8 million for the following equipment:

- Vibrator compactor (1)
- Agricultural Tractors with trailers (2)
- Dump trucks, 12 ton (5)
- Fixed body trucks, 12 ton (2)
- Water Trucks (1)
- Fuel truck (1)
- 4X4 liaison vehicles under CIP(6)
- Fuel tank trailers (2)
- Engine hauling trailer (1)
- Lubricating/Maintenance trials (1)
- Light Maintenance Unit (1)
- 350 liter cement Mixers (4)
- Powers Saws (3)

- Mobile air compressor (1)
- Dural Motor Pumps (2)
- 20 KVA Diesel Generators (2)
- Bulldozer, Track, CIP (1)
- Front-end loaders, CIP (2)
- Road graders, CIP (4)
- Bailey Bridge

The Bailey Bridge (army surplus) arrived 1985 and presently is stored in Bandundu. The four road gradas (champion) arrived in port in April and are scheduled to arrive in Kasaji in september. The other equipment is scheduled to arrive by the end of the year.

4. Expected Impact

The road program in Lualaba sub-region is expected to result in the repair and improved maintenance of 683 kms of national roads, 465 km of regional priority roads, 694 km of secondary roads and 1429 km of farm to market roads, a total of 3,271 kms. This work will include the repair of existing bridges and provision of new ones in areas where river crossings have been a major bottleneck. The project is expected to increase access to farming areas, to provide all weather transportation on priority roads and to reduce costs of transportation considerably.

The first impact expected will be on employment and income generation in the area. Lualaba's economic activity has declined several fold from levels reached before the war when the RR operations of the mines generated a great deal of business and merchants were active in marketing the areas agricultural production (maize, manioc, cotton, tobacco, livestock, etc). to the mining community markets (Kolwesi and others) and north to the Kasai. Cash income is at very low levels and the employment generated by the project will be a significant factor in raising this level. This will work as follows:

- . temporary employment in construction of the Kasaji camp
- . employment of manual labor for road repair (by OR under USAID and Belgian Cooperation projects)
- . employment generated as the result of goods and services being procured for the road program.

The influence of the road project on cash employment will be reinforced by the Shaba Refugee projects for Health and Water Infrastructure and OFM for these projects.

The Roads project is expected to contribute to the farming sector by increasing access to production areas cut off from vehicle traffic by very poor roads and lack of stream (bridges) and swamp (causeway) crossings and by reducing the extremely high cost of transport in the three zones of the sub-region. The impact of improved roads on agricultural marketing and production has been demonstrated in the USAID North Shaba Development Project where a combination of roads, improved seed distribution and extension resulted in marked increases in farm income and economic activity. The same conditions of existing markets outside the area and potential for expanded production and yields within the area exist throughout the Lualaba sub-region.

The impact of increasing opportunities in agriculture and expanding economic activity in the area will facilitate the slow process of and settlement of refugees. The road program will also facilitate other development programs in the area and in particular the Refugee Health and Water projects by facilitating and reducing their costs of transport and access to isolated communities. In order to assess the socio-economic impact of the Refugee projects, it will be necessary to establish base line data and undertake periodic assessments of impact. An annual socio-economic survey of the zones of Lualaba, including analysis of impact on major trading centers and selected villages would provide the impact analysis needed to assess the effectiveness of the projects.

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Figure I
Time Line: Implementation of the
Shaba Refugee Road Project
(660-0115)

(August 1984 - September 1986)

<u>1984 KEY DATES</u>	<u>ACTION</u>
August 31, 1984	PP Approved
September 27, 1984	PROAG signed (PACD: 9/30/90)
December 26, 1985	GOZ designates responsible officials
<u>1985</u>	
January 18, 1985	First procurement - PIO/C for Bailey Bridge
April, 1985	PIO/T for funding USAID Area Development Office in Shaba. OR proposal for manual work roads.
-----, 1985	USAID/ADO office opened
May 1985	Implementation schedule for procurement and TA drawn up. USAID agrees to provide Z 2.69 million for manual work.
June 1985	USAID approves procurement by OR of one bulldozer, two loaders, and four graders using counterpart funds (\$863,000 equiv) and the commodity import program
July 30, 1985	PIO/T providing funding for USAID/ADO
-----, 1985	CPF budget for 1985 approved
August 1985	Implementation begins on manual road maintenance in Dilolo zone where UNHCR is operating
September 1985	First CPF deposited to OR/Shaba's account for Manual work. Bids received by OR/Shaba for CPF/CIP procurement of heavy equipment (bulldozers, two loaders, 4 graders) and two 4x4 liaison vehicles. AID/W approves single-source waiver authorizing OR to contract with ORT for senior engineer and master mechanic.
October 10, 1985	PIO/T for ORT host government contract to begin o/a Jan 1986
October/December 1985	Procurement specialist Lacerte works with USAID, OR and in the states to expedite procurement of heavy equipment (\$ and CIP funded).

November/December 1985 Draft ORT host government contract prepared by USAID/ADO and approved by USAID/MGT

December 12, 1985 Waiver executed for Mack Truck procurement. CP budget for 1986 approved.

1986

January 1986 Review of OR management of CP funds. OR and ORT discuss terms of TA contract.

February 1986 OR places orders for \$ funded procurement of road equipment French version of ORT contract prepared. CPT accounts for project opened in Shaba and Kinshasa. Z 20 million in CPT for first quarter mis-directed to wrong account and frozen delaying procurement of spare parts for repair of existing OR equipment designated for the project.

March 1986 French version of ORT contract sent to ORT/London for final review. First \$-funded equipment orders placed. Plan for OR base camp in Kasaji are drawn up.

April 1986 4 Champion Graders ordered under CIP program arrive in Matadi port. Four landrovers purchased locally with CPF delivered to OR/Kinshasa were sent to Lubumbashi. L/Com for final orders of \$-financed procurement were issued on April 11.

May 1986 Problems in release and transfer of CPF to OR/Shaba continue to delay work on Base Camp in Kasaji and spare parts procurement to repair existing equipment

June/July 1986 ORT and OR finally sign contract on June 27, five months behind schedule. Z380,000 in CPF authorized to finance OR repairs of Luashi bridge in southern Dialo zone (UNHCR request). Construction of the Kasaji base camp began June 17. Cit. Ngandu assigned by OR as Chef du Chantier. OR also assigns Cit. Mbongo Mpassi to head OR Production Unit 652 which will be responsible for the Lualaba and Kolwezi regions. OR/Shaba finally received CPT 10m scheduled for reception April.

August/September Work continues on Kasaji camp. OR equipment repaired. OR approves ORT nomination of master mechanic, scheduled to arrive with engineer in October. Evaluation team visits project area. Graders arrive in Kasaji. Belgium cooperation announces road program with OR in Sandoa Zone of Lualaba.

5. Problems and Constraints

Major constraints to project implementation are delays in arrival of the technical assistance team and the lack of heavy equipment. Most of the equipment is scheduled to arrive by the end of 1986 and should be on site the first part of 1987. The technical assistance team is expected to be in place by October, 1986. Although these constraints have delayed implementation of major road rehabilitation, work has progressed on manual maintenance and construction of the base camp. If the technical assistance team arrives as expected they should be able to prepare an implementation plan such that when the equipment arrives work can progress at a rate that will permit planned outputs to be achieved by the end of the project.

Construction of the base camp has been delayed by a shortage of construction materials - mainly cement, reinforcing steel, and roofing materials. The lack of construction materials is caused by cash flow problems and a shortage of materials for sale on the open market. The shortage of materials has been alleviated by the Shaba Refugee Health Project loaning cement to OR. Every effort should be made to provide adequate funds on a timely basis and materials should be ordered to enable the base camp construction to be completed by the time the equipment arrives.

One technical constraint is the shortage of available manual labor to maintain agricultural feeder roads in the remote sections of the sub-region. Additional transport will be acquired to implement road maintenance in these areas.

APPENDIX A
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ANNEX E

SHABA REFUGEE WATER PROJECT

START-UP EVALUATION

August 29 - September 15, 1986

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1. Introduction

The project focuses on the reconstruction of an area which experienced widespread fighting, population displacement, and devastation in 1977-78, and heavy refugee influx from the Angolan conflict in the 1980's. The process of recovery and reconstruction began in the early 1980's with reestablishment of security, postal services and telecommunications and the repatriation of the population, over which half was displaced. Refugees which now number nearly 10% of the population are being resettled in the project area. The project area is the Lualaba sub-region of Shaba with a population of about 400,000 and an area of 80,000 sq.km.

USAID/Zaire undertook three projects in the project area in 1985 to help reconstruct facilities in the area and accelerate socio-economic recovery. There are the Shaba Refugee Water, Health and Roads projects which this start-up evaluation addresses. Related activities in the area include UNHCR refugee relief, the SANRU II rural health project, UNICEF health activities, activities of Mission groups in education and health and recently a Belgian program for road improvement in the Sandoa area.

This Annex provides additional information on the observations, findings and recommendations of the evaluation team which visited the project area August 27-September 3. The Annex covers:

- Scope of Work of the Evaluation (Shaba Refugee Water Project)
- Project Background and Time-Line
- Strategy, Objectives, and Design
- The Adequacy of the Project Management System
- Project Implementation
- Impact Expected
- Summary of Findings and Recommendations

2. Scope of Work of Start Up Evaluation

The purpose of the evaluation is to assess project progress vis-à-vis project objectives and to determine if the Refugee projects are on track. The scope of work for the start up evaluation was defined in Annex A.

3. Project Background and Time-Line

The project was designed in 1984 with the assistance of the International Association for Rural Development (AIDR), a private voluntary technical organization operating out of Brussels which had done extensive rural water development in Shaba in the 1960's. The Project Paper was signed in September 1984 and the Project Agreement in May. Project activity began following the execution of a Cooperative Agreement between USAID AND AIDR dated June 5, 1985 and the simultaneous execution of a Memorandum of Agreement between SNHR and AIDR. The three documents constituted a tripartite agreement in effect.

September 13, 1984	PP signed
May 25, 1985	PROAG signed
June 5, 1985	AIDR Cooperative Agreement signed
July/August 1985	Assignment of TA Team; and SNHR personnel to Sandoa
September 1985	Construction of Sandoa Base started
October/November 1985	WASH Survey for design of O+M systems
November 1985	Cancellation of AIDR Agreement; Interim arrangements to maintain TA team in place
December/January 1985/86	Recruitment of Community Development Workers (CDW) and Technicians for well capping crews
February 1986	Training seminar for CDW; Completion of construction of Sandoa Base Station
March 1986	Well capping program and village site selection begins
April/August 1986	Ninety sites surveyed with CD extension. Sixty five springs capped. Topological studies completed for piped water systems; Prefeasibility studies completed for Musumba Kapanga, Kasaji, Mwajinga and Sandoa. Drilling rig ordered in August.
August 22, 1986	Cooperative Agreement with AIDR/Z new financial accounting system installed
August/September 1986	AIDRZ/SNHR review of 1986 and 1987 work plans and Project Organization. Start-up evaluation.

Implementation began (see Time-Line in Figure 1) in August 1985. Construction of the Sandoa base station began in September 1985. A major disruption occurred when AIDR went into liquidation early in October 1985 (as a result of events external to Zaïre and unforeseeable) and the Cooperative Agreement was voided in November. USAID in consultation with SNHR was however able to make interim arrangements to maintain the TA team in place and continue implementation. During this interim period, a new PVO, the International Association for Rural Development in Zaïre (AIDRZ) rose from the ashes of the defunct AIDR. In August 1986, USAID signed a new Cooperative Agreement with AIDRZ naming it as implementing agent.

To foreshadow the section of project implementation, the work in the first year has proceeded well. The major set back has been in dollar-funded procurement which was delayed as much as 6-8 months as a result of the AIDR liquidation. This in turn delayed start up of the village well program. The original work plan (PROAG) had scheduled installation and renovation of 170 wells and development of 140 spring catchments in the first two years. Under the revised schedule included in the agreement with AIDRZ it is projected that about 70 drilled wells and about 150 springs would be capped by the end of year two.

Delayed procurement has been a major factor in slow start up of the well program but in any event some delay would have been needed to reinforce the community extension activities of the project to insure establishment of satisfactory O+M systems for villages opting to participate in the program.

4. Project Strategy, Purpose, Design Assumptions and Objectives

a. Strategy

The strategy presented in the project paper is to take advantage of the ready availability of water in the Lualaba sub-region "to improve both water quality and access to adequate supplies for drinking, sanitation and economic activity (manioc processing in particular" (PP, p.10) in the villages of the area (assumed to number about 500 with populations ranging from 300 to 500). To take advantage of the availability of water, the PROAG proposed, specifically, to:

- Create a Rural Hydrology Station as part of the National Rural Hydrology Service (SNHR) to carry out the works;
- Train staff of the SNHR in the station to carry out the program;
- Conduct spring capping, well rehabilitation and well drilling to develop village potable water supplies;
- Developed piped water supplies under gravity feed for larger agglomerations;
- Assure water supplies for referral health centers; and,
- Provide an extension unit with two water sanitation technicians.

The basic strategy as presented in the PP and PROAG has been recognized as deficient by not dealing sufficiently with the need for community action at the village level to organize local systems to maintain these investments in good condition. AIDRZ and

SNHR have since established a Community Development Division with a qualified director and six trained community development workers. With this change, the strategy is considered valid and appropriate.

b. Project Purpose and Goal

The purpose of the project is to improve the water supply systems of the Lualaba Sub Region. This purpose relates to an overall goal which is to integrate repatriates and refugees into regional socio-economic development.

c. Validity of Design Assumptions

Additional experience and information collected in the project area show that some basic assumptions in the PP are inaccurate. These have to do with the number and population of villages, the availability of springs for development as potable water supply points and the feasibility of rehabilitating dug wells installed in the earlier programs by the colonial authorities and AIDR, and a number of other points.

1) Number of Villages and Availability of Developable Springs

The PP assumed that there were 500 villages in the area and that their population ranged from 300-500. The WASH survey concluded that there were more likely 700 to 800 villages and that their population ranged from as few as ten families to up to 3000-4000 persons (family size is believed to average five to six persons).

The PP also assumed that there would be developable springs for all 500 villages in the area. The reality is that developable springs will not be possible for a large percentage of the villages. The WASH survey of 20 villages throughout the region indicated that only 15% had developable springs. The surveys carried out by the project, mainly in Sandoa and Kapanga, indicate that 40-50% of the villages may have developable springs.

In order to establish a sound basis for site selection and work organization and scheduling, the Community Development Division of the station is assigning two technicians to conduct a survey of water availabilities and needs in all the villages of the sub-region. The survey will begin in September by motorcycle (recently received by the project) and is expected to be completed by November. It will provide data on the number of villages, their estimated population according to the villager chief, near-by springs, near-by schools, dispensaries, missions and mechanics.

ii) Program Time Frame

A consequence of the more than expected number of villages is that the project with its planned inputs can not hope to cover all villages in the sub-region by its completion date of March 1991. In the PP it was also recognized that the total program of rural water supply development could not be completed immediately. Buried in the Technical Annex (p.63) is a tabular summary of activities to be

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undertaken in a first phase and then in a second with the observation that the project proposals are based on complete implementation of Phase I activities (figure 2). With the increase in villages to be served plus the need for piped water systems (being studied) for major rural agglomerations, more time and more resources will be required to complete the program in the sub-region. This need was discussed with the Director General of SNHR with the observation that the GOZ for its part should realistically plan on a ten year time frame for scheduling and completing the rural water supply program there. This would entail continuing staffing and operation of the Sandoa station through 1995, and additional financing from the GOZ and interested donors starting circa 1990/91. The evaluation team recommends planning for the program be cast in a ten-year frame with the project covering the period through 1990.

iii) Renovation of Existing Wells

The PP assumed that there were 140 existing wells out of service which warranted re-opening and reequipment with a hand pump. Analysis by the Technical Division of the station has shown that renovation of these wells would be significantly more costly than the drilling of new tubewells and that better quality and more water could be expected from the drilled wells. The Orientation Committee has therefore decided to eliminate the well renovation program from the objectives and outputs of the project, a decision endorsed by the evaluation team.

iv) Policy for Spring Catchment Development

The PP and PROAG are unclear on the policy for spring catchment development. They provide as an objective the capping of springs near villages "as water supply points for washing (laundrying) and soaking of cassava, and in case of pump failure" (our underlining), and this language is retained in the Project Description annexed to the AIDRZ Cooperative Agreement.

The past year's experience has confirmed, however, that capped springs should be regarded as a primary and low cost source of potable water with a useful life averaging in the area of 10-20* years. The conclusion, which the evaluation team endorses, is that springs near villages should be viewed not as a back-up system but as a major and developable source of potable water to be supplemented where necessary by other systems, and in particular tubewell systems.

Where there is a spring catchment, the women of the village will find it convenient to do their laundry near it. For this reason, AIDRZ and SNHR propose to establish laundrying areas (a few square meters) near the spring outlet.

* A good number of wells may dry up over a 10 year period, but well constructed and maintained spring catchments can often last up to 20 years.

Figure 2

Planned Phasing of Project
Activities According to PP

<u>Location</u>			<u>Phase 2</u>
Traditional Works villages			375 capped springs 35 rehabilitated dug wells 270 boreholes
	m ³ /day	5,655	4,455
	Users	188,500	148,500
Towns	Studies	Misumb, Kalamb, Musev, Mwajinga, Kafakumba (2), Dilolo Poste, Kasaji (2) Buninge Agricultural Inst. Pilot projects with rural health centers	
	works	35 capped springs, 12 dug wells, 22 boreholes, 10 piped water systems	3 piped water systems + ?
	m ³ /day	1,000	415
	Users	22,050	8,200
<u>Total</u>	m ³ /day	6,655	4,870
	-----	210,555	156,700

SOURCE: Shaba Refugee Water Supply Project Paper, Annex 4, page 63

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As an aside the evaluation team observed that there is a need for more complete water quality testing than simple field tests - taste, smell, temperature, and low turbidity. While testing of water quality can be difficult the team feels that a sanitary survey should be taken of each site in connection with the collection of the initial engineering data. The survey should identify potential sources of pollution and their importance assessed. Suspect sources should be tested for bacteriological quality.

v) Feasibility of Providing Separate Facilities for Manioc Leaching

A current objective is to provide where possible for manioc leaching so as to avoid drinking water contamination. This would require the construction of water containers near the spring or pump outlets. Currently, the villagers dig holes in the ground for soaking. This matter was reviewed with the evaluation team with SNHR/AIDRZ suggesting that the existing village system appeared appropriate and that construction of manioc soaking facilities could have real disadvantages (standing containers of stagnant water). It was concluded by consensus that the project should not attempt to provide for manioc leaching since the villagers would use spring flow off for that purpose in any case. Finally, it has been observed that villagers refuse to use common manioc leaching facilities.

vi) Need for Animal Drinking Troughs

AIDRZ/SNHR raised with the team the issue of providing drinking troughs for animals in order to insure clean drinking water points. Cogent considerations raised are that drinking water for animals has not been a problem and that animal troughs represent a hazard for children as well as mosquito breeding grounds. It was concluded that at least provisionally animal troughs should not be constructed under the project. This conclusion might be modified by experience as situations are encountered in particular villages.

vii) Scheduling of Spring Capping and Well Drilling

The workplan for spring capping and well drilling impinges on the issue of planning and financing gravity flow systems.

Work planning for the project has been based on capping 500 springs (about 100 per year) and developing 570 wells (140-145 per year). With respect to well capping, the six technical crews have a capacity to cap as many as 15 per month. However, at this rate, there is a concern that supervision of the technical work may prove difficult and that the quality of the spring catchments may suffer. There is also a concern that the capping program may outpace the important and associated community development effort (for O+M) in the villages concerned. For this reasons, AIDRZ/SNHR have concluded that work planning should be based on an average of 10 springs capped each month. With vacations this leads to about 100 springs capped per year or up to 500 in the period 1986-90. This assumes there are

that many developable spring sources sufficiently near villages, including those developed for gravity fed piped water supply systems. (In any case, some flexibility is desirable. The results of the village survey and additional operational experience with the CD program and in other areas could lead to a decision to increase in the number of cappings per year if this would increase project impact consistent with sustainability of the installations.)

Furthermore, the Orientation Committee had based the well program, expected to start March 1, 1987, on a drilling rate of between 140-145 wells per year. In a joint meeting with project staff, DG/SNHR, the Administrator of AIDRZ and the team, it was decided to plan instead on 10 drillings a month. Given ten months of effective drilling time per year, this results in a total of about 100 tubewells per year or about 370 in the period 1987-90. This decision is supported by two considerations:

- Experience in other areas suggests that the rate of 15 drillings per month under the difficult conditions in Lualaba Sub-Region is unlikely to be achieved. Furthermore, a slower rate would help insure high quality of performance.
- The installation of tubewells in villages which elect to organize themselves for their operation and maintenance is a considerable community development effort requiring a great deal of extension and training. The constraining factor will not be the ability to drill holes fast but the ability of the CD Division to work effectively with participating communities.

Reductions in output for spring capping and well drilling will result in some savings of CPF and possibly dollar funding which could be reprogrammed for other activities, including gravity flow systems.

viii) Installation of Piped Water Supply Systems for Medical and Educational Institutions and for Major Rural Agglomerations

The PROAG specifically established the objectives of improving water supplies for medical and school centers and providing piped water systems in major rural population centers not served by REGIDESO. The outputs specified to be achieved include one large town, Musumba, equipped with a gravity system and 10 missionary run medical and educational complexes provided with solar powered or hydraulic ram systems. The end-of-project status (EOPS) indicates that piped water supply systems will be installed for two major rural centers and for one major village with a second medical referral center and that eight second medical referral centers would have rehabilitated and improved water supply systems.*

*The ten referral centers are (1) Samutab Hospital (Musumba), (2) Ntit Medical Center (Kapanga), (3) Katoka Medical Center, (4) Kasaji-Lueo Medical Center, (5) Dilolo Post Medical Center, (6) Sandoa Leprosarium, (7) Kasaji-Chisengama Medical Center, (8) Kafakumba, (9) Kimpuki Medical Center, (10) Chisambu Medical Technical Institute.

Their objectives were restated in the Revised Amplified Project Description:

- Improve existing water supply systems for medical and school centers to increase operating efficiency and decrease operational costs
- Undertake studies for providing piped water systems in major rural population centers currently not enjoying REGIDESO systems.
- Undertake studies for installing pilot village water systems where there is also an existing medical infrastructure.
- Install a gravity system for drinking water in Musumba and Samuteb Hospital.

Outputs have also been restated. They now include:

- In a first phase studies of water systems for medical and school centers with the first evaluation to decide whether the studied systems are to be implemented.
- A gravity system for Musumba.

EOPS is given as the study of the rehabilitation and improvement of piped water systems for secondary medical referral centers, installation of piped water systems for one major village with a secondary reference center and the study of water systems for other centers to be selected.

Several observations are pertinent:

- The lack of sufficient potable water supply for secondary medical centers is a critical concern both in terms of treating patients and in terms of good sanitation to prevent the spread of disease.
- Gravity fed piped water systems cost more per person served than tubewells but have lower O+M costs.
- The organization and operation of piped water systems is more complex and requires more management capability than small village systems.
- In principal, it is desirable to install a complete system rather than to do the installation in phases for financial reasons. However, the phased approach may offer advantages in gradually developing O+M systems as well as in permitting financing to be phased in.

- Many villages in the area would be included in the piped water systems that have been studied as would many medical and institutional centers.
- There is now and there will continue to be technical capacity at the Sandoa station, with existing staff, to install several piped water systems.
- The present budget provides funding for one gravity system and for 10 water system studies.
- In some situations, it will be possible to establish the systems so that a portion of users' fees revert to SNHR to cover station operations (e.g. Sandoa with REGIDESO reimbursing a portion of user fees).
- The population to be reached by the piped water systems under study total over 90,000 persons including a high percentage of repatriated population and refugees.
- It is possible that the slower rate of well capping and village drilling now being planned, may result in increased funding availabilities of Z 15-20 million within the present budget.
- It is possible that other donors (UNICEF, Belgian Cooperation), might be interested in helping GOZ/SNHR install one or more of these systems. Technical assistance would be available from Sandoa station to supervise installation and establishment of O+M and provide on-going monitoring and technical guidance.
- USAID and the GOZ might also consider the possibility of a modest increase in the budget.
- The total L/C cost of installing the systems studied to date is estimated at roughly Z 100 million or \$ 1 million equivalent. However, expenditures and financing would extent into a second phase beyond 1990.

The evaluation team reviewed the issue of piped water systems with the DG/SNHR, the Administrator of AIDRZ and with the project management. This discussion led to a consensus that an effort should be made to carry out several piped water systems and to explore possible additional funding to undertake others.

A possible scenario is:

- a) Implement Phase 1 of the Musumba-Kapanga water supply scheme. Phase 1 would cost about Z6.4 million (already budgeted for Z7.0 million) and serve Samuteb Hospital and Chisambu Medical Technical Institute, and a population of 6278 persons. Phase 2 costing Z33.4 million would be deferred until additional funding is available. Pending Phase 2, a tubewell would be provided to increase water supply for the Ntit Medical Center;

- b) Implement the Sandoa scheme at an estimated cost of Z 27.7 million, providing potable water for the Sandoa State Hospital, Leprosarium and TB center and 7,500 persons in a major healing and administrative center;
- c) Implement the Kafakumbu Mission scheme covering the Kafakumbu-Kimpuki Medical Center and a population of 1,843 at an estimated cost of Z 2.25 million. Provide one or two tubewells for the dispensaries at Kafakumba Lake-Post;
- d) Implement the Katoka Water Supply System for the Katoka Medical Center and a population of 1,785 persons at an estimated cost (rough) of Z 2.7 million;
- e) Provide a tubewell water supply for Dilolo Post Medical Center;
- f) Undertaken Phase 1 of the Kasaji water supply system providing water for the medical center and a population of 4,176 persons at an estimated cost of Z 3.85 million. Provide interim water supply for the hospital by tubewells (2). Defer phase 2 casting Z 25.5 million until additional funding becomes available.
- g) Provide tubewell water supply for the Kasaji-Lueo Medical Center and the Kasaji-Chisengama Hospital.

The cost of this scenario is Z23 million of which Z7 million is currently budgeted. A possible objection to this scenario is the desirability to cover all the population in agglomeration where such a system is being installed. This is a political question which SNHR and local authorities would need to resolve. However, programs for public utility development are usual in the world.

Cost of Various Gravity Flow Schemes Under Study(1)

	BUDGETED	UNBUDGETED	TOTAL
Musumba	6400	-	6400
Sandoa	-	7700	7700
Ntit Medical Center	pm*	-	pm
Kafakumba Mission	-	2250	2250
Katoka	-	2700	2700
Dilolo Post Medical Center	pm*	-	pm
Kasaji Phase 1	pm*	3850	pm
Total	6400	16500(2)	22900(3)

*Tubewells (4-6)

Source: AIDRZ, September 1986

NOTES: (1) This program would assure water supplies for the medical centers of:

- Samuteb Hospital
- Kasaji Chisengama Hospital
- Ntit Medical Center
- Sandoa State Hospital
- Sandoa Leprosarium
- Kafakumba - Kimpuki Medical Center
- Kafakumba-L. Medical Center
- Kafakumba-L. Post Dispensary
- Katoka Medical Center
- Dilolo Post Medical Center
- Chisambu Medical Tech Institute
- Kasaji-Lueo Medical Center

(2) Initial calculations suggest this amount could be funded within the existing CPF budget for the project.

(3) Under this scenario, implementation of Kapanga Phase 2 (Z33,4 million), Kasaji, Phase 2 (Z25.5 million), Mwajinga (Z22.7 million), Kafakumba Lake-Post (Z5.25 million) and Dilolo Post (Z6.32 million) would be scheduled in the 1990-1995 period or when additional funding becomes available.

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5. Adequacy of Project Management

a. Project Organization

The project is organized as shown in Figure 3. Policy direction is exercised by an Orientation Committee composed of representatives of SNHR, USAID and AIDRZ. This committee has worked effectively to provide appropriate guidance to project management. It was also effective in overcoming the serious situation created by the demise of the original implementing agent (AIDR) and by its replacement by AIDRZ.

Project management is simple and effective. Procurement and financial management is assured by the home office of AIDRZ located in Kinshasa. Close liaison is maintained by the home office with the SNHR Rural Hydrology Station. USAID was of major assistance in solving procurement problems, particularly by assuming the work of procurement (drilling rig and other items) after the demise of AIDR and until AIDRZ could take up this function. Quarterly Progress and Annual Reports are submitted by AIDRZ to USAID. Financial reporting is as specified by USAID Controller for reporting on payments and periodic advances.

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Figure 3

Organization of Shaba Refugee Water Project
(660-0114)

ORIENTATION
COMMITTEE
REPS OF SNRH,
USAID and AIDRZ

USAID Area
Development
Office

Project Director
M. de Bachère
DD/Chef of station
T. Mudahama

Technical Unit
Chief: de Bachère
Deputy: _____

Community
Development
Division
Chief: Kabagema B
Deputy: Kazake M.

Administrative
Division
Chief: H. Musembe
Deputy: D. Zielke

Technical Services
Division
Chief: G. Appelsman
Deputy: D. Nsimba

Admin. Services
Personnel
Payroll
Communications
Security
H. Musembe

Accounting
Cashier
Inventory
Warehouse
D. Zielke

Well
Capping
Crews
Chief:
U. Mishitu

Drilling
Crews
Chief: Vacant

Communicated by AIDRZ, September 7, 1986

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Construction of the Rural Hydrology Station in Sandoa was substantially completed by March 1986. Staffing of the station is nearly completed. In all, the station has a permanent staff of approximately 50 employees of all categories. Each of three Station Divisions -- Administrative, Technical and Community Development is well established with standardized procedures and work plans and several months of operations experience. The station has in fact been operational since January (training, studies, site selection, community extension and well capping). It has successfully carried out the work of installing 62 spring catchments in as many villages providing water for well over 16,000 persons.

Training of well capping crews is completed. Training of community development workers is completed. Initial work accomplished and direct observation by the evaluation team indicate that these crews are well trained and effective in carrying out their duties under their directors.

b. SNHR Support

The evaluation team was able to spend a substantial amount of time with the Director General of SNHR (Cit. Lukono-Sowa), who was spending a week at the station reviewing staffing, personnel relations, station planning and operations with the head of AIDRZ (Mr. Guy Petit) and with the project management. SNHR has a strong commitment to the success of the Shaba Refugee Water Project and is providing strong support for it by working through the Orientation Committee, other government agencies (such as the zonal and sub-regional commissioners, and with its staff assigned to the station.

The intention of SNHR is to maintain the station in operation with SNHR cadre for as long as it takes to complete the installation of necessary rural water supplies in the sub-region. In practice this means that SNHR is planning to continue the station's staffing and operations through 1995. The activities of SNHR in Lualaba Sub-Region represent its most important operation in the country and the patterns and techniques of work developed in the sub-region are expected to influence its operations and capabilities in other parts of the country as the financial resources made available to it through the GOZ and donors permit expansion of its activities.

The principal responsibilities of SNHR are to provide policy and operational guidance to the station, to assure station operations compatible with the operational system being established nationwide by SNHR and to insure support of local authorities for the station. The team observed that SNHR is performing these responsibilities well.

SNHR provides three full time staff to the station. These are:

- o The Chief of Station, Cit. Mudahama Terera, who currently works as deputy to the Project Director, M. Maurice de Bachere; he is scheduled to take over management of the station in 1988.

- o The Chief of Administration, Cit. Musembe Heibantshi; and,
- o A Conducteur de Travaux (Foreman), Cit. Mishitu Umba, who works with the Technical Division directing work of the well capping crews.

The project has also hired and trained a number of Zairian cadre. These include six Community Development Workers considered well trained and effective in their work, and six well capping technicians also considered well trained and effective in their work. Mr. Kazake Muteba, a graduate of the Institut Supérieur des Etudes Sociologiques, is being groomed to replace Cit. Kabagema as head of the Community Development Division. Cit. Mkongolo Ngindu has been hired as a mechanic and will eventually be assigned to the drilling crew and trained as a driller. The project is currently attempting to recruit a person to serve as head mechanic and a second person to be trained as a driller.

The staffing of the station was under review as of August 1986 by the DG/SNHR And the Administrator of AIDR in consultation with the station management. Pursuant to these reviews it was decided to appoint designate Cit. Musembe as Chief of the Administrative Division. The intention is to move toward Zairianization of project administration as fast as feasible.

It is early to say how well these Zairian staff will perform over an extended period of time and in the isolated circumstances they are working in. The first Chief of Station objected to his transfer there and left for other work in the mining industry. Mr. Muhadama has had difficulties adjusting but is making an effort to do so, strongly encouraged by the Director General. The Project Director clearly has a responsibility for helping develop and motivating all the staff of the station. The team was able to observe that living and working conditions appeared good and were conducive to career development. A good start seems to have been made.

c. AIDRZ (Implementing Agency)

Under a Cooperative Agreement with USAID and a Memorandum of Understanding to be executed between GOZ and AIDRZ, the International Association for Rural Development in Zaire (AIDRZ) is the implementing agency for the project. The PROAG, the Cooperative Agreement and the Memorandum are intended to be mutually consistent documents. Technical assistance provided under the Agreement includes the following specialists:

- o Mr. Maurice de Bachere, Hydraulics Engineer, is responsible for managing the Sandoa Station and all technical studies and work. He will train the Chief of Station and relinquish his management function as of January 1, 1989 at which time he will assume the role of technical advisor until 1990.

- o M. George Appelmans, Hydraulic Specialist, responsible for the technical service, including training and work organization of the well capping program and for equipment maintenance and garage operations. His current contract is for eighteen months and will end in June of 1987.
- o Cit. Kabagema Bigwe, Sociologist/Demographer, head of the Community Development Division, responsible for extension work with villages; his contract for two years will be completed in December 1987; and,
- o Mr. David Zielke, locally hired Administrative Assistant, acts as Deputy Head of the Administrative Section with particular responsibility for accounting, cashier activities, inventory control and vehicle operations.

These four persons are experienced African hands with many years of experience in Central Africa and fluency in French and in Swahili and competency in their fields. The team judged that AIDRZ had succeeded in providing a well balanced and effective TA team that had worked effectively to organize the program and initiate operations.

The well drilling rig is expected to arrive in Sandoa in January and is expected to begin work o/a March 1, 1987. AIDRZ is recruiting an expatriate well driller to manage the well drilling program and to train a Zairian crew and well drillers. It is expected that this person will be recruited to arrive by January and that he will remain until the end of the project. Training will be required for the well drilling crews and for village level pump maintenance and repairmen.

The evaluation team recommends that a highly experienced person be recruited for this expatriate position because of the importance of conducting the drilling work well, and the on-the-job training for the Zairian drillers. A person of less experience could encounter difficulties in proper drilling and installation of tube wells, the scheduling of drilling operations and maintenance of the rig. It will be important to limit rig down time to not more than two months per year.

With the arrival of the drilling specialist, following a period of overlapping of 5 to 6 months, Mr. Appelman's position will be taken over by a Zairian counterpart.

d. USAID Management Support and Oversight

USAID's Design and Evaluation Division (DEO) which handles a number of infrastructure projects in Zaire has the responsibility for management support and oversight of this project. The responsibility has been exercised for the past two years by Mr. T. Born who has served as a member of the Orientation Committee for the project.

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Under its Cooperative Agreement with AIDRZ, USAID has reserved the right to approve annual plans and budgets, to inspect project activities and advise AIDRZ to take needed corrective action, and to direct project activities within the scope of the Amplified Project Description to ensure that such activities are mutually supportive of GOZ, USAID and other donor activities in Shaba.

In accordance with the cooperative agreement, USAID has an Area Development Officer (ADO) located in Lubumbashi whose office is partly financed by the project and whose functions include:

- o Monitoring and evaluation of project activities to ensure that management of AID resources is satisfactory;
- o Assisting in the preparation of project implementation documents, particularly those required for procurement;
- o Liaison with host country officials; and assistance in project reporting and record keeping, including financial management information and project performance tracking.

The ADO is currently assigned as Project Officer responsible within DEO for USAID management of the Shaba Refugee Health Project. He has not been so designated for the Water Project because the United Methodist Church which has the cooperating agreement for implementing the health project is headquartered in Lubumbashi. SNHR and AIDRZ are headquartered in Kinshasa. As a practical matter, the ADO has been very helpful in providing local logistic support, including communications liaison with local officials and regular monitoring of project implementation on behalf of DEO. Another important function of the ADO is to insure appropriate coordination among the three Refugee Projects operative in the Lualaba area.

The evaluation team concludes that USAID project management and support have been effective. However, improvements should be sought in expediting AID documentation for AIDRZ procurement and payment of long overdue bills. Considering the delays that might have been expected when the initial implementing agent proved unable to carry out the cooperating agreement, USAID's performance in cooperation with SNHR in devising measures to keep the project on track with only a little delay (some six months or so) is exemplary.

e. Implementation Methods

Implementation methods appear appropriate for the area. These include self help and force account methods for all village water installation. Project management strategy is to assure effective operation and maintenance by villages through village water committees supported by self-help and users' fees to cover costs of spare parts for pumps and repairmen services. This will require techniques of rural animation by the CD Division. The Division will also need to conduct training programs for village maintenance and repairmen and for water committee officers. Spare parts provision is expected to be provided with the help of local mission organizations in the sub-region (in accordance with the WASH O&M report).

Methods used to install piped water systems will depend on technical studies but will probably include force account operations, community self help and on occasion, where necessary, contracting. The organization of O&M for piped water systems will need to be determined by the feasibility studies to be completed by the station. The studies in hand are at the pre- feasibility stage.)

f. Coordination with Other Projects in The Zone

Coordination with other projects in the area has been limited (because all are in the start-up phase). The Water Project has however been attentive to the needs of water supply for medical centers being supported by Project 114. There is an obvious need to provide coordination between the Shaba Refugee Water, Health and Roads Projects. Since the three projects are in an early stage of execution, it is timely to begin this coordination. The evaluation team supports the proposal that the three project directors meet with the ADO in October to begin a process of regular consultation and coordination. Coordination issues of concern are:

- o Road and bridge improvements to improve access to more isolated areas;
 - o Responsibilities for development and installation of water supply systems to selected medical centers;
 - o Assistance from the Shaba Refugee Health and Sanru II Projects to program support for health personnel (bicycles, visual aids, participatory skills and extension learning) in local dispensaries and health centers to carry out health education in participating villages. (Ref Wash Report, pps 36-37); and
 - o Assistance from Missions to support VLOM.
- g. Adequacy of Project Management

The project is just beginning its second year of operations. Serious disruptions occurred as a result of the unforeseeable bankruptcy of AIDRZ. Nevertheless, the project has made good progress and is on track after a delay of six to eight months off the original schedule. Having reviewed the project management mechanisms and operations, the evaluation team concludes that project management has been adequate and is sufficient to insure proper project implementation.

6. Project Implementation Status (Planning and Execution)

a. Installation of Water Systems

The PROAG and the initial Cooperative Agreement with AIDR projected the installation of 500 spring catchments and 570 village wells over the life of project. The work plan called for the construction of 60 springs capped

the first year, 80 the second, 100 the third, 120 the fourth and 140 the fifth. Installation in the first year (July) was about 50 spring catchments. The capacity exists to cap 15 springs per month, although the current plan is to limit spring capping for villages to about 100 per year, and ten per month.

The PROAG also projected 60 village wells developed the first year (40 drilled and 20 dug) and 110 the second year (90 drilled and 30 dug). As noted earlier, late procurement of the drilling rig and a decision to eliminate the dug well component has delayed implementation of the village well program. It is now planned that by the end of year 2 a total of 70 drilled wells and about 150 springs would be capped, and that effective village level O&M (VLOM) will be in operation.

b. Funding and Financial Plan

A total of \$4 million was originally estimated required to carry out the project. Revised estimates of input requirements and costs have raised the estimate of total costs to \$6.25 million.

A revised funding plan was worked out by USAID and SNHR earlier this year and incorporated in the Cooperative Agreement executed by USAID with AIDRZ in August. Under this plan, the U.S. dollar grant remains at \$2.25 million as provided in the PROAG. The estimated requirement for local currency (in the form of counterpart funds released by the USAID Controller) has been raised from "not less than the equivalent of \$1.8 million" to the equivalent of not less than \$4.0 million equivalent (Z 240 million).

In the opinion of the DG/SNHR, this change as well as other modifications in the Project Description should be reflected in an amendment in the PROAG as well as in the Cooperative Agreement and in an AIDRZ-GOZ Memorandum of Agreement.

Dollar funding has proceeded as follows. An initial amount of \$270,000 was advanced to AIDR. This amount is held in a frozen account in Belgian bank and although USAID is taking legal steps, its recovery is uncertain. The balance of available dollar funding is \$1.98 million. This has been sub-obligated through the Cooperative Agreement with AIDRZ in amount \$1.73 million and by various Project Implementing Orders for technical services and commodity procurement issued by USAID.

The Cooperative Agreement with AIDRZ provides an illustrative dollar budget for the \$2.0 million broken down as follows:

Investments.....	\$432,000
Materials/Supplies.....	445,000
Int'l Transport.....	72,000
Tech. Assistance.....	835,000
Management.....	167,000
Contingencies.....	49,000
 Total	 \$2,000,000

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The Investments category shown above is made up of survey equipment (\$20,000), housing furniture and equipment (\$7,000), drilling rig (\$360,000) and radio equipment (\$45,000).

Included in the above are all expenditures previously incurred by AIDR, and those incurred by AIDRZ under its temporary agreement with USAID and by USAID for direct foreign equipment procurement. In the event the \$270,000 frozen assets are not recovered, the Agreement provides that the number of hand pumps to be procured will be reduced to cover the deficit (from 500 to 430) and the Agreement will be terminated June 30, 1989 rather than on 3/31/91.

Actual dollar availabilities as of August 1986 are estimated at \$1.412 million, not counting the \$270,000 discussed above. Project Management was confident that this amount of dollar funding would cover requirements subject to the reduction in handpump procurement and reduced time for AIDRZ under its Cooperative Agreement if the \$270,000 is not recovered.

Counterpart funds are provided on the basis of annual calendar year budgets established with the USAID program office and through intermittent advances by the USAID Controller based on actual requirements for project execution. Projections of L/C requirements by year are as follows:

1985.....	\$360,000	equiv. (Z 22. mln)
1986.....	1,121,000	equiv. (Z 68. mln)
1987.....	668,000	equiv. (Z 40. mln)
1988.....	771,000	equiv. (Z 46. mln)
1989.....	622,000	equiv. (Z 37. mln)
1990.....	448,000	equiv. (Z 27. mln)
Total.....	\$4,000,000	equiv. (Z 240 mln).

The zaire amounts have been calculated based on Z60 equals \$1.00.

A total of Z 75 million is expected to be provided in CY86. AIDRZ has drawn up a provisional CPF budget for 1987 totaling Z 34 million. However requirements for budgeting for CD training and extension and for piped water supply system development may raise requirements in CY87.

c. Procurement

i. Dollar-funded procurement

Dollar-funded procurement was delayed 6-8 months by the cancellation of the initial Cooperative Agreement. With interim action by USAID to procure directly for the project, and with the recent execution of a new Cooperative Agreement, procurement is now to be handled by AIDRZ. In terms of project implementation, it is disturbing that arrangements which had been completed and "decided" for ordering the pumps from India have been changed by recent order of USAID in order to explore possible procurement in the U.S.

The major procurement categories are the project drilling rig with necessary spare part support, hand pumps and hand pump spare parts, survey equipment, radios and shop tools and equipment. The amount budgeted for this procurement is \$877,000.

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Some survey equipment ordered in December 1985 has been received and is in use. USAID ordered the drilling rig under a PIO/C (\$354,000). Its delivery to the port is expected in October. It will be mounted on a locally procured truck and driven to Sandoa early in January. Arrangements have been made under the procurement to have a manufacturer's technician in Sandoa for a month to provide guidance to the Technical Division on the operation and maintenance of the rig.

Now that the Cooperative Agreement with AIDRZ is in effect, USAID is asking the Association to proceed as soon as possible with the procurement of 250 sets of the India II hand pump previously identified for the project's tube wells. AIDRZ plans to place this order in September providing the necessary AID documentation is in hand. Since the plan is to equip a total of 570 wells with pumps, a second order for 320 pump sets is envisaged in 1988, after the second evaluation. Spare and tool kits are being included in the order for 200 pumps.

In procuring the pumps, spares and tools, and in line with the WASH O&M study (p41), AIDRZ should attempt to negotiate a supply and service agreement providing: a guarantee for all pumps; inspection and certification of pumps prior to shipment by an independent engineering firm; a guarantee of the availability of spare parts in Zaire by an import company for at least five years; and one month services of a pump expert to train project and SNHR mechanics to install pumps and in O&M procedures. (Wash O&M report, p. 41.)

USAID has approved foreign source procurement of the communications equipment required (three fixed stations, two in Kinshasa and one in Sandoa, and eight mobile units). This order will also be placed by AIDRZ in September or as soon as AID documentation is available. There has been an unfortunate delay of two months by USAID in preparing the necessary Letter of Commitment.

AIDRZ has negotiated a favorable arrangement for stockpiling spare parts for the drilling rig in Belgium to be dispatched by air freight when needed. The arrangement provides that the supplier will substitute for spare parts in lesser need or not needed spares that are in greater need for rig repair and maintenance (all exchanges at 1986 prices). In effect a revolving spare parts system is established providing much greater flexibility and avoiding wastage due to the procurement of spares which will never be used. This innovative procedure may require special AID authorization which appears desirable.

No hand pumps have been available for demonstrating or training purposes. And it is regrettable that no trials appear to have been made of the pump with the proposed modification which the team would hope would be guaranteed by the supplier. The team recommends that at least one modified pump be ordered for delivery by air freight as soon as possible.

ii. Local Currency Procurement

L/C procurement is budgeted at the equivalent of \$2.1 million (Z 125 mln). AIDRZ under its interim technical services contract with USAID established procedures of local procurement of commodities such as vehicles,

cement, piping and fuel which appear over the past six months to have worked well. The major items include \$434,000 equivalent for vehicles (three trucks, two pick ups, and six ?? landrovers) all of which have been procured except for one truck and one Landrover, \$470,000 equivalent for fuel by contract with Fina and \$384,000 equivalent for piping from Tubetra.

d. Project Station

The project station is located at Sandoa, a major trading center and administration center of the Sandoa Zone and central to all villages and towns of the Lualaba Sub-Region. The construction of the station began in September and was substantially completed in March. The station comprises seven housing units, an administration office unit, a technical office unit, and a combined garage, workshop and warehouse. Ample protected parking and outside storage space is available. The lay out is well conceived and the construction is appropriate to the need. The performance in completing this work in such a short period demonstrates the capacity of AIDRZ and the station to organize and execute the work program of the station.

e. Site Surveys and Selection

From March through August 1986, village surveys were conducted on the axis Sandoa-Kapanga and then to the north of Kapanga (and to the NW and NE). Some 65 developable spring catchments were identified and installed for villages which had agreed in advance to form a water committee and participate in the work of installation and assure maintenance. The villages in question ranged from as few as 70 to nearly 2,000 persons. The water quality is reportedly good and the total flow is estimated adequate to meet minimum needs (30 liters per day) for a population of 16,000 persons. In fact, the villages where these spring catchments are located have a significantly larger population and many of them will require additional potable water sources (from tubewells).

The work carried out in this period indicates that the station has organized and staffed itself to be able to select village sites, involve village participation and accomplish technically sound spring catchments. The task over the coming months is to gear up and move to well drilling operations and to establish a sound workplan for developing gravity fed piped water supply systems. One system is currently to be started during the next year. Feasibility studies for the piped water systems need to be completed and should include add detailed financial, administrative and social impact analysis to the technical cost analysis now in hand. With respect to the study for Sandoa, promising talks have been held with REGIDESO headquarters by SNHR with a view to a collaborative effort to increase and assure the supply of potable water in 1987. The budget will, however, need to be reworked to cover the Sandoa operation. The 1987 work plan will include developing water supplies in some 100 villages including 100 spring catchments and 70 tube wells. 1987 will be a year also of testing techniques and systems for training village water maintenance personnel and repairmen, for village management of O&M systems and to determine the practicality of village collections of users' fees required to assure pump maintenance.

f. Piped Water Systems Studies

The Station has demonstrated its capacity to conduct necessary topographical surveys and mapping and to prepare pre-feasibility studies?

7. Evaluation Issues

This section deals with issues and questions raised in the Scope of Work for the evaluation:

- o Site Selection
- o Analysis of Alternative Water Systems
- o Community Development Workers Effectiveness
- o Village Maintenance System

The issue of sustainability was also reviewed in this section. A sixth issue, that of decisions regarding development of piped water systems serving medical centers and major or large rural agglomerations, was dealt with in section 4(c) (IX).

a. Site Selection

The evaluation team was asked to review the criteria for the selection of villages for water supply development and to comment.

Discussion:

In the PP and PPROAG the question of site selection is somewhat academic since it is assumed that more or less all 500 villages in the area would be provided with a spring catchment and dug or drilled well. During the first year of implementation two factors arose to make site selection an issue. The first is the recognition that effective VLOM systems need to be developed along with the "hardware"; that effective VLOM requires active village cooperation through a process of deciding to participate and determining to organize for operation and maintenance. The second factor is that there are many more than 500 villages, and that some of these may be too small to justify or to afford more expensive systems and that choices based on predetermined criteria will need to be made concerning complete coverage in some villages or partial coverage of most.

The criteria which appear relevant to the situation in Lualaba are:

- . Need, a fact in most villages
- . Proximity of villages to developable spring catchments,
- . Village population
- . Accessibility to village by well capping and drilling crews,
- . Organisation and scheduling of work to achieve economies of scale in utilization of crews and for logistic supply;
- . Village willingness and financial capacity to support a water supply system;

- Potential for organizing services for spare parts supply and repair-personnel;
- Opportunities to include the village in a piped water system;
- Availability of funding to subsidize the capital investments (pumps, drilling, well capping, piped water systems); and
- A health facility serving a larger population than the village

Site selection will also depend on economic solutions to work organization by the station. Considering the large distances and difficult transportation, communication and logistic problems, and the availability of only one drilling rig, the station will have to proceed by geographic sector oriented along major transportation axes.

It will be possible to specify more clearly how village site selection will be accomplished when the results of the village survey (para 4(c)(1)) become available and decisions have been made regarding planning and execution for piped water supply systems.

b. Water Systems Analysis

The statement of work raised several questions: (i) which of the three basic water systems (tubewells, capped springs on gravity feed) perform best under project conditions? (ii) which systems are most efficient? (iii) Develop site specific criteria for system selection?

Discussion:

1) No drilled wells are operating in the area and it is premature to make comparisons on the relative performance of wells and gravity systems under project conditions. Having said this, it may be hazarded that spring catchment systems as being designed and installed by the project and gravity feed systems which are being planned will perform better than the wells because of the considerably greater requirement for and expense of pump maintenance and repair. This question of relative performance should be included in the project's monitoring system and reviewed in the mid-term evaluation in 1988.

An alternate definition of efficiency might be a total per capita cost of operating a water supply system over its life including amortization of the capital investment and annual O & M.*

This question was reviewed by the evaluation team with the DG/SNHR, AIDRZ's Chief Administrator and senior staff of the Sandoa station. Data were developed by the station estimating roughly the investment and the annual O & M costs per person served of spring catchments, gravity flow systems and tubewells with hand pumps (see Figure 4).

* Studies of unit costs of alternative water supplies (spring catchments, dug wells, drilled wells, gravity flow systems have been carried out for the SANRU II project which is to install several thousand water points in 100 health zones over a seven year period. See report by _____ Turner, July 1985.

Figure 4

Relative Costs (Investment and O & M) for Alternative Water
Supply Systems in the Lualaba Sub Zone

(Preliminary data)

	Investment Cost	O & M Cost	Assumed Life of Asset (yrs)
Spring Catchment	Z 25,000	Z10	10.20 (a)
Gravity Flow System	Z 1260/ person	Z30	20/30/50 (b)
Tube well/handpump	Z170,000 (Z680/person)	Z140	20/50 (c)

Source: AIDRZ, communicated by Mr. Maurice de Bachère,
September 1986

- (a) Life of Spring Catchments depends on hydrological conditions which may change
- (b) 50 years for piping, 20 years for reservoirs/cisterns and 35 years for other elements
- (c) 20 years for the pumps; 50 years for the well.

- Springs
 - A developable catchment providing at least 4-5 m³ per day, year round;
 - Within 500m of a village population center;
 - A village population of 100 persons (or a population expected to grow to 100 persons or more); and
 - Village need and desire for the catchment and willingness to provide effective O & M.
- Gravity-fed piped water systems
(fed by spring catchments)
 - Should be developed for major rural agglomerations ranging in size from large villages of about 1,500 or more to major trading and administrative centers ranging in population up to 20,000 persons or more;
 - Assured source of year-round spring water of good quality;
 - Well organized systems of O & M; community willing and able to support users fees; and
 - As far as technically and economically (per capita investment costs at the margin not significantly greater than for the system as a whole) feasible, hamlets and villages in the area of a piped water supply system should be incorporated into it.
- Village tubewells, handpump operated;
 - Used to provide potable water to villages without alternative supply or to supplement supply of potable water available from village spring catchments;
 - Requires a well planned and effective VLOM; and
 - Population served estimated to range from 170 to 330 assuming well production ranging from 5 m³ (year round) to 10 m³ (year round) per day.

c. Community Development Workers - Effectiveness

The Statement of Work for the evaluation raises the following questions: (i) effectiveness of CDW; (ii) have they adequately explained the importance of clean water; (iii) have they generated enthusiasm in the villages to elicit village involvement in the construction and long term maintenance of the water supply system; (iv) are villages prepared to contribute to install and pay for repairs; and are local missions willing to support the maintenance and repairs of water systems.

Discussion:

i) The evaluation team is not certain how effective CDWs have been because the opportunity to observe their work or the result of their work was limited. Moreover, their work will become more difficult and challenging when villages are faced with decision to invest in tubewell systems; The staff of AIDRZ and of SNHR are satisfied that CDW performance has been effective. This is a question which needs monitoring.

ii) Information collected by the team indicated that the CDWs have adequately explained the importance of clean water. In this regard, it is believed important that USAID help obtain the assistance of Project 114 to mobilize local health workers to undertake village health education for villages with water supply systems.

iii) The CDWs appear to have generated enthusiasm by villagers for the installation and maintenance of spring catchments. Villages have participated actively in the work (clearing a track for vehicles to the site, clearing the site, participating in earth removal, construction of the drainage system around the catchment). However, the project has been paying several workers to work with the well capper to excavate the head works. The project will, in the future, require villages to donate this labor. How this will effect participation remains to be seen but various indications suggest that villages will respond strongly to the need for self-help to improve their water supply.

vi) Villagers appear pleased to participate in the construction and long term maintenance of spring catchments. How villagers will react to the cost of maintaining a tubewell system is unknown. The socio-economic survey carried out by WASH in November 1985 indicates that larger villages will be financially able to handle the costs (about 210 per family per month) but that many smaller villagers may find it difficult to do so considering their other needs and very limited cash revenues.

v) The WASH study of O&M systems interviewed a number of missions on this point (their willingness to stock and sell spare parts) and found a willingness to support a VLOM system in the project zone. Steps need to be taken to pursue this matter, which should be raised at the joint meeting of Shaba Project Directors which USAID/ADO is now planning to organize in October.

d. Village Maintenance Systems

The team was asked to: (i) review how Village Water Committees will manage the improved water systems; (ii) state if the system developed by WASH for VLOM is workable; (iii) indicate how systems will be repaired when they break down; and (iv) indicate how spare parts will be procured.

Discussion:

1) The team reviewed how Village Water Committees would manage their capped springs. Self-help labor to do the necessary clearing of the catchment area and its drains is involved and would appear to pose no problems. However, this question should be monitored.

ii) The team reviewed the three tier program proposed in the WASH report and believes it is workable and should be put into operation with adjustments made based on operating experience. It is regrettable that copies of the published version of this report have not yet been made available to SNHR or AIRDZ. The team recommends that a translation in French of the report be provided to AIRDZ/SNHR as soon as possible and that AIRDZ/SNHR review the recommendations and initiate steps to implement them.

iii) Procedures for repairing tubewell systems when they breakdown are described in detail in the WASH O&M study.

iv) Spare parts will be procured by the project and stored in strategic locations (mission centers, Sandoa station) to be sold to villages of trained pump repairmen. The proceeds of the sale will provide funds to replace the spare parts by orders placed with the supplier's importer in Kinshasa.

e) Sustainability Issue

The sustainability of water systems installed under the project is viewed as a crucial concern by the GOZ and USAID and the technical assistance team (AIDRZ). Well designed and well installed systems are of first importance to long term functioning and sustainability. Of equal importance is the establishment of effective systems for operation and maintenance of these installations. A basic principal of O&M is that local organizations need to be established with local financing through users' fees.

In the case of village systems - catchments and wells with hand pumps - the requirement for effective O&M is strong village identification and acceptance of the systems as theirs and their interest in efficient operations and repair and maintenance when needed. The project involves the establishment of local water committees, the collection of users' fees to cover O&M including spare parts purchase, the training of maintenance and repair personnel and provision of a spare parts supply system. The evaluation team observed that the issue of sustainability is being addressed by project management. Progress in this regard will require continued management attention, careful planning and monitoring. It should be carefully reviewed in the mid-term evaluation scheduled in 1988.

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Appendix A
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