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WATER AND SANITATION FOR HEALTH PROJECT

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EMERGENCY WATER SUPPLY AND SANITATION ASSISTANCE TO THE ETHIOPIAN DROUGHT AND FAMINE

WASH FIELD REPORT NO. 145

AUGUST 1985

Prepared for the
USAID Office of Foreign Disaster Assistance
Activity No. 131

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Prepared for the USAID Office of Foreign Disaster Assistance
under WASH Activity No. 131

by

Dennis B. Warner, Ph.D., P.E.

August 1985

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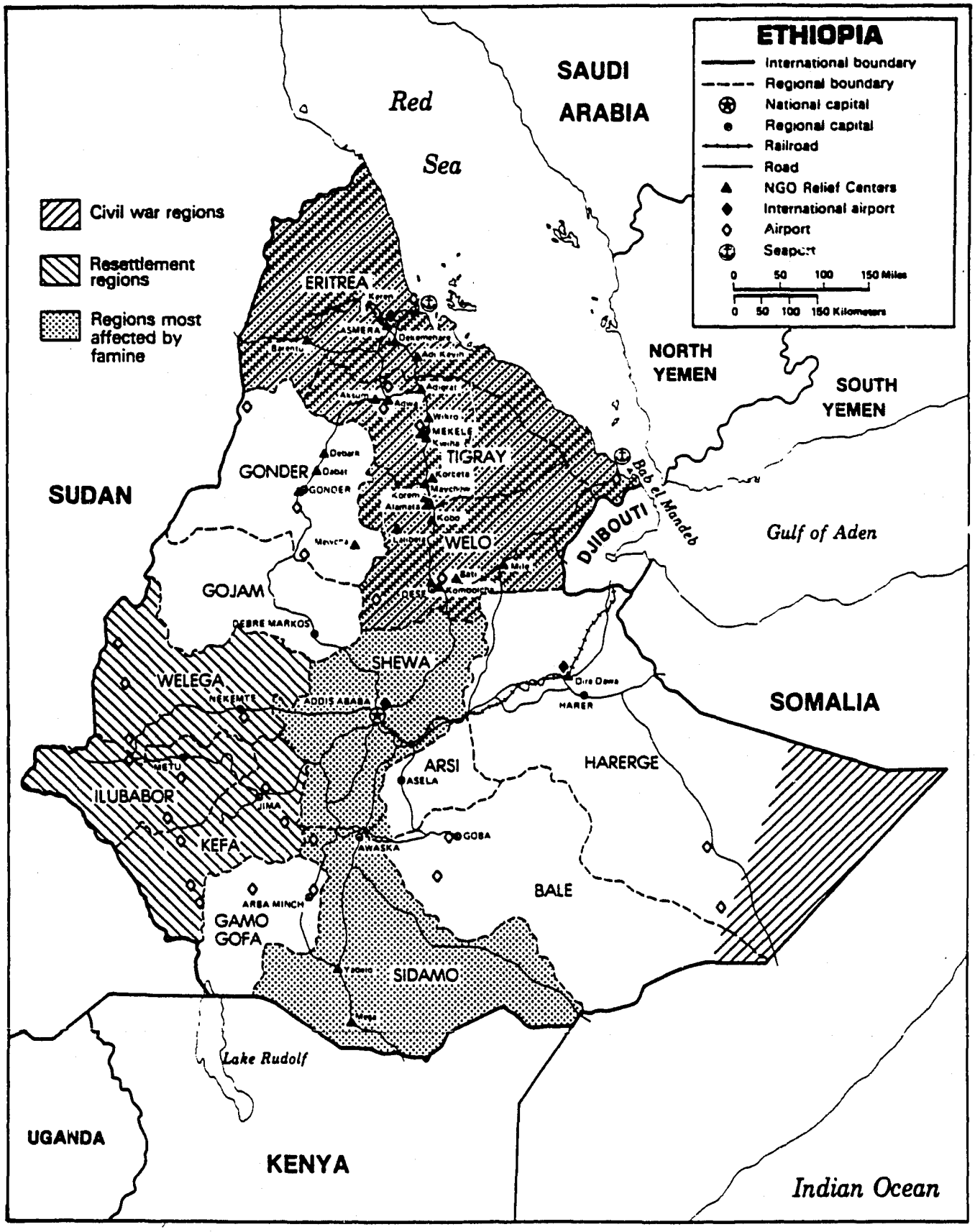

Source: Congressional Research Service, Foreign Affairs National Defense Division

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LIST OF ACRONYMS

ADRA	Adventist Development and Relief Association
ASG/EOE	Assistant Secretary-General for Emergency Operations in Ethiopia
Birr	Ethiopia currency unit of exchange: $1.00 = 2.05 Birr
CIDA	Canadian International Development Agency
CRS	Catholic Relief Services
EWWCA	Ethiopian Water Works Construction Authority
FAO	Food and Agriculture Organization
GED	German Emergency Doctors
GOE	Government of Ethiopia
ICRC	International Committee for the Red Cross
LICROSS	League of Red Cross Societies
LWF	Lutheran World Federation
NGO	Non-governmental organization
NWRC	National Water Resources Commission
OFDA	Office of Foreign Disaster Assistance
PMGSE	Provisional Military Government of Socialist Ethiopia
PVO	Private voluntary organization
RAF	Royal Air Force (UK)
RRC	Relief and Rehabilitation Commission
SIM	Society for International Missionaries
UNDRO	United Nations Disaster Relief Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WSS	Water Supply and Sanitation
WSSA	Water Supply and Sanitation Authority

ACKNOWLEDGEMENTS

This report and the field work in Ethiopia on which much of it was based could not have been possible without the assistance of a great many people. The following is a sample of those who were particularly helpful. Within the USAID office in Addis Ababa, Fred C. Fisher, the USAID Coordinator for Emergency Assistance, and his deputy, Frederick Machmer, provided basic policy guidance plus official support in terms of office space, secretarial assistance, and transport. In addition, Donald Anderson, on TDY from AID/Washington, assisted in the negotiation of the UNICEF well drilling agreement, while Walter North, who joined the USAID/Ethiopia staff in February, acted as the USAID water and sanitation liaison officer.

The U.N. Office for Emergency Operations in Ethiopia was especially helpful in providing the WASH consultant with access to key officials, logistic support in the field, and general information on overall emergency activities. The assistance given by Assistant Secretary-General Kurt Jansson, who probably has the most difficult job in the current crisis, and NGO Liaison Tom Franklin helped the consultant to visit areas of Ethiopia and witness situations that would have otherwise been impossible to reach.

Officials within the Government of Ethiopia (GOE) were also helpful in this effort. Ato Eshetu Habtemariam, Head of the Foreign Assistance Service of the NWRC, helped arrange introductions among GOE water supply officials and was instrumental in shaping the UNICEF agreement. Ato Abera Aguma, Head of the Rural Water Supply Department of EWWCA, provided encouragement regarding possible future USAID water projects in Ethiopia. And finally, Major Mulugeta Kebede and Ato Ephrem Guade of the Relief and Rehabilitation Commission supplied valuable insights into the relief operations of the GOE.

There remains a long list of individuals working with relief organizations who contributed to the results of this visit. Among them: Kalidas Ray of UNICEF/Ethiopia, Per Engebak of UNICEF/New York, and John Skoda of UNICEF/Nairobi for assistance in setting up the UNICEF agreement; Danny Hayes of the Society for International Missionaries (SIM) for assistance in developing the SIM proposal; Dr. Roger Bruce of World Vision for the visit to Lalibela Feeding Center; Rene Berchtold of the International Committee for the Red Cross for the visits to Axum and Adwa Feeding Centers; and Rev. Tom Fitzpatrick of Catholic Relief Services for numerous insights, introductions, and favors.

Lastly, to the entire relief community in Ethiopia, both national and international, this consultant wishes to express his gratitude and admiration. In the face of enormous difficulties, their response to the widespread suffering caused by the drought has been one of the better examples in today's troubled world of cooperation among individuals and organizations. Their concern and dedication and their search for ways to effectively collaborate in a common effort are some of the ennobling side effects of the Ethiopian crisis. This concern was summed up in a benediction, given at the start of a weekly meeting of the main private relief organization, the Christian Relief Development Association, in Addis Ababa in late February. Adapted from Psalm 104 of the

Old Testament, the benediction reminded all present of the better world for which they were working:

> We pray you, Lord:
> From your dwelling water the hills;
> Let earth drink its fill of your gift;
> Let the grain grow for the cattle,
> and let the plants serve man's needs.
>
> Make springs gush forth in the valley;
> Let them flow in between the hills,
> and give drink to all the beasts of the fields,
> So that man may bring forth bread from the earth,
> and wine to cheer his heart,
> oil to make him glad,
> and bread to strengthen his heart.
>
> All of us look to you,
> to give us our food in due season;
> You give it, we gather it up;
> You open your hand, and we have our fill.
>
> May the Lord rejoice in his works!
> May the glory of the Lord last forever!

EXECUTIVE SUMMARY

At the request of the Office of Foreign Disaster Assistance (OFDA) of the U.S. Agency for International Development (USAID), a WASH consultant visited Ethiopia over the period 28 January to 8 March 1985 to assist the agency in the implementation of an emergency water supply project in the relief camps of Wello Region. While in Ethiopia, the consultant also served as the water supply and sanitation advisor to the U.N. Assistant Secretary-General for Emergency Operations in Ethiopia. This report contains a description of the activities of the consultant regarding both the USAID water project and his advisory role with the United Nations. In addition, it describes the status of USAID water supply assistance as of March 1985 and presents recommendations for future actions.

Sub-Saharan Africa is witnessing a catastrophic drought affecting upwards of 150 million people in 28 countries. The effects of this drought are particularly severe in Ethiopia, where more than a million people have died of starvation and illness in the past four years and over 10 million people remain at great risk due to the drought-induced famine which has gripped the country.

The international response to the drought and famine in Ethiopia has been an immense outpouring of food, medical attention, and technical personnel. More than 20 bilateral agencies and U.N. organizations plus over 50 private voluntary organizations (PVOs) have joined in a crash program for feeding and sheltering hungry, and often homeless, people. This effort, along with the parallel efforts of the Government of Ethiopia (GOE), has resulted in 50 shelter camps and 267 food distribution centers. For 1985, it is estimated that 1.5 million tons of emergency food will need to be imported into Ethiopia. The U.S. Government has pledged one-third of this total, and recent legislation has removed some of the restrictions that previously limited U.S. assistance to emergency aid by barring long-term development aid.

The WASH consultant worked closely with USAID/Ethiopia in identifying an organization to implement a project of borehole drilling and water supply assistance in the Wello Region camps. It was decided that UNICEF had the capability, interest, and close working relationships with the GOE necessary for such a project. While in Ethiopia, the consultant also assisted USAID in reviewing a proposal from the Society for International Missionaries (SIM) for a water supply project in Gama Gofa Region. Both the UNICEF and SIM projects were forwarded to AID/Washington for appoval.

As water and sanitation advisor to the U.N. Emergency Operations Office, the WASH consultant prepared reports on the status of water and sanitation conditions in the relief camps. This work involved meetings with representatives of relief organizations, visits to camps in Hararghe, Wello, and Tigray regions, and assistance in the organization of a meeting for representatives of relief organizations concerned with water supply conditions. Three field trips were made under U.N. sponsorship, which included visits to camps in Gawane, Mile, Bati, Harbo, Alamata, Korem, Lalibela, Adwa, and Axum. In all camps, water supply and sanitation conditions were inadequate, and in some cases posed serious hazards to public health.

The conclusions of this six-week effort in Ethiopia are as follows:

- The Ethiopian drought and famine has overwhelmed the meager resources of the GOE and without massive amounts of external relief assistance the country is facing a disaster of unparalleled magnitude.

- The international donor community is currently playing a very active relief role but needs to expand its efforts even more in the coming months.

- Through food shipments, USAID has become the largest relief donor in Ethiopia. Most USAID assistance is channeled through PVOs.

- Continued emergency food assistance will be needed for at least the next 18 months. Greater emergency assistance needs to be given to environmental health facilities (water, sanitation, shelter) in the relief camps and to the rehabilitation of towns, villages, and farms.

- Until recently, the Hickenlooper and Brooke amendments have restricted U.S. relief efforts to short-term emergency assistance. However, recent legislation and a more liberal interpretation of official policies now allow USAID to consider long-term recovery measures for Ethiopia.

- Emergency water supply and sanitation assistance is urgently needed in the relief camps, the towns adjacent to the camps, and the villages where the drought has been especially severe.

- USAID could play a much more active role in water and sanitation by supporting the UNICEF and SIM projects plus additional projects proposed by PVOs.

The recommendations of the WASH consultant to USAID are the following:

Emergency assistance policies:

- Eliminate any residual inhibiting effects of the Hickenlooper and Brooke amendments on U.S. emergency assistance.

- Broadly define emergency assistance to allow USAID to deal with the root causes of the Ethiopian drought and famine.

- Allocate increasing amounts of emergency assistance to keeping people in their villages and out of the relief camps.

- Provide emergency water and sanitation assistance to towns and villages whose systems are being overtaxed by growing numbers of displaced persons.

Water and sanitation activities of USAID:

- Approve the proposed grant to UNICEF for well drilling activities in Wello Region.
- Approve the proposed grant to SIM for well drilling activities in Gama Gofa Region.
- Develop a maintenance support project for emergency water supply systems in Wello Region.
- Encourage PVOs to submit proposals for emergency water supply and sanitation support.
- Establish a fund, under the control of either USAID/Ethiopia or the U.S. Embassy, for emergency water and sanitation activities in relief camps.
- Provide funds to UNICEF for a water and sanitation advisor to the U.N. Office for Emergency Operations in Ethiopia.
- Maintain a water and sanitation advisor to USAID/Ethiopia.

Chapter 1

INTRODUCTION

This is a report of a WASH consultant visit to Ethiopia to assist the U.S. Agency for International Development (USAID) in implementing a project of emergency water supply assistance to the relief camps of Wello Region. WASH Project participation in this effort was requested and funded by the AID Office of Foreign Disaster Assistance (OFDA) as part of the drought relief activities of the U.S. Government in sub-Saharan Africa. This report contains a description of the activities of the WASH consultant over the period January-March 1985, the status of USAID water supply assistance as of March 1985, and recommendations for future actions.

In a larger sense, however, this is a report on a major event of our time, a catastrophic drought directly affecting half the population of Africa. The drought extends across the entire Sahelian belt from Mauritania on the west coast to Ethiopia on the east and takes in the entire eastern coast of Africa. The United Nations has identified 20 countries as "critically affected" and in need of urgent assistance.

Since 1982, the drought has been particularly severe in Ethiopia. Drastically reduced rainfalls over much of the country, but in particular over the densely populated central highlands, have resulted in several years of crop failures, widespread famine, the breakdown and dislocation of rural communities, and growing death tolls due to starvation and illness. The international community has attempted to respond to this crisis with one of the largest relief efforts in recent history. The limited success of this effort, due, in part, to logistical problems, internal organizational restrictions, and the sheer enormity of the problem, is also discussed in this report.

Thus, there are two general objectives of this report. The first, as indicated in the opening paragraph, is to report on the WASH response to the request by OFDA for specific water supply assistance in Wello Region. The second is to urge greater efforts to ameliorate the overall effects of the drought and famine in Ethiopia. To do this, the report will attempt to show the following:

(1) The severity of the drought and the needs arising from it.
(2) The response of the international donor community to these needs.
(3) The role of water supply and sanitation in these needs.
(4) Specific areas of water supply and sanitation that should receive increased assistance from the donor community.

The report is organized in the following manner.

Chapter 2 describes the nature of the emergency caused by the drought and its associated famine. The historical background to droughts in Ethiopia is explored and the response of the donor community, including USAID, is described.

Chapter 3 describes the role of the WASH Project and, in particular, the activities of the WASH consultant during a six-week visit to Ethiopia during January-March 1985. This chapter also describes the proposed project

assistance agreements with UNICEF and the Society for International Missionaries (SIM) and the activities carried out on behalf of the U.N. Office for Emergency Operations in Ethiopia.

Chapter 4 outlines the legal restrictions on USAID emergency assistance to Ethiopia. The limitations imposed by the Hickenlooper and Brooke amendments to the Foreign Assistance Act are described in some detail.

Chapter 5 presents the conclusions of the consultant and is intended to be a summary statement of the overall needs and the problems inhibiting the expansion of emergency assistance programs.

Chapter 6 provides recommendations intended to meet the most pressing needs of the current emergency. The first part of the chapter deals with U.S. government policies on development aid (although the broader implications are relevant to all donors), while the second part recommends specific water and sanitation activities for consideration by USAID.

Chapter 2

NATURE OF THE EMERGENCY

2.1 Background to the Ethiopian Drought and Famine

Drought and its deadly partner famine have stalked repeatedly across Ethiopia throughout its recorded history. Information drawn from Egyptian records of Nile River floods, tree rings in the beams of Ethiopian monastaries, sunspot cycles, reports of foreign travellers, and royal Ethiopian chronicles indicate that droughts are a frequent, almost normal, component of Ethiopian life. Over the past 200 years, available data suggest that perhaps seven droughts per century can be expected. Figure 1 shows the drought-prone regions of Ethiopia.

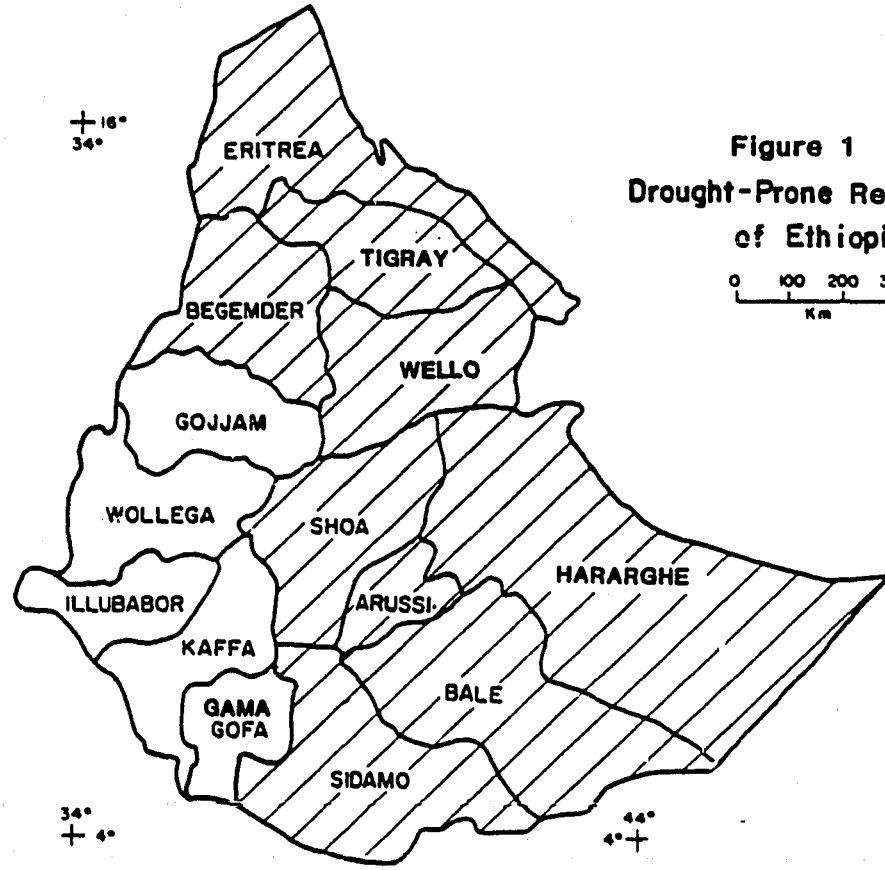


Figure 1
Drought-Prone Regions of Ethiopia

Famine follows closely after severe droughts, and the worst famines are marked by extremely high death tolls. The 1973-75 drought in Ethiopia caused upwards of a half million deaths (200,000 in Wello Region alone) and contributed to the overthrow of the Haile Selassie government. Fifteen years earlier, 1957-59, another drought killed a reported 100,000 people in Wello and Tigray regions. The worst drought of recent times, however, may have occurred in 1888-92 when a devastating famine throughout Ethiopia caused one-third of the population to perish.

Ethiopia is now in its fourth successive year of below normal rainfall. The decrease was particularly acute in 1984 when the Belg rains (the short rains during February to May) completely failed and the Meher rains (the long rains during June to September) fell to 40 percent or less of their normal patterns. As a result, many rivers, wells, and springs that used to be permanently flowing dried up, and vast areas became critically short of water for irrigation, livestock watering, and even basic human needs. The most severely affected regions in this drought are Wello, Tigray, and Eritrea in the north, Shoa in the center, Hararghe in the east, and Sidamo in the south. Overall, 12 of 14 regions are suffering from drought in varying degrees.

The continuation of the drought into 1985 and the repeated failure of this year's Belg rains have had a cumulative debilitating effect on agricultural production. A U.N. Food and Agriculture Organization (FAO) survey in December 1984 reported that 1984 grain production would be 25 to 30 percent below the average of the three previous drought-affected years. Since normal grain production is about 7.3 million tons per year, the 1984 decline translates into a shortfall of approximately 2.0 million tons of food, or roughly equivalent to the consumption needs of almost 8 million people for a year.

The ultimate consequence of famine, of course, is death, whether by outright starvation or by sickness arising from malnutrition, exposure to infections, or other related factors. There are no accurate morbidity and mortality data describing the current famine. Informed estimates, however, put the famine-related death toll at 300,000 during 1984. Overall, a million deaths may have been caused by the drought since it began four years ago.

The current emergency in Ethiopia is the consequence of a number of highly interconnected environmental, social, and political factors. Among the most relevant to famine are:

- Drought - very poor rains since 1982.
- Overgrazing - Ethiopia has the largest livestock population in Africa.
- Deforestation - 60 years ago forests covered 40 percent of Ethiopia; now they cover only 4 percent.
- Population - 42,000,000 people, with the majority crowded into the densely populated central highlands.
- Land degradation - poor agricultural practices have led to increasing desertification in the lowlands and extremely high rates of soil erosion in the mountainous areas.

- Poverty - per capita income is less than $140 per year, one of the lowest in Africa.

- Insecurity - rebel movements in Tigray, Eritrea, and Hararghe Regions; up to 80 percent of Tigray, Gondar, and Eritrea not under Government of Ethiopia (GOE) control.

- Logistics - few improved roads coupled with some of the most inaccessible mountainous terrain in the world; one-half of the population lives more than two days' walk from even the crudest road.

Little information is available on actual water supply conditions in Ethiopia. UNICEF estimates that less than 5 percent of the drought-affected population have access to safe drinking water. In the most seriously affected regions of Wello and Tigray, water supply improvements have been generally limited to the areas adjacent to the main north-south road between Addis Ababa and Asmara and the east-west road between Dese and Assab. OXFAM (UK) reports that only 7 percent of the 3.6 million people in Wello are served by satisfactory water supplies. The vast majority of these are in the towns along the main roads. Lack of trained personnel, shortages of supplies and equipment, and poor maintenance further restrict full utilization of existing water systems. According to OXFAM (UK), less than 50 percent of the 200 boreholes put into operation in Wello over the past ten years are still functioning. Moreover, most of the several score handpumps installed or wells dug in Wello during this period are no longer operating. Government of Ethiopia (GOE) priorities in water supply development to date seem to be centered on the construction of new works, borehole drilling, and service to the larger towns.

With the persistence of the current drought, famine continues to spread to new areas and to worsen in regions already affected. In 1979, the GOE established an "Early Warning System" to monitor famine conditions. Serious problems began to be noted in 1983, and by August 1984 the Relief and Rehabilitation Commission (RRC), the GOE agency in charge of drought relief programs, estimated that 6.4 million people were in need of immediate relief assistance. To meet the need, over one million tons of grain, among other items, would be required during the following twelve months. At a donors' meeting in Addis Ababa in October 1984, the GOE stated that 1.25 million tons of grain and various supplementary foods were needed for the coming year, of which one-half was requested immediately. In addition, water supply improvements totalling Birr 9.96 million ($4.6 million) were requested. Two months later, in December 1984, the RRC raised its estimates of people at risk to 7.75 million and food assistance requirements to 1.5 million tons. It also increased its estimate of emergency water supply requirements to Birr 19.2 million ($9.4 million) for drilling equipment and pumps. By the end of 1984, the RRC reported that it was supporting 195 food distribution centers, 20 shelter camps, and 41 intensive feeding centers in the famine areas.

The above estimates of populations at risk have been confirmed by various organizations including the United Nations and the U.S. Government. Unfortunately, the number of people at risk continues to grow. In February 1985 the U.N. Office for Emergency Operations in Africa was estimating that 7.9 million people were affected; by May, this total had grown to 10.8 million. Food assistance needs for 1985 remain at 1.5 million tons, which is three times the amount of food Ethiopia received in 1984.

As 1985 moved towards the Meher (long) rains of June - September, there was widespread concern in Ethiopia that continued drought conditions would push the number of people at risk even higher. The combined effects of drought and famine, plus civil strife and other factors, had caused large numbers of Ethiopians to migrate to neighboring Sudan. By early 1985, over one million Ethiopians, mainly from Tigray and Eritrea, had sought refuge in Sudan, and the influx was so great that U.N. Under Secretary-General Maurice Strong feared that another 600,000 refugees would soon join them.

The drought has now become so pervasive and the dislocation of normal settlement patterns so profound that even a return of the rains to what can be considered normal levels will probably have little immediate affect on reducing the emergency needs of Ethiopia. At least two good harvests will be necessary to restore a degree of normalcy and self-sufficiency to the Ethiopian rural areas. Until then, the emergency arising from the drought and famine can be expected to last a minimum of one more year.

2.2 Extent of the Drought and Famine in Africa

Throughout sub-Saharan Africa, a drought of unprecedented extent is raging. The affected areas include all of the Sahelian countries stretching from Mauritania on the Atlantic coast to Somalia on the Indian Ocean coast, plus the eastern coast of Africa from Sudan south to Mozambique. As in the case of Ethiopia, the drought has persisted for most of the current decade. The U.N. Office for Emergency Operations in Africa has called the drought "an unprecedented crisis which shows little sign of abating in the near future." The dimensions of this crisis include 30 million seriously affected people out of a total population of 150 million living in the drought-affected countries. Of these, over 10 million have had to abandon their homes and lands in search of food and water and to move to temporary camps or overcrowded cities and towns. Figure 2 shows the countries considered by the United Nations to be most in need.

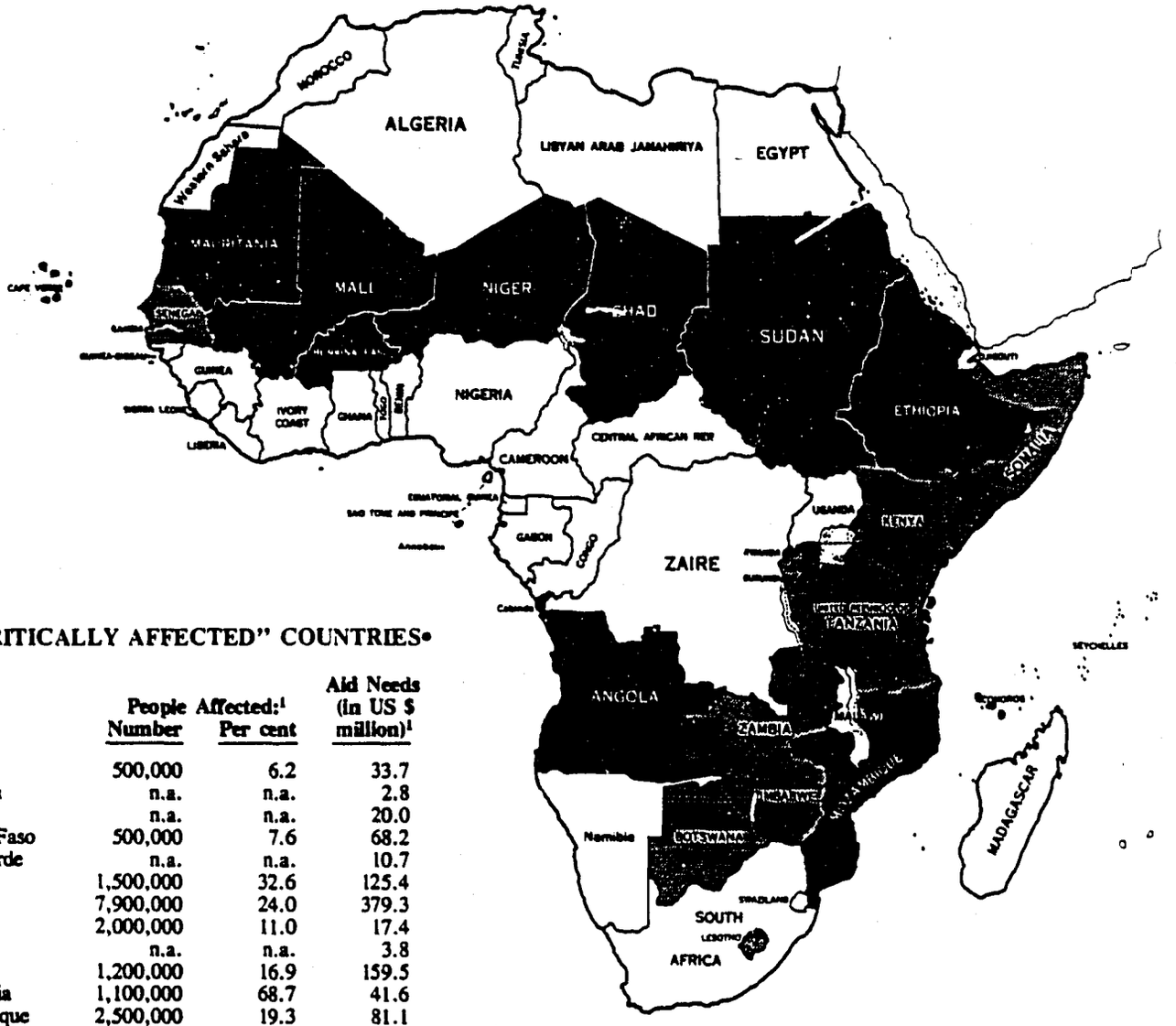
At a March 1985 conference on the African emergency sponsored by the U.N. Office for Emergency Operations in Africa, it was estimated that a total of $1.6 billion worth of emergency food, agriculture, health, and water supply inputs were needed beyond existing commitments in the 20 most seriously affected countries. According to a February 1985 FAO report, the emergency food needs of sub-Saharan Africa are 7.045 million tons of grain for the current year. International donors have pledged 5.06 million tons of this total, leaving a shortfall of 1.99 million tons.

The countries in greatest need are Ethiopia -- with total emergency food aid requirements of 1.5 million tons and a current shortfall over outstanding pledges of 0.79 million tons -- and Sudan -- with food aid requirements of 1.4 million tons and a shortfall of 0.69 million tons.

2.3 Response of the International Community

The response of the international donor community to the Ethiopian drought and famine has been an outpouring of human and material assistance unequalled in

African Emergency Map



•THE "CRITICALLY AFFECTED" COUNTRIES•

Country	People Affected:[1] Number	Per cent	Aid Needs (in US $ million)[1]
Angola	500,000	6.2	33.7
* Botswana	n.a.	n.a.	2.8
* Burundi	n.a.	n.a.	20.0
* Burkina Faso	500,000	7.6	68.2
* Cape Verde	n.a.	n.a.	10.7
* Chad	1,500,000	32.6	125.4
* Ethiopia	7,900,000	24.0	379.3
Kenya	2,000,000	11.0	17.4
* Lesotho	n.a.	n.a.	3.8
* Mali	1,200,000	16.9	159.5
Mauritania	1,100,000	68.7	41.6
Mozambique	2,500,000	19.3	81.1
* Niger	2,500,000	42.3	149.7
* Rwanda	3,000,000	54.5	27.2
Senegal	n.a.	n.a.	23.4
* Somalia	n.a.	n.a.	22.7
* Sudan	4,500,000	22.2	191.3
* Tanzania	1,200,000	6.0	63.2
Zambia	n.a.	n.a.	6.8
Zimbabwe	2,000,000	26.6	2.8
Totals:	30,400,000[2]		1,430.6
Refugees			52.0
Contingencies	—		100.0

[1] UN/OEOA estimates of mid-February 1985.
[2] In 13 of the 20 countries.

* Least developed country.

Figure 2. – of

Africa. Over the past year, there has been a growing tide of concern and resources from U.N. organizations, bilateral agencies, PVOs (private voluntary organizations), and individual citizens of nations around the world. International attention remained unfocussed until the latter half of 1984, when the combined weight of official reports on the seriousness of the drought, urgent GOE requests for emergency assistance, and the growing attention of the press and television media created a worldwide awareness of the human and ecological disaster occurring in Ethiopia. Widespread concern to "do something" could be found in foreign ministries, missionary headquarters, corporate board rooms, private welfare organizations, school classrooms, and individual homes. In November 1984, U.N. Secretary-General Javier Perez de Cuellar and UNICEF Director James Grant visited Ethiopia and toured some of the relief camps. The following month the United Nations opened an Office for Emergency Operations in Ethiopia under Assistant Secretary-General Kurt Jansson.

Actual aid to Ethiopia started from a low base but rose rapidly in late 1984 and early 1985. For 1984, food shipments from the international donor community totalled 0.42 million tons for both emergency and regular programs. For 1985, the U.N. Office for Emergency Operations in Africa has estimated cereal food needs to be 1.5 million tons valued at $495 million. Emergency food needs were highlighted at a U.N. conference for donor governments held in Geneva in March 1985, in which known pledges for Ethiopia were given as 0.71 million tons worth $234 million, leaving a shortfall of 0.79 million tons worth $260 million. The overall cost of additional emergency aid to Ethiopia for 1985, proposed at the conference, was $401.3 million, consisting of $260.5 million for food and transport, $95 million for agriculture, $10.2 million for health actions, $6.3 million for relief survival, $14.3 for logistics and $15.0 million for water projects.

Over the period January-April 1985, donor food shipments to Ethiopia amounted to 0.39 million tons. By May 1985, overall donor food commitments for 1985 were 0.90 million tons, with pledges for another 0.30 million tons awaiting official confirmation. The chief donors (both food and overall relief in the current emergency) have been the United States, the European Economic Community, the World Food Programme, Canada, and West Germany.

Water supply assistance to Ethiopia has been spearheaded by UNICEF, OXFAM (UK), and several other PVOs. UNICEF has been active in Ethiopia for many years and has an established program of both development activities and, more recently, relief efforts. Over the period May 1983 to December 1984, UNICEF provided almost $1.5 million in emergency water supply assistance in the form of tanks, pumps, and other equipment. For 1985, UNICEF is seeking a total of $6.6 million in supplementary funds for water storage tanks, new water systems, and environmental health activities. OXFAM is the most active of the PVOs in water supply, although its activities have been limited to feeding centers and shelters in Wello and Tigray regions. As of March 1985, a total of 24 sites in these two regions had been supplied with OXFAM equipment (storage tanks, pipes, pumps, distribution points, etc.). By working closely with the Ethiopian Water Works Construction Authority (EWWCA), the GOE agency responsible for new water supplies, and by providing both technical assistance and packages of equipment and materials directly applicable for emergency situations, OXFAM has become the most effective single organization in the

provision of water supplies to the relief camps of Wello and southern Tigray regions (see Appendix A for a list of officials contacted).

2.4 The USAID Response

The initial USAID response to the Ethiopian drought and famine was relatively mild, but over time USAID has developed the largest emergency relief program among all external donors. The difficulty of providing assistance was compounded in the early years of the drought by the strained relations between the United States and the Ethiopian Government and by the absence of a USAID Mission in Ethiopia.* By 1979, all official development aid had ceased, although Food for Peace (both regular and emergency Title II programs) has continued to the present. In 1982 and 1983, the first two years of the current famine, U.S. Government emergency food shipments to Ethiopia totalled $2.5 million and $2.8 million, respectively. As the drought worsened, however, U.S. Government aid began to increase. For FY 1984, official assistance grew to $17.2 million for 41,488 tons of food and $5.8 million for non-food aid (see Appendix B).

The real turning point in the official U.S. Government awareness of the gravity of the Ethiopian drought and famine occurred in October-November 1984. As a result of dramatic television coverage of the desperate situation existing in the overcrowded feeding centers and relief camps, the question of humanitarian aid became an issue in the latter stages of the 1984 Presidential campaign. AID Administrator M. Peter McPherson visited Ethiopia in early November and, after touring feeding centers in Alamata, Korem, and Makelle, recommended increased U.S. Government food aid and financial resources. Shortly thereafter, a USAID coordinator for emergency relief was posted to Ethiopia to oversee the expanding relief effort. By February 1985, the USAID office in Addis Ababa had a staff of four direct-hire professionals and one personal services contractor.

Impetus for increased U.S. emergency aid was also provided by other official visitors. In November 1984 Rep. Mickey Leland (D-Texas), chairman of the House Select Committee on Hunger, led a group of eight congressmen on a fact-finding visit to Ethiopia. Since then, Rep. Leland's committee has vigorously supported increased emergency assistance to Ethiopia, as well as to other drought-affected countries in Africa. Other visitors to Ethiopia have included Sen. Ted Kennedy (D-Mass.) in late December 1984 and Senators Dennis DeConcini (D-Ariz.) and Paul Trible (R-Vir.) in February 1985.

Almost all U.S. emergency aid to Ethiopia in recent years has been channeled through PVOs. The first official government-to-government aid agreement was a 50,000 ton shipment of emergency food pledged to Ethiopia by the United States under a $25 million agreeement signed by both governments in mid-December 1984. By the beginning of 1985, U.S. emergency assistance commitments to Ethiopia for FY 1985 included 234 million tons of food and other commodities at a total cost of $129 million (see Appendix B). Except for the 50,000 ton

* The USAID Mission to Ethiopia was closed in 1977 because of deteriorating relations following the 1974 revolution which brought a Marxist military government to power.

government-to-government shipment which arrived in Ethiopia in February 1985, all food aid has been earmarked for distribution by PVOs (Catholic Relief Services, World Vision, etc.) and international organizations (International Committee of the Red Cross, World Food Programme, etc.).

USAID concern with the water supply situation in Ethiopia also arose in October-November 1984 when the OFDA requested the WASH Project to assess the status of well drilling equipment in the drought-stricken areas. A WASH team visted Ethiopia in November and recommended an emergency program of borehole drilling and equipment rehabilitation in the relief camps of Wello Region. Following approval of the recommendations by USAID, another WASH consultant worked with the USAID office in Addis Ababa in developing a $750,000 project for implementation by UNICEF. Details on USAID and WASH water supply activities are given in Chapter 3.

As awareness of the seriousness of the drought and famine in Africa grew among the American people, official efforts to further increase emergency assistance became prominent. In early January 1985 President Reagan called for an additional $411 million for Africa food aid and proposed a "Food for Progress" program for the continent. At the same time, a group of 68 congressmen, pressing for even more aid, proposed a $1 billion appropriation for African famine relief of which $787 million would be for immediate relief and the rest for long-term agricultural development. In both cases, the proposed additional assistance exceeded total U.S. food aid to Africa in all of FY 1984 (1.4 million tons valued at $430 million).

Congress and the President acted together in early April 1985 to pass the African Famine Relief and Recovery Act which appropriated an additional $800 million for famine relief, rehabilitation, and recovery in Africa. This bill increased funds for emergency food aid by $625 million and for non-food assistance by $175 million. In terms of approved U.S. food assistance to Africa at this time, emergency food aid (1.6 million tons) plus regular P.L. 480 food programs (1.3 million tons) had an overall value of $935.8 million. These totals raised U.S. food pledges to 2.9 million tons, or approximately 41 percent of the emergency food requirements of the 20 most affected countries. By mid-May, overall U.S. famine-relief expenditures in Africa had risen to $1.05 billion for food plus another $40 million for non-food assistance.

Passage of the Famine Relief Bill also allowed a significant increase in emergency assistance to Ethiopia. By mid-April 1985, the U.S. Government had pledged for the fiscal year 0.53 million tons of food worth $244 million, including transport, plus another $29 million for non-food aid, consisting mainly of medical supplies, water supplies, and shelter materials. U.S. food commitments to Ethiopia for 1985 now account for one-third of the 1.5 million tons estimated by the United Nations necessary to avert disaster.

Chapter 3

WASH INVOLVEMENT (ACT 131)

3.1 Background

3.1.1 Overall WASH Involvement

There have been three phases to WASH involvement in Ethiopia to date (WASH authorization numbers shown in parentheses):

- Phase I: Two WASH consultants visited Ethiopia 17-30 November 1984 to assess well drilling capabilities. (RM 112, see WASH Field Report No. 138.)

- Phase II: During December 1984 and January 1985, WASH assisted OFDA in the initial planning of a USAID-financed well drilling project in Wello Region. (ACT 121.)

- Phase III: A WASH consultant visited Ethiopia 28 January - 8 March 1985 to assist USAID/Ethiopia in implementing the well drilling project in Wello and to serve as a water supply advisor to the U.N. Emergency Operations Office. (ACT 131.)

The main elements of Phases I and II are described in the two sections that follow. The bulk of this chapter, however, is devoted to the activities and results of the field visit carried out in Phase III.

3.1.2 Initial WASH Involvement: RM 112

On 7 November 1984, OFDA requested the AID Office of Health (S&T/H) to send two well drilling specialists to Ethiopia to assess the status of existing well drilling equipment and the need for equipment rehabilitation for minimum drinking water needs in the drought-stricken areas.

This request was forwarded to the WASH Project by the Office of Health as RM 112. WASH then sent two consultants, Mr. Eugene Rumph of Bishop, Brogden and Rumph, and Mr. Ralph Preble of Camp Dresser & McKee International Inc., to Ethiopia over the period 17-30 November 1984 to carry out the requested task.

While in Ethiopia, the consultants found it necessary to expand their assessments of emergency water supplies to include overall water needs at refugee camps and the availability of personnel, equipment, and supplies to meet these needs. Their report (WASH Field Report No. 138) indicated that the water supply situation in the camps was seriously deficient and recommended that USAID provide the following emergency assistance:

1. Drill 12 new 6-inch diameter boreholes in displaced person camps in Wello Region ($480,000).

2. Rehabilitate two Failing CF-15 drilling rigs in Wello Region ($100,000).

3. Supply hand tools, hydrogeological equipment, and six to seven weeks' services of a hydrologist ($59,000).

4. Supply pump installation and maintenance equipment and six to seven weeks' services of a mechanic ($55,000).

5. Supply 25,000 plastic water containers of 2 1/2 gallon size for camp residents ($50,000).

6. Provide a short-term consultant for 90 days to coordinate water-related activities among USAID/Ethiopia, PVOs, NGOs (non-governmental organizations), and the GOE.

The total cost of the above assistance activities was estimated at $794,000.

OFDA accepted the above recommendations, and on 28 December 1984, AID Administrator McPherson authorized the expenditure of $799,000 (item 5 was increased to $55,000) from the OFDA disaster assistance account to implement them (see Appendix C).

3.1.3 Follow-up WASH Assistance: ACT 121

In order to implement the emergency water activities approved by the AID Administrator, WASH was asked by OFDA in late December 1984 to provide (1) a scope of work, list of drilling firms, and a proposal evaluation document for a company to rehabilitate drilling rigs and carry out drilling activities in Ethiopia, and (2) a short-term consultant to assist USAID/Ethiopia in coordinating water-related activities. The activities included in the first item were authorized by the AID Office of Health as ACT 121 and were carried out during the first half of January 1985. The activities under the second item are part of ACT 131 as described in this chapter.

WASH provided OFDA with the information requested in the first item in early January, but a number of factors prevented AID from immediately implementing field activities. One was the difficulty of developing a scope of work for a drilling contractor due to insufficient information on likely field conditions. Another was the requirement for competitive procurement of a drilling contractor. A third was the uncertainty over whether the key GOE drilling rigs and field personnel would be available for rehabilitation and would be assigned to carry out the OFDA drilling program in the Wello camps. In addition, WASH learned in early January that OXFAM (USA) was planning to supply the GOE with spare parts for the Failing CF-15 drilling rigs which were scheduled for rehabilitation under the OFDA authorization. Moreover, WASH also learned that the GOE had recently moved a new rotary drilling rig into Wello Region for the purpose of drilling ten boreholes at relief camps.

It was apparent by the second week of January 1985 that there were too many unknowns for rapid project implementation. The conditions that had existed at the time of the visit of the WASH consultants in November 1984 had radically changed, and the USAID office in Addis Ababa was unable to keep up with the situation. WASH recommended that a consultant be sent to Ethiopia immediately to clarify these issues and to send back recommendations regarding implementation of the project. OFDA agreed, and all ongoing discussions with

drilling contractors and PVOs were put on hold pending clarification from the field.

3.2 Scope of Work: ACT 131

WASH was asked under ACT 131 to send a consultant to Ethiopia immediately to review the situation in the field and determine how the emergency water project approved by AID could be best implemented. It was decided to send Dr. Dennis B. Warner, WASH Deputy Project Director, for a period of 30 days to carry out the following scope of work:

1. Act as a coordinator between USAID/Ethiopia and the other donors and agencies which are assisting in refugee relief efforts in the water sector (e.g., GOE, OXFAM, UNICEF, etc.).

2. Assist USAID/Ethiopia to determine needs for and programs in (1) the rehabilitation of drilling rigs in Wello Region, (2) the drilling of ten to twelve new water wells at relief camps, and (3) the rehabilitation of existing wells.

3. Visit refugee relief camps to determine emergency water needs and who is helping to meet them.

4. Determine potential strategies and recommended courses of action to USAID/Ethiopia.

Upon arriving in Addis Ababa, the WASH consultant was asked by USAID/Ethiopia to serve as a special water supply advisor to the U.N. Emergency Operations Office headed by Mr. Kurt Jansson, Assistant Secretary-General for Emergency Operations in Ethiopia (ASG/EOE). It was expected that such a role would require about 75 percent of the consultant's time, leaving 25 percent for USAID-related activities. The following supplementary scope of work was developed for this new role and was reviewed and approved by USAID/Ethiopia, AID/Washington, the Office of the ASG/EOE, and WASH.

Supplementary Scope of Work: Emergency Water Supply Expert

Purpose: The primary effort of the consultant will be to assess short- and mid-term (6-12 months) needs for potable water supply at emergency relief centers in Ethiopia.

Duties:

1. Assist the U.N. ASG/EOE in coordinating donor and NGO relief-related potable water supply activities.

2. Assist the U.N. ASG/EOE in developing an inventory of relief-related potable water supply activities under way or committed by donors and NGOs.

3. Maintain informal contact with the Relief and Rehabilitation Commission, appropriate elements of the National Water Resources Commission, and with donors and NGOs.

4. Advise USAID/Ethiopia on U.S.-financed water supply activities from the viewpoint of both technical and managerial feasibility.

5. Monitor U.S. Government-financed water supply activities and advise on problems and corrective actions.

6. Prepare reports for the ASG/EOE and USAID/Ethiopia on critical shortfalls in water supply requirements in emergency relief centers as well as on longer-term potable water rehabilitation requirements for current population centers affected by the drought.

The activities reflecting both of the above scopes of work are outlined in the following sections.

3.3 Itinerary

The WASH consultant was scheduled to leave for Ethiopia on 17 January, but, because of difficulties in obtaining a visa, departure was delayed until 24 January. While en route, Dr. Warner visited OXFAM (UK) in Oxford, England, on 25 January to discuss the water-related activities of OXFAM in Ethiopia. He arrived in Addis Ababa on 28 January and departed on 8 March. Dr. Warner remained in Ethiopia two weeks longer than originally planned in order to carry out the advisory role for the United Nations and to ensure continuity with the replacement WASH consultant, who arrived in Addis Ababa on 5 March.

While in Ethiopia the WASH consultant was provided with office facilities, secretarial assistance, and transport by both USAID and the United Nations. Travel permits for visits to relief camps were obtained through both offices; however, permits obtained through the U.N. office had fewer restrictions on them than those received through the USAID office. As a result, all three up-country trips were taken under U.N. permits. These trips included Wello Region relief camps, 11-15 February (by road); Lalibela relief camps, 25 February (by air); and Axum/Adwa relief camps, 2-4 March (by air). Throughout this period, the WASH consultant kept USAID officials closely informed of all activities and involved them whenever possible in discussions and meetings with GOE and NGO officials. A final verbal debriefing was held with USAID officials on 7 March. It was understood by USAID/Ethiopia that the WASH consultant's written report would be prepared in Washington, D.C., and sent back to the field for review.

3.4 Coordination with OXFAM

Prior to his arrival in Ethiopia, the WASH consultant stopped in England and visited OXFAM (UK) at Oxford on 25 January (1) to review the overall water-related activities of OXFAM in Ethiopia, (2) to clarify reports that OXFAM (USA) had ordered spare parts for the Failing CF-15 drilling rigs in Wello Region, and (3) to explore whether OXFAM would be interested in implementing emergency water supply assistance activities in Ethiopia for AID.

OXFAM officials (Mr. Dick Copeland, Mr. James Howard, and Mr. Paul Sherlock) indicated that OXFAM (UK) had two engineers working in Ethiopia, that OXFAM was limiting its water-related activities to Wello Region, and that all OXFAM water supply assistance was channeled through the Ethiopian Water Works Construction Authority (EWWCA). Because of the success of recent public appeals for Ethiopian famine relief, OXFAM had a large budget available for Ethiopia and intended to expand its water activities there. Although OXFAM normally worked primarily with other NGOs, there were no policy restrictions, according to the OXFAM officials interviewed, on its working with USAID.

Unfortunately, the officials at the OXFAM (UK) office knew very little about the OXFAM (USA) order of drilling rig spare parts for Ethiopia. They could not explain how OXFAM (USA) obtained a list of spare parts or to whom the parts would be consigned in Ethiopia. That evening, the WASH consultant telephoned the WASH Project office and recommended that WASH (1) visit OXFAM (USA) in Boston to determine the status of the order for drilling rig parts and (2) contact the George E. Failing Company in Enid, Oklahoma, to determine the origin of the list of spares.

In Ethiopia, meetings were held with Mr. Cris Mason, the Assistant Field Director for OXFAM (UK), and Ms. Laura Kullenberg, Projects Officer for OXFAM (USA), who reported that the list of spare parts for the Failing CF-15 rigs was provided to OXFAM (USA) by the EWWCA. The parts had arrived in Addis Ababa on 22 January and had been forwarded to Kombolcha, the EWWCA regional office for Wello Region. None of the OXFAM officials knew whether or not the parts shipment represented the total rehabilitation needs of drilling rigs in Wello. However, a later review of the OXFAM order list with UNICEF officials indicated that all of the major parts needed for the rehabilitation of the two Failing CF-15 rigs were included in the shipment. Therefore, on 31 January the WASH consultant telephoned OFDA to report that there was no longer any need for spare parts for the Failing drilling rigs as OXFAM (USA) had already supplied them.

3.5 Project Development Activities

3.5.1 Initial Field Coordination

Initial field coordination of the USAID water project was carried out by the USAID office in Addis Ababa. On 3 January 1985 USAID/Ethiopia informed the Relief and Rehabilitation Commission (RRC) that the U.S. Government was willing to provide water-related emergency relief assistance valued at approximately $800,000. Implementation of the project, however, required assurances from the GOE that the necessary drilling rigs and crews would be available. On 15 January, USAID/Ethiopia asked the RRC for formal assurance that the two Failing CF-15 drilling rigs would be available for rehabilitation and subsequent drilling operations in the relief centers of Wello Region and that the associated field personnel, transport, fuel, and supplies would be provided for the above purposes.

Two days later, on 17 January, USAID/Ethiopia cabled OFDA that informal agreement had been reached with the RRC on the above questions. Within a few days, however, it became clear to USAID/Ethiopia that the National Water Resources Commission (NWRC) did not approve of the terms and conditions of the

project. The NWRC did not want any expatriate well drilling and repair personnel (the authorized project allowed for two drillers, a Failing Company rig mechanic, a hydrologist, and a pump mechanic), nor did it see any need for spare parts for the two Failing CF-15 drill rigs (because OXFAM (USA) was providing the spares). However, NWRC officials did want the tools, equipment, supplies, and water containers specified in the project authorization. In addition, they wanted the U.S. Government to rehabilitate a Gardner-Denver rotary rig and to provide additional well drilling and water supply materials. Although the NWRC was opposed to expatriate technical assistance, it agreed with the RRC that the short-term consultant (item 6 in section 3.1.2) responsible for coordinating donor water activities was acceptable.

It was at this point (28 January) that the WASH consultant arrived in Ethiopia. Initial efforts were directed towards identifying a PVO with the willingness and capability to implement the USAID water project. It was also evident that the organization had to be acceptable to both USAID and the NWRC. Organizations considered for this role included AFRICARE, OXFAM, Catholic Relief Services, and CARE. After one week, it was evident that no PVO was in a good position to implement the project, for reasons ranging from a lack of field capability to a reluctance to work directly with USAID. Increased attention was then given to the possibility of channeling U.S. emergency water supply assistance through UNICEF.

3.5.2 Proposed UNICEF Grant

A series of fruitful discussions regarding implementation of USAID projects were held with UNICEF during the WASH consultant's first week in country. UNICEF is a major donor in water supply in Ethiopia and has been working with the NWRC for many years. It is active in the current emergency and was looking for ways to increase its water-related activities in the drought-affected areas. UNICEF programming includes both regular projects, for which funds are available, and "noted" projects, which are implemented only if funds can be found. According to UNICEF officials, the category of "noted" projects is sufficiently general to include all of the emergency water activities authorized for USAID assistance.

By the time the decision was made by USAID not to use a PVO, discussions regarding the use of UNICEF as the implementing agency were well under way. The NWRC approved of this arrangement and provided USAID with detailed lists of spare parts, equipment, and materials for the project. A draft agreement for a $750,000 grant to UNICEF was drawn up, informally reviewed by the NWRC, and sent to AID/Washington for approval on 16 February (see Appendix D).

3.5.3 Proposed SIM Grant

Another potential USAID-supported emergency water project appeared at this time. The Society for International Missionaries (SIM) submitted a proposal to USAID/Ethiopia in January for assistance in drilling 40 boreholes in the isolated areas of Gama Gofa Region and for an area near Asmara in Eritrea Region. The SIM proposal called for the installation of locally-manufactured handpumps to provide emergency water supplies in the vicinity of feeding and food distribution centers. Of the overall project cost of $489,832, SIM

requested that USAID provide $177,367, or about one-third of the total. The WASH consultant reviewed the SIM proposal and recommended that USAID support it. On 16 February, USAID/Ethiopia sent a revised SIM proposal to AID/Washington for approval (see Appendix E).

3.5.4 Continued WASH Assistance

The final decision regarding continued WASH technical assistance was not made until the latter part of the WASH consultant's visit to Ethiopia. During the first weeks of this assignment, it was assumed that Dr. Warner would be replaced by another WASH consultant in order to carry on the special water supply advisory role to the U.N. Emergency Operations Office. By the third week of February, the replacement had been recruited by WASH and was prepared to leave for Ethiopia. USAID/Ethiopia, however, was informed by Mr. Kurt Jansson (ASG/EOE) that there was some opposition within the GOE to having an American advisor on the staff of the ASG/EOE. For this reason, Mr. Jansson believed it advisable not to replace Warner with another U.S. consultant and instead to seek a replacement from UNICEF. This information caused USAID/Ethiopia to put a temporary hold on the arrival of the second consultant until it could be determined whether or not there was sufficient need for a water supply specialist to work exclusively on USAID emergency water activities. After reviewing the work of the first WASH consultant (Dr. Warner), USAID/Ethiopia decided that such an individual was needed to further expand USAID-supported emergency water assistance and to continue the coordination of USAID and GOE (NWRC and RRC) water activities. As a result, USAID/Ethiopia cabled AID/Washington to immediately send the new WASH consultant, Mr. Charles Kline, who arrived in Addis Ababa on 5 March for a two-month assignment.

The primary responsibilities of the new WASH consultant are closely tied to the identification, review, and monitoring of USAID-supported emergency water-supply and sanitation assistance. The scope of work for this assignment is as follows:

1. Continually assess and keep USAID/Ethiopia informed of the emergency water supply and sanitation (WSS) needs in the drought-affected areas. This will involve field visits to the most affected areas as well as frequent meetings and discussions with representatives of the GOE, U.N. organizations, bilaterals, and NGOs.

2. Identify the priority operational and capacity expansion needs for emergency WSS assistance. This will require close coordination with other donor agencies to determine priorities for immediate action.

3. Review proposals from the donor community which may be appropriate for USAID assistance for emergency WSS activities. This will require an understanding of the available procedures for channeling USAID assistance to the drought-affected areas. Close coordination and the development of good working relationships with all relevant organizations (GOE, U.N. organizations, bilaterals, and NGOs) will be essential.

4. Advise USAID/Ethiopia on the technical, managerial, and administrative feasibility of such proposals for emergency WSS assistance.

5. Monitor the technical and administrative aspects of USAID-financed emergency WSS activities.

6. Provide technical liaison on emergency WSS matters between USAID/Ethiopia and other organizations working in the drought-affected areas.

Among the possibilities for future USAID emergency water assistance are potential projects in association with PVOs in Tigray, Shoa, and Hararghe regions. However, the most important potential project, in terms of the number of people likely to be benefitted, is a program of maintenance support to the emergency water supply facilities in Wello Region.

3.6 Assistance to the U.N. Emergency Operations Office

3.6.1 Activities

The provision of special advisory services in water supply and sanitation to the Assistant Secretary-General for Emergency Operations in Ethiopia (ASG/EOE) absorbed the bulk of the WASH consultant's time. The responsibilities of the position included the preparation of assessments of emergency water supply and sanitation needs, assistance in coordinating donor activities, and the development of appropriate recommendations to the ASG/EOE. To carry out the above, discussions were held with officials of key private, U.N., and bilateral organizations; field trips were made to relief camps in Wello and Tigray regions, and a meeting of donor organizations active in the water and sanitation sector was held under the sponsorship of the Office of the ASG/EOE. The findings and recommendations arising from these activities were given to the ASG/EOE in a series of reports (Appendices F to I) and are summarized in the following sections.

3.6.2 Field Trip to Wello Region Shelter Camps and Feeding Centers (see Appendix F)

Over the period 11-14 February, visits were made by road to shelter camps and feeding centers at Gewane, Mile, Bati, Harbo, Alamata, and Korem to assess the water supply and sanitation conditions on behalf of the Office of the ASG/EOE.

During these visits discussions were held with camp administrators, officials of the RRC and EWWCA, and with representatives of donor organizations. Within the limitations of time, the water supply and sanitation facilities were inspected, and note was made of the recent improvements in water systems, especially those provided by the EWWCA and OXFAM (UK).

Despite recent improvements, however, water supply available at the visited sites was found to average between three and seven liters per capita per day (lcd), an inadequate amount for basic health maintenance. Problems were also seen where camps obtained their water from existing town systems that were unable to meet the combined needs of the town, the camp, and the growing influx of people from the villages seeking food and shelter. In such cases, the dangers of inadequate sanitation and limited water availability pose high risks of disease transmission through contaminated water supplies.

The report to the ASG/EOE gave specific recommendations for each of the camps visited. On a more general level, additional suggestions were made with regard to planning and coordination, design and construction, and operation and maintenance. The most important of these are believed to be (1) consider the water supply and sanitation needs of each new camp before it is established, (2) encourage closer coordination between camp operators, the EWWCA, and donor organizations, and (3) establish minimum water supply and sanitation criteria for operating shelter camps and feeding centers.

3.6.3 Visit to Lalibela Feeding Centers (see Appendix G)

The second visit on behalf of the ASG/EOE was made to the World Vision relief camp at Lalibela in Wello Region on 25 February. Travel between Addis Ababa and Lalibela was by chartered aircraft belonging to World Vision.

There are two feeding centers in Lalibela, one run by World Vision and the other by the German Emergency Doctors (GED). Water for the feeding centers and most of Lalibela town is provided by the municipality. The amount of water actually available at the time of the visit was very inadequate for both the town and feeding centers. Because of pumping problems, the World Vision center averaged 6,000 to 7,000 liters per day and the GED center 3,000 to 4,000 liters per day, or approximately one to two lcd at each center. World Vision reported that no water was used for bathing or clothes washing and approximately half of the time there was insufficient water for the preparation of meals at the feeding centers. According to EWWCA officials in Addis Ababa, there were plans to install new UNICEF-supplied pumps and engines in Lalibela in March.

Sanitation within the feeding centers was good but uncontrolled defecation outside the centers posed serious health hazards. World Vision used sanitary guards to actively enforce latrine usage within its camp areas.

The recommendations of the WASH consultant to the ASG/EOE were to install the UNICEF pumping equipment as soon as possible, to work out agreements with the GOE, local officials, and the feeding center operators regarding the supply of fuel for the water pumps and the clean up of areas where uncontrolled defecation was occurring, and to provide bathing and clothes washing facilities for shelter residents.

3.6.4 Visit to Axum and Adwa Feeding Centers (see Appendix H)

A third trip for the Office of the ASG/EOE was made to Axum and Adwa in Tigray Region 2-4 March. Travel was by commercial airlines and by relief flights operated by the ICRC and the British Royal Air Force (RAF). On 4 March, the WASH consultant flew multiple round trips with the RAF carrying grain from the port of Assab to the regional distribution center at Mekelle.

Adwa Feeding Center: At the time of the visit, an International Committee for the Red Cross (ICRC) feeding camp at Adwa obtained water by tanker truck and from a nearby dug well with handpump. Estimated water availability for the 3,000 people in the shelter was approximately 25,000 liters per day from both

sources. Sanitation facilities at the camp consisted of trench latrines. No special bathing or clothes washing facilities were provided.

Recommendations to the ASG/EOE by the WASH consultant were to determine whether or not an electric or diesel-powered pump could replace the handpump and to consider digging or drilling new wells.

Axum Feeding Center: Feeding camps at Axum run by the ICRC and the RRC had drastically different water supply situations. The ICRC camp drew its water directly from the Axum town supply through pipes and taps installed by the ICRC. Water usage was about 10,000 to 11,000 liters per day to the feeding center and its associated shelter camp of 1,600 people. The RRC camp of 1,100 people obtained its water by tanker truck from a distant silt-laden stream. Only 1,500 to 2,000 liters per day were available from this source. It is likely that the RRC was using the stream as a water source because it may have been reluctant or unable to pay the water rate to the town. Additional water was drawn by camp residents from a large stone-lined well near the shelter area. Both camps used trench latrines, but neither employed any sanitary guards. In addition, neither camp had any specific bathing or clothes washing facilities.

The report of the WASH consultant to the ASG/EOE recommended that the RRC camp use its tanker truck to obtain potable water from the Axum town supply and to connect the camp by pipe to the town as soon as possible. Moreover, additional sanitation facilities were recommended for both the ICRC and RRC camps.

3.6.5 Donors Meeting on Water Supply and Sanitation (see Appendix I)

On 27 February, the Office of the ASG/EOE sponsored a meeting for agencies involved in water supply and sanitation in the drought-affected regions. The purpose of the meeting was to identify the needs for water supply and sanitation activities in the drought-affected areas, to find out what the various organizations were doing in these areas, and to determine what further activities were necessary to meet these needs. Approximately 30 representatives of U.N., bilateral, and NGO agencies attended the meeting. The WASH consultant assisted in the initial conception of the meeting, the preparation and planning, and the post-session reporting.

At the meeting, an official of the NWRC outlined the NWRC assistance requirements for water supply projects in the drought-affected areas of Ethiopia. He stated that the goal of the NWRC was to provide potable water supplies to 2.9 million people in drought areas. This would involve 2,230 projects of which 883 were deep borehole well projects. The remainder were hand-dug wells, shallow tube wells, spring capping, and surface water development. The total cost of these works was estimated at Birr 93 million ($45 million). As of February 1985, the NWRC reported that commitments of Birr 25 million ($12 million) were in hand.

Further discussions at the meeting dealt with donor activities, maintenance needs, drilling rigs and drilling operations, equipment standardization, development priorities, and project agreements. The consensus of the participants attending the meeting was that there should be as much priority on maintenance, spare parts, and standardization of equipment as on new water

projects. The chairman asked the participants to complete a questionnaire on current water activities and said that further discussions would be held between UNICEF and the U.N. Office for Emergency Operations in Ethiopia to determine how best to use the information thus collected.

Chapter 4

LIMITATIONS ON USAID INVOLVEMENT

4.1 Background

Prior to 1974, USAID and its predecessors maintained an active program of development assistance activities in Ethiopia. U.S. Government aid for development purposes began in the early 1950s and steadily increased over the next 20 years before dropping off following the 1974-75 revolution. Total economic assistance in the form of both loans and grants over this period was as follows:

Years	Average Economic Assistance per Year (in millions of dollars)
1951-55	$ 1.7
1956-60	6.9
1961-65	17.6
1966-70	22.8
1971-75	12.0
1976-80	12.0
1981-85	61.1
1981	5.0
1982	2.5
1983	2.8
1984	22.0
1985	273.0

The USAID portion of the above figures generally has averaged about 90 percent, except for the periods 1959-60, 1966-67, and 1974 to date, when large Food for Peace contributions were made in response to droughts and famines.

USAID involvement dropped off greatly in the mid-1970s when the hereditary monarchy headed by Haile Selassie was overthrown in a rising tide of public discontent and a military government emerged in its place. The 1974 revolution ended an imperial line that, according to legend, traced its origins back 2,500 years to King Solomon. The new military government, which came to be known as the Provisional Military Government of Socialist Ethiopia (PMGSE), quickly proclaimed itself to be Marxist and instituted widespread nationalization of land, houses, and businesses. In many cases, outright expropriation or seizure of property occurred. Included in these nationalizations was American property consisting of some private homes, a few airplanes, and a factory belonging to the Kalamazoo Spice Company. Some compensation was eventually paid by the Ethiopian Government, but approximately $30 million worth of claims by U.S. citizens still remain unsettled.

For the first few years following the revolution (1976-79), USAID maintained a small-grant program averaging about $4.0 million per year. However, relationships continued to deteriorate between the two countries, causing USAID to close its mission in 1977 and the Peace Corps to withdraw the following year.

Except for Food for Peace grants, no economic assistance has been provided to Ethiopia by the U.S. Government since 1979.

4.2 The Hickenlooper Amendment

Until recently, U.S. Government assistance to Ethiopia has been restricted by the Hickenlooper Amendment (PL 87-195, U.S. Foreign Assistance Act of 1961, Sec. 620-e-1), which prevents all but humanitarian aid to countries that have nationalized American property without compensation.

The law was passed by Congress in 1962 as an amendment to the Foreign Assistance Act in response to the nationalization of U.S. property in Brazil. The key portion of the Hickenlooper Amendment (as amended) reads as follows:

> "(e) (1) The President shall suspend assistance to the government of any country to which assistance is provided under this or any other Act when the government of such country or any government agency or subdivision within such country on or after January 1, 1962-
>
> (A) has nationalized or expropriated or seized ownership or control of property owned by any United States citizen or by any corporation, partnership, or association not less than 50 per centum beneficially owned by United States citizens, or
>
> (B) has taken steps to repudiate or nullify existing contracts or agreements with any United States citizen or any corporation, partnership, or association not less than 50 per centum beneficially owned by United States citizens, or
>
> (C) has imposed or enforced discriminatory taxes or other exactions, or restrictive maintenance or operational conditions or has taken other actions, which have the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property so owned...."

The amendment goes on to state that aid under the Foreign Assistance Act is to be suspended if such country or government "fails within a reasonable time...to take appropriate steps....including speedy compensation...equivalent to the full value thereof...". Removal of the suspension can occur only at the request of the President: "...such suspension shall continue until the President is satisfied that appropriate steps are being taken, and the provisions of this subsection shall not be waived with respect to any country unless the President determines and certifies that such a waiver is important to the national interests of the United States."

4.3 The Brooke Amendment

U.S. Government assistance to Ethiopia is also subject to the restrictions of the Brooke Amendment (PL 98-473, U.S. Foreign Assistance Appropriations Act of 1985, Sec. 518, as amended), which prohibits development aid to countries that have not paid off loans received from the U.S. Government. Where the Hickenlooper Amendment deals with foreign debts to U.S. private citizens, the Brooke Amendment refers to foreign debts to the American government.

Enacted in 1976, the Brooke Amendment became applicable to Ethiopia in 1977 when the GOE decided not to repay U.S. loans for military equipment. The relevant portion of the amendment is the following:

> "Sec. 518. No part of any appropriation contained in this Act shall be used to furnish assistance to any country which is in default during a period in excess of one calendar year in payment to the United States of principal or interest on any loan made to such country by the United States pursuant to a program for which funds are appropriated under this Act."

4.4 Operational Limits

Prior to April 1985, the overall effect of the Hickenlooper and Brooke amendments was to prohibit any long-term developmental aid that made a permanent improvement in the productive capacity or welfare of the Ethiopians. Humanitarian aid of an emergency nature was allowed if it did not bring about a permanent improvement in the economic level of the people. USAID policy, therefore, has been limited to providing food and other assistance on a grant basis. It has not utilized food-for-work programs or other efforts where the food could be earned by the recipients. Thus, food, which is short-term, has been given to famine-stricken Ethiopia, but seeds, which are a long-term developmental input, have not been provided.

The overall implications of current U.S. emergency assistance to Ethiopia is that it is directed toward the immediate needs of the drought but is not addressing either its causes or long-term consequences. The immediate problems are famine, displacement, and illness, and to help solve those problems USAID is providing food, shelter, and medical attention. The causes of the drought and famine are lack of rainfall, overpopulation of the highlands, soil erosion, poor agricultural practices, lack of transport, and political insurgencies. Both the Hickenlooper and the Brooke amendments prohibit assistance which deals with these problems; and therefore, USAID has failed to address the root causes of much of the suffering in the country today.

By dealing only with the symptoms and not the causes of the drought and famine, the U.S. Government inadvertently encourages the creation of permanent displaced person camps and the dependency of hundreds of thousands of people on relief handouts -- two new problems. Little thought has been given to date to the future of the camps. Few people who have sought help in the camps have the ability to return to their former homes and farms. At best, they become candidates for GOE resettlement programs; at worst they may be destined to remain in the camps for an indefinite future.

In spite of the limitations imposed by Congress, USAID does support some long-term assistance indirectly. USAID channels food assistance through numerous PVOs, most notably the Catholic Relief Services, Churches Drought Action in Africa, CARE, World Vision, and Lutheran World Relief. Because many of these organizations also carry out some long-term development efforts with their own resources, USAID emergency assistance channeled through them may allow them to devote more of their own resources to basic problems of development.

Since late 1984, there have been increasing calls within the relief community to "stretch" the definition of emergency assistance allowed under the Hickenlooper Amendment. The drought and famine is now so severe that alleviating the basic causes has become an emergency issue. Moreover, almost every Congressional delegation that has visited Ethiopia over the past nine months has urged an increase in aid. The desire to increase U.S. assistance has transcended most political views that normally shape foreign aid policy.

Through the early months of 1985, many observers believed that the simplest resolution to the Hickenlooper impasse was to lift the restriction on U.S. development aid. This would be possible if the President were to determine that the GOE was taking "appropriate steps" to settle the compensation claims. According to Rep. Mickey Leland (D-Tex.), chairman of the House Select Committee on Hunger, all that was needed to justify lifting the Hickenlooper restrictions was a "good-faith effort" on the part of the GOE. For its part, the GOE states it has settled 80 percent of all claims by individuals and companies around the world and that it has made fair offers for the remainder. The largest remaining U.S. claim is for $20 million by the Kalamazoo Spice Company. Since the GOE has refused to accept that amount, the claim remains unsettled.

In April 1985, official U.S. policies towards Ethiopian relief needs began to change significantly. The African Famine Relief and Recovery Act, passed by Congress on April 2, stated that the restrictions of the Hickenlooper Amendment did not apply to the supplemental funds authorized by the Act. The appropriations bill, however, did not remove the restrictions of the Brooke Amendment, thereby leaving USAID officials without clear cut guidance regarding long-term development aid to Ethiopia. This dilemma was resolved in early May 1985, according to the Washington Post, when the USAID office in Addis Ababa informed relief officials by letter that the U.S. Government was no longer restricted by either the Hickenlooper or Brooke amendments on the use of the April supplemental funds for development purposes.

Chapter 5

CONCLUSIONS

5.1 Magnitude of Need

By almost any measure, the current drought that holds much of Sahelian and Eastern Africa in a grip of famine, dislocation, and sickness has dealt the largest share of suffering to Ethiopia. Inadequate rainfall over the past three years has caused much of Ethiopia, and in particular the central highlands, to be critically short of food. Although problems of drought are found in 28 African countries, in Ethiopia the combination of inadequate rainfall, widespread poverty, dense populations, and general inaccessibility threatens the survival of more people than in any other country on the continent. With perhaps one million people already dead because of the famine and close to another eleven million at risk of starvation, Ethiopia is currently facing a disaster of unparalleled magnitude in Africa.

Ethiopia has insufficient resources to respond to the needs of the current emergency. The multiple liabilities of extreme poverty throughout much of the country, inadequate financial, technical, and human resources available to the GOE, and the presence of armed insurgencies in several regions would be a heavy burden at any time. In the context of the current drought, the devastating effects of famine and dislocation have overwhelmed the GOE and the relatively small amount of internal resources it has been able to muster. The problems arising from the drought are so acute that all efforts to ameliorate them can be considered to be emergency in nature.

5.2 Role of the International Donor Community

The international donor community has responded to the Ethiopian emergency with massive efforts aimed at supplying and distributing food in the famine-affected areas. (See Appendix J for a list of aid organizations and Appendix K for the NGO address list for Ethiopia.) Although these efforts, which in many ways are unprecedented, do not meet the full needs of the emergency, they are based upon broad public support in donor countries. Some of the key elements in donor efforts are the following:

- There are approximately 50 PVOs actively providing relief assistance, such as food distribution, feeding programs, the provision of shelter, medical aid, clothing, water supply and sanitation, etc.
- There are approximately 20 bilateral and U.N. organizations providing food, other commodities, and transportation.
- Of the 1.5 million tons of emergency (imported) food supplies needed in 1985, 898,000 tons had been pledged by May. It is expected that one-third of the total will be provided by the United States, another third by the European Economic Community, and the remainder by others, mainly Canada.

- There are currently 50 shelter camps and 267 food distribution centers in Ethiopia. Most of the shelter camps are operated by PVOs. Additional camps and distribution centers are being established as the famine continues to worsen.

- The most active international organization in terms of emergency water supplies for relief camps is OXFAM (UK). Other organizations providing significant amounts of emergency water supply assistance include UNICEF, Lutheran World Federation, and Norwegian Church Aid. In addition, several organizations, such as Catholic Relief Services and the Adventist Development and Relief Association, intend to undertake major emergency water supply programs in the future.

- There is great need not only to expand the relief efforts of the international community but also to promote better coordination among the various organizations.

- There is some concern that a persistence of the Ethiopian drought and famine might lead to a growing sense of "donor fatigue" in the public support for organizations providing relief assistance. This could cause a reduction in resources for emergency programs.

5.3 Role of USAID

After an absence of seven years, USAID returned to Ethiopia in October 1984. The current position of USAID/Ethiopia is as follows:

- USAID/Ethiopia does not maintain full Mission status. The office, which is staffed with only five professionals (four direct-hires and one personal services contractor), administers only emergency assistance.

- USAID is committed to providing 530,000 tons of food to Ethiopia in 1985. By March, 175,000 tons had been delivered.

- Because of these food shipments, USAID is the largest international donor to Ethiopian relief operations. It has become the most influential member of the international community in coordinating food distribution.

- To date, most USAID relief assistance has been in the form of food contributions. Other USAID-financed assistance has included internal transport, medical supplies, and shelter materials.

- USAID/Ethiopia is now interested in expanding the types of emergency assistance it might provide. Improved water supply and sanitation is the most likely area for new programs.

- At present, USAID prefers to channel emergency assistance through PVOs and other non-governmental organizations.

5.4 Types of Emergency Assistance Required

The effects of drought and famine in Ethiopia are so widespread that no single action or type of assistance is sufficient. A variety of relief efforts are needed, as follows:

- Continued food assistance will be required for the indefinite future. Even if adequate rainfall levels return, emergency food distribution will be needed for at least the next 18 months (two harvests).

- Greater attention needs to be given to the problems of environmental health in the relief camps. This includes water supply, sanitation, and shelter.

- Greater assistance needs to be directed to helping people remain self-supporting in their home areas and villages. The problems of drought, famine, abandonment of farms, and migration to camps cannot be effectively combatted by providing assistance only to relief camps. Potential aid to home areas includes food distribution, seeds, drinking water supplies, irrigation systems, and medical facilities.

5.5 Relevance of Hickenlooper and Brooke Amendments

As described in Sections 4.2 and 4.3, the Hickenlooper and Brooke amendments have strongly influenced the type of assistance USAID has provided to Ethiopia during the current crises. Although these amendments no longer control U.S. relief policy to Ethiopia, several conclusions follow from this early policy dominance:

- In the past, a strict interpretation of the Hickenlooper and Brooke amendments severely constrained USAID assistance to the Ethiopian drought and famine emergency. Such interpretation prevented
  a. any "permanent" development assistance;
  b. food-for-work and other programs;
  c. assistance programs directed at the farms and villages where people live; and
  d. direct USAID programs with GOE agencies.

- The presence of the Hickenlooper and Brooke amendments as Congressional restrictions deflected attention from the magnitude of the Ethiopian drought and famine and discouraged full consideration of the merits of the emergency needs.

- The restrictions mandated by the Hickenlooper Amendment could have been waived if the United States had accepted that a good faith effort had been made by the GOE to resolve the outstanding U.S. claims for compensation.

- In lieu of waiving the Hickenlooper and Brooke amendments, many of their restrictions could have been reduced, or avoided altogether, through a broad interpretation of what constitutes emergency

assistance. If, as suggested in Section 5.1.1, the problems of drought and famine in Ethiopia had been considered to be so severe that almost all actions to ameliorate them were defined as emergency actions, then a far greater range of emergency assistance activities could have been provided by USAID.

5.6 Emergency Water Supply and Sanitation Needs

The emergency water supply and sanitation needs arising from the drought and famine are found over wide areas of Ethiopia and are not limited to the relief camps. These needs are equally great and urgent in many towns and villages. In terms of the root causes of famine and dislocation, however, the needs in the villages and on the farms are the most critical. Conclusions regarding emergency water supply and sanitation are as follows:

- Water supply and sanitation conditions are inadequate for the protection of public health in most relief camps. The main problem tends to be insufficient quantities of water due to either inadequate water sources or poor maintenance of equipment.

- Water supply facilities in towns adjacent to relief camps generally are overburdened. Since many camps obtain their water from an adjacent town, the improvement of camp supplies is often dependent upon the augmentation of adjacent town supplies.

- The improvement of water supplies in villages is one of several actions necessary to prevent the abandonment of farms and subsequent migration to relief camps.

- The proposed grant agreement to UNICEF (Appendix D) provides the most effective application of the USAID authorization for well drilling assistance to relief camps in Wello Region. This agreement suggests changes in the original authorization to take account of current well drilling activities in the region and the elimination of U.S. technical assistance in the project.

- The proposal by the Society for International Missionaries for USAID support for the drilling of 40 boreholes near food distribution centers in Gama Gofa and Eritrea regions (see Appendix E) gives USAID the opportunity to expand its emergency water supply efforts and to provide rapid assistance to drought-affected areas. This proposal could become a model for expanded USAID support of emergency water supply projects implemented by PVOs.

- Current operations and maintenance of existing water supply systems, especially those in relief camps, are extremely poor. There is a need for programs of maintenance support for both the PVOs that are operating camp systems and GOE agencies operating water facilities in the adjacent towns.

- PVOs and other non-governmental organizations are becoming increasingly aware of the need to improve water and sanitation services in and around relief camps and food distribution centers. Many of

these organizations would implement water and sanitation improvements if appropriate technical and financial support were made available to them.

- USAID/Ethiopia needs the resources and flexibility to respond rapidly (within days) to water and sanitation emergencies in relief camps in selected situations, rather than to wait for approval from Washington.

- OXFAM (UK) is the most active and effective organization currently providing water supply facilities to relief camps in Wello Region. The OXFAM procedures and equipment could provide a useful model for a USAID program of emergency water supply assistance.

- The U.N. Office for Emergency Operations in Ethiopia will continue to need the services of a water supply and sanitation advisor. For maximum effectiveness, such an advisor should be drawn from UNICEF or some other U.N. organization.

- USAID/Ethiopia also will continue to need the services of a water supply and sanitation advisor as long as the drought persists and USAID is interested in expanding its programs of emergency assistance. At present, water and sanitation represents the area in which USAID can have the greatest impact on the drought and famine.

Chapter 6

RECOMMENDATIONS

The recommendations of the WASH consultant to AID/Washington and USAID/Ethiopia are as follows:

6.1 Emergency Assistance Policies

1. Eliminate the residual inhibiting effects of the Hickenlooper and Brooke amendments on U.S. emergency assistance.

As described in Chapter 4, the Hickenlooper and Brooke amendments seriously restricted the U.S. Government prior to April 1985 from dealing with the basic causes of the Ethiopian drought and famine. The problems of drought, starvation, sickness, and abandonment of farms cannot be effectively eliminated solely through assistance in the form of food donations and improved relief camps. More must be done to counter these problems in the towns and villages and especially on the farms where most Ethiopians find their daily sustenance. The Hickenlooper Amendment prohibited direct U.S. Government assistance to these areas and, thus, limited it to the worst consequences of the drought rather than to the eventual elimination of the drought. There are a number of ways in which the amendment could have been nullified or otherwise over-ridden, including the resolution of outstanding claims by American firms against the GOE, a declaration by the President that appropriate steps were being taken by the GOE to resolve the matter, or a declaration by the President that a waiver of the amendment would be in the national interest of the United States. Now that U.S. policy has been freed from the restrictions of these amendments the important point is to remove the residual inhibiting effect they have on U.S. assistance to the Ethiopian drought and to allow emergency assistance activities to be based on considerations of need and the long-term interests of both the United States and Ethiopia.

2. Define emergency assistance broadly to allow USAID to deal with the root causes of the Ethiopian drought and famine.

The magnitude of the current Ethiopian drought and famine is so severe that emergency conditions exist over vast areas of the country and are not limited to food distribution centers and displaced-person relief camps. It is necessary to recognize that these distribution centers and relief camps have been established because normal patterns of existence have been overwhelmingly disrupted in the towns, villages, and farms of the drought-affected areas. The root causes of famine, sicknesses, and displacement cannot be solved in the camps. They must be addressed where people live -- in their villages and on their farms. Thus, emergency needs should be defined to include both the consequences and the causes of the drought and famine.

3. Allocate increasing amounts of emergency assistance to keeping people in their villages and out of the camps.

Once people make the decision to seek assistance from the relief camps, they usually have no homes or farms to which they can return. To obtain food, they

have sold their livestock, their personal possessions, and even their homes (for firewood). The camps tend to become settlements of permanently displaced people who have neither home, employment, nor dignity. Little thought has been given to the future of these camps and to the future of the people residing in them. It would be far better to provide assistance to the towns, villages, and farms affected by the drought so that people can stay on the land where they can more fully support themselves rather than migrate to the camps where they become completely dependent upon the welfare of outside agencies. Assistance to the rural areas could include programs of food aid as well as seeds, agricultural implements, improved water supplies, and medical aid.

4. Provide emergency water and sanitation assistance to towns and villages whose systems are being overtaxed by growing numbers of displaced persons.

As described in Chapter 2, many relief camps are located near towns and rely for water upon often antiquated and inadequate town supplies. Because the town and camp systems are often interlinked, the improvement of water supply in a camp is frequently dependent upon an associated improvement in the town system. Limiting emergency water and sanitation assistance only to the camps may result in excessive costs and may adversely affect the delicate social and political relationships that tend to exist between towns and camps. Emergency assistance, therefore, should be directed to both towns and camps, since both are affected by the drought.

6.2 Emergency Water and Sanitation Assistance Activities of USAID

1. Approve and implement the proposed grant to UNICEF for well drilling activities in Wello Region.

As shown in Appendix D, USAID/Ethiopia has prepared for review and approval by AID/Washington a grant agreement to UNICEF for $750,000 to implement a program of well drilling, drill rig rehabilitation, and the provision of water supply equipment and materials in Wello Region. This is the project which arose out of the recommendations submitted by WASH consultants in December 1984. It has been redesigned to account for current conditions, and it incorporates specific requests and requirements of the GOE. Although the grant is to be implemented by UNICEF, this project is clearly seen by GOE officials to be assistance from the U.S. Government. UNICEF is ready to begin implementation immediately.

2. Approve and implement the proposal by the Society for International Missionaries (SIM) for well drilling activities in Gama Gofa and Eritrea regions.

As shown in Appendix E, the SIM proposal requests $177,367 from USAID for partial support for the drilling of 40 boreholes and the installation of handpumps and other water supply equipment around three feeding areas in Gama Gofa Region and one area in Eritrea Region. All of these areas have been badly affected by the drought and are in great need of emergency water supplies. The SIM project was scheduled to begin in March 1985. USAID assistance, which is about one-third of the total anticipated project costs, would allow the SIM to complete the project sooner than would be possible otherwise.

3. Develop a maintenance support project for emergency water supply systems in Wello Region.

In order to maintain essential water supplies for feeding centers, relief camps, and towns sheltering large numbers of displaced persons, existing facilities must be frequently inspected and inoperative systems must be rapidly repaired. An effective maintenance program will probably need assistance in the form of equipment, spare parts, technicians, and management. In addition, such a program probably should be channeled through either the EWWCA or the Water Supply and Sanitation Authority (WSSA) in order to ensure that subsequent mid- to long-term maintenance operations will be continued by the GOE. Discussions with USAID/Ethiopia, the NWRC, the EWWCA, and UNICEF have indicated that maintenance of emergency water systems in the drought-affected areas is crucial to the health and well-being of the populations there. Further investigations are needed to define the full nature, extent, and operational characteristics of such a program.

4. Encourage PVOs to submit proposals for emergency water supply and sanitation support.

A number of PVOs have far better field experience, logistical capability, and working relationships with the GOE than USAID does. These organizations often are able to implement USAID-supported projects rapidly. USAID should announce to the donor community in Ethiopia that it is interested in supporting specified types of emergency water and sanitation projects and would welcome for review proposals from PVOs. Among the projects that might be supported by USAID are proposals for well drilling activities, commodity supplies, maintenance programs, salary support, and, where appropriate, technical assistance.

5. Establish a fund, under the control of either USAID/Ethiopia or the U.S. Embassy, for emergency water and sanitation activities in relief camps.

There is great need for flexibility and speed in dealing with the water and sanitation problems associated with relief activities. Often times, a relatively minor problem can jeopardize overall operations and the delivery of services to large numbers of people. In the relief camps, such problems may include pump and engine breakdowns, pipeline breakages, water source contamination, and fuel shortages. Having a fund of money available for such emergencies would provide a considerable degree of support to the relief camps, which normally have no alternative water sources in the event of system breakdowns. Such a fund should be under the control of the USAID coordinator or the U.S. chargé d'affairs, and disbursements from it should be made directly to the organization best able to address the problem. It is recommended that the fund initially contain $250,000.

6. Provide funds to UNICEF for a water and sanitation advisor to the U.N. Assistant Secretary-General for Emergency Operations in Ethiopia (ASG/EOE).

As long as the drought emergency lasts, there will remain a need for a water and sanitation expert in the U.N. Emergency Operations Office. Such an individual is essential to make up-to-date assessments of emergency needs, to advise the ASG/EOE on appropriate actions, and to coordinate donor activities. Assistance of this type was provided by USAID/Ethiopia through the WASH con-

sultant from late January to early March 1985. The ASG/EOE, however, has indicated he will seek such assistance in the future from UNICEF. In the event an appropriate expert is not available, USAID should identify an acceptable candidate and then provide UNICEF with funds to employ him or her in the above role. The selected candidate should be a water and sanitation engineer with experience in rural Africa and in general relief operations. The expert will be needed in Ethiopia for a period of at least six months.

7. Maintain a water and sanitation advisor to USAID/Ethiopia

Water and sanitation now represents the area in which USAID/Ethiopia can make the greatest impact on the current emergency. Until the drought and famine abates, there will be a continual need for an expert on water supply and sanitation within USAID/Ethiopia. This individual is needed to assess water and sanitation conditions at relief camps and other drought-stricken areas, to advise USAID of emergency needs, to review project proposals from NGOs, to coordinate USAID/Ethiopia activities with the GOE and the donor community, and to keep the ASG/EOE advised of the current water and sanitation situation. In order to promote close working relationships with the GOE technical agencies, it is recommended that the position be filled with a water and sanitation engineer.

Photo 1. View of Bati camp. Storage tank near tree on left is dry because only one borehole is functioning and it has insufficient pressure to fill this tank.

Photo 2. Feeding shed at ICRC camp at Adwa. Young children are fed up to five times a day by the ICRC. Mothers and relatives assist in feeding the children.

Photo 3. ICRC tanker truck filling a 15,000 liter storage tank at Adwa camp. Except for a single handpump on a shallow well, the camp has no water supply of its own. Water is obtained by tanker truck from nearby Adwa town once or twice per day.

Photo 4. Large hand-dug well near an RRC camp outside of Axum town. Chidlren are scooping water from the bottom of this 10-meter deep well, which has only a few centimeters of water remaining.

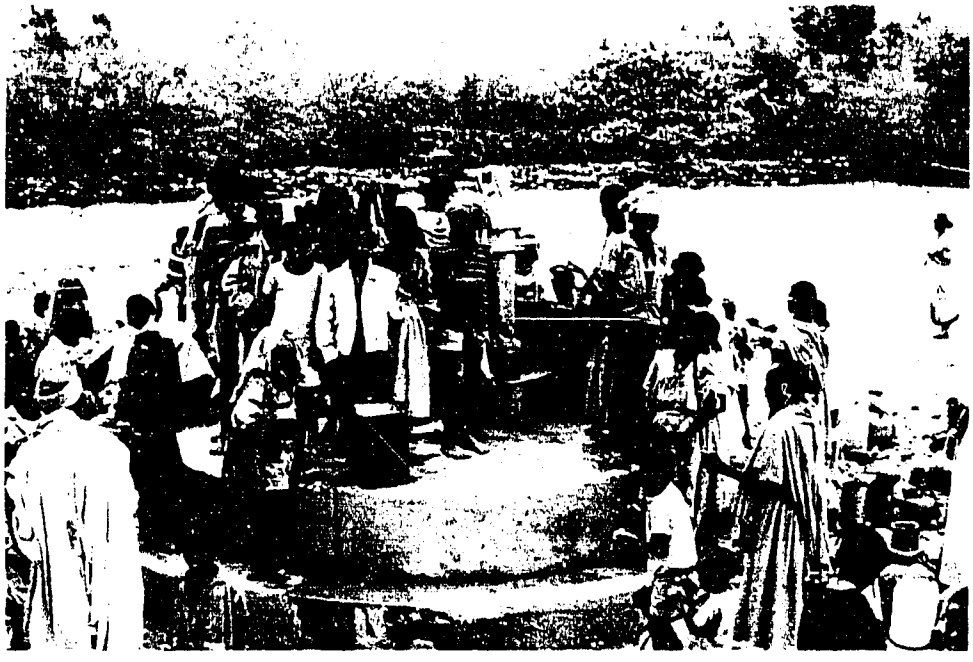


Photo 5. Handpump on a shallow well near Adwa camp. Supplied by UNICEF, this handpump provides the only source of water in the camp. The ICRC supplements the handpump supply with approximately 10,000 liters per day brought by tanker truck from Adwa town.

Photo 6. Residents of Bati camp crowd around a 6-tap distribution frame built by OXFAM.

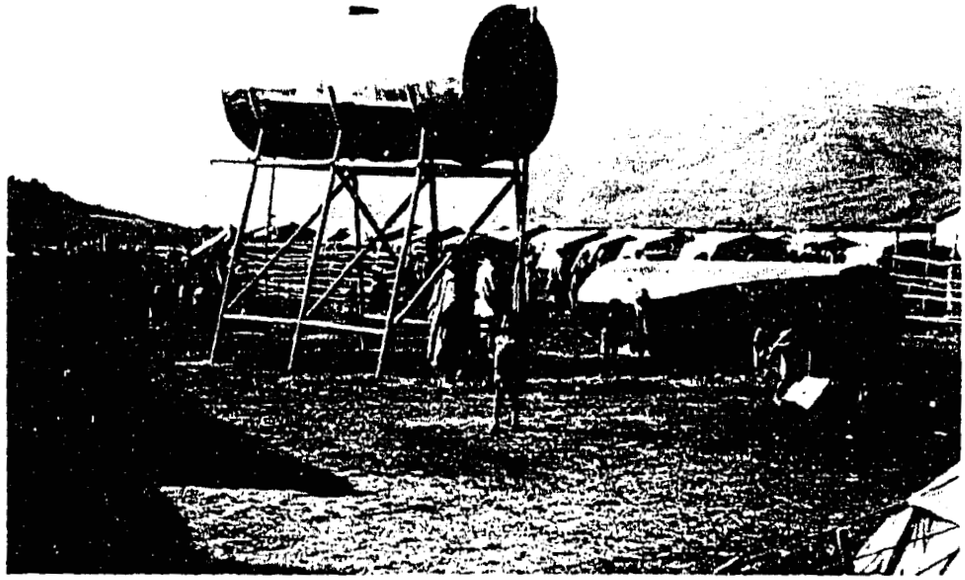


Photo 7. Storage tanks at RRC camp at Korem. The high-level tank provides 10,000 liters of storage to the camp. It is supplied by a single borehole. The low-level tank is not used because of insufficient pumping capacity.

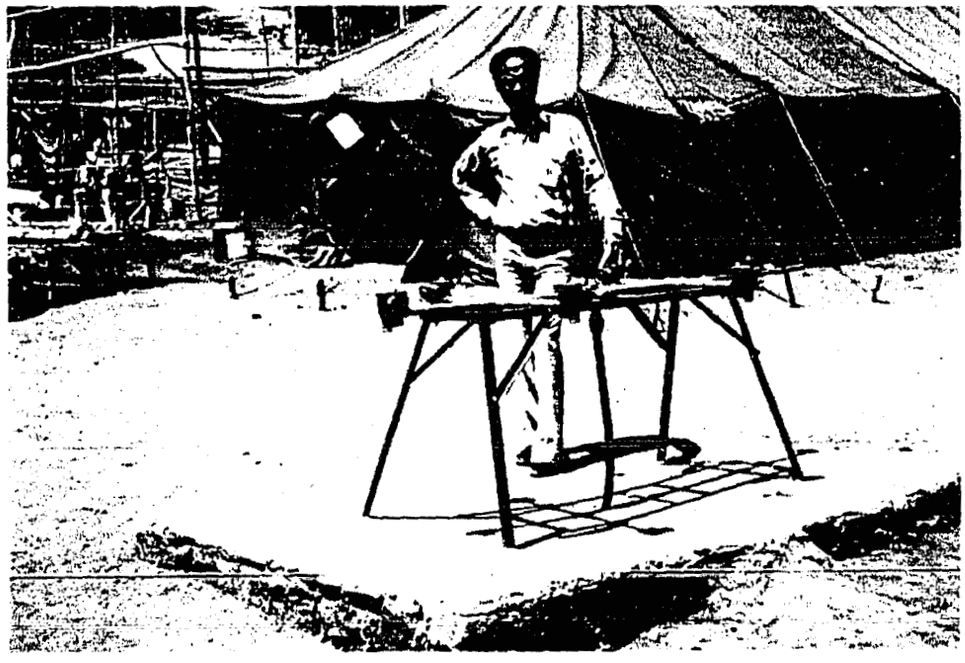


Photo 8. OXFAM tap frame in Lalibela camp. The camp obtains its water from the Lalibela town supply, but inadequate pumping capacity often causes the camp to be without water. On this particular day, there is no water in the camp.

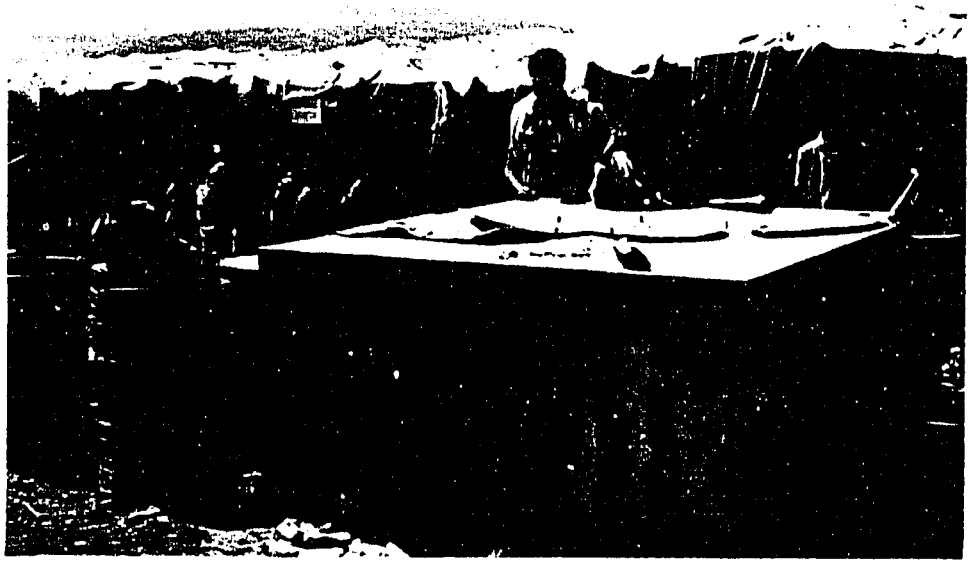


Photo 9. Dilapidated 2,000 liter tank at RRC camp at Axum. The water in this tank is brought by RRC tanker truck from a muddy stream 25 km away. Although the camp is less than one km from Axum town, it does not draw upon the piped water supply there.

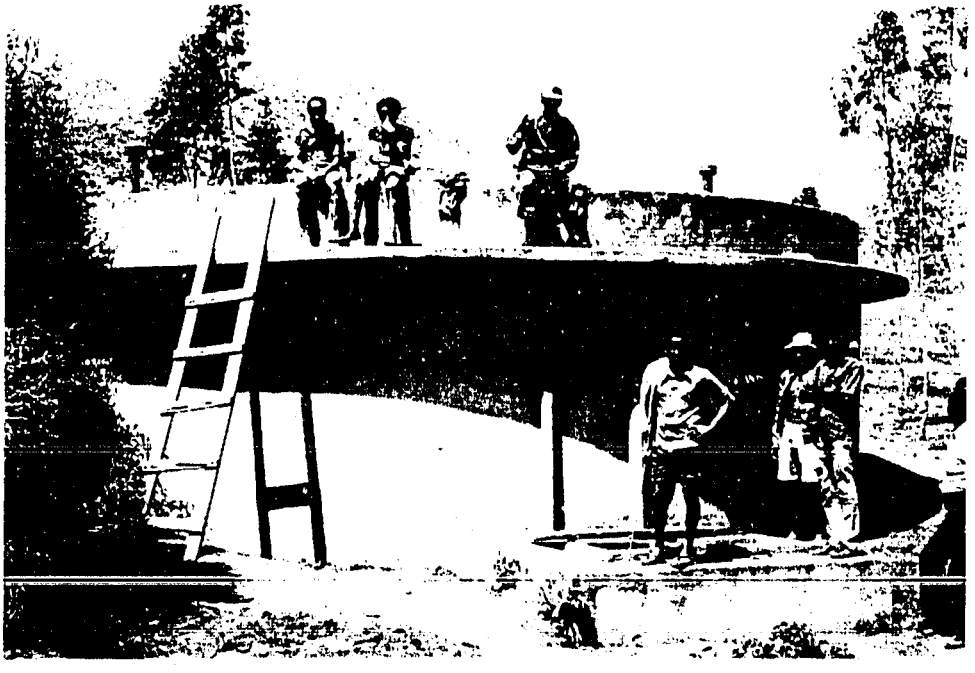


Photo 10. Water tank for Alamata town. This 155,000 liter tank serves both the town and the feeding centers run by World Vision and the Missionaries of Charity. Over the past few years the town has grown from 15,000 to 65,000 and the water system is now inadequate for current needs.

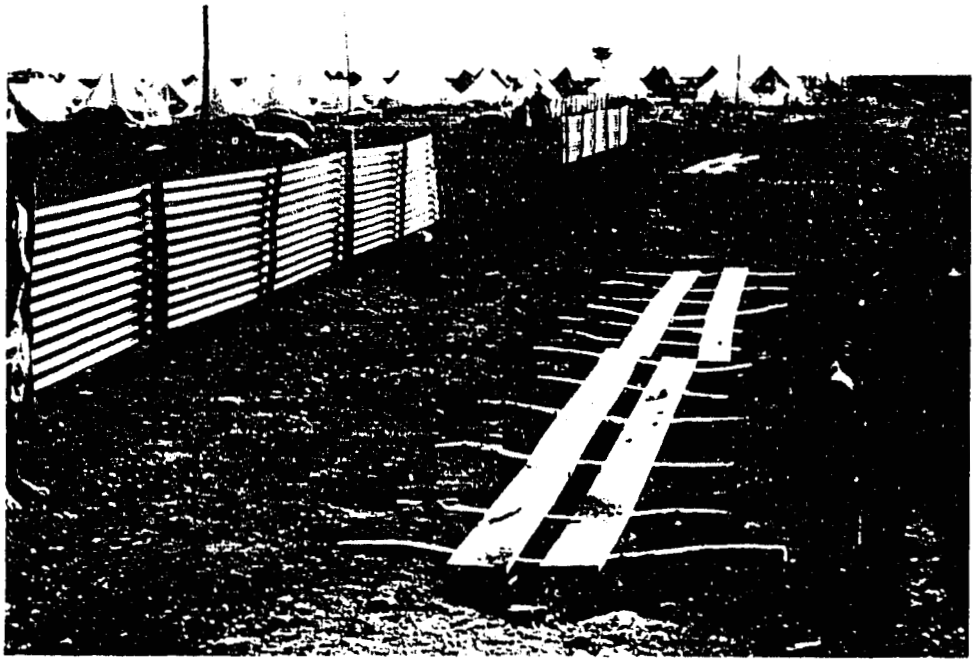


Photo 11. Trench latrine for ICRC camp at Axum. These open latrines were built when camp residents refused to use enclosed latrine shelters.

Photo 12. Semi-private latrine stalls at World Vision camp at Lalibela. Although well designed with a concrete slab and a measure of privacy, these latrines have not been used very much by camp residents.

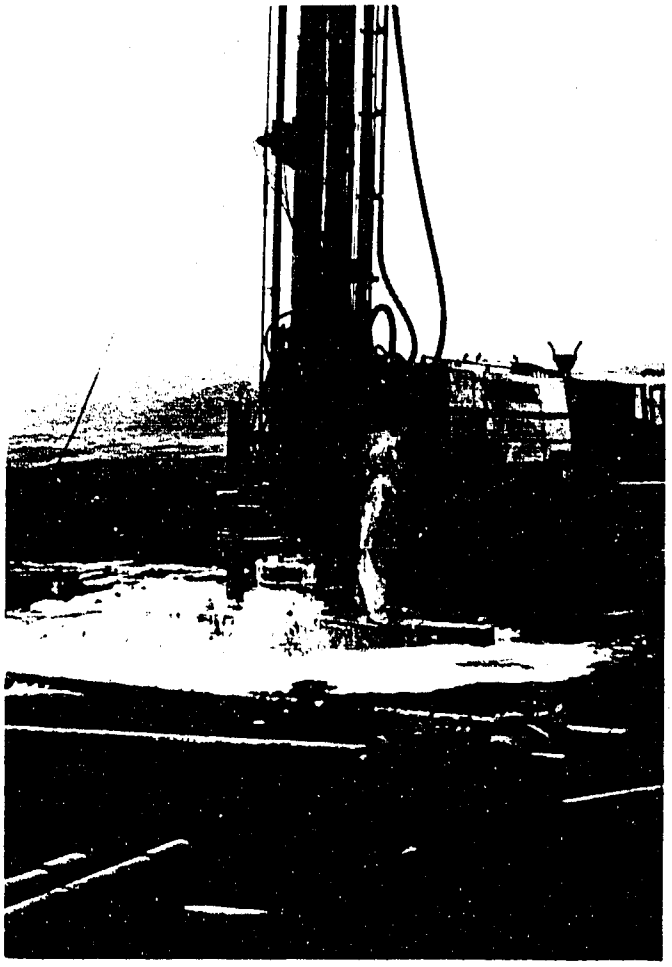


Photo 13. Halco drilling rig near Bati town. The EWWCA is using this rig to drill a well intended to serve the town. The new well is to replace an older well which has been turned over to Bati relief camp.

Photo 14. Workmen installing a diesel engine over a borehole at Bati camp. The engine is in poor condition and the workmen are not fully familiar with this equipment.

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APPENDIX A

Officials Contacted

U.S. Embassy

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Frederick Machmer	General Development Officer
Walter North	Water and Sanitation Liaison
Charles Heffernan	PSC Program Officer
Nancy Metcalf	Food for Peace Officer, USAID/Nairobi
Donald Anderson	S&T/RD/RI, AID/Washington

Government of Ethiopia

Alem Alazar	Commissioner, NWRC
Eshetu Hablemariam	Head, Foreign Assistance Service, NWRC (18-52-77)
Abera Aguma	Head, Rural Water Supply Department, EWWCA (18-37-54)
Mulugeta Kebede	Head, Engineering & Technical Service, RRC (16-01-05)
Ephrem Guade	Head of Water Supply, RRC (16-01-05)
Tesfaye Gemechu	Head, Operations and Maintenance Department WSSA (18-27-66)
Robert Lemay	Management Advisor, EWWCA (18-39-80)
Getachu Tesfaye	Bilateral Assistance Desk, RRC (15-24-35)
Tamrat Gebre	Administrator, Lasta Awraja, Wello Region
Berhanu Alamayu	Nutritional Field Worker, RRC Relief Camp at Axum
Ato Johannes	Dep. Head, EWWCA Regional Office, Kombolcha
Yeshitila Demerraw	RRC Representative, Korem Relief Camp
Kassaw Asmamaw	Mayor, Alemata Town
Tadessa Bamenew	Regional Manager, EWWCA, Wello Region

United Nations Organizations

Kurt Jansson	Assistant Secretary-General for Emergency Operations in Ethiopia
Tom Franklin	NGO Liaison, Office of the ASG/EOE (15-74-82)
Bilge Reid	Bi-lateral Liaison, Office of the ASG/EOE (15-74-74)
Martin Buechi	Monitor, Office of the ASG/EOE
Kevin Farrell	Donor Liaison, World Food Programme/RRC (15-06-67)
Kalidas Ray	Chief, Water Section, UNICEF/Addis Ababa (15-33-04)
Per Engebak	Drinking Water and Sanitation Advisor, UNICEF/New York
Dr. John D. Skoda	Regional Advisor (Water and Environmental Sanitation) UNICEF/Nairobi
Vlado S. Zakula	Drilling Adviser, UNICEF/Addis Ababa (44-82-90)
Sergio Peresutti	Operations Advisor, UNICEF/Addis Ababa
Jean L. Romain	Regional Water Supply and Sanitation Advisor, WHO/Addis Ababa (44-54-60)

Government of Canada

Frank C. Gillis	First Secretary, Embassy of Canada (15-11-00)
Ray Farrington	Country Program Director, Anglophone Africa CIDA/Hull, Quebec
Richard Chappell	CIDA/Hull, Quebec

NGOs

Ato Getachn	ERCS Coordinator, Bati Relief Camp
Dr. Irja Kantaneu	Medical Coordinator, LICROSS
Gillian Whittington	League of Red Cross Societies (34-55-80)

OXFAM (UK)

Jim Howard	Technical Director, Oxford, England (0865-56777)
Paul Sherlock	Engineer, Oxford, England (0865-56777)
Dick Copeland	Administrator, Oxford England (0865-56777)
Cris Mason	Assistant Field Director (Relief), Addis Ababa (15-91-56)
Ben Faucett	Engineer, Kombolcha
Keith Salt	Engineer, Kombolcha

CONCERN

Rev. John Finucane	Director (12-22-36)
John Cosgrove	Civil/Mechanical Engineer, Harbo Relief Camp
Donal Matthews	Engineering Consultant
Liam Walsh	Civil Engineer, Ibnatt Relief Camp

Catholic Relief Services

Rev. Thomas R. Fitzpatrick	NGO Liaison, CRS/Addis Ababa (15-95-48)
Francis X. Carlin	Country Representative (16-55-33)
Michael R. Wiest	Director, CRS/Nairobi
Karlyn Eckman	Associate Director, CRS/Nairobi
Donald E. Henry	Consultant, CRS/Addis Ababa
Tom Kivlan	Procurement Officer, CRS/Addis Ababa
Addisu Beyene	Project Manager, CRS/Addis Ababa

World Vision International

Cliff R. Benzeli	Vice President (15-90-60)
David Ward	Associate Director (15-90-61)
V. Roger Bruce, M.D.	Technical Director, Labibela Relief Camp
Roy Higgins	Water/Sanitation Expert

Rod Jackson	Water/Sanitation Engineer
Keith Buck	Assistant Administrator
Solomon Lodamo	Administrator, Alemata Relief Camp
Paulos Gulilat	Project Manager, Lalibela Relief Camp

International Committee for the Red Cross

John Grinling	Relief Coordinator (15-81-21)
Peter Sonderegger	Deputy Head of Delegation (15-81-21)
Rene Berchtold	Delegate, Axum and Adwa
Doug Nisbet	Sanitation and Water Engineer

PVOs

Danny Hayes	Engineer, SIM (11-23-48)
Alex Fellows	Director, SIM (11-23-48)
Bro. Augustine O'Keefe	Executive Secretary, CRDA (16-71-00)
Laura Kullenberg	Projects Officer, OXFAM (USA)
Stanley Dunn	Director, CARE/Ethiopia (15-62-85)
Michael Elliot	Farm Mangager, Kelafo Mustahil Rehabilitation Project, LWF
Gareth Davies	Monitor, LWF (12-32-88)
Larry Clifford	Director, ADRA
David W. Patterson	Principal, Ethiopian Adventist College (tel. Arusi Negalli 2)
Edwin Mason	Baptist Missionary
Bro. Gregory Flynn	Ethiopian Catholic Secretariat (12-48-07)
Dr. Warren L. Berggren	Coordinator, Health Programs, SCF/Westport, Connecticut
Ricky P. Majette	Resident Representative, AFRICARE (15-40-00)

Others

Dennis DeConcini	U.S. Senator, Arizona
H. Yuasa	Coordinator, Overseas Project & Construction Department, Nissaku Co./Tokyo
Tom Knudson	Register Staff Writer, Iowa City News Bureau

APPENDIX B

U.S. Emergency Assistance to Ethiopia
FY 1984 and 1985

U.S. EMERGENCY ASSISTANCE TO ETHIOPIA -- FY 1984

PVO RECIPIENT[1]	PL- 480 TITLE II COMMODITY[2]	METRIC TONS	COSTS IN '000 US$ COMMODITY	FREIGHT	TOTAL PL- 480	ODFA[3] INLAND TRANSPORT	OFDA[3] OTHER	GRAND TOTAL
CRS REGULAR (MCH)	NFDM	4,771	--	--	--	--	--	--
	SFSG	4,878	--	--	--	--	--	--
	VEGOIL	2,214	--	--	--	--	--	--
SUBTOTAL REGULAR		11,863	3,870.0	2,165.0	6,035.0	--	--	6,035.0
CRS EMERGENCY	NFDM	1,020	--	--	--	--	--	--
	RICE	37	--	--	--	--	--	--
	SFSG	10,002	--	--	--	--	--	--
	VEGOIL	921	--	--	--	--	--	--
SUBTOTAL EMERGENCY		11,980	3,414.3	2,186.9	5,601.2	3,495	--	9,096.2
CRS TOTAL		23,843	7,284.3	4,351.9	11,636.2	3,495	--	15,131.2
WFP EMERGENCY	ICSM	145	54.7	14.0	68.7	--	--	--
IEFR	WHEAT	12,500	1,975.9	1,800.0	3,775.9	--	--	
WEP TOTAL		12,645	2,030.6	1,814.0	3,844.6	--	--	3,844.6
LWR EMERGENCY	WHEAT	5,000	790.3	1,000.0	1,790.3	582	--	2,372.3
CRDA EMERGENCY		--	--	--	--	700	--	700.0
UNICEF (MCH-MEDICINES)		--	--	--	--	--	1,000	1,000.0
GRAND TOTAL		41,488	10,105.2	7,165.9	17,271.1	4,777	1,000	23,048.1

[1] FULL NAMES OF PVO RECIPIENTS ON REVERSE SIDE

[2] FULL NAMES OF COMMODITIES ON REVERSE SIDE

[3] OFFICE OF FOREIGN DISASTER ASSISTANCE

AID/ETHIOPIA

DECEMBER 29, 1984

U.S. EMERGENCY ASSISTANCE TO ETHIOPIA - FY1985

F O O D

PVO RECIPIENT[1]	COMMODITY (IN MT)	COMMODITY COST ('000 US$)	FREIGHT COST ('000 US$)	INLAND TRANSPORT COST ('000 US$)	TOTAL COST ('000 US$)
CRS-Regular	11,869	4,093.9	1,483.6	-0-	5,577.5
CRS-Emergency	40,558	12,514.7	7,483.7	3,252.0	23,250.4
CRS-MC	4,654	2,221.6	861.5	-0-	3,083.1
CDAA-E	53,372	20,674.5	9,892.9	-0-	30,567.4
CDAA-E/CARE	41,525	11,261.3	6,021.5	-0-	17,282.8
ICRC	11,070	4,362.1	2,028.0	-0-	6,390.1
WVRO	7,200	9,072.0	1,332.0	1,597.0	12,001.0
LICROSS	3,610	1,449.9	523.4	-0-	1,973.3
WFP/IEFR	9,973	3,451.7	1,736.2	-0-	5,187.9
Govt.-to-Govt.	50,000	9,684.8	4,849.5	-0-	14,534.3
Subtotal-Food Assistance	233,831	78,786.5	36,212.3	4,849.0	119,847.8

N O N - F O O D

ITEM	TOTAL COST ('000 US$)
Transamerica Airlift	5,807.0
Makelle Airlift	25.0
Shelter Supplies (Blankets and Plastic Sheeting)	3,475.0
Subtotal Non-Food Assistance	9,307.0
TOTAL U.S. EMERGENCY ASSISTANCE	129,154.8

[1]Full names of PVO Recipients on reverse side

AID/ETHIOPIA
January 4, 1985

PRIVATE VOLUNTARY ORGANIZATION RECIPIENTS

CRS	CATHOLIC RELIEF SERVICES
MCH	MOTHER CHILD HEALTH PROGRAM
WFP	WORLD FOOD PROGRAMME
WFP/IEFR	WORLD FOOD PROGRAMM'S INTERNATIONAL EMERGENCY FAMINE RELIEF
LWR	LUTHERAN WORLD RELIEF
CRDA	CHRISTIAN RELIEF AND DEVELOPMENT ASSOCIATION
UNICEF	UNITED NATIONS CHILDREN'S FUND

COMMODITIES

NFDM	NON FAT DRY MILK
SFSG	SOYA FORTIFIED SORGHUM GRITS
VEGOIL	VEGETABLE OIL
ICSM	INSTANT CORN SOYA MILK

AID/ETHIOPIA
DECEMBER 29, 1984

APPENDIX C

Action Memorandum for the AID Administrator
27 December 1984

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

DEC 27 4 27 PM '84

EXECUTIVE SECRETARIAT

27 DEC 1984

ACTION MEMORANDUM FOR THE ADMINISTRATOR

FROM: OFDA, Julius W. Becton, Jr., Director

SUBJECT: Provision of Emergency Water Supplies at Eight Displaced Persons Camps in Ethiopia

Problem: Provision of water supplies at eight displaced persons camps in Wello District and rehabilitation of two drilling rigs in the same District.

Background: In late November, USAID/Ethiopia and the GOE Commissioner for Relief and Rehabilitation requested U.S. technical assistance to assess:

(1) the current well-drilling equipment capability to provide water to drought-stricken population areas;

(2) well drilling equipment rehabilitation costs; and

(3) emergency water supply needs in displaced persons camps.

The OFDA contracted with Water and Sanitation for Health (WASH) to review the emergency water needs in Ethiopia. They were clearly instructed to analyze equipment repair and water needs necessary to support life in the displaced persons camps and not the GOE resettlement camps. The 16-day assessment included interviews with GOE officials, UNICEF, OXFAM, PVOs and USAID/Ethiopia personnel. Field trips were made in accordance with availability of aircraft and GOE approval. An executive summary of the WASH report is attached for your review.

Recommendations: WASH recommended, Fred Fischer supported, and the Task Force supports the recommendations listed below. AID/GC agrees that these constitute emergency activities and are, therefore, appropriate OFDA-funded activities. Funds would come from OFDA's disaster assistance account.

Your concurrence is requested to contract for the services and equipment of a well-driller for up to eight months to:

8503621

(1) Drill 12 wells of 6-inch diameter in displaced persons camps (not resettlement camps) in Wello (8 months x $60,000 = $480,000).

APPROVE [signature]

DISAPPROVE _____

DATE 28 DEC 1

(2) Repair two existing well-drilling rigs in Wello ($100,000).

APPROVE [signature]

DISAPPROVE _____

DATE 28 DEC 1984

(3) Provide hand tools, hydrological equipment, and 6-7 weeks' services of a hydrologist ($59,000).

APPROVE [signature]

DISAPPROVE _____

DATE 28 DEC 1984

(4) Provide pump installation equipment including tools for pump maintenance ($55,000).

APPROVE [signature]

DISAPPROVE _____

DATE 28 DEC 1984

(5) Provide 25,000 plastic water containers of 2 1/2 gallon size ($55,000).

APPROVE [signature]

DISAPPROVE _____

DATE 28 DEC 1984

(6) Provide short-term consultant for 90 days to coordinate water-related activities among USAID/Ethiopia, PVOs, NGOs and the GOE ($50,000).

APPROVED _____

DISAPPROVED _____

DATE 28 DEC 1984

Clearances:
AA/AFR:MEdelman _____ Date _____
GC:HFry _____ Date 12/21/84
signed for PPC clearance
PPC/PB:HRHandler _____ Date 12/19/84

Attachment
Exec Summary, WASH Report

OFDA/TFAF:HBHarris/FGarcia:fv:12/16/84:X28926(#3211A)

APPENDIX D

Proposed UNICEF Agreement

ACTION MEMORANDUM

TO : Gen. Julius W. Becton Jr., Director, OFDA

FROM : Fred C. Fischer, U.S. Coordinator for Emergency Relief, Ethiopia

SUBJECT : Provision of Emergency Water Supplies at Eight Displaced Persons Camps in Ethiopia

Problem: To provide water supplies at displaced persons camps in Wello Region, the grant which was authorized by the Administrator on December 29, needs to be revised.

Background: On December 29, A/AID authorized the use of grant funds in the amount of $799,000 to assist the PMGSE in water supply activities (see TAB/A).

AID/Addis subsequently began to negotiate with the Relief and Rehabilitation Commission (RRC) and the PMGSE executing agency for water activities, the National Water Resources Commission (NWRC). It soon became clear that those two agencies felt that all of the approved assistance was neither necessary nor desireable. The NWRC, in particular, concluded that most of the proposed technical assistance was not necessary.

Since UNICEF in Addis is a major donor in water supply -- and has been working for many years with the NWRC -- we discussed NWRC's capability to execute the proposed water activities. UNICEF technical personnel advised us that NWRC could make available capable drilling and construction teams.

AID/Addis subsequently discussed independently with NWRC and UNICEF proposed uses of the grant funds to achieve the original objectives. We came to an informal agreement (see Tab B) as to the activities to be financed, with UNICEF acceptable as the grantee agency for executing the U.S. Government water assistance program.

AID/Addis believes that UNICEF has sufficient qualified water supply personnel in Ethiopia to manage and monitor effectively the grant.

The total amount originally approved by A/AID was $799,000 of which $50,000 was approved for the short term Washington consultant to AID/Addis (who has participated actively in preparing this proposal). We propose to reduce the funds for the short term consultant to $49,000; the remaining $750,000 would be utilized to finance the grant to UNICEF.

Discussion: The proposed, revised Ethiopia Emergency water supply program, which is contained in a draft Grant Agreement with UNICEF (Tab C) varies from that approved by the Administrator. The objectives and the outputs of the proposed program remain essentially the same; but the specific inputs are changed considerably. Your approval of these revisions is requested.

Specifically, that:

a) You approve the revisions in the proposed water supply program.

Approved: _____

Disapproved: _____

Date: _____

b) You authorize the OFDA Contract Officer to negotiate the proposed grant with UNICEF, New York.

Approved: _____

Disapproved: _____

Date: _____

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

Dec 27 4 27 PM '84

AID
EXECUTIVE SECRETARIAT

27 DEC 1984

ACTION MEMORANDUM FOR THE ADMINISTRATOR

FROM: OFDA, Julius W. Becton, Jr., Director

SUBJECT: Provision of Emergency Water Supplies at Eight Displaced Persons Camps in Ethiopia

Problem: Provision of water supplies at eight displaced persons camps in Wello District and rehabilitation of two drilling rigs in the same District.

Background: In late November, USAID/Ethiopia and the GOE Commissioner for Relief and Rehabilitation requested U.S. technical assistance to assess:

(1) the current well-drilling equipment capability to provide water to drought-stricken population areas;

(2) well drilling equipment rehabilitation costs; and

(3) emergency water supply needs in displaced persons camps.

The OFDA contracted with Water and Sanitation for Health (WASH) to review the emergency water needs in Ethiopia. They were clearly instructed to analyze equipment repair and water needs necessary to support life in the displaced persons camps and not the GOE resettlement camps. The 16-day assessment included interviews with GOE officials, UNICEF, OXFAM, PVOs and USAID/Ethiopia personnel. Field trips were made in accordance with availability of aircraft and GOE approval. An executive summary of the WASH report is attached for your review.

Recommendations: WASH recommended, Fred Fischer supported, and the Task Force supports the recommendations listed below. AID/GC agrees that these constitute emergency activities and are, therefore, appropriate OFDA-funded activities. Funds would come from OFDA's disaster assistance account.

Your concurrence is requested to contract for the services and equipment of a well-driller for up to eight months to:

8503621

8503621

(1) Drill 12 wells of 6-inch diameter in displaced persons camps (not resettlement camps) in Wello (8 months x $60,000 = $480,000).

APPROVE _____

DISAPPROVE _____

DATE 28 DEC 1984

(2) Repair two existing well-drilling rigs in Wello ($100,000).

APPROVE _____

DISAPPROVE _____

DATE 28 DEC 1984

(3) Provide hand tools, hydrological equipment, and 6-7 weeks' services of a hydrologist ($59,000).

APPROVE _____

DISAPPROVE _____

DATE 28 DEC 1984

(4) Provide pump installation equipment including tools for pump maintenance ($55,000).

APPROVE _____

DISAPPROVE _____

DATE 28 DEC 1984

(5) Provide 25,000 plastic water containers of 2 1/2 gallon size ($55,000).

APPROVE _____

DISAPPROVE _____

DATE 28 DEC 1984

(6) Provide short-term consultant for 90 days to coordinate water-related activities among USAID/Ethiopia, PVOs, NGOs and the GOE ($50,000).

APPROVED

DISAPPROVED

DATE 28 DEC 1984

Clearances:
AA/AFR:MEdelman Date 12/27/84
GC:HFry Date 12/21/84
PPC clearance
PPC/PB:HRHandler Date 12/27/84

Attachment
Exec Summary, WASH Report

OFDA/TFAF:HBHarris/FGarcia:fy:12/16/84:X28926(#3211A)

UNITED STATES GOVERNMENT

memorandum

DATE: February 12, 1985

REPLY TO ATTN OF: Dennis B. Warner, WASH Project Dennis Warner

SUBJECT: Meeting with National Water Resources Commission on Proposed USAID Water Supply Emergency Relief Activities in Wollo Region

TO: Mr. Fred C. Fischer, USAID Coordinator

Summary:

On 9 February 1985, Donald Anderson and I met with Mr. Abera Aguma (Head of the Rural Water Supply Department NWRC) and Mr. Eshetu Habtemariam (Head of the Foreign Assistance Service, NWRC) at the National Water Resources Commission (NWRC) headquarters to discuss the proposed USAID emergency water supply activities in Wollo Region. The NWRC, acting through its operational arm, the Ethiopian Water Works Construction Authority (EWWCA) is the implementing agency for the PMGSE for all water supply activities in the country.

The meeting had encouraging signs that an agreement between USAID and the PMGSE on the above water activities was possible in the near future. The NWRC officials indicated their desire to reach a speedy agreement on the activities and, when we stated that USAID was willing to delete the technical assistance components of the activities, assured us of prompt action on their part in preparing detailed lists of requested commodities. In brief, general agreement was reached on (1) the nature and location of USAID-assisted water activities, (2) the deployment of a second drilling rig to the work sites, and (3) the use of UNICEF as an implementing organization for the USAID assistance.

Details:

Discussions were held on the following issues:

(1) Failing CF-15 drilling rigs.

According to the NWRC officials, these rigs, which were at the core of all previous discussions of USAID emergency water assistance to Wollo Region, do not require parts or repair assistance from USAID.

(2) Halco drilling rig (model unknown).

The NWRC has moved a Halco drilling rig into Wollo Region where it has begun a drilling program of ten wells in the emergency relief camps.

(3) NWRC perception of USAID assistance.

USAID emergency assistance is needed to provide tools, materials, and equipment to equip the wells drilled by the Halco rig, to rehabilitate wells which have become non-operational, and to equip wells which were drilled in the past but which have never been provided with pumps, engines and other water supply equipment.

(4) Rehabilitation of Gardner Denver Rotary drilling rig.

The NWRC would like to rehabilitate this rig which is currently in very poor condition. If USAID provided the parts to rehabilitate this rig, the NWRC would deploy it to Wollo Region to assist and accelerate the emergency drilling program. Mr. Aguma said that he was prepared to put this assurance in writing.

(5) USAID technical assistance.

The NWRC does not require any USAID technical assistance associated with these water supply activities. They stated that the NWRC (probably the EWWCA) has sufficient technical capabilities to do all the necessary work itself.

(6) Pumps and engines.

The NWRC officials were concerned that the USAID grant allow for the procurement of pumps, engines, and piping, for the emergency water supply activities. We said that it would.

(7) Available Funds.

When questioned whether the full $800,000 would be available, we responded that the available amount would be determined after a USAID review of detailed materials and equipment requests submitted by the NWRC.

(8) UNICEF as an implementing agency.

The NWRC officials had no problem with USAID using UNICEF as the implementing agency for the grant. They commented that, although UNICEF implementation was sometimes slow, there existed a good working relationship between the NWRC and UNICEF. We said that USAID was prepared to move the grant agreement as rapidly as possible and that UNICEF had assured us that it was prepared to short-cut

its normal procurement procedures by providing materials and equipment from inventories already in Ethiopia and earmarked for regular development purposes.

(9) Long-term development assistance.

The NWRC officials asked whether USAID could provide water supply assistance to established villages and rural communities in order to encourage people to remain in their home areas and not flock to relief camps. We responded that the existing USAID authorization was limited to the emergency relief sites.

Results.

The following general agreements were made at the meeting:

By USAID representative:

(1) No USAID technical assistance would be included in the grant.

(2) USAID funds could be used for drilling costs, spare parts, the rehabilitation of the Gardner Denver rig, tools, hydrologic equipment, pumps, engines, piping, and plastic water containers.

(3) Total available grant funds were subject to a USAID review of the detailed lists of tools, materials, and equipment to be provided by the NWRC.

By NWRC representatives:

(1) the NWRC would provide, within one week, detailed list of:

- relief camp drilling sites and numbers of wells
- spare parts needed for the Gardner Denver rig
- pumps and engines
- pipes and associated materials
- tools and equipment

(2) The NWRC will deploy the rehabilitated Gardner Denver drilling rig to the emergency relief camps in Wollo to accelerate the USAID assisted drilling program.

(3) UNICEF is acceptable to the NWRC as the recipient of the USAID grant for the emergency water supply activities.

Actions Needed:

(1) Detailed lists of sites, wells, parts, and equipment from the NWRC.

(2) Approval of AID/W for modification of the original authorization.

(3) Discussions with and agreement on UNICEF role as implementing agency.

cc: Donald Anderson

Grant Agreement
Between
U.S. Agency for International Development
and
the U-N-I-C-E-F
for
U.S. Government Water Related Emergency
Relief Assistance to Ethiopia

This grant agreement is to provide U. S. Government emergency relief assistance in the form of well drilling and associated water supply activities to specified emergency feeding sites in Wello Region of Ethiopia. The background and general need for this assistance is described in Annex A. 1. USAID formally communicated its authorization for water/ related activities to the Relief and Rehabilitation Commission on 3 January 1985, as shown in Annex A.2. Subsequent discussions with the National Water Resources Commission resulted in the deletion of several components from the original AID authorization.

Therefore, in order to implement the project as proposed by the U.S. Government and as subsequently modified in discussions with the National Water Resources Commission, USAID grants up to $750,000 to UNICEF for the following purposes:

(1) Drill 12 water supply wells of 6-inch diameter and/or provide water supply facilities for the following displaced persons camps in Wello Region:

Mersa - one well
Mile - one well
Kobo - one well
Alamata - two wells
Bati - two wells
Harbo - two wells
Korem - two wells
Other Wello camps - one well

(2) Procure the spare parts listed in Annex B. and repair the Gardner-Denver drilling rig currently in the EWWCA Central Workshop in Addis Ababa.

(3) Upon completion of the rehabilitation of the above drilling rig, assist the EWWCA to immediately deploy the rig to Wello Region to assist in drilling the above wells.

(4) Procure the hand tools, hydrological survey equipment, and earth resistivity equipment listed in Annex B and make them available for use on relevant water supply activities in the displaced persons camps identified in item (1) above.

(5) Procure the pump installation and maintenance equipment listed in Annex B and make it available for use on relevant water supply activities in the displaced persons camps identified in item (1) above.

(6) Procure the pumps, engines, pipes and other water supply related materials listed in Annex B for use on relevant water supply activities in the displaced persons camps identified in item (1) above.

(7) Procure 25,000 plastic water containers of 2-1/2 gallon capacity for distribution to residents of displaced persons camps identified in item (1) above.

(8) Provide the necessary administrative and technical assistance services to procure, transport, distribute, and monitor the utilization of the commodities included in items (2) - (7). This item is limited to no more than U. S. $30,000.

This grant is to be utilized only for the drilling, equipping, and rehabilitation of wells and the equipping and/or rehabilitation of water supply facilities as described in the above items. No changes may be made in any of the above items except as otherwise agreed to by USAID in writing. In the event that this grant is insufficient to cover all of the above items, UNICEF will prepare a revised listing of commodities and/or activities for USAID approval within the total of grant funds available.

UNICEF will make every effort to implement fully this grant and complete all activities within 9 months from the date of this grant.

All procurement under this grant will be U. S. source and origin or Ethiopia source and origin except as otherwise agreed to by USAID.

In order for UNICEF to begin immediate implementation of the water supply activities, it is understood that UNICEF may use commodities it has in stock which are committed for development water supply activities in Ethiopia. UNICEF is hereby authorized to utilize items procured under this grant to replace such UNICEF commodities.

ANNEX A. Background material

1. WASH Field Report No. 138: "An Assessment of Problems and Needs for Water Supplies at Ethiopian Drought-Victim Camps" December 1984.

2. Letter from Fred C. Fischer, U.S. Coordinator for Emergency Relief to Commissioner Dawit Wolde Giorgis of 3 January 1985.

ANNEX B. Water Works Tools, Equipment and Construction materials list and cost estimates.

For U.S.A.I.D.	For U.N.I.C.E.F.
Date	Date

January 3, 1985

Commissioner Dawit Golde Giorgis
Relief and Rehabilitation Commission
Addis Ababa

Dear Mr. Commissioner:

I am pleased to inform you that the U.S. Government is prepared to provide the following water-related emergency relief assistance, valued at $900,000:

(1) Drill 12 wells of 6-inch diameter in displaced persons camps in Wello (8 months at $60,000; $480,000).

(2) Repair two existing well-drilling rigs in Wello ($100,000).

(3) Provide hand tools, hydrological equipment, and 6-7 weeks' services of a hydrologist ($60,000).

(4) Provide pump installation equipment including tools for pump maintenance ($55,000).

(5) Provide 25,000 plastic water containers of 2 1/2 gallon size ($55,000).

(6) Provide short-term consultant for 90 days to coordinate water-related activities among USAID/Ethiopia, PVOs, NGOs, and GOE ($50,000).

Please let me know at your earliest convenience which officials of the RRC or other PMGSE ministries my office should be in touch with on the implementation of these activities.

Sincerely,

Fred C. Fischer
U.S. Coordinator for
Emergency Relief

REQUEST OF WATER TOOLS, EQUIPMENTS & CONSTRUCTION MATERIALS

TO THE GOVERNMENT OF UNITED STATES OF AMERICA

FOR THE RELIEF CENTERS IN WOLLO

ITEM	DESCRIPTION	UNIT	Qnt.	Amt. in US $	REMARKS
I.	DRILLING MATEREALS				
1	Casing, Mild Steel API Standard.....			115,000.-	
	- $6\frac{5}{8}$"	mts.	1440		
	- $10\frac{5}{8}$"	"	120		
	- $12\frac{5}{8}$"	"	120		
2	Drilling foam (each drum = 200 litres)	Drums	12		
3	Aqua Jell (50 kg)	Sacs	400		
4	Dop (petroleum Product) (Drum = 20 kg)	Drums	2		
II.	CONSTRUCTION (PIPE LAYING)				
	A - Pipes & Fittings				
1	Galvanized steel pipe			224,000.-	
	- 4"	mts.	4800		
	- 3"	"	6000		
	- $2\frac{1}{2}$"	"	4800		
	- 2"	"	6000		
	- $1\frac{1}{2}$"	"	1200		
	- 1"	"	1200		
	- $\frac{1}{4}$"	"	504		
2	Fittings.....			29,000.-	

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Item	DESCRIPTION	UNIT	QNT.	Amount in US$	REMARKS
B.	Hand Tools & Equipment			42,000.-	
1	Pipe threader 1" - 2"	Each	4		
2	" " 2" - 4"	"	4		
3	" cutter 1" - 4"	"	4		
4	Vice	"	4		
5	Reinforcement bar cutter upto 20mm	"	2		
6	Pipe Wrench	"	8		
	- 14"	"	8		
	- 18"	"	8		
	- 24"	"	8		
	- 36"	"	8		
	- 48"	"	8		
7	Chain tongs	Pcs.	8		
8	Hack saw	"	4		
9	" " blade	"	48		
10	Plumb bob	"	4		
11	Steel meter tapes 50mts.	"	4		
	3mts.				
12	Vibratore/concrete/	"	4		
13	$0.5m^3$ concrete mixer	"	4		
14.	Wheel barrow	"	32		
15	Welding machine/medium size/	"	2		
16	Hammer Jack with drilling accessories & compresser	"	2		
II	Pumps & Generators				
1	Submersible pump			68,000.-	
	- Q = 3 L/Sec. H = 75mts.	Nos.	2		
	- Q = 3 L/Sec. H = 15mts.	"	4		
	- Q = 2.5 L/Sec. H =200mts.	"	7		
	- Q = 2.5L/Sec. H =250mts.	"	3		

.../

ITEM	DESCRIPTION	UNIT	Qnt.	Amount in US$	REMARKS
2	Horizontal Centrifugal Pump Q = 5 L/Sec, H = 200mts.		2		
3	Generating Set			80,000.-	
	- 9 H.P.	Nos.	2		
	- 18 "	"	4		
	- 19 "	"	7		
	- 20 "	"	3		
III	Truck mounted pump setting & Weatherover rig for installing and rehabilitating wells with accessories & spare parts.	Nos.	1	64,000.-	
IV	Spare parts for Gardner Denver rig rehabilitation	L.S		155,000.-	
V	Hydro Geological Equipment	"		9,000.-	
	- Pocket lens x 20	Nos.	2		
	- Brunton Geological Compass	"	2		
	- Water level indicatory measing tape	"	2		
	- 100 mts.	"	2		
	- 150 mts.	"	2		
	- 200 mts.	"	2		
	- 300 mts.	"	1		
	- Side bags	"	2		
	- Stop watch	"	2		
	- Chemical analysis Kit	"	1		
VI	Geophysical Equipment			14,000.-	
	- Earth Resestivity Equipment unit	Set	1		
			TOTAL	800,000.-	

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THE PROVISIONAL MILITARY GOVERNMENT OF SOCIALIST ETHIOPIA

NATIONAL WATER RESOURCES COMMISSION

Ref. No. W.C.2/10/12/7-2

Date. 20. FEB. 1985

Mr. D. Anderson
U. S. Embassy
Addis Ababa

Dear Mr. Anderson:

Re: Our discussion on the utilization of the Gardner Denver drilling rig

As discussed in our meeting, one of the components of U.S. Aid grant draft agreement with UNICEF for well drilling and associated water supply activities to emergency feeding sites in Wollo Region, is the rehabilitation of a Gardner Denver drilling rig.

The purpose of this letter is to confirm to you, as per your verbal request, that the rehabilitated rig would be used in the project area until such time as the project is completed, provided that the spare parts required for the rig rehabilitation have been made available, as per the grant agreemant, in time.

Provisional Military Government of Socialist Ethiopia · National Water Resources Commission

Yours sincerely,

Eshetu Habtemariam
Assistance Coordination Officer

cc. Ethiopian Water Works Construction Authority
Addis Ababa

/lm

ቴሌክስ Telex 21219
አዲስ አበባ Addis Ababa
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Water

February 20, 1985

Commissioner Dawit Wolde Giorgis
Relief and Rehabilitation Commission
Addis Ababa

Dear Commissioner Dawit:

This is further to my letters to you of January 15, 1985 and February 1, 1985. I advised you on January 15 that the U.S.G. water related emergency relief assistance would be in the form of a grant/ contract(s) primarily through a U.S. Private Voluntary Organization. In my letter to you of February 1, I stated that in our discussions with the NWRC, we were advised that most of the proposed technical assistance was not required by your Government.

I am happy to report to you that in subsequent discussions, my office and the NWRC have agreed in principle to the kind and amounts of assistance required to increase the water supply for emergency shelter areas in the Wello Region. We have also agreed in principle that the U.S.G. assistance would be in the form of a grant to the UNICEF.

I am attaching a copy of the proposed grant agreement which has been informally reviewed by both the NWRC and the UNICEF Addis staff.

I am hereby requesting your agreement that the above proposed method of assistance is acceptable to your Government.

Sincerely,

/s/ Fredrick E Machmer Jr.

Fred C. Fischer
U.S. Coordinator for
Emergency Relief

REQUEST FOR ASSISTACE FOR THE DROUGHT AFFECTED AREAS TO THE USA GOVERNMENT.

REHABILITATION OF GARDNER DENVER R.G.

Spare Parts and Drilling accessories for ~~gardner denver~~ Gardner Denver Drilling Rig Model No.2000; Serial No. 20-2879

No.	Description	unit	Quan
1	Diesel Engine cummins model No. C-180-ip Engine No. 583120 SBM No. 86520; mounted on the gardner denver model No. 2000; ser. no. 20-2879 for drilling operation One complete rig engine cummins model No. C-180-ip or equivalent	No	1
2	Rotary table assembly No. 2003 Bottoom Ring Model No. 1000 spec No. 141-263 on the drilling Rig gardner denuer model No. 2000, serial No. 20-2879	No	1
3	Spare parts for rotary table No. 2003		
	Model No. 1000, Spec No. 141-263		
	Ring gear 143-999	psc.	2
	Pinion 144-000		
	Bearing ring 101-586	"	2
	Bearing cup(Timken 96140)106-319	"	2
	Bearing cone(Timken 96900)106-240	"	2
	Bearing retainer 110-833	"	2
	Bottomnut 109-963	"	2
	Grease Seal(Victor 61500)106-757	"	2
	O-Ring(Arrowhead 6230-45)108-517	"	2
	Grease fitting (Alemite 1613)107-803	"	2
	Pinion Bearing Spacer 108-271	"	2
	Grease Seal(National 55079)106-692	"	2
	Grease Seal Retainer 108-268		
	Bearing Cup(Timken 5535) 106-287	"	2
	Bearing Cone (Timken 5582)106-202	"	2
	Bearing Cone (Timken 5565 106-201	"	2
	Gasket 015 Thick 122-544	"	2
	Gasked 015 Thick 122-543	"	2
	Gasket Alemtte 1641 107-801		

.../

	Description	Unit	Quant:
4	Clutch Controls(Drill Serial No. 20-2879)121-588	Pac	2
	- Grease Fittin(Slemite 1911)107-808	Psc.	2
	- Shifrer yoke 117-756	"	2
5	Air Compressor Of suitable design to adequately operate a down hhouhole drill, airline labricator system, water injection pump, pnamatic hand grinder. Hoving a copacity of approximately 700 CFM at 175 P.S i prefarable screw type; driven by an Air cooled diesal engine trailer mounted.	Psc	1
6	Airline Lubricator system or in-ling oiler for down the hole drilling.	"	1
7	Water Injaction pump up to 86.P.M. for installation on drilling rig to he used or water of foam injection during drilling with air compressor(Driven by air cookdd diesel engine		
8	Flush joint drill pipes 4½ins. x20 ft. long, with 3½ ins. API F.H. welded tool joints and break out flats;thread protectors fyttad	pes	40
9	Slips for 4½ ins. O.D flush joint drill pipe toffir taper in Rotary Table Model No. 1000 on the drilling rig Gardner dsauer model No. 2000 serial No. 20-2879	"	10
10	Hoisting plug; heavy duty boll bearing swivel type, for 4½ ins. flush-joint drill pipe with 3½ins. API F.H. Pin	"	2
11	Break- out plate for 4½ ins O.D. drill pipe flats	"	2
12	Rotary die overshot for 4½ ins O.D. flush-joint drill pipe	"	2
13	Taper fishing top for 4½ins. O.D flush-joint drill pipe with 3 ½ ins. API F.H. Box.		

.../

.o	Description	Unit	Qut.
14	Mission serafs B-53-15 megadrill 53/8ins. with 3½ ins. API F.H Box connection	pes	2
15	Special wrenches and tools for dismontling down the hole hemaxer B-53-15	"	4
16	Mission button bit 6 ins. for B-53-15 Mission megadrill	"	10
17	Mission button bit 8ins. for B-53-15 mission magadrill	"	10
18	Mission button bit 97/8 ins. for B-53-15 mission magadrill	"	4
19	Mission button bit reamer 6-8½ins. for B-53-15 mission megadrill	"	4
20	97/8 ins. 3-cone rotary rock bits for soft formation	"	10
21	97/8 ins. 3-cone rotary rock bits for medium/hard formation, M7R or equivalent	"	15
22	12 3/4 ins. 3- cone rotary roller bits for soft formation	"	10
23	12 3/4 ins 3-cone medium/hard formation drilling bits, W7R or equivalent	"	10
24	Subs 2 7/8ins.API -iF box to 3½ins. API F.H. pix to connqctéd these drill pipes to the 5 1/4 ins. drill collars or to connqct these drill pipes to 4½ins flush-joint drill pipes	"	2
25	Spare Parts for Mission B-53-15 Megadrill		
	Piston	pes	2
	Volve Guide	"	2
	Makg up Ring	"	2
	Spring	"	4
	Chock vove dart	"	4
	Rigid Volve	"	2
	O-Ring	"	6
	Piston Rot. Ring	"	4
	Bit Ret. Ring	"	2
	Top Sub	"	2
	Driver Sub	"	2

No.	Description	Unit	Qut.
26	SUB 3½ins. API to 2 7/8 ins API Pin	Pes	2
	SUB 2 7/8 ins. API Box to 3½ins. API pin	"	2
27	Model 2000 Crown Block Assemble 113-638		
	Cotter Pin 127-538	pes	18
	Bushing 102-627	"	4
	Bushing 101-469	"	4
	Grease Fitting(Alemtte 1613)107-803	"	8
	Sheave Pin 101-083	"	4
	5/8 ins. Nut Castellated 125-648	"	4
	Sheave Pin 101-082	"	4
	3/4 ins. Nut Castellated	"	4
	7/8 ins Nut Castellated	"	4
	Lins Nut Castellated	"	4
	Shfave Pin 103 -000	"	4
	Bearing(Fafnir 312 WD)106-098	"	4
	Bushing 100-831	"	4
	Bushing 100-767		
28	Drill collars 5 1/4ins O.D. x 20ft.long with upper tool joint 3½ins. A.P.I F.H. box and lower tool joint 3½ ins. API F.H. pin with milled flats for lable slip drill pipe with connect directly to drill collars and drill collars will connect directly together. Also these 5 1/4 ins. drill collars will connect directly to the sub 3½ins API F.H. box.	pes	2
29	Sub with break-out flats and check valve 3½ins. API F.H. Box to 4½ins. API Reg.Box(to connect 8½ins diam. bits to 5 1/4 ins.drill callors, also to connect the same diam. bits to 4½ins O.D.flush-joint drill pipe	pes	2
30	Sub with break-out flats and check valve 3½ins. API F/H. Box to 6 5/8ins. API Reg. Box (to connect large size bits to 5 1/4ins.drill collars, also to connect to same diam bits to 4@ins O.D.flush-joint drill pipe	"	2
31	Table slip for 5½ins. drill collars for rotary table of gardner denver model No. 2000 rotary table No. 2003	"	4
32	Swival heavy duty type KG KRng Swivel for gardner denver model No. 2000	pes	1
33	Kelly hose 3"x33'with moleboss fitting 1000#WP 3670-0254	"	1

No	Description	unit	qut.
34	Adapter 3½ins. API I.F Box to 6 5/8ins API regular box 7 3/4 ins O.D X3ins. I.D X10ins.long part No 156449	pes	2
35	Spare Parts for type K.G King Swivel		
	Bearing Spindle 30KG-8 2pes US$ 600	pes	2
	Washpipe, King 30KG-25	pes	20
	Packing 30KG-20	"	6
	Lantern ring 30KG-21		
	Packing seal ring	"	5
	O-Ring 30KG 6227-47	"	10
	O-Ring 30KG 6227 -49	"	10
	O-Ring 30 KG 6227--42		
	Adjusting lock nud 30KG-23	"	6
	Adjusting screw 30.KG 24	"	6
	Dpturast Bearing 30KG-13	"	2
	Downthrust bearing 30KG-12	"	6
	Shield Seal 30KG-9	"	4
	Bearing Shiald 30KG-10	"	2
	Bail Pin Nuts 30KG-3.	"	6
36	Mud Pump 8ins piping indtallation 146-452		
	Elbow 3ins. x 45 M.B. 141-783	"	8
	Nipple 3 ins X8ins.long 126-000	"	2
	Union - weco Fig.200 125-544	"	6
	Hose fitting 1 1/4ins king 122-115	2	3
	Hose clamp 123-512	"	4
37	Hydraulic Circuit 2000 W/RET.Rotary 146-383		
	Control valve-2Bank 121-703	"	1
	Gauge-3000#123-980	"	3
38	Mast Assembly Model 2000 124-599		
	Mast bushing 109-503	"	4
	Bushing sheave 121-406	"	4
	Washer 5/8ins 121-075	"	4
	Grease Fitting Alemite-Zerk 107-801	"	4
	Clevis Pin 5/8ins W/cotter key 121-211	"	4
	Swivel Clevis ½ins.122-431 ypps US$45	"	4
	Cable clamp 3/8ins 122-173 12pes US$120	"	12
	Cable 3/8ins 6x19x38 ft. long122-160	"	

No	Description	Unit	Qut.
39	Hydraulic Cylinder Assembly 127-005		
	Cylinder Assembly 127-005 for dardner denver drilling rig model No 2000+ drill serial No 20.2879	pes	2
40	1504G Winch Assembly 123-645		
	Gasket 121-017	pes	4
	Ring gear carrier 110-595	"	2
	Ring gear and pinion set No.124710	"	2
	Pilot bearing rerainer 121-979	"	2
	Pilot Bearing 106-365	"	2
	Gasker 121-016	"	4
	Pinion Bearing cone 106-232	"	4
	Pinion lock nut 140-125	"	4
	Pinion lockwasher 140-160	"	4
	Lockwasher 9/16ins 121-074	"	4
	Bearing cup 106-274	"	18
	Bearing cone 106-182	"	4
	Grease seal 106-711	"	4
	Lockwasher 3/8ins 121-071	"	36
	Grease seal 106-716	"	4
	Gasket 121-014	"	4
	Bearing washer 107-940	"	8
	Bearing nut 107-913	"	4
	Grease fitting 107-801	"	4
	Gasker 102-529	"	4
41	DrwwWorks Accessories W/Air clutch 1504 127-758		
	Spring 121-702	"	8
	Mount brake release spring 141-526	"	8
	" " " " 141-527 pes	"	8
42	Hand tool set 976A0 4011-90 for Air Compressor	ser	1
43	Accessories for air cowpressol incl 2"x20metre hose	"	2
44	Grinding wheels for dry grinding 51x31x10m/m 044 1105-43	pes	100
45	Air-line lubricator BLG 60A	"	1
46	Wire brushes oborn	"	1

No	Description	Unit	Qut.
47	Casing spider bonls, splip type, with nings as nelcssary and slips for 6 5/8 ins and 85/8ins O/ D casing	pes	1
48	Cosing elevvetors,complets with lings,for 65/8ins O.D.casing	"	2
49	Casing elevetors,complete with lings for 85/8ins O.D.casing	"	2
50	Cosing elevetors, complete with lings for 10 3/4ins O.D casing	"	2
51	Casing clamps for 6 5/8ins.O.D.casing	"	2
52	" " " 8 5/8ins O.D. "	"	2
53	" " " 10 3/4ins O.D. "	"	2
54	Wub to connect kelly, 3½"APIF.H	"	2
55	Cominotion box-open end wranches 5/16ins. thoru. 1 1/4ins, 18pes.in roll kit Ws-1172-SR	set	1
56	Square drive sockets ½ins,31tools in metal tool box WSS-6A	"	1
	+1-2 controlair valve	"	4
57	Retractable rotary mounting and drive 146-309		
	Cross bearing - 6c 107-899	pes	6
	Slip yore 110-037	"	3
	Splined shaft 110-036	"	2

SPARE PARTS FOR 7½ ins. x 8 ins. FY-FXX GARDNER - DENVER PUMP

Item	Description	Unit	Qty.	Remark
58	Baffle, Piston Rod 250-1 FXX - 840	pcs	4	
	Oil stop head 250 - FXX - 495	"	2	
	Gasket discharge flange 250-25-c-603	"	4	
	Gasket, cylinder head	"	8	
	Packing stuffing box 250-60-BG-13	"	24	
	Junk ring, stuffing box 250-BC-317	"	4	
	Bushing Gland 250-1-FD-152	"	4	
	Rod piston with nuts 250-FXX-183-X	"	4	
	Nut, cross head 250-50-T-137	"	4	
	Liner, cylinder 7½ ins. 250-FY-456-75	"	4	
	Packing, liner set screws 250-60-C-5	"	48	
	Liner sleeve 250-3-EN-519	"	8	
	Piston 7½ ins. API-3.250-45-D-262	"	4	
	Rubber, piston RT-½ ins. B	"	8	
	Valve Assy. 250-4-FD-482-B	"	16	
	Seat, valve 250-FD-451	"	16	
	Spring valve 250-78-A-139	"	16	
	Gasket, valve cover 250-25-G-32	"	16	
	Sub with check valve 4½ ins. API neg. pin to 6 5/8 ins. API reg box to connect large size bit to 7 1/4 ins. drill collom	"	1	
59	Drill collar 7 1/4 ins. O.D.x20ft. long with upper tool joint 3½ ins. API F.H. box and lower tool joint 4½ ins. API Reg box complete with pin hole	"	1	
60	Suction hose 1 ins. x -25ft. for water injection pump with nipples, quick union	"	2	
61	"BJ" rotary tongs with latch jaws, range from 2 7/8 ins; 5 1/4 ins. and 4½ ins. O.D. flush joind drill pipe to fit on drilling rig gardner denver	"	1	
62	Model No. 2000			
63	Drum line 5/8x400ft. non-spinning wing line spec. W-12	"	2	

Associated Equipment

Item	Description	Unit	Qty.	Remark
1	De-watering pump, diesel driver low capacity	pcs	2	
2	Grinding machine L5R 335 120 for griniding button bits, air hose ¼ins.x3 and attache--ment set	"	1	
3	Grinding wheels for dry frinding 51x31x10mm. 044 1105-43	"	100	
4	Cut-off grinder 3.8 KW. L55 84 5060 complete including attachment	"	1	
5	portable electric arc-welding unit bobart type or similar, capacity 600 Amps. powered by a diesel engine with electric starter, complete with 50 fc. cable and ground, clamp, two welding hoods, two pairs welders asbestos gloves and tan liners and two electrode holders. Spare parts for 2 years as specified by the manufacturer	"	1	
6	Tool joint compound dope brush	"	1	
7	Revert/Mud mixer from Johnson Div. Water marker 500	"	2	
8	Chain tongs to handle 6 5/8" and 8 5/8" casing with 2 sets spare chains & bolts	"	2	
9	Chain tongs to handle 10 3/8" casings	"	2	
10	Pipe wrenches rigid 18"	"	4	
11	" " " 24"	"	4	
12	" " " 36"	"	4	
13	" " " 48"	"	4	
	Drilling Materials			
1	Baroid quick foam 55 gall.	Drums	10	
2	EX-Mud in 5 gallons	pail	100	
3	Revert in 25 lb. bags	bags	40	
4	Bentonite in 100 lb. bags	tons	20	
5	Tool joint compound 40 lb. pail	pail	10	
	Support Giving Vehicles			
1	~~4x4 Truck, 10 tons~~	~~Nos~~	~~1~~	~~deleted by A.L.D / Addis 2/16/85~~
2	~~4x4 Truck 1 ton pick-up~~	~~"~~	~~1~~	

APPENDIX E

Society for International Missionaries Proposal

ACTION MEMORANDUM

TO : Gen. Julius W. Becton, Jr., Director, OFDA

FROM : Fred C. Fischer, U.S. Coordinator for Emergency Relief, Ethiopia

SUBJECT : Provision of Emergency Water Supplies at Feeding Station Areas for Three Isolated Areas of Gamo Gofa and One Area near Asmara.

Problem:

The Society for International Missionaries (SIM)[1/] a PVO with 58 years of experience in Ethiopia, is proposing to drill boreholes and install handpumps in order to provide emergency water supplies around four feeding areas in drought-stricken regions of Ethiopia. Their proposal is attached at TAB A.

Background:

SIM has received requests from the Relief and Rehabilitation Commission (RRC) to provide food assistance and drinking water for three isolated areas of Gamo Gofa Region and for the area surrounding Decamhare, near Asmara, in Eritrea Region. All of these areas have been very badly affected by the current drought and all are in dire need of emergency water supplies.

SIM intends to operate feeding and food distribution centers in the above areas. Without minimally adequate drinking water supplies, the effectiveness of the proposed feeding centers will be greatly reduced and the people will remain at great risk in terms of immediate survival.

AID/Addis Water and Sanitation Consultant, Dr. Dennis Warner has reviewed the SIM proposal and has inspected the SIM workshop in Addis Ababa where the Boswell handpumps are fabricated. This handpump was developed in Ethiopia and, over the past several years, SIM has fabricated and installed several hundred of them in the southern regions of the country. According to SIM officials the Ethiopian Government has recently made a request to SIM for 1000 of these handpumps.

1/ Formerly the Sudan Interior Mission

AID/Addis believes that SIM has had sufficient experience with this pump to warrant its use in the current emergency water situation. As shown in the attached proposal, SIM intends to drill the boreholes and manufacture and install the handpumps. In addition, SIM intends to train several maintenance personnel and it will attempt to negotiate one year renewable agreements with the Ethiopian Water Works Construction Authority for the provision of maintenance services by SIM.

AID/Addis believes that SIM has sufficient local experience, resources, and trained personnel to carry out that portion of the proposal exclusive of the AID input. The overall project is estimated to cost $489,832, of which it is proposed that AID provide $177,367, or 36.2% of the total. AID funds will be used only for personnel costs, travel and transport, site occupancy costs, office expenses, and administration. No AID funds will be used for the procurement of drilling rigs, handpumps and water tanks.

Discussion:

The proposal is in line with AID's support for providing water supplies to drought-affected people at feeding centers. SIM intends to begin field operations in March 1985. The assistance requested of AID will allow SIM to complete the project faster and more effectively. The intention of SIM to begin work in the very near future provides AID with the opportunity to have an immediate impact on the availability of potable water supplies in several drought-affected areas of the country.

Recommendation:

Your approval is requested to grant $177,367 to SIM to carry out well drilling, the manufacture and installation of forty handpumps, and the construction of water supply facilities in three areas of Gamo Gofa Region and one area of Eritrea Region.

APPROVED: _____

DATE: _____

DISAPPROVED: _____

DATE: _____

UNITED STATES GOVERNMENT

memorandum

DATE: February 16, 1985

REPLY TO ATTN OF: Dennis B. Warner, WASH Project Dennis B. Warner

SUBJECT: SIM Proposal for Emergency Water Well Drilling and Handpump Installation in Ethiopia

TO: Mr. Fred C. Fischer, U.S. Coordinator for Emergency Relief

The attached package consists of materials obtained from SIM with regard to their proposal to drill 40 boreholes and equip them with locally-manufactured handpumps in and around feeding centers in Gamo Gofa and Eritrea Regions.

Contents of this proposal package include:

1. Cover letter from Alex Fellows, Director of SIM, to Fred C. Fischer, USAID Coordinator, dated 6 February 1985.

2. Proposal entitled, "Emergency Water Well Drilling and Handpump Installation in Ethiopia".

3. Example of typical well drilling costs for SIM.

4. Addendum to SIM Proposal, by Keith Fellows, January 1985.

5. SIM-AID and RRC Nutritional Survey Report from parts of Gamo Gofa, January 1985.

6. Proposal entitled, "SIM-AID Emergency Food Assistance in Gamo Gofa, 4 February 1985.

7. RRC-SIM Basic Agreement, dated 15 January 1985.

Because the basic proposal (item 2) and its attachments does not clearly indicate where the 40 proposed boreholes will be located, I telephoned Mr. Keith Fellows of SIM on 16 February 1985. According to Mr. Fellows, the boreholes will be drilled as follows:

- One borehole in each of four SIM base camps

- One borehole in each of five feeding centers

- the remaining boreholes will be sited within villages serving as distribution points for dry rations (There will be 8 to 12 such villages associated with each feeding center).

Recommendation:

In my opinion, this proposal merits serious consideration by AID. SIM has manufactured and installed several hundred of the Boswell handpumps in recent years. All proposed water activities are intended to serve emergency water needs associated with feeding and food distribution centers. Long-term maintenance of the handpumps is likely to be a problem, but the anticipated long-term presence of SIM in the project areas provides some assurance that maintenance needs will be covered.

The primary strengths of this proposal are:

(1) SIM is a well established and experienced organization; and

(2) Field work will begin in March 1985.

I recommend that AID support the requested amount of $177,367.00, which is 36.2% of total project costs.

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S. I. M.
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(1)

February 6, 1985

Mr. Fred C. Fischer
U.S. Coordinator for Emergency Relief
The American Embassy
Addis Ababa, Ethiopia

Dear Mr. Fischer:

Attached is a project proposal by SIM for emergency water well drilling and handpump installation in Ethiopia. This proposal is requesting $177,367.00 from the Office of Emergency Relief (USAID) for the fiscal year 1985.

After examining this proposal please forward it to Washington for final approval. We look forward to working together with you in alleviating some of the pain and suffering this country is experiencing. We are prepared to start the project as soon as funding is approved.

Sincerely,

Alex Fellows

Alex Fellows
Director

DH:ak

SOCIETY OF INTERNATIONAL MISSIONARIES/P.O. BOX 127 ADDIS ABABA, ETHIOPIA/PHONE: 11 23 48
SIM SERVING: IN LIBERIA, GHANA, BENIN, UPPER VOLTA, NIGER, NIGERIA, SUDAN, ETHIOPIA, KENYA, BOLIVIA, PERU.

(2)

EMERGENCY WATER WELL DRILLING

AND HAND PUMP INSTALLATION

IN ETHIOPIA

Safe Drinking Water for Four Feeding Areas

Grant Recipient and Reporting Agency	S I M Cedar Grove, NJ. 07009
Grant and Program Supervisor	SIM, International Cedar Grove, NJ. 07009
Program Implementer	SIM Ethiopia PO Box 127 Addis Ababa, Ethiopia

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BACKGROUND

Ethiopia is geographically the tenth largest country of the African continent with approximately 400,000 square miles and the second most populated country with current estimates running near 40 million people. About 80% of the population depends on agriculture for livelihood. Ethiopia is listed as one of the poorest countries in the world with an average per capita income below $140.00 a year.

Much of Ethiopia is being currently devastated by a terrible drought and famine. Thousands upon thousands of farmers have experienced total crop failure.

THE NEED

SIM has recieved requests from the RRC (Relief and Rehabilitation Commission) and from local administrators to provide food assistance and drinking water for 3 isolated areas of Gema Gofa and for the area surrounding Decamhare, near Asmara. Two SIM nurses are already in Decamhare setting up relief operations there. One SIM doctor along with two other SIM nurses are in Ethiopia and are making preparations to open a feeding station in Gema Gofa. Other personnel have been contacted abroad and will be arriving soon. The shortage or non-existence of potable water in these areas is acute and compounds the severity of the famine situation. In one of the proposed feeding center locations in Gema Gofa, people are walking from 10 to 20 kilometers to obtain water. Without adequate drinking water available, the feeding centers are greatly hampered in their efforts to save the lives of the people affected by the famine.

THE PROJECT RESPONSE

SIM proposes to move into these feeding station areas with qualified engineers and with small mobile inexpensive, short life drilling equipment to drill 40 boreholes and install 40 handpumps. Over 40,000 people should benefit from these installations.

KEY PROJECT PERSONNEL

Name	POSITION	Nationality	Qualifications
Danny Hays	Engineering Coordinator	USA	Civil Engineer, Registered Professional Engineer- State of Texas, 5 years experience in USA and 3 years experience in Ethiopia and Niger. Speaks Amharic.
Russell Rickets	Engineer	Australian	Mechanical Engineer, 4 years water project experience in Ethiopia. Speaks some Amharic
Andy Meakins	Engineer	British	Civil Engineer, 5 years water project experience in Ethiopia. Speaks some Amharic.
Bob Sturm	Engineer	USA	Mechanical Engineer

DURATION OF THE PROJECT

SIM will begin the project as soon as funding is approved. The project duration will be between 6 months and 12 months.

LOCATION OF THE PROGRAM

1. Hamere Demeka, Hamer Woreda, Geleb Hamer-Baco Aaraja, Gema Gofa region.
2. Turmi, Hamer Woreda, Geleb Hamer-Baco Aaraja, Gema Gofa region
3. Erbure, Bene Kule Woreda, Geleb Hamer-Baco Aaraja, Gema Gofa region
4. Decamhare, Decamhare Woreda, Akelegunzaye Aaraja, Eritrea region

(Hamere Demeka and Turmi are close enough to be handled by one engineer.)

BUDGET SUMMARY (in US dollars)

	SIM	COORDINATOR EMERGENCY RELIEF	TOTAL
I. Personnel	49,000.00	68,200.00	117,200.00
II. Travel and Transport	6,000.00	55,610.00	61,610.00
III. Direct Project Expense	226,500.00	0.00	226,500.00
IV. Occupancy	0.00	29,880.00	29,880.00
V. Office Expense	0.00	6,100.00	6,100.00
VI. Administration	30,965.00	17,577.00	48,542.00
TOTAL	312,465.00	177,367.00	489,832.00

BREAKDOWN (in US dollars)

I. Personnel	SIM	Coordinator Emergency Relief	Total
Salaries (including per diem and benefits)			
1. Engineering Coordinator (Ex-pat)	7,000.00	7,000.00	14,000.00
2. Engineer - Asmara (Expat)	14,000.00	14,000.00	28,000.00
3. Engineer - (Expat)	0.00	28,000.00	28,000.00
4. Engineer - (Expat)	28,000.00	0.00	28,000.00
5. Technician - Asmara (Eth National)		5,000.00	5,000.00
6. Technician - " "		5,000.00	5,000.00
7. Technician - " "		5,000.00	5,000.00
8. Daily Laborers (6 workers) "		4,200.00	4,200.00
	49,000.00	68,200.00	117,200.00
II. Travel and Transport			
1. International Transport			
1/2 of Engineering Coordinator	1,500.00		1,500.00
3 Engineers (@ 3,000/trip)	4,500.00	4,500.00	9,000.00
2. In-Country Airfare			
3 trips (A.A. to Asmara @ 154/trip)		460.00	460.00
3. Transport of Material		11,000.00	11,000.00
4. Transport of Material (air freight, A.A. to Asmara)		10,000.00	10,000.00
5. Local Staff Transportation		14,650.00	14,650.00
6. Transport of drilling rigs to Addis Ababa		15,000.00	15,000.00
	6,000,00	55,610.00	61,610.00
III. Direct Project Expense			
1. 3 portable drilling rigs and spare parts	165,000.00		165,000.00
2. 40 handpumps and installation	60,000.00		60,000.00
3. 3 1,000 liter water tanks	1,500.00		1,500.00
	226,500.00		226,500.00

		SIM	Coordinator Emergency Relief	Total
IV. Occupancy				
Base Camp	8,000.00 each *3		24,000.00	24,000.00
Storeroom	1,000.00 each *3		3,000.00	3,000.00
Security	960.00 each *3		2,880.00	2,880.00
			29,880.00	29,880.00
V. Office Expense				
2 way radios and license 3000.00 *2			6,000.00	6,000.00
Telephone (A.A. to Asmara)			100.00	100.00
			6,100.00	6,100.00
VI. SIM Administration 11%		30,965.00	17,577.00	48,542.00

BUDGET JUSTIFICATION

I. Personnel

The Engineering Coordinator will spend 1/2 of his time in overseeing the project. The other 3 engineers will be full-time, as well as the Ethiopian technicians and laborers.

II. Travel and Transport

1. International travel at $3,000.00 per trip
2. In-Country airfare - 3 trips to Asmara at $154.00 per trip
3. Transport of Material, truck rates at $.65 per Km X 16,925 Km
4. Air Freight to Asmara - $10,000.00
5. Local Staff Transportation 63,700 Km at $0.23 per Km
6. Transport of drilling rigs - air freight for one $10,000.00
   sea freight for two 5,000.00

III. Direct Project Expense

1. Portable Drilling Rigs with spare parts = $55,000.00 each
2. Handpumps and installation = $1,500.00 per installation
3. 1,000 liter water tanks at $500.00 each

IV. Occupancy

Base camp includes tents, sleeping facilities, cooking facilities, refrigerator, lights, water provisions, etc.

V. Office Expense

Two way radios required to coordinate and order materials, each $3,000.00

VI. Administrative costs at 11%

Technical Data

1. The drilling rig we propose to use is a CTM 10,000 or a "Flamingo" model (the Flamingo is merely an updated CTM 10,000). This is manufactured by DeepRock Manfacturing Co. of Opelika, Alaska. The unit is a rotary hydraulic unit with a 17 H.P. engine for the hydraulic system and a 17 H.P. mud pump. Accessories include an air powered rock hammer and air compressor for drilling through rock. SIM has operated one of these rigs for the last year to test performance in isolated areas. We drilled 22 boreholes with depths varying from 12 meters to 50 meters and we were pleased with its performance. Actual capacity of rig is probably in excess of 70 meters, but few handpumps can pump beyond 50 meters, so there is no need to drill beyond 50 meters. Borehole diameter capacity is 8 inches, but we generally drill a 6-inch hole.

The rig is mounted on a 2-wheel trailer with leveling jacks. We pull it wth a Toyota Land Cruiser pickup, which also carries a water tank and functions as a water truck.

2. Well depth will vary from 10 to 50 meters. Diameter = 6 inches Casing = 4 inch diameter plastic pipe (manufactured in Addis Ababa) Drop pipe = 2 inch diameter steel pipe

3. The handpumps are Boswell handpumps, which SIM manufactures in Addis Ababa. The Ethiopian Water Works Construction Authority approves the use of these and uses many themselves. We used Clayton-Mark brass cylinders.

4. The water tanks will be welded steel plate, with a top access hatch, and a 2" diameter coupling connection. These can be purchased in Addis Ababa.

5. The feeding center locations have been selected by the RRC and SIM. This determines the general area of our borehole site location. Specific location will be determined by discussions with the community leaders and with the Doctor in charge of the feeding centers. All proposed water projects will also be cleared with the Ethiopian Water Works Construction Authority, Southern Region.

6. All proposed sites are either in a feeding center or in the nearby surrounding area. There are no resettlement sites under this proposal.

7. We can obtain all materials required in Addis Ababa except the 3 drilling rigs. We are in the process of negotiating a way to have them flown out. Probably we will fly out 2, borrow an existing one, and ship the 3rd one by sea to replace the borrowed one.

8. SIM will be ready to begin field operations with one drilling rig in March, 1985. If necessary SIM will borrow a drilling rig from another project to use until the new ones arrive. The additional drilling rigs would go into operation in April or May, if they can be shipped that quickly.

9. Final responsibility for maintaining any completed water project in Ethiopia lies with either the Ethiopian Water Works Construction Authority or with the Urban Sewer and Water Authority. Although, they are making great progress in the area of maintenance, it is unlikely that they will have the resources to maintain the handpumps put in under this proposal.

SIM, however, is planning to establish a long range water development program in areas that are near to the sites of the emergency drilling. Part of our program will be to train and equip several local nationals to maintain Boswell handpumps. We will propose to the Ethiopian Water Works Construction Authority that SIM enter into a one year renewable agreement whereby SIM maintains the projects SIM completed. If SIM leaves the region for some unforeseen reason, we will leave behind a well trained maintenance crew, and we will strongly advise the EWWCA to employ these men and allow them to continue maintaining the systems.

January 1985

Example of Typical Well Drilling Costs for SIM
(figures developed for another SIM project)

(3)

Well Drilling in Gamo Gofa Region - Budget Proposal
All figures in Ethiopian Birr

I. Personnal

Salaries including all other personnal costs:

1 Group leader (technician) @450.00/month (Eth. National)	5,400.00
3 Local helpers @120.00/month ea. (" " s)	4,320.00
Per diem for group leader @ 12.00/day x 24 days/mo.avg.	3,456.00
	13,176.00

II. Materials and Tools

A. Handpump installation, average depth= 30m.

2" drop pipe	500.00
Boswell pump	550.00
½"left pipe	150.00
Cylinder	450.00
Cement(2sacks)	25.00
Sand	25.00
Rebar	50.00
Wood forms	25.00
4" casing	300.00
Bolts and other	125.00

2,200.00 per borehole x 25 boreholes = 55,000.00

Note: 1. Transportation included under ~~II~~ III
2. Benzine, etc. for drilling included under ~~II~~ III.
3. Gravel provided locally.

B. Tools

Complete outfit, including pipe threader, cutter, rebar cutter, pipe wrenches, shovels, picks, wheel barrows, buckets, land tools, etc.
= 3,000.00

Summary

Pump installation	55,000.00
Tools	3,000.00
	58,000.00

III. Transportation and transport

A.	Transport of materials 7500km. @1.15/km.	8,625.00
B.	Water Team Vehicles operating costs 10,000km.@0.65/km.	6,500.00
		15,125.00

IV. Equipment Costs

A. Portable Hydraulic Rotary Drilling Rig and Equipment

1.	Basic rig(including shipping, customs, tax, 50m of drill pipe, bits, and battery)	60,000.00
2.	Spare parts and extra drill pipe	20,000.00
3.	Rock hammer airbit and air compressor	30,000.00
		110,000.00

B. Toyota Land Cruiser Pickup(including shipping, customs, tax, registration, insurance, and pipe rack) 90,000.00

each 45,000.00 x 2 required

Total Equipment Costs	110,000.00
	90,000.00
	200,000.00

V. Administrative Costs @ 5½%

Budget Summary (all in Eth. Birr)

I	Personnal	13,176.00
II.	Materials and Tools	58,000.00
III.	Transportation	15,125.00
IV.	Equipment Costs	200,000.00
V.	Administrative (5½%)	15,746.00
	Total Required Eth. Birr	302,047.00

Anderson / Warner

(4)

Addendum to SIM Proposal

SOCIETY OF INTERNATIONAL MISSIONARIES
REPORT ON WATER AND FAMINE RELIEF
by Keith Fellows

To US-AID

JANUARY, 1985

S I M I N V O L V E M E N T

Background

The Society of International Missionaries(SIM) has been involved in Ethiopia since 1927 and was involved in education, health(including running hospitals and training local staff) and development. In 1974 SIM was deeply involved in the famine relief work. Due to the nature of the difficulties experienced the SIM became involved in supplying water - to rural areas. To meet this need a drill rig was brought out and operated in the northern part of the country. Since there was difficulty in obtaining pumps an engineer was brought out to design pumps that could be manufactured locally. A small manufacturing plant was set up in Addis Ababa to produce the Boswell pump and is currently operating. Due to the increased demand by UNICEF and Ministry of Water Resources the plant has been expanded to increase production.

The SIM currently has four water teams operating in four areas in Sidamo Region. These teams are involved in drilling wells, digging hand dug wells, capping and protecting springs and constructing some water catchments for towns.

In July of 1984 the SIM started two feeding centers in Wolaita in anticipation of terminating after the major rains. When the major rains failed the program was expanded to include a supplemental dry ration distribution to the 4000 families in the Abala area where the feeding centers are.

Anticipated Program

In January 1985 the Relief and Rehabilitation Commission approached the SIM to expand its involvement into the Gamo Gofa Region where the SIM formerly worked but about 1978 due to various reasons terminated their involvement in the Gamo Gofa Region. A joint RRC - SIM survey was conducted identifying four areas that require immediate emergency relief aid. See Appendix II.

Plan of Action

To assure fast and efficient distribution and supply of needed food items, a modular concept of relief teams will be used. Four teams will be in operation in the selected sites in Gamo Gofa. The teams will be coordinated, supervised and given support by the district office in Soddo, Wolaita and the entire operation will be monitored and assisted by the SIM's Addis

Ababa Headquarters. SIM's water engineers will be assigned project to alleviate the critical water shortages in the area rigs will be moved from the development program in Sidamo reg rigs are being brought in to meet the crisis need.

Emergency health care will be provided by trained medical

What the Program Is:

The program proposed is strictly an emergency relief project relieving acute water shortage and relieving the starving and ne ing status of the 10,000 families. The SIM's water engineer and Relief Coordinator will select sites for a feeding center and a b A well will be provided for each. The population has had to trave field for water as traditional water sources have dried up. Peopl rently walking 2 - 3 hours one way for water. To maximize the effe food aid given centrally located wells will be provided for the com

Where the Program will Operate

In connection with the Relief and Rehabilitation Commission of th Ethiopian Government, the SIM's staff surveyed areas not receiving r and four sites were identified as needing immediate aid.

Gamo Gofa Region	1.	Kaecha	2924 families
	2.	Demika - Turime	3291 "
	3.	Eribore	1516 "
	4.	Tsamai	1500 "

See map in appendix I.

Appendix	I	Gamo Gofa Nutritional Survey
"	II	SIM Proposal for Emergency Food Assist
"	III	RRC - SIM contract

APPENDIX F

Wello Field Report

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UNITED NATIONS NATIONS UNIES

OFFICE OF THE ASSISTANT SECRETARY-GENERAL
FOR EMERGENCY OPERATIONS IN ETHIOPIA

MEMORANDUM

TO : Kurt Jansson, ASG/EOE

DATE : February 21, 1985

FROM : Dennis Warner, Water Supply Specialist

REF. No.

SUBJECT : Report on Field trip to Wello Region Shelter Camps and Feeding Centres, 11 - 14 February, 1985

Attached for your review is my report on a field trip to Wello Region over 11 - 14 February 1985. The purpose of this trip was to assess water supply and sanitation conditions in the emergency shelter camps and feeding centres in the drought affected areas. During the trip, I visited sites at Gewani (Harrarghe Region), Mile, Bati, Harbo, Alamata, and Korem (Wello Region). The assessments and, where appropriate, associated recommendations are given in the report.

I shall be pleased to answer any questions you may have on this report.

Office of the Assistant Secretary General

For Emergency Operations in Ethiopia

FIELD TRIP REPORT

ON

VISITS TO GEWANE, MILE, BATI, HARBO, ALAMATA, AND KOREM SHELTER CAMPS AND FEEDING CENTERS

11-14 FEBRUARY 1985

By

Dr. Dennis B. Warner

Water Supply Specialist

23 February 1985

SUMMARY

This report describes visits over 11-14 February 1985 to shelter camps and feeding centers at Gewane, Mile, Bati, Harbo, Alamata, and Korem to assess the water supply and sanitation conditions on behalf of the Office of the Assistant Secretary General for Emergency Operations in Ethiopia.

During these visits discussions were held with camp administrators, officials of RRC and EWWCA, and with representatives of donor organizations. Within the limitations of time, the water supply and sanitation facilities were inspected, and note was made of the recent improvements in water systems, especially those provided by EWWCA and OXFAM.

Despite recent improvements, however, the availability of water at all sites was found to average between 3 and 7 liters per capita per day, a figure inadequate for basic health maintenance. Problems were also seen where camps obtained their water supply from existing town systems that were unable to meet the combined needs of the town, the camp, and the growing influx of people from the villages seeking food and shelter. In such cases, the dangers of inadquate sanitation and limited water availability pose high risks of disease transmission through contaminated water supplies.

Where appropriate, recommendations are included herein for each of the camps visited. On a more general level, additional suggestions are made with regard to planning and coordination, design and construction, and operation and maintenance. The most important of these are believed to be: (1) consider the water supply and sanitation needs of each new camp before it is established, (2) encourage closer coordination between camp operators, EWWCA, and donor organizations, and (3) establish minimum water supply and sanitation criteria for operating shelter camps and feeding centers.

1.0. Introduction

On 11-14 February 1985, Dr. Dennis B. Warner, Water Supply Specialist, Dr. Martin Buechi, Monitor, and Ato Kabete, driver travelled by road to various shelter camps in Wello Region on behalf of the Office of the Assistant Secretary General for Emergency Operations in Ethiopia (ASG/EOE). This report describes those aspects of the trip dealing with water supply and sanitation.

1.1. Purpose of Trip

The primary purpose of this field trip was to gather information on water supply and sanitation conditions in the drought-affected areas of Wello Region with regard to the following:

(1) To assess the general status of water supply and sanitation facilities in and around the emergency shelter areas, feeding centers, and food distribution centers of the drought-affected areas.

(2) To identify immediate needs for water supply and sanitation improvements in the above areas.

(3) To recommend priorities of needs and relevant assistance activities for coordinated water supply and sanitation actions by both donors and operational agencies.

1.2. Itinerary

11 February:	By car Addis Ababa to Gewane (380 km). Visited Gewane village and nearby ERCS feeding center.
12 February:	By car Gewane to Mile (150 km) to Bati (100 km) to Kombolcha (45 km). Visited ERCS/RRC feeding center at Mile and ERCS/RRC shelter and feeding center at Bati.

13 February: By car Kombolcha to Harbo (10 km) to Kombolcha (10 km) to Alamata (215 km). Visited offices of CONCERN at Harbo and Ethiopian Water Works Construction Authority (EWWCA) at Kombolcha.

14 February: By car Alamata to Korem (20 km) to Korem (20 km). By air Alamata to Addis Ababa (400 km). Visited shelter camps and feeding centers run by RRC and SCF at Korem. Visited feeding centers and food distribution centers run by World Vision, Sisters of Charity, and RRC at Alamata. Also visited Alamata town.

2. Findings

2.1. Gewane Feeding Station

The feeding station is located two to three kilometers from Gewane town and about 200 meters from an established village. Operated by the ERCS, the station at the time of the visit was providng supplementary feeding to approximately 1000 people with another 1500 receiving dry rations. Some shelter is available at the camp for the very weak and sick and some people have erected temporary huts of woven reeds outside the camp. Since the feeding station began operations only ten days before the visit, the feeding shelters, kitchens, and latrines were not yet fully completed.

No permanent water supplies are available in the feeding station. The nearby village has an elevated water tank that apparently is supplied by the Gewane town system. The camp, however, does not draw upon the village water supplies. Instead, it obtain its water from Gewane town by means of a 9000 liter tanker truck which makes two trips per day. At first, the tanker made up to four trips per day, but this left the town water supply inadequate for its own needs, and the camp supplies were reduced to two tankers per day. The ERCS camp administrator reported that there were no plans to develop any further water supply system for the camp.

Separate pit latrines for men and women are located about 100 meters from the center of the camp. There are no showers or specific bathing or clothes washing facilities. Some work has began on the construction of a ground level reservoir to hold water brought by the tanker truck. At

present, people fill their containers directly from the tanker. Spillage occurs during this process and people then must walk through muddy pools to reach the tanker tap. At the time of the visit, an ERCS engineer was working in the camp for a few days.

Recommendation:

(1) Complete the water storage reservoir.

(2) Consider developing an on-site source of water for the camp - either several shallow hand dug wells with handpumps or a borehole with a diesel engine and pump.

2.2. Mile Feeding Station

The feeding center is located about 5 km from Mile town and about 0.5 km from the Mile River. Operation of the center is by the ECRS and the RRC. Approximately 2200 camp residents receive supplemental feeding and another 7000 non-residents, who live in temporary reed huts outside the camp, receive dry rations.

Water supply for the camp comes from two sources. The primary source is the Mile River, from which water is pumped from an open infiltration well on the river bank to a 130,000 liter storage tank. The water then flows by gravity to two clusters of water taps in the camp. The centrifugal pump, diesel engine, piping, storage tank, and taps were supplied by OXFAM within the last two months. Unfortunately, the system was not working at the time of the visit, and the camp was being supplied water by tanker trucks from a borehole 25 km away. The camp was receiving two or three tankers per day (18,000 liters), which discharged their water into a 27,000 liter capacity "pillow tank". Water from this flexible tank was being drawn off for the distribution taps and a solar water heater. Shower stalls were available but had been disconnected in order to conserve water.

Because of the current shortage of water, people from the camp area were drawing some of their supplies from the river, which is highly contaminated by human and animal wastes. According to OXFAM, a recent bacteriological test of the river water gave an E-coli count of about 3000 per 100 ml.

It is probable that improper operation of the primary water system contributed to its breakdown. An inspection of the infiltration well showed that a channel had been opened between the well and the river in order to increase the inflow of water into the well. The high silt load in the river, therefore, was not filtered out by the water flowing through the sands of the riverbank, with the result that turbid waters in the well entered the intake pipe and eventually clogged the pump. When the pump stopped, there was no one in the camp with either the necessary tools or knowledge to carry out the required cleaning of the pump chambers. At the time of the visit, camp workers were digging a new infiltration well, but this too was directly (and improperly) connected to the river by an open channel of water. A camp official stated that they had not yet informed OXFAM of the problem with the pump.

The camp official was advised not to connect the infiltration well directly to the river because it was necessary for the river water to pass through the sand before entering the well. He also was advised to inform OXFAM of the problem and obtain proper guidance on the design and construction of an infiltration well.

Recommendation

(1) Dig a larger and deeper infiltration well on the river bank. Keep the foot valve of the intake pipe at least 0.5 meter above the bottom of the well. Consider filling the well with graded gravel, stones, and boulders as a means of improving sediment removal.

(2) If the river bank sands are not suitable for an infiltration well, consider drilling a borehole for the camp.

(3) Continue the practice, recommended by OXFAM, of chlorinating the water pumped into the storage tank.

2.3. Bati Shelter Camp

Bati camp is adjacent to Bati town and is situated alongside a small stream which separates the camp from the town. At the time of the visit, 17,000 people were resident in the camp, down from a high of 28,000 reported several weeks earlier. The majority of residents are sheltered within canvas tents.

The camp has been drawing water from the town system since the camp was established in 1984. In recent months, the Ethiopian Water Works Construction Authority (EWWCA) has made several improvements to the camp water supply and OXFAM has provided a 45,000 liter storage tank, piping, and water taps. At present, there are two boreholes within the camp. One is equipped with a diesel engine and direct drive submersible pump which pumps to the OXFAM tank. The ERCS camp coordinator claimed the diesel engine, which was recently installed by EWWCA, is unreliable and should be replaced. The other borehole, until recently, had been abandoned, but EWWCA has just rehabilitated it and was in the process of installing a diesel engine and direct drive submersible pump. This borehole is also connected to the 45,000 liter storage tank.

Water from the storage tank flows by gravity to several water tap distribution frames supplied by OXFAM. The ERCS coordinator said that the pressure in the line was not sufficient to supply all of the taps in the camp, and even when the second borehole became operational, overall water supply would be insufficient for camp needs. He claimed that the camp used about 80,000 liters per day, but to obtain this total EWWCA tanker trucks made daily trips to Kombolcha, 30 km to the west, to obtain water. Water from the tanker trucks is currently stored in large pillow tanks at the upper end of the camp.

Two areas with multiple water taps were inspected. Both had queues of people, which were kept orderly by the guards, but both had poor drainage, which caused people to walk through muddy pools to reach the taps. New shower stalls were under construction but will not be used until the water system pressure and capacity are increased. Water is reportedly available in the camp for drinking, cooking, and bathing, but not for clothes washing. Camp officials have posted guards to keep people out of the adjacent stream, which is said to be highly polluted with bilharzia.

The camp coordinator reported that pit latrines had been built on the peripheries of the camp and that vacumn tankers were used to empty them when they became full. This could not be confirmed as no one was available to show me the latrines. When asked what, if any, water supply and sanitation improvements were needed in the camp, the coordinator gave the following list:

(1) new water generator (diesel engine)

(2) tanker truck controlled by the camp

(3) more steel pipes

(4) water disinfection chemicals

(5) another borehole

EWWCA has moved a Halco rotary drilling rig to Bati to drill a new borehole to augment the town water supply.* It was not possible during the visit to assess the overall capacity of the town system. When the current works are completed, it appears that the town and the camp will each have two boreholes. However, it is not certain whether the two boreholes in the camp will be adequate to meet all of its water supply needs.

Recommendation

(1) Assess the capacity and overall reliability of the new water supply system being built for the camp and for the town.

(2) If the camp system, as planned, does not have the capacity to provide camp residents approximately 10 liters per capita per day (lcd), determine whether new pumping and storage equipment is required for the two camp boreholes or whether a third borehole is needed for the camp.

2.4. Harbo Feeding Center

The Harbo center is located along the main tarmac road 20 km south of Kombolcha. The camp is operated by CONCERN and has a resident population of 6,000 to 7,000. Because of security problems, I did not enter the camp but instead met with the camp engineer at the residence of the CONCERN staff.

The engineer reported that the camp uses two boreholes. One belongs to the Harbo town supply but is also connected to the camp. The other was drilled for the camp by EWWCA with the Halco drilling rig (currently at Bati) one month ago. Unfortunately, the pump and engine set for this borehole has malfunctioned and CONCERN is waiting for EWWCA to repair the system.

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* Both the NWRC and EWWCA have stated that the Halco drilling rig will be used in Wello Region for improving water supplies at shelter camps and feeding centers.

Water consumption at the camp is reported to be about 50,000 liters per day. When both boreholes were operating, they supplied the camp with 15,000 to 20,000 liters/day. Another 26,000 liters per day is brought by tanker truck (two trips daily) from Kombolcha. The remainder of the daily water needs is taken directly from a nearby river (polluted) by the camp residents. Water is stored at Harbo in a new 13,000 liter storage tank supplied by OXFAM and in an old 5,000 liter tank. When the camp supply is operating, water is distributed to the people through two OXFAM water tap frames. The camp engineer reported that 200 pit latrines have been constructed in the camp. CONCERN has had some problems, however, in encouraging the camp residents to use the latrines and in finding sufficient eucalyptus poles for constructing the latrine slabs.

Additional needs: The camp engineer indicated that Harbo camp needs another borehole* plus additional technical assistance for system construction and better training for pump operators.

2.5. Alamata Feeding Center

The Alamata feeding center is a non-residential facility located within Alamata town. World Vision operates two feeding sites serving a total of 10,600 persons daily and the Sisters of Charity operate a third feeding site serving an additional 10,000 persons. All persons served by these centers must find shelter in the town, whose population has swelled from 15,000 to over 65,000 in the past year. In addition, the RRC distributes dry rations to the local peasant association.

Both the town and the feeding sites draw their water from the town water system. The main source of water is a river from which a 6 km pipeline conducts water to a 40 year old concrete reservoir of 216,000 liter capacity in the town. From the reservoir, a gravity main carries water through the town, and a recently installed bypass carries water to a new 50,000 liter storage tank supplied by OXFAM to serve one of the two World Vision feeding sites. Water is available at this site through several OXFAM tap distribution frames. In the town, water from the main concrete reservoir is distributed through 14 public fountains, of which only six are reported to be functioning.

* EWWCA officials have indicated that the Halco drilling rig will move to Harbo camp as soon as it completes its work at Bati.

A second source of water is provided by two boreholes in the town, one of which pumps directly to the old concrete reservoir. Several other old boreholes are in the vicinity of the town but are not used at present.

Overall, the Alamata water system is woefully inadequate for the town, the feeding center, and the tens of thousands of additional people that have flocked to Alamata because of the drought. During the rainy season the pipe intake at the river frequently becomes blocked with sand. Moreover, the 6 km gravity main to the concrete reservoir was severely damaged in a flood last December. Although the pipeline was promptly repaired, the 4-inch cast iron main continues to leak and in any event cannot carry sufficient flow to meet all of the needs of the town and feeding center. The mayor of Alamata estimated that the system provides about 300,000 liters per day but the town and feeding center require at least twice as much. A total of 50,000 liters per day is currently provided to the upper World Vision site and the Sisters of Charity site adjacent to the OXFAM storage tank. The lower World Vision feeding site has no direct water line, and water must be obtained from public fountains in the town. World Vision intends to replace the 4-inch cast iron main with a larger 6-inch pipeline, but no construction date has yet been set.

General sanitation and excreta disposal pose serious problems to the town and feeding center. Being non-residential in nature, the feeding sites cannot easily control the sanitation practices of the people coming for food. The problem is made worse by the four-fold increase in town population. Latrines have been constructed at the feeding sites but defecation behavior is difficult to control outside the sites. As a result, several open areas leading to the sites have become large communal toilets. The danger of contamination of the town water supply is high, especially since disinfection of the water is not practiced. According to the mayor, the priority water needs of the town are chlorination of the water supply, construction of a larger reservoir, and improvement of the 6 km intake pipeline.

Recommendation

(1) Redesign the pipeline intake chamber at the river to prevent clogging with sand.

(2) Replace the existing 4-inch cast iron gravity main from the intake to the reservoir with larger diameter pipe capable of serving both the town and the feeding center.

(3) Provide some disinfection of the water at the reservoir. Ideally, this should be an on-line chemical feeding unit on the pipeline leading into the reservoir. As an emergency expedient, a simple drip chlorinator could be installed on the reservoir tank itself.

(4) Provide additional latrines outside the feeding sites. These latrines will need to be cleaned daily to encourage people to use them.

(5) If the supply of water from the river cannot be increased to meet the needs of the town and camp, consider rehabilitating one or more of the old boreholes in the town.

2.6. Korem Shelter and Feeding Center

Korem is the site of the largest shelter and feeding center in the country. SCF and the RRC each operate separate camps providing both shelter and feeding. According to an RRC official, the SCF camp provides shelter and special feeding to 12,000 people plus dry rations to another 7,000 to 8,000, while the RRC camp provides feeding for 10,000 people and dry rations for an additional 5,000. Overall camp populations, however, may be much higher. OXFAM estimates the two camps to contain between 50,000 and 60,000 people. The water supply systems for the two camps are completely separate. The SCF camp draws water from a new borehole, 75 meters deep, which is equipped with an electro-submersible pump that pumps to a storage tank on the grounds of a nearby secondary school. From the tank, the water flows by gravity to several taps in the feeding center. The yield of the borehole is said to be just adequate for the SCF camp, leaving no surplus for the RRC camp. The borehole and pumping equipment were provided by EWWCA, while the storage tank was supplied by OXFAM. The water situation in the RRC camp is far more limited. The main source of supply is a 31 meter deep borehole, located in the camp, which is equipped with a diesel engine and a direct drive submersible pump. Water is pumped to a 15,000 liter elevated storage tank, from which it flows to four tap distribution frames. The pump is operated 12 hours per day and pumps approximately 45,000 liters daily. However, the supply is inadequate for the needs of the camp and water is available at the taps for only a limited period each day. EWWCA has provided a second diesel engine to allow the borehole to be pumped continuously (using both engines alternatively), but this engine was inoperative at the time of the visit.

Two springs (not visited) are reportedly used as a supplemental source of water for the camp.

An OXFAM report dated January 1985 suggested three possibilities for increasing the water supply to the RRC camp: (1) drilling a new borehole, (2) pumping from a river separating the camp from the town, and (3) pumping from the springs currently used as a supplemental source of water. The report stated that both OXFAM and EWWCA favor the third alternative as it can be implemented very rapidly.

3. Conclusions

The water supply and sanitation conditions resulting from the current drought can be described in terms of camps, towns, and the general countryside. All have been affected by the drought and the associated famine. The camps, which include emergency shelter areas, feeding centers, and food distribution points, have the most noticeable problems because they are very new (some are only a few months old) and have generally been unable to develop water and sanitation systems adequate for the populations being served. In the towns adjacent to the camps, the existing water systems, which were generally inadequate to begin with, are increasingly overtaxed by the burgeoning populations seeking emergency food and shelter.

Thus, the problems of both camps and towns are intertwined. One cannot solve the problems of one without at least considering the problems of the other.

And finally, the water problems of the camps and towns can only be fully understood in terms of the severe drought conditions existing throughout the countryside. Most surface water sources have disappeared. Rivers are down (only the Awash and Mile Rivers were seen to have water) and most streams have completely dried up. The fields are burnt and dusty, and there is little to be seen to keep people on the land. Throughout the region, there is a constant movement of people towards the towns and camps for food, water, and medical attention. Although the water supply conditions in the towns and camps may be inadequate, they are invariably better than those in the villages.

Several general conclusions can be made about the water supply and sanitation conditions in the drought-affected areas of Wello Region:

(1) Although recent water supply improvements could be seen in all of the camps visited on this trip, the availability of water at all sites was still inadequate for basic health purposes. Accurate figures were not available, but rough estimates indicate water consumption rates of 3 to 7 lcd for the camps and feeding centers described in this report.

(2) There is need for improved water supply and sanitation facilities for non-resident populations using feeding centers.

(3) Most shelter camps and feeding centers have given primary emphasis to food distribution and feeding needs and relatively minor concern to water supply and sanitation. The problems arising from inadequate water and sanitation, thus, become increasingly severe as camp populations rapidly expand.

(4) There are insufficient numbers of qualified engineers and sanitarians to expand and improve water and sanitation systems in the camps. In general, the few available engineers do not have trained technicans and works supervisors to help carry out needed improvements.

(5) In some cases, problems persist because of a lack of funds, but more commonly the problems remain unsolved because of the absence of special equipment, difficulties of transport, or the shortage of trained personnel.

(6) Coordination is often weak between the organizations operating camps and the EWWCA. Donor organizations take insufficient advantage of the resources available in government and other donor organizations.

(7) Similarly, coordination appears to be weak among organizations operating camps that are adjacent to each other. The general tendency seems to be for such camps to act independently rather than collaboratively.

(8) The reliability and continuous operation of water supply systems in camps is seriously limited by a lack of trained pump operators, shortages of spare parts and fuel, and the general absence of rapid back up maintenance services for major repairs.

(9) When camps draw their water supplies from nearby towns, they invariably place great pressures on already over-strained town systems.

(10) The presence of a camp near a town often attracts large numbers of people to the town area, which further aggravates the problems of water shortages and also causes sanitation problems in squatter areas.

4. Recommendations

Planning and coordination:

(1) Consider the water supply and sanitation needs of each new camp before it is established. Avoid siting a camp where it will be difficult to ensure an adequate supply of water.

(2) Include EWWCA in all discussions of new or improved water supply systems.

(3) Encourage closer coordination between operators of camps and donor organizations willing to provide technical assistance, equipment, and materials. Establish an updated assessment of water and sanitation needs plus a roster of organizations with resources available for such needs.

Design and construction:

(1) Establish standard criteria for water supply and sanitation services in camps and feeding centers. For example, 5 lcd could be set as a minimum water consumption level for emergency start up operations and 10 lcd for normal camp operations. Similarly, minimum criteria should be established for latrines, drainage, and refuse disposal. Encourage all camp operators to attain these minimum levels.

(2) To the extent possible, standardize equipment and materials in order to make spare parts more readily available and to allow mechanics to be more familiar with necessary repair procedures.

(3) As a rule, develop at least two independent sources of water for large camp facilities. Camps with only a single water source are at great risk in the event of a mechanical breakdown or source contamination.

(4) Because few reliable surface water sources exist, new boreholes should be drilled near existing camp areas. These boreholes should be sited so that they will be available for use in the future by nearby towns or villages when the emergency camps are no longer needed.

(5) Provide disinfection treatment for all water systems using rivers or streams. Surface water sources are likely to be contaminated by upstream users.

Operation and maintenance:

(1) Upgrade the training of pump operators at the camps. At the least, such personnel should be able to carry out simple dismantling and cleaning operations on pumps, engines, and pipelines.

(2) Provide a basic set of tools to pump operators to allow them to carry out the above maintenance.

(3) Equip a roving engineer or mechanic to visit each camp on a regular schedule, perhaps every two to four weeks, to check on the operation and status of the water system.

(4) Make advance arrangements with EWWCA or some other organization to provide major repairs when requested.

APPENDIX G

Lalibela Field Report

Office of Assistant Secretary General

for Emergency Operations in Ethiopia

Field Trip Report

on

Visit to Lalibela Feeding Centers

25 February 1985

by

Dr. Dennis B. Warner

Water Supply Specialist

7 March 1985

On February 25, 1985, Dr. Dennis B. Warner visited the World Vision relief camp at Lalibela on behalf of the Office of the Assistant Secretary General for Emergency Operations in Ethiopia. Travel by chartered aircraft from Addis Ababa to Lalibela and return was made possible through the assistance of World Vision.

Purpose of Trip:

(1) To assess the general status of water supply and sanitation facilities in and around the emergency relief centers of Lalibela.

(2) To identify immediate needs for water supply and sanitation improvements in the above area.

(3) To recommend priorities of needs for coordinated water supply and sanitation actions by both donors and operational agencies.

Officials Contacted:

Roger Bruce, M.D.	Technical Director, Lalibela Feeding Center, World Vision
Paulos Gulilat	Project Manager, Lalibela Feeding Center, World Vision
Tamrat Gebre	Administrator, Lasta Awraja, (Lalibela) Wello Region
Ben Fawcett	Engineer, OXFAM, Addis Ababa

Findings:

Lalibela town is situated in Lasta Awraja in northwest Wello Region approximately 75 km west of the main Addis Ababa-Asmara road. The town has a normal population of 5,000 but a recent influx of people has raised the total considerably.

There are two feeding centers located on the outskirts of the town. The first, run by World Vision, provides supplemental feeding to about 8,000 people, of which 6,000 are fed within the

World Vision compound and the remainder fed outside the compound. The total number being fed is currently increasing by approximately 50 people per day. World Vision also maintains a separate shelter area opened in late January, in which 7,000 people are housed under plastic sheets.

The second feeding center is run by the Committee for German Emergency Doctors (GED). Approximately 1,500 people receive supplemental feeding here. In addition, the RRC distributes dry rations, but no statistics were available as to the number of people receiving grain.

Because of a lack of time, actual visits were made only to the World Vision compound and its associated water supply and sanitation facilities.

Water for the two feeding centers and most of the town is provided by the municipality. The primary water system involves pumping from a shallow well at the confluence of two streams located below the high plateau on which Lalibela resides. Water is pumped through two main stages more than 500 meters to a 140,000 liter concrete storage tank on top of the plateau. From the tank, water flows by gravity to the town and to smaller storage tanks at the two feeding centers.

A 45,000 liter storage tank, located adjacent to the World Vision compound, supplies water within the compound through three multiple tap distribution frames. The piping, storage tank, and taps were provided by OXFAM and were installed by EWWCA technicians and a GED engineer in December 1984.

The GED feeding center is supplied water by two 5,000 liter storage tanks and a tap distribution frame. The tanks and tap frame were supplied by OXFAM.

The amount of water actually available to the town and the feeding centers is very inadequate for their needs. Although no figures are available for the supply to the town, it is estimated that the World Vision feeding center averages 6,000 to 7,000 liters per day, while the GED feeding center receives from 3,000 to 4,000 liters per day. World Vision officials reported that their storage tank normally receives only a few centimeters of water per day and that approximately half of the time there is insufficient water for the preparation of meals at the feeding center. As a result, there are no bathing or clothes washing facilities for either the staff or shelter residents. Water is available in limited quantities only for the most basic necessities.

Because of inadequate pumping capacity at the first high-lift stage, the water system is unable to supply the necessary quantities of water for the town and feeding centers. The undersized pump and engine set which is currently at this stage was installed last year only as a temporary measure. UNICEF has supplied a new double set of properly-sized pumps and engines, and this equipment is now in Lalibela awaiting installation by Ethiopian Water Works Construction Authority (EWWCA) team from Kombolcha. Officials of EWWCA, UNICEF, and OXFAM are confident that the new pumps and engines will be adequate for the combined needs of the town and feeding centers. What is not certain, however, is whether there will be sufficient fuel for the engines. At present, the various diesel engines are operated by the municipality from 4 to 8 hours per day. Despite contributions of fuel by World Vision, GED, the Ethiopian Military, and others, shortages occur and the pumps occasionally must be shut down. Larger engines and pumps are likely to require more fuel than the old pump sets. According to the Administrator of Lasta Region, the shortage of fuel is the real constraint to increasing the town water supply.

There is some thought being given to tapping springs located approximately 6 km from the town. A comprehensive investigation of this possibility has not yet been made. At present, a small part of town receives piped water from another nearby spring.

Sanitation within the World Vision compound is very good. Proper drainage areas and soakaways have been constructed around the water taps, and in two instances excess water is conducted to a nearby garden for irrigation purposes. Two types of latrines have been built. The first consists of 24 individual enclosed latrines with concrete slabs, and the second is merely an open earth trench approximately 10 meters long. Camp residents are allowed to use either latrine, and the trench model is reported to be the more popular one. World Vision actively enforces the use of latrines with sanitary guards. During the visit to the feeding center, two sanitary guards were fired for not upholding camp restrictions against indiscriminate defecation by camp residents. Outside of the World Vision property, however, sanitation controls are not enforced. The area immediately below the World Vision storage tank has become an open communal toilet.

Sanitation conditions were not directly observed at either the World Vision shelter area or the GED feeding center.

In summary, there is a severe water shortage in the two feeding centers. It is estimated that the current availability of water allows only 1 to 2 liters per capita per day (lcd). Sanitation within the feeding centers is good but uncontrolled defecation outside the centers poses serious health hazards. Installation of new pump and engine sets on the first stage of the town water system should solve the problem of pumping inadequacy, but the question of the availability of diesel fuel has not been resolved.

Recommendations:

(1) EWWCA should install the new UNICEF-supplied pumps and engines in the town water system as soon as possible. These pumps and engines are already in Lalibela.

(2) Once the new pumps and engines are installed, determine the diesel fuel requirements for the town water system. Establish an agreement between the relevant organizations regarding contributions of fuel to meet system needs.

(3) Work out an agreement between the municipality and the feeding centers regarding the clean up of the areas where uncontrolled defecation has occurred.

(4) Once the supply of water to the feeding centers is adequate, provide bathing and clothes washing facilities for shelter residents.

APPENDIX H

Axum Field Report

Office of Assistant Secretary General

for Emergency Operations in Ethiopia

Field Trip Report

on

Visit to Axum and Adwa Feeding Centers

2-4 March 1985

by

Dr. Dennis B. Warner

Water Supply Specialist

7 March, 1985

Pre

On 2-4 March 1985, Dr. Dennis B. Warner visited Axum and Adwa on behalf of the Office of the Assistant Secretary General for Emergency Operations in Ethiopia.

Purpose of Trip:

(1) To assess the general status of water supply and sanitation facilities in and around the emergency relief centers of Axum and Adwa.

(2) To identify immediate needs for water supply and sanitation improvements in the above areas.

(3) To recommend priorities of needs for coordinated water supply and sanitation actions by both donors and operational agencies.

Itinerary:

2 March: By air (Ethiopian Airlines) Addis Ababa to Axum. By ICRC can to Adwa (35 km). Visited ICRC feeding center at Adwa.

3 March: Visited ICRC feeding center and RRC feeding center at Axum. By ICRC car to Adwa (25 km). Visited Adwa town water system.

4 March: By air (ICRC relief flight) Axum to Makelle. By air (RAF relief flight) Makelle to Addis Ababa.

Officials Contacted:

Rene Berchtold	ICRC Delegate for Axum and Adwa
Doug Nisbet	Water and Sanitation Engineer, ICRC
Berhanu Alamayu	Nutritional Field Worker, RRC feeding center, Axum

Findings - Adwa

Adwa is a town of about 25,000 located in northern Tigrai Region. There are two feeding centers in Adwa, one operated by the ICRC and the other operated by the RRC. Only the ICRC center was visited and no information was collected on the RRC facility.

The ICRC camp contains a feeding center, in which 380 children receive supplemental feeding, and a tented shelter area, which shelters the families of the children receiving supplemental feeding. The shelter area currently contains about 3,000 people. In addition to the above supplemental feeding, the ICRC distributes a monthly dry ration of 15 kg per person to 22,000 displaced persons plus a similar ration, but on a bi-monthly basis, to another 12,000 needy persons in Adwa town.

The camp draws its water supply from two sources. An ICRC tanker truck of 7,000 liters capacity makes 1 to 2 trips per day to Adwa to collect water from the town system. This water is pumped into five 1,000 liter storage tanks at the feeding center with the remainder put into a 45,000 liter storage tank near the shelter area. When water is available, the people draw their supplies from a tap on the large storage tank. The second source of water is a hand dug well (3 meters wide and 16 meters deep) on which is installed an India Mark II handpump. This well is situated near the storage tank and shelter camp. It is estimated that the average water availability from these two sources is about 10,000 liters per day from the town/tanker truck source and 15,000 liters per day from the shallow well/handpump source.

The town of Adwa draws water from two borehcles, each of which pumps to two 2,000 liter storage tanks. Each set of tanks supplies water to a single tap distribution frame and to an overhead spigot for filling tanker trucks. There are no private house connections in Adwa, and the approximately 25,000 residents of the town apparently draw their water from these two public taps.

In order to develop a more dependable source of water for the camp, the Ethiopian Water Works Construction Authority (EWWCA) is digging three large shallow wells near the camp. These wells are all 4 to 5 meters wide and currently have reached between 7 and 10 meters in depth. None has reached

any significant quantities of water and progress on all of them has been hampered by difficulties of digging through rock. If sufficient water is reached, it can be assumed that EWWCA will probably cover the wells and install handpumps.

At the time of the visit, two ICRC water specialists were at Adwa investigating the possibility of improving the water supply to the camp. One possibility was to replace the India Mark II handpump on the existing shallow well with an electro-submersible centrifugal pump and to pump water from the shallow well directly into the nearby 45,000 liter storage tank. One concern, however, was that the high speed centrifugal pump would pump the well dry before the storage tank could be filled. Another possibility was to replace the direct drive pump on the closer of the two Adwa town boreholes with a more powerful ICRC pump and thereby provide additional water for both the town and the camp. Testing of these two possibilities was scheduled to occur immediately following my visit to the area.

Sanitation facilities at the camp consist of trench latrines at the feeding center and near the shelter area. In both cases, the trenches were spanned with long poles on which the users were able to stand and the latrines were enclosed with either sheet metal (at the feeding center) or canvas (at the shelter area). The latrine at the feeding center was clean, but that at the shelter area was dirty and appeared not to have been cleaned recently. Although people are encouraged to use the latrines, sanitary guards are not used to enforce such behavior. The residents in the shelter area are told not to defecate in the vicinity of the tents or they will be expelled from the camp. According to ICRC officials, this warning has been sufficient to keep the immediate area around the tents clean.

No special bathing or clothes washing facilities are provided for the shelter residents, even though the hand-pump and storage tank provide relatively ample supplies of water.

In general, water supplies for both the camp and the town need improvement. The feeding center, in particular, needs a larger and more dependable supply than that currently provided by tanker truck.

Recommendations - Adwa

(1) Determine (as is currently planned) whether larger quantities of water can be obtained by (a) replacing the handpump on the existing shallow well with an electrical pump and (b) by replacing the direct drive diesel powered pump on the nearby town borehole with a more powerful electro-submersible pump.

(2) If recommendation (1) does not produce sufficient quantities of water, continue digging the three shallow wells in search of suitable water-bearing strata.

(3) If neither recommendations (1) or (2) prove feasible, consider drilling a new borehole for use of the town and the camp.

Findings - Axum

Axum town has a population of about 25,000. It is approximately 25 km northeast of Adwa. There are two feeding centers adjacent to the town, one run by the ICRC and one operated by the RRC.

The ICRC facility provides supplemental feeding to 320 children, plus general dry food distribution on a monthly basis to 21,000 displaced people and general distribution on a bi-monthly basis to 12,000 needy persons in Axum town. The general distribution in each case is reported to be 15 kg per person. Associated with the feeding center is a tent shelter area, in which families of the children receiving supplemental feeding are allowed to reside. At present, there are 1,626 people in the shelter area.

The ICRC camp draws its water directly from the Axum town supply. A pipe leads from the town system into the feeding center where it connects to several water taps. A further line takes water to a standpipe with two taps located about 200 meters from the shelter area. ICRC installed the pipes and taps at the time the camp opened in December 1984. The supply is dependable and water is always available. The ICRC, however, must pay the municipality Birr 0.75 per cubic meter of water. The current rate of water use is about 10,000 to 11,000 liters per day. Water supply within the town, however, is not as reliable as within the ICRC camp. The Axum hospital, for example, reportedly receives only intermittent supplies.

Sanitation facilities within the ICRC camp involve three latrine areas. One is an enclosed trench latrine attached to the feeding center. Covering the trench are poles and planks, over which wood ashes are sprinkled daily to help keep the area clean. The people coming to the feeding center are required to use this latrine. A second latrine consists of two complete metal buildings having concrete floor slabs with individual squatting holes. These latrines were built when the camp was first established. The camp residents apparently do not like such enclosed latrines and have not used them very much. At the time of the visit, these latrines were in need of a cleaning. The third latrine area is adjacent to the shelter area. It consists of two 10 meter long trenches shielded from the tent area by a single low metal wall. As at Adwa, there are no sanitary guards, but the camp residents are told that if they defecate within the shelter area they will be expelled from the camp.

Although water is ample for camp needs, there are no specific bathing or clothes washing facilities available for the residents.

The second feeding center is a small facility run by the RRC. A total of 1,095 people are sheltered within 74 tents. Supplemental feeding is provided for 450 of the residents and dry rations are given to 850 of them. Unfortunately, the supply of food to the camp is not always reliable and sometimes the feeding programs are interrupted.

Water supply in the RRC camp is very poor. The camp does not draw from the Axum town supply, but instead brings water by tanker from a silt-laden river near Adwa. The tanker brings water two or three times per week and discharges it into a 4,000 liter storage tank next to the feeding center. It is estimated that the camp uses between 1,500 and 2,000 liters of water per day from this source, which is less than 2 liters per capita per day. Some additional water is found by the camp residents at a large stone-lined dug well located 100 meters from the shelter area. The well currently has a few centimeters of muddy water in it.

In summary, the most serious problem at the RRC camp is the lack of a dependable and clean water supply. It is possible that the camp has been using a river as a source of water because of inability or reluctance to pay the water rate to the town. Whatever the reason, a camp

official indicated that there were plans to connect the camp to the town water supply in the near future.

Recommendations - Axum

(1) Immediately improve the water supply situation at the RRC camp by initially obtaining potable water by tanker from the Axum town supply and then as soon as possible connect the camp by pipe to the town system.

(2) Provide additional sanitation facilities at both the ICRC and RRC camps to allow the residents to wash clothes and, in particular, bathe children.

APPENDIX I

Donor Meeting on Emergency Water Supplies

R E P O R T

ON

INFORMATION MEETING ON WATER SUPPLY

AND ENVIRONMENTAL SANITATION

27 February, 1985

Held at the Assembly Hall of the Ethiopian Red Cross

The meeting was opened at 4:00 PM by Mr. Kurt Kansson, the Assistant Secretary General for Emergency Operations in Ethiopia. He introduced the following representatives of the National Water Resources Commission: Ato Melesse Endalamaw, Head of Planning, Ato Eshetu Habtemariam, Head of the Foreign Assistance Service, and Ato Mesfin Itenfisu, Senior Hydrologist. In addition to the NWRC representatives, there were approximately 30 representatives of United Nations, bi-lateral, and non-governmental agencies in attendance for the meeting. Apologies for not being able to appear were received from the Ministry of Health, Save the Children (U.K.), and CONCERN.

The Assistant Secretary General explained that the purpose of the meeting was to identify the needs for water supply and sanitation activities in the drought-affected areas, to find out what the various organizations were doing in these areas, and to determine what further activities were necessary to meet these needs.

Presentation by the National Water Resources Commission (NWRC)

Ato Melesse Endalamaw, the Head of the Planning Department of the NWRC, outlined the NWRC assistance requirements for water supply schemes in the drought-affected area of the country. Out of a national population of 42 million, 4 million are urban, of which 20 percent have potable water supplies, while 38 million are rural, of which only 5 percent have access to potable supplies.

Because of the drought, water resources have declined throughout the country, this includes rivers, springs, hand dug wells, boreholes, and groundwater levels. For example, of the approximately 1000 boreholes in Ethiopia, 200 are no longer operational because of a lack of spare parts and proper maintenance, 150 boreholes are no longer operational because of the lowering of the groundwater table, and 50 new boreholes remain uncompleted because of a lack of pumping equipment.

The goal of the NWRC is to provide potable water supplies to 2.9 million people in the drought-affected areas. The following strategies have been adopted to achieve this goal:

1. Maintain and repair existing, but malfunctioning, water supply systems.
2. Complete the partially constructed, but unfinished, water systems.
3. Improve the yield of existing water supply systems.
4. Augment existing water supply systems in towns serving as relief centers.
5. Construct new water supply systems in rehabilitation areas.

To meet the needs of these 2.9 million people, a total of 2230 schemes will have to be undertaken, as shown in Table 1. An increase in operational capabilities will be needed in several areas. For example, there are 38 drilling rigs in the country, but only 11 are in good condition, while the remaining 27 are inefficient and have been in service for 15 to 30 years. Thus, priority is being given to building up the construction and maintenance capabilities of the regional water authority offices in order to carry out the proposed projects and to keep existing and additional water systems operational. This includes the provision of new drilling rigs, vehicles, equipment and tools puls the addition of three senior hydrogeologists and two senior drilling experts.

The total assistance requirement cost of the above program is estimated at Birr 99 million, as follows:

	(Million Birr)
Pumps and generators	22.6
Casings	8.8
Pipes and fittings	13.6
Building materials	3.7
Construction equipment	1.3
Drilling rigs	28.9
Vehicles	8.4
Workshop and Maintenance equipment	9.3
Other equipment	1.7

To date, the NWRC has commitments in hand totalling Birr 25 million, of which approximately Birr 10 million is for machinery and equipment and Birr 15 million is for drilling rigs. The main donors in this effort are OXFAM, UNICEF, SCF(U.K), USA, SIM, and NORCHURCHAID.

Discussion

1. Donor Activities

Several donor organizations described their current water supply and sanitation operations.

Informal presentations were given by OXFAM, NORCHURCHAID, and the ICRC. Some organizations indicated they preferred implementing their own programs, while others stressed the importance of working through the NWRC or the RRC. In most cases, donor ogranizations become involved in water supply and sanitation activities as part of other on-going operations. The Chairman drew the attention of the participants to a questionnaire that had been given to each organization. He asked the representatives to complete the questionnaires, describing their agency's water supply and sanitation activities, which would then be compiled into a report on assistance in the water supply and sanitation sector.

2. Drilling Rigs and Drilling Operations

There was considerable comment on the proposed NWRC drilling program. It was pointed out that the projected increase in drilling capacity involved the acquisition of sophisticated drilling rigs requiring highly trained operational personnel. Although it was recognized that a variety of different sizes of drilling rigs was needed, the NWRC representatives were asked if smaller rigs and lower cost technologies were more appropriate to current needs. In reply, the NWRC representative stated that the technical assistance apsects were a strong component in all of their development plans. He added that there was a good existing supply of experienced drillers, and that new technicians were currently being trained at the Institute of Water Technology at Arba Minch. Furthermore, he indicated that lower cost casing pipes were being utilized in current operations.

The high capital cost of drilling rigs was questioned by one donor representative who stated that there was greater need at present for engines, pumps, and other equipment than for new drilling rigs. Other donors generally supported this position, some adding comments on the high costs of drilling operations and problems involved with the transport of drilling rigs.

3. Maintenance

There was widespread agreement that maintenance of water supply facilities needs to be improved. Several donor representatives commented on the shortage of spare parts for engines, generators, pumps, and drilling rigs. One representative stated that a project which supplied spare parts for drilling rigs would be very useful. Several participants felt that it would be better to repair and maintain existing schemes than to continually build new schemes which quickly become non-operational. A NWRC representative admitted that the Commission was not able to operate and maintain all water schemes in the country and, therefore, it welcomed such assistance from private agencies. One representative of a donor organization said that they preferred working within the Commission rather than as an independent agent, but they also believed it was not appropriate to encourage the Commission to construct new water schemes without giving it the capability to maintain old schemes.

4. Equipment Standardization

Some discussion was given to the problems inherent in using too many different types of engines, pumps, and other equipment in water supply schemes. At present, there is a wide variety of such equipment in Ethiopia and this causes problems in making repairs and stocking spare parts. Several donor representatives indicated that a standardization of equipment should be pursued. A representative of the NWRC replied that the Commission preferred Mono pumps for boreholes less than 100 meters in depth and centrifugal pumps for boreholes over 100 meters. He added that several types of handpumps were currently utilized but the Commission had found that the Mono and the India Mark II were the best models. The Chairman made a request at this point to the NWRC representatives to prepare a more definitive list of equipment that could be circulated to all the donor organizations to assist them in future project implementation.

On a related issue, all participants were given a copy of a paper prepared by CONCERN entitled "Proposed Schedule of Priorities for Engineering Work in Relief Camps." These guidelines are intended to establish criteria for the design of water supply, latrines, refuse disposal, shelters, and drainage in relief camps so that the most serious hazards to public health are dealt with first

5. Development Priorties

Many participants stressed that the choice of project technologies should be based on actual needs and ease of implementation and maintenance. Noting that deep drilling was very sophisticated and costly, several individuals called for the development of springs, shallow aquifers, and surface waters before drilling was attempted. One donor representative asked why the Commission rarely impounded surface waters for potable water schemes. The NWRC representative replied that the possibilities for surface impoundment were limited because of the current drought and also that such impoundments were normally considered by the Commission to be part of small and medium irrigation schemes rather than water supply schemes. However, they stated that simpler technologies do receive priority and that the Commission views drilling to be the last choice for water source development. To emphasize this point, it was noted that the NWRC plan for 2230 water schemes includes over 1500 schemes based on shallow wells.

A question was raised whether the 2230 schemes planned by the Commission will be for rehabilitation schemes or for existing villages. A NWRC representative responded by explaining that the main concern of the Commission was for the drought-affected areas. Many people had voluntarily migrated from these areas. Therefore, the plan gave consideration to both those who have moved and those who remained, although he added that it did not identify specific areas or sites.

6. Project Agreements

There are a variety of ways in which donor organizations can implement projects. Some organizations prefer to work closely with the Commission while others prefer to act independently. Representatives of the NWRC stressed that such choices were possible because the Commission did not have the capability of handling all water schemes. Thus, for example, a donor organization could bring in its own drilling rig. However, several questions were raised over the issue of technical assistance and it was not clear whether donor organizations were encouraged to bring in their own technical expertise or whether they should look to the Commission for such assistance.

The final issue dealt with the issue of project agreements between donor organizations and the NWRC. It was noted that many organizations have agreements with the RRC but they also negotiate directly with the NWRC on water projects. A representative of the NWRC commented that the Commission prefers to have project agreements directly with individual donors. He encouraged donor organizations to contact the Commission to discuss potential future projects. He added that the Commission would be responsive to the interests of the donor organizations and would provide them with project documents dealing with the types of projects or areas of the country in which the donor organizations wished to become involved.

The Chairman summed up the sense of the meeting in which there should be as much priority on maintenance, spare parts, and standarization of equipment as on new water schemes. He again asked the participants to complete the questionnaire and said that further discussions would be held between the United Nations' Office of the ASG/EOE and UNICEF to determine how to best use the information thus collected.

The Chairman then adjourned the meeting at 4:00 PM.

Actions Indicated by the Meeting

1.	Completion of questionnaire on water supply and sanitation activities	- All donor organizations
2.	List of boreholes to be drilled in 1985	NWRC
3.	List of standarized water supply equipment	NWRC
4.	Comments on engineering criteria for relief camps (Paper prepared by CONCERN)	All organizations operating relief camps.
5.	Compilation of questionnaire responses	Office of ASG/EOE
6.	Preparation and distribution of minutes of meeting	Offie of ASG/EOE

List of Participants

Name	Organization
Tim Clifton	British Embassy
Jinichi Yuki	Embassy of Japan
Bruce Adams	SIM
Tom Fellows	Food for the Hungry
Tom Fitzpatrick	CRS & CRDA
Don E. Commings	World University Service - Canada
Karl Harbo	EEC
Larry Clifford	ADRA
Reinhard Terus	W. German Embassy
K. A. Edwards	ECA
Karl Gustav Lundgren	Norwegian Church Aid
Dag T. Gsessing	Science Res. Council, Norway
Helmer Dahl	Chr. Michelsen Inst., Norway
Andreas Tonning	Norwegian Inst. of Tech.

Name	Organization
Augustine O'Keefe	CRDA
Alula Legesse	Ethiopian Red Cross
Magnus Hallgrimsson	LORCS
Mistre Awake	CONCERN
	Chinese Embassy
Shan Shu Qing	Chinese Embassy
Fikru Haileyesus	WHO
Danielle Villanovith	EEC Delegation
Grinling, John	ICRC
Cormack, Peter	World Vision
Higgins, Roy	World Vision
A. Getachew	ECS
Hugh Goyder	OXFAM
Kalidas Ray	UNICEF
R. Padmini	UNICEF
Stanley Dunn	CARE
Walter North	USAID
Ben Fawcett	OXFAM
Keith Salt	OXFAM
Haraldur Olafsson	Norwegian Church Aid
Dennis Warner	Office of ASG/EOE

TABLE 1

PROPOSED PROJECT COMPONENTS

Item No	Project Description	Type of System	No of Scheme	Population to be Served
1	Additional sources for towns and villages affected by influx of drought affected people	Bore-hole	60	150,000.00
2	Replacement for dried wells	"	150	375,000.00
3	Deepening of dried wells	"	50	125,000.00
4 *	New water sources in drought affected areas	"	185	462,500.00
		Hand dug and shallow tube wells	625	156,250.00
5	Water sources for relief and rehabilitation centers	Bore hole,	105	262,500.00
		Hand dug wells	625	156,250.00
		Spring capping	120	30,000.00
		Surface water development	110	275,000.00
6	Repair & Maintenance of existing rural water supply systems in drought affected areas including completion of partially constructed systems	Bore holes	283	707,500.00
		Hand dug wells	300	75,000.00
	Total:-		2230	2,888,750.00

* where no system was existing before.

APPENDIX J

Aid Organizations in Ethiopia

AID ORGANIZATIONS

Christian Relief and Development Association Members

ADRA (Seventh Day Adventist)	Lawrenze M. Clifford	158300
Baptist General Conference Mission	Demoz Deguma	201662
Catholic Relief Services	Frank Carlin	165527, 28, 29,33
CRDA	Brother Gus O'Keefe	167100 167102
CDAA	Monsgr. Robert J. Coll	123395 123766/123851
CONCERN	Fr. John Finucane	122236 123421
Ethiopian Catholic Secretariat	Tekle Rosario	124807 123395
Ethiopian Orthodox Church/DICAD	Elly Boon	110099
Ethiopian Evangelical Church Mekane Yesus	Solomon Gidada	111203
Hope Enterprises	Kassa Agafari	200628 112508
Lutheran World Federation/ World Service	Niels Nikolaison	115669 116914
Mennonite Economic Development Associates	Asrat Gebre	443820
Mennonite Mission in Ethiopia	Bob Hovde	180630 200716
Norwegian Save the Children REDD BARNA	Tom Tyrihjell	152846 152956
OXFAM	Hugh Goyder	163595
Philadelphia Church Mission Sweden	G. Fallsten	445287
Save the Children, UK	David Alexander	111464
Save the Children, US	Dr. Jerry Salole	131314
Seventh Day Adventist/Wordld Serv.	Glayds Martin	447220
Society of Int. Missionaries	Alex Fellows	112348
St. Mathew's Church	Rev. Colin Battel	112623
World Vision Int. Ethiopia	Cliff R. Benzel	159060,447400x209

OTHER PRIVATE VOLUNTARY ORGANIZATIONS

AFRICARE	Thmas Kelly	447400 x 316
CARE	Stanley Dunn	156285
Catholic Social Action Committee	Bro. Cesare Bullo	(04)400958 400384 400333
CDAA (Church Drought Action Africa)	Msgr. Robert Coll	123851 123766
Food for the Hungry, Int.	Thomas Fellows, Area Director	203664
German Emergency Doctors	Christiane V. Gaertner	
International Committee of the Red Cross (ICRC)	Leon de Riedmatten, Delegation Head	158121 158366
LICROSS	Mr. Person #15-44-74	157689 159144
Medicins Sans Frontieres	Briguitte M. Vasset	200441
Save the Children (U.S.)	Willet Weeks	447130 x 238
Swedish Save the Children (RADDA BARNEN)	Lars Christer Bjorck Resident Representative	446506

BILATERAL DONORS

Australia	Les Luck	448400 rm. 1003
Belgium	Paul J. Vermeirsch, AMB	181825
Canada	Terry Mooney, Counsellor	151100
Peoples Republic of China	Cheng Yongcan, Counsellor	200428
Cuba	Noel Sanchez Auila, "	203238
Federal Republic of Germany	Micael Pletsch, "	120433
Finland	Eso Jaasalo, Counsellor	203021
France	Duniel Droulers, "	124061
Italy	Giovanni Ricciulli, "	112424
Japan	Masaharu Wada, Counsellor	448215
Republic of Korea	Hoom Sohn, "	204490
Netherlands	Hendrik Heijnen, Charge	203300
Norway	Bunt Linjorn	
Spain	Enrique Romeu	115622
Sweden	Ann Wilkens	151255
Switzerland	Franz Berrer	201107
United Kingdom	Mike Alcock, Counsellor	182354
United States	Fred Fischer, USAID	110666

MULTILATERAL DONORS

EEC	Karl Harbo, Economic Advisor	151703 152252
FAO	Hans A. Dall	153487
UNDP	Dr. Kenneth King/Jorgen Lissner	154157
UNDRO	Asjborn Devold	155919
UNHCR	Nicaolas Bwakira Colin G. Mitchell	153998 153946
UNICEF	Dr. R. Padmini	153648
WFP	Desmond Taylor Burkard Oberle = #15-87-80	153717 154425
UN Sec. Gen. Task Force	Kurt Jansson	157468 157474

APPENDIX K

NGO Address List for Ethiopia

UNITED NATIONS NATIONS UNIES

OFFICE OF THE ASSISTANT SECRETARY-GENERAL FOR EMERGENCY OPERATIONS IN ETHIOPIA

22/2/85

NGO ADDRESS LIST

ORGANIZATION	CONTACT	BOX	TELEPHONE
*Adventist Development & Relief Association	Mr. Larry Clifford	145	15 85 07, 15 84 3(
Air Serv International	Mr. Larry Nicholson	127	44 74 00,
AFRICARE	Mr. Ricky Majette	2309	15 40 00
*Baptist General Conference Mission	Mr. William Murray	2323	16 15 51
Baptist Mission of Ethiopia	Mr. Linn Groce	5539	20 05 28, 20 05 29
CARE	Mr. Stanley Dunn	7410	15 62 85
*Catholic Relief Service	Mr. Frank Carlin	6592	16 55 27-9
Christian Blind Mission International	Mr. Cyril Gingerich	5674	12 27 71
Christian Relief Development Association	Bro. A. O'Keeffe	5674	16 71 00/02
Churches Drought Action in Africa		6592	12 38 51
*Church of Christ	Ato Behailu Abebe	3147	20 09 81
*Concern	Fr. John Finucane	2434	12 22 36, 12 34 21
*Ethiopian Catholic Secretariat	Abba Stephanos Tedla	2454	12 47 00
Ethiopian Cooperative Union of the Blind	Ato Andargachew	3057	44 96 92
*Ethiopian Orthodox Church/DICAD	Ato Zemedhun Bezuwork	503	11 96 61
*Ethiopian Evangelical Church Mekane Yesus	Dr. Solomon Gidada	2087	12 37 22, 12 37 25
Ethiopian Red Cross	Ato Girma Kidane	1932	15 71 63
*Faith Mission	Ato Melles Ogubazgi	30073	11 27 92
*Food for the Hungry International	Mr. Tom Fellows	127	20 36 64
*Finnish Mission	Mr. Roeninen	3833	13 01 39
*German Agro Action	Mr. Lothar Koering	1866	44 70 60
*German Committee Emergency Doctors	Mrs. Oertel	660	44 99 57, 44 57 40
*Hope Enterprises	Ato Kassa Ayafari	30153	20 06 28
International Committee of Red Cross	Mr. John Grinling	5701	15 81 21

ORGANIZATION	CONTACT	BOX	TELEPHONE
Japan International Volunteer Centre	Ms. Michiko Ogino	5650	18 51 09
Jerusalem Memorial of Ethiopian Believers	Ato Mekonnen Zewdie	3430	11 91 50
Jesuit Relief Services	Fr. Roland Turenne	147 Debre Zeit	33 80 70
Kale Heywet Church Devt. Programme	Dr. Mulatu Baffa	5829	15 41 70
League of Red Cross Societies	Mr. Anders Persson	195	15 44 74
Lutheran World Federation	Mr. Niels Nikolaison	40132	12 32 88/89
Medecins Sans Frontieres	Dr. Brigitte Vasset	1334	12 38 56
Mennonite Economic Development Associates	Ato Asrat Gebre	1165	15 06 87
Mennonite Mission in Ethiopia	Mr. Bob Hovde	70367	20 05 28
Menschen fur Menschen	Mr. Karlheinz Bohm	37 Harar	(05) 66 08 74
Norwegian Church Aid	Mr. Haraldur Olafsson	1248	15 89 98
Novib	Mr. Ad Becx	5674	20 08 00
Organization of Netherlands Volunteers	Mr. Harry Van Keulen	40675	15 01 59
OXFAM (U.K.)	Mr. Hugh Goyder	2333	15 91 56
OXFAM (U.S.)	Ms. Laura Kullenberg	2333	44 71 30
Philadelphia Church Mission	Mr. Gert Fallsten	529	44 52 87
Save the Children Fund (Norway) Redd Barna	Mr. Tom Tyrihjell	6589	15 28 46/56
Save the Children Fund (Sweden) Radda Barnen	Mr. Lars Christer Bjorck	3457	15 55 74, 44 65 06
Save the Children Fund (UK)	Mr. David Alexander	7165	11 14 64
Save the Children Fund (US)	Dr. Gerard Salole	387	13 13 77
Society of International Missionaries	Mr. Alex Fellows	127	11 23 48
SOS Kinderdorf	Ato Getachew T/Yesus	3495	20 05 94
St. Matthew's Church	Rev Colin Batell	109	11 26 23
Swiss Evangelical Nile Mission	Mr. Gerald Luthi	30909	12 04 65
Terre des Hommes-Netherlands	Fr. Jac Emmers	1010	13 83 27
Terre des Hommes-Lausanne	Mr. Jean-Michel Kuckmann	679 Dessie	(03) 11 11 27
World University Service of Canada	Mr. Walter Msimang	c/o UNHCR Dire Dawa	

* CRDA Members