CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION
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ETHIOPIA

Membership Water & Sanitation Survey

1991 - 1994

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Author's Note

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ds. June 1996

Preface

We have the pleasure in presenting the results of a survey of CRDA members involved in Water and Sanitation during the period 1991 to 1994.

The first Directory of NGO activities in the WATSAN sector from 1986-1990 was produced by UNICEF in 1991. Many Government agencies, donors, NGOs, UN and bilateral agencies found the Directory useful as it provided readily available information and promoted greater cooperation and understanding among the major actors in the sector.

The Christian Relief and Development Association commissioned the Arbaminch Water Technology Institute (AWTI) to undertake the second inventory with the main objective of providing an update of members' activities in WATSAN. This edition contains quantitative and qualitative information on water supply, sanitation, irrigation and hydropower projects implemented by CRDA members. We intend to update this directory annually.

It is our hope that this publication will serve as a useful source of information for all those involved in the WATSAN sector.

We would like to thank Mr Daniel Schotanus and the AWTI staff involved in the study. We would like to express our sincere appreciation to the CRDA Working Group for their valuable contribution throughout the study.

Finally, we want to thank UNICEF for their consent and encouragement to update the original directory.

Augustine O'Keefe (Bro.)
Executive Director
CRDA

Summary

NGOs entered Ethiopia en masse after the world-wide publicity given to the 1983-84 famine. Most NGOs were active in food distribution programmes and the provision of other basic services such as health, water and sanitation from a relief perspective. Some left after the crises ended, but many stayed on and diversified their programmes to include rehabilitation and development projects. A study of the water and sanitation sector between 1986 and 1990 reveals that 38 NGOs were active in WatSan programming, among them 5 local organizations. A new survey of the WatSan sector covering the period 1991 - 1994 was commissioned by the Christian Relief and Development Association in 1995 and carried out by the Community Development Research Centre of the Arbaminch Water Technology Institute among the CRDA members. The findings of this second study, intended to provide an update on members' WatSan activities are presented in this report.

United Nations coverage figures for Ethiopia, i.e. access to safe water supplies and proper sanitation facilities, in particular for the rural population, are among the lowest in the world. The rationale, therefore, for this second survey, as for the first, is the need to further improve understanding, coordination and cooperation between the many WatSan actors in order to provide more effective, efficient, appropriate, affordable and sustainable water and sanitation services. Compared to the previous survey, the number of NGOs with WatSan activities has increased significantly: 64 of the 100+ CRDA members, among them 21 indigenous non-government organizations. Together they expended over 150 million Ethiopian Birr (US $30m): 69% on water supplies, 4% on sanitation and 27% on small-scale irrigation projects and reached over 4 million beneficiaries (8.4% of the population).* 9 CRDA members are responsible for nearly 75% of these expenditures (see Figure I). Although members' WatSan activities are reported for all regions (except Harar municipality), the highest concentration is in areas with the greatest population densities, as is shown in Table I:

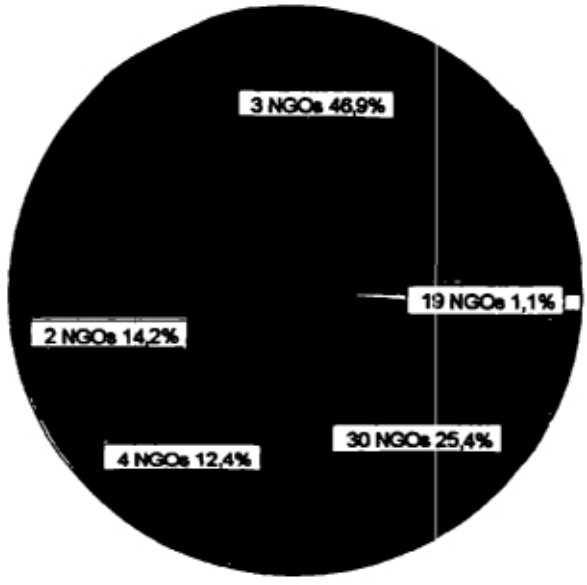


Figure I: Distribution of NGO WatSan Expenditures

Table I: Number of CRDA Members in WatSan per Region									
Region 1: Tigray	12	Region 2: Afar	2	Region 3: Amhara	24	Region 4: Oromia	31	Region 5: Somali	6
Region 6: Benshangul	2	Region 7-11: SEPAR	29	Region 12: Gambela	1	Region 13: Harar	0	Region 14: Addis Ababa	17

** To put this figure in perspective: During the same period the Ethiopian population increased by an estimated 6.5 million.*

Table II: CRDA Members WatSan Project Achievements 1991-1994			
Description	Number	Cost (EB)	Beneficiaries
Spring Protections	1,301	37,039,849	868,814
Hand-Dug Wells	1,110	9,265,094	567,761
Boreholes	406	24,447,563	636,534
Distribution Systems / Storage Tanks	306 / 212	5,224,163	923,050
Ponds	1,005	3,488,265	273,205
Roof Catchments	94	161,912	6,530
Non-Differentiated Water Projects		25,856,710	540,725
Sanitation		6,441,740	192,280
Irrigated Surface Area	11,199 ha	40,724,641	300,740

Spring development, borehole drilling and hand-dug well construction take up the bulk of the CRDA members' water supply activities. Pond construction for rainwater harvesting is practiced in drier regions where springs are unavailable and groundwater inaccessible. Distribution systems are attached to gravity schemes (springs) and motorized boreholes. Pit latrine and VIP latrine construction account for most of the members' sanitation expenditures. The majority of the small-scale irrigation activities are in the form of surface irrigation schemes. Some sprinkler and drip systems were also reported. A breakdown per project category is given in Table II.

Comparing the expenditures and number of beneficiaries on a project by project basis average costs per beneficiary per type of project were calculated and compared with the reported value of community contributions to the project in cash, labour and materials as illustrated in Figure II.The average community contribution for the overall WatSan sector is a meager 11.5% and reflects a preoccupation by most NGOs with the hardware components of project implementation.

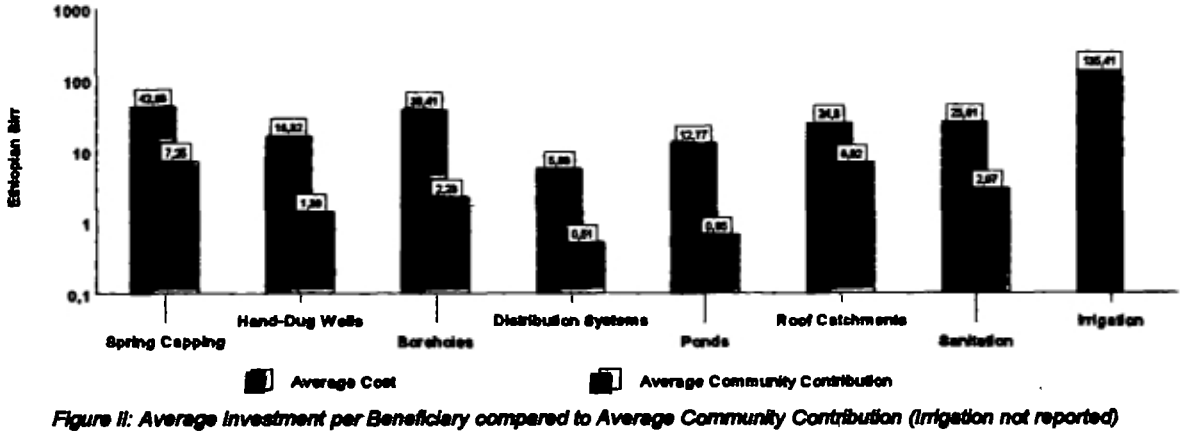


Figure II: Average Investment per Beneficiary compared to Average Community Contribution (Irrigation not reported)

86% of boreholes are drilled by the CRDA members with their own rigs (17 rotary rigs and 1 percussion rig). Most are fitted with handpumps, as are the majority of the hand-dug wells. With an average of EB 1,000 per meter, drilling costs are high. In line with government recommendations, a shift is occuring in favour of the installation of VLOM pumps, i.e. the Afridev, Aquadev, Akaki, Nira and Tara. As is shown in Figure III, previously the level of village level operation and maintenance handpumps stood a 12% of overall installation, currently this is over 50%. The non-VLOM India Mark 2 pump is the most commonly installed pump on deep wells and is expected to hold onto its leading position until a suitable VLOM alternative has been developed.

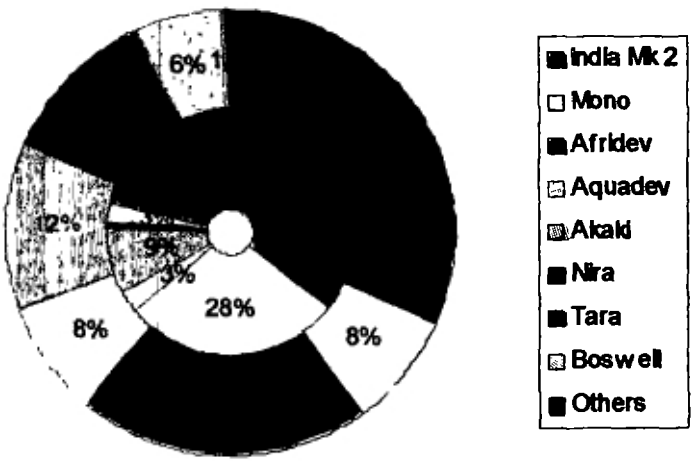


Figure III: Handpump Models in NGO Water Projects Inside: 1986-1990; Outside: 1991-1994

69% of the CRDA members with water development projects also include a sanitation component. Compared to the water and irrigation projects, however, the actual investment in environmental sanitation is very low and deserves greater emphasis for a more effective and sustainable community health promotion. At the same time, as illustrated in Figure IV, the cost per beneficiary for most latrine models is too high to be affordable and replicable without external subsidies.

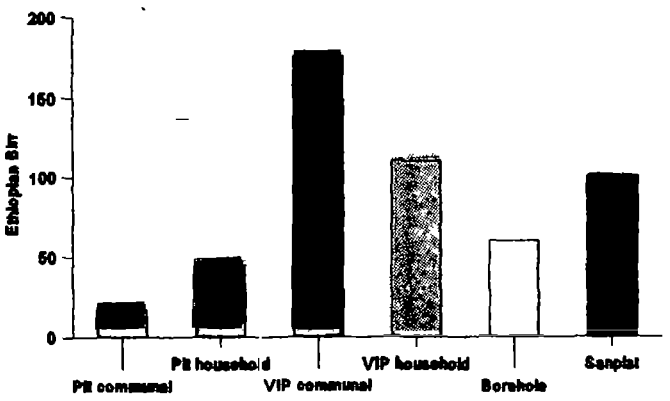


Figure IV: Cost/Beneficiary for various latrine models

Small-scale irrigation projects are carried out by one-third of the respondents, with one CRDA member accounting for 80% of the total acreage. Most concentrate on the physical provision of water to farmer-managed schemes. Further in-depth assessment is necessary of technical, environmental and social parameters to optimize performance of most schemes. Training is an important requirement for the further professionalization of NGO WatSan activities. CRDA is the major provider of technical and management training for its members.

Unfortunately many NGOs continue to show isolationist tendencies at a time when a concerted effort by all actors in the Ethiopian WatSan sector, including NGOs, government and the private commercial sector is the only way to dramatically improve access to safe water, proper sanitation facilities and food security for Ethiopia's population.

Contents

Part 2: Profiles

Figures

Tables

Boxes

Abbreviations & Acronyms

ASPF	Akaki Spare Parts Factory
AWTI	Arbaminch Water Technology Institute
CDRC	Community Development Research Centre (at AWTI)
CRDA	Christian Relief and Development Association
CYFWO	Children, Youth and Family Welfare Organization
EB	Ethiopian Birr (1991: US$1.00=EB2.07; 1993: $1.00=EB5.00)
EWWCA	Ethiopian Water Works Construction Authority
GO	Government Organization
GoE	Government of Ethiopia
GPS	Global Positioning System
ha	Hectare (10,000m^2)
MoH	Ministry of Health
MoLSA	Ministry of Labour and Social Affairs
MoNREP	Ministry of Natural Resources and Environmental Protection
N/R	Not Reported
NGO	Non-Government Organization
O&M	Operation and Maintenance
RRC	Relief and Rehabilitation Commission
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VIP	Ventilated Improved Pit (latrine)
VLOM	Village Level Operation and (Management of) Maintenance
WatSan	Water Supply and Sanitation
WEDC	Water, Engineering and Development Centre (Loughborough Univ.)
WSSA	Water Supply and Sewerage Authority

CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION

Membership Water & Sanitation Survey

Part 1: Analysis

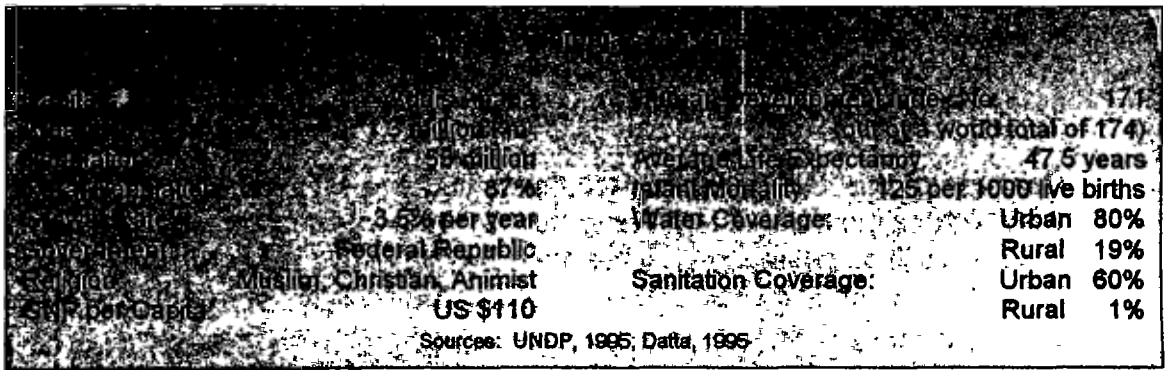
1 Introduction

Ethiopia joins the ranks of those who will not be able to achieve the United Nation's goal of *safe water and sanitation for all by the year 2000.* UNICEF and UNDP figures show (see Box 1) that water but in particular sanitation coverage is among the worst in the world. In fact, the situation is probably worse than these figures indicate, since analysis of the underlying data indicates that the coverage is often based on the estimated beneficiaries of cummulative water and sanitation (WatSan) projects and does not take into account the large number of projects which have fallen into disrepair since their construction.

Although not always appreciated by the other WatSan actors, non-government organizations (NGOs) i.e. international aid and development agencies, churches and other local organizations have played a substantial role in the sector. NGOs are likely to have been instrumental in providing at least half to three-quarters of the *rural* coverage figures.

The majority of NGOs entered Ethiopia after the world-wide publicity given to the 1983-84 famine. Most NGOs were active in food distribution programmes and the provision of other basic services, such as health, water and sanitation from a relief perspective. While some left after the emergency, many NGOs stayed on and expanded their programmes to include rehabilitation and development projects.

In October 1990 the Ethiopian office of the United Nations Children Fund (UNICEF) commissioned a study on the Water and Sanitation development activities undertaken by non-government organizations (NGOs) in Ethiopia from 1986 to 1990.



Although it was clear to most that NGOs were quite active in the WatSan sector, many were surprised at the outcome of the UNICEF study: The report, which was published in 1991, specified that the NGO investment in WatSan sector in Ethiopia during this 5-year period was over 115 million Ethiopian Birr, US $55.6 million (US $1 = EB 2.05). This was said to be as much as the combined rural water expenditures of the Ethiopian government's Water Resources Commission and UNICEF, the largest multilateral WatSan donor, combined for this period.

Before the publication of the UNICEF report, very limited qualitative as well as quantitative information was available about the NGOs active in Ethiopia's WatSan sector. Eventhough the government's Relief and Rehabilitation Commission (RRC) requested and presumably collected trimester reports from most NGOs with which it had signed agreements, this information was not commonly available to other parties. Periodic reporting of distilled information from NGO reports would have facilitated the coordination and cooperation between the relevant government agencies and the NGOs. In the event, the UNICEF NGO WatSan report served to partially fill the information gap and was widely disseminated among the NGOs and other actors in the sector, such as bi-lateral and multi-lateral agencies and various government agencies.

The report was found to be a useful and comprehensive reference on NGO WatSan activities, improving coordination and an exchange of information and lessons learned between NGOs, leading to more effective and efficient interventions in the sector.

Five years on from the publication of the first UNICEF NGO WatSan report, there is an urgent need for updating the available NGO WatSan information. At the initiative of the Water and Sanitation Interest Group, an elected body of NGO representatives meeting under the umbrella of the Christian Relief and Development Association (CRDA), a second survey was commissioned of NGOs active in the WatSan sector by CRDA.

The Community Development Research Centre of the Arbaminch Water Technology Institute (AWTI) in southern Ethiopia was asked to carry out the study for the period 1991-1994. The NGO survey was to have been carried out parallel to another AWTI research project, the inventorization of the WatSan activities of the national and regional government agencies. Unfortunately, however, after visiting many national and regional government offices, the inventory of government WatSan activities failed to yield adequate progress due to lack of organized information available from the respective agencies.

Because of this, the gathered NGO data and analysis will have to stand on its own, without the possibility of referring it to the context of government activities. But it will still be possible to pursue the main aim of this study, which is to provide an updated overview of activities as well as an analysis of trends and issues in the NGO WatSan sector.

The initial UNICEF study showed that in the 1986-1990 period the NGOs had their house in relative order. This study shows that NGO performance, while still having certain short-comings, has been further streamlined. Although the data is not available at this time, it should surprise nobody to find in time that, both in terms of quantity and quality, the NGO contribution will have proven to be on par with the efforts of the other actors in addressing the need for clean drinking water, environmental sanitation and small-scale irrigation.

This report presents the outcome of the inventory of qualitative and quantitative information in two parts:

Part 1 starts with a brief explanation of the survey context and methodology, followed by a detailed discussion and analysis of the collected data, divided into the main sections: Organizational Overview, Project Activities, Management Structure, Project Approach and the technical analysis of Water Supply, Environmental Sanitation, Irrigation, Hydro Power and Staff Training activities. Conclusions are then drawn and recommendations made concerning main issues and trends distilled from the analysis.

Part 2 presents an organizational profile and activity summary per NGO in alphabetical order. In contrast to the UNICEF report, which described the WatSan activities of each NGO in detail, this report summarizes the quantitative achievements, with the intention that it will be easier to periodically update this information.

2 Methodology

The study was subdivided into three phases: Data collection (August-September 1995); the database design and data entry (October-November); analysis, reporting and editing (December-March 1996). Distribution of draft report, NGO profiles for modifications to CRDA and respective NGOs (April-May).

2.1 Approach

Since the study was commissioned by CRDA, the study concerns the CRDA membership. From the CRDA computerized database directory a printout was made by activity sector, listing those members with specific water and sanitation sector activities. In consultation with the CRDA Water and Sanitation Interest Group, the AWTI Community Development Research Centre drew up a 10 page questionnaire covering a wide range of organizational, methodological as well as technical aspects of WatSan development. A deliberate effort was made to facilitate and simplify the answering of the questions by providing simple check boxes and cross tables for the most common alternatives, categories or numerical answers. For open answers and comments separate space was provided. A sample questionnaire is provided in the Annex.

Answering the 10 page questionnaire required precious time of busy managers and the four surveyors on this project frequently visited organizations only to find that a prearranged appointment with the knowledgable person could not be held and had to be rescheduled. Unfortunately, the response of some organizations could have been better.[1] Inevitably, some organizations (3) with known WatSan activities failed to respond altogether and have of necessity been left out of the survey.

2.2 Validity and Limitations

It is difficult to assess the absolute correctness of the information provided by each respondent. A number of organizations provided annual reports which provided some opportunity for cross-checking, but time and budget constraints did not allow for systematic control of the provided data. Especially the financial aspects of the WatSan projects may have been extracted from differing reporting formats, time-periods and summarized, rounded, etc. to give approximate values for a number of organizations.

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1 *In one case the surveyor was required to visit a particular office of a large organization 8 times and was then told to sit down and summarize the data from the four year period from a large stack of source documents herself. In several other cases, it proved extremely difficult to obtain full replies to the questions, especially where it concerned finances. By comparing the answers with other information provided, it also became clear that some respondents were apparently new to their positions and not completely aware of the activities carried out by his or her own organization in the previous 4 years.*

The analysis of the data is therefore based on the information as reported to the surveyors and may be found after further in-depth analysis to contain some factual errors.

There were some indications of respondents being unsure on the actual reporting period and possibly having included data on projects from before 1991.[2] This is most likely compensated by the fact that a number of organizations in this study did not provide all quantitative and financial data.

Where additional information was provided, the analysis occasionally was able to use this to supplement the answers in the questionnaires.[3] Where information was not fully provided by respondents (in about 28% of the cases), they were left out of the analysis of a particular subject, unless such additional information was provided for example from project or annual reports.

2.3 Coverage

The initial UNICEF report covered 38 organizations. The current study covers 64 organizations, with an overlap of 32 organizations also included in the first study. This corresponds to a near doubling in the CRDA membership over the previous 5 years. The 64 included NGOs represent a 96% response rate of the CRDA membership reportedly active in WatSan[4]. Since this study only concerns CRDA members, there are a number of NGOs not covered by this study, some of whom were included in the original study. It is however estimated that this study covers approximately 80-90% of the total NGO community in terms of WatSan activities and expenditures and may therefore be considered representative of all NGOs active in the sector.

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2 *Projects which may have been entered in the UNICEF report as ongoing per end of 1990, could have also been included in this study as completed in the current period, leading to a potential double entry.*

3 *The recent CRDA membership directory was also consulted for complementary data where the questionnaires were not completely clear.*

4 *Three organizations failed to return their questionnaire in time for inclusion in the report. Two organizations with minor WatSan programmes have since left the country and no project data could be obtained from them. Several organizations were not involved in implementing WatSan projects, but only funded other organizations to do so and were therefore left out of this study.*

3 Analysis

The analysis of the collected data follows the outline of the questionnaire. The Microsoft Access relational database programme (version 2.0) was used for storage and retrieval, allowing in addition for automated comparissons and cross references between the various categories and subjects. Some of the graphical analyses were made with Microsoft Excel (5.0).

3.1 Organizational Overview

3.1.1 NGO Identities

Of the 64 included NGOs in this study 21 are national organizations[5], the balance are international NGOs. 18 organizations checked the box for being religious organizations or churches, while additional information indicates that another 6 organizations have religious affiliations or identities. Of these 8 organizations are national religious or affiliated organizations. These various identities are illustrated in Figure 1.

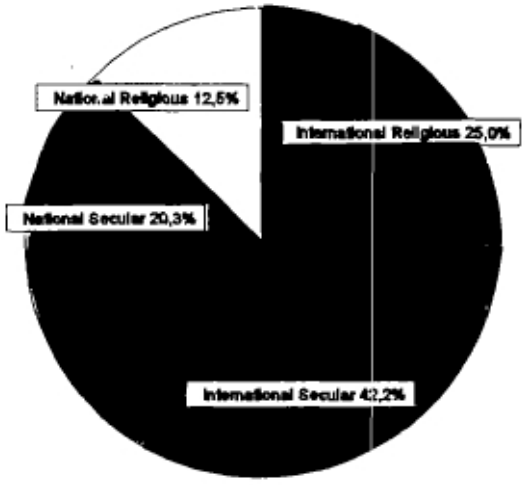

Figure 1: NGO Identities in WatSan

That these identities may change is shown by at least two agencies which were previously known as international organizations, but have now listed themselves as local NGOs. Another has an overseas board, but is listed as a local NGO. A fourth organization also ticked the national NGO option box on the questionnaire, but has recently been reincorporated into a government line agency from which it had originally sought to disengage itself.

3.1.2 Central Government Agreements

62 organizations reported general agreements with the Relief and Rehabilitation Commission (RRC) at the national level, which included all the international NGOs. 27 of these had one or more additional project or programme agreements with a line ministry or agency. The most popular being the Ministry of Health, with 14 general agreements, then the Ministry of Agriculture with 6 agreements, the Ministry of Natural Resources and Environmental Protection (MoNREP) or one of its subagencies (e.g. WSSA, EWWCA) with 4 agreements.

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5 *"National" in this report is used interchangeably with "local" and "indigenous" when refering to Ethiopian based organizations.*

Others government agencies with which the NGOs had signed agreements are the Children, Youth and Family Welfare Organization (CYFWO), the Ministry of External Cooperation, the Ministry of Education, the Ministry of Internal Affairs, and the Addis Ababa Municipality. One local NGO reported only an agreement with the Ministry of Labour and Social Affairs (MoLSA) and one reported no general agreement at all.

At the time of this study taking place, the government policies on NGO activities and agreements has again undergone significant changes, with the central agreement with RRC reportedly being replaced by an agreement with the Ministry of Justice. What practical consequences this will have is not clear at the time of writing.

3.1.3 Regional Government Agreements

At the regional level 34 NGOs reported project and/or programme agreements with the Relief and Rehabilitation Bureaus, the regional counterpart of the RRC. Partially overlapping with the first group, 20 reported agreements with regional bureaus of the various line ministries. 19 organizations reported no regional agreements.

3.2 Project Activities

3.2.1 Water Supply

60 organizations of the 64 are involved in water supply projects, but only 22 distinguished water supply as their highest priority. Most in fact saw their involvement in water as supporting their main institutional objectives. Only 10 organizations differentiated between their priority activities and the funds allocated to these activities: 4 listed the expenditures on water supply as being the highest, while the activity was not their highest priority and, vica versa, 6 had higher expenditures in another sector, eventhough water supply was their main priority.

3.2.2 Environmental Sanitation

In terms of environmental sanitation activities, 8 organizations listed sanitation as the highest priority, but 5 did so in combination with giving the same priority to water supply (3 of these also included irrigation as their highest priority). In terms of expenditures, 3 reported environmental sanitation as incurring their greatest expenditures, while two others grouped the expenditures together with water supply as their highest.

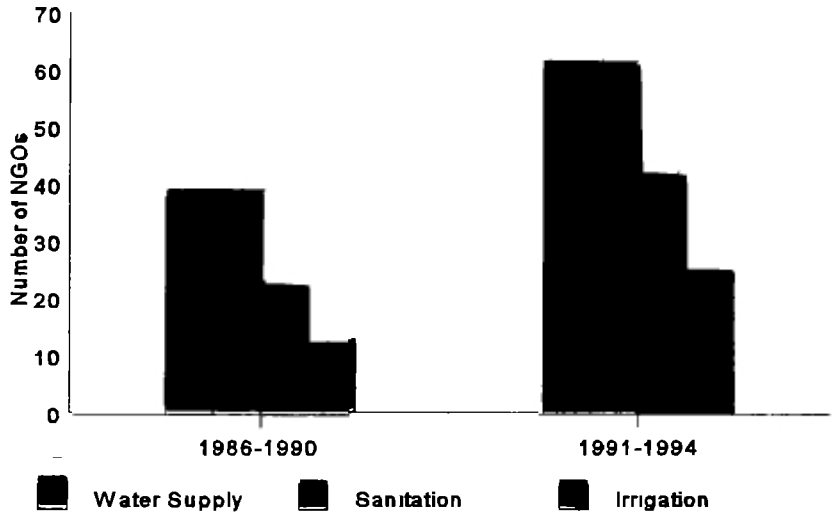

Figure 2. Number of NGOs active in the WatSan Sector

3.2.3 Irrigation

2 organizations uniquely reported irrigation as having their highest priority and 3 grouped it together with water supply and environmental sanitation as their highest priority. 3 Organizations uniquely reported irrigation as the largest expenditure post, 1 organization was only involved in irrigation and 1 listed irrigation together with water supply and environmental sanitation for the highest expenditures.

3.2.4 Other Activities

WatSan programming is an important part of total NGO activites, but certainly not the only component. Most NGOs are involved in a wide variety of development programmes and projects. In fact, 35 of the respondents listed other development activities, such as health care, agriculture, afforestation, social work, etc. as their main priority and/or highest expenditures (over their WatSan activities).

3.2.5 Link between Water Supply & Sanitation

Compared with the 1991 UNICEF report, which listed 58% of the organizations involved in water supply as having a sanitation component, this study reveals that the situation has improved somewhat, but not drastically, with 69% of the 60 organizations involved in water supply also including a sanitation component. Another 6 organizations (10%) reported that they *always* provide hygiene education along side their water supply activities and another 2 (3%) do so *frequently*.

Thus at a 82% nominal integration level of water supply projects with sanitation activities and/or hygiene education, this reflects at least a growing awareness among NGOs that water and sanitation should be connected if they are to be effective in improving the health of the rural and urban communities.

But as will be discussed in section 3.6, the actual performance in terms of environmental sanitation projects lags somewhat behind the increased environmental sanitation awareness.

3.2.6 Expenditures & Beneficiaries

A comparison between the number of NGOs involved in the various types of activities and expenditure of the 1986-1990 UNICEF report and this study is given in Figure 2. The UNICEF study reported total expenditures in the three areas at 115.8 million Ethiopian Birr for nearly 3.9 million beneficiaries. The expenditures recorded in this study amount to over 150 million Birr, with water supply accounting for EB 106m [69.1%], environmental sanitation EB 5.7m [3.7%] and irrigation EB 41.7m [27.2%] for a total of 4.3 million beneficiaries.

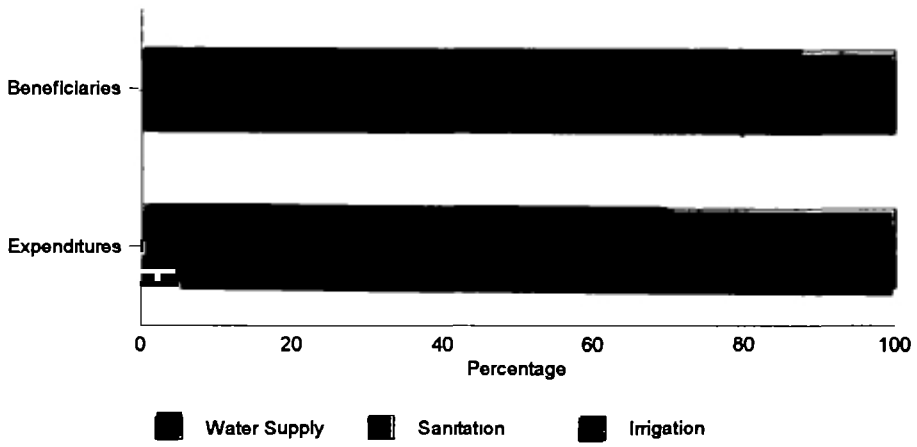

Figure 3: NGO WatSan Beneficiaries and Expenditures Distribution per Sector

Figure 3 compares the reported expenditures and beneficiaries between the three subsectors.[6] Assuming a total population of 50 million during 1994 the NGO projects have provided 8.4% nominal WatSan coverage (water: 7.4%; sanitation: 0.4%; irrigation: 0.6%).[7] Given the fact that NGOs are primarily active in rural water development this would amount to 9.7% coverage of the rural population (i.e. of 87% of the total population).

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6 *5 NGOs did not report their water expenditures, while 11 and 8 NGOs did not report their sanitation and irrigation expenditures respectively. 8 NGOs did not report the number of beneficiaries in their water projects, while 10 and 8 organizations did not report their respective sanitation and irrigation beneficiaries.*

7 *The nominal ("in name only") coverage figures commonly overstate the actual coverage since they assume that all projects are fully operational, while practical experience suggests that anywhere between 25-50% of projects appear to fail in permanent disrepair soon after the first few year of project life.*

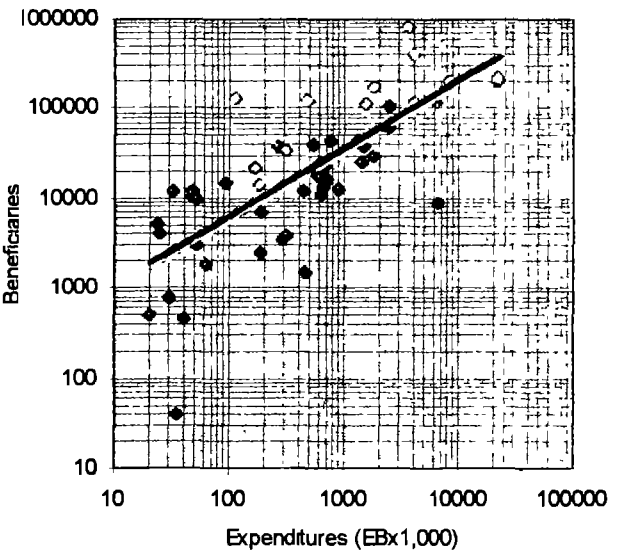

Figure 4. Correlation between WatSan Expenditures & Beneficiaries

In Figure 4 the NGO expenditures versus beneficiaries are depicted as data pairs which show a positive correlation as indicated by the line drawn through the centre of the scatter plot. In spite of the rather wide spread of the individual data pairs, one may expect a causal relationship between the higher project expenditures and greater coverage. A double logarithmic scale is used to accomodate the wide variety in project sizes.

Figure 5 illustrates that 9 NGOs (including 4 local organizations) account for nearly 75% of NGO WatSan expenditures in Ethiopia reported for this period, with the largest three (including one local organization) covering nearly half of all the reported expenditures. 3 local and 2 international religious organizations are responsible for nearly 50% of all expenditures. Four NGOs (out of 31 reporting), including one local NGO, are responsible for over 50% of the Sanitation expenditures. One international NGO (out of the 22 which reported their expenditures) accounts for 78% of all irrigation expenditures.

While the overall WatSan investment has seen a 30% increase from EB 116 million (1986-1990) to over EB 150 million (1991-1994), the sharp devaluation of the previously overvalued Ethiopian Birr in 1992 (from US $1 = EB 2.05 to EB 5.00) means that the investment in terms of equivalent foreign currency has nearly been halved from US $56m approximately US $30m . The concomitant increase in project output, however, implies a reduction rather than inflation of real project costs, meaning that as a group the NGOs have generally been able to accomplish more with less funding. Some of this growth is due to the numberical increase of NGOs, but the major growth in output is accounted for by the larger organizations.

In the absence of clear information on other actors' activities and expenditures, such as the government's, it is difficult to firmly place the NGO contribution in the overall picture. Given the political upheaval after the 1991 change of government and the subsequent decentralization policies, accompanied by staffing and budget problems, it would not be surprising to find that also during this period, as with the previous reporting period, the NGO contribution in coverage as well as expenditures may again have superceeded that of the government.

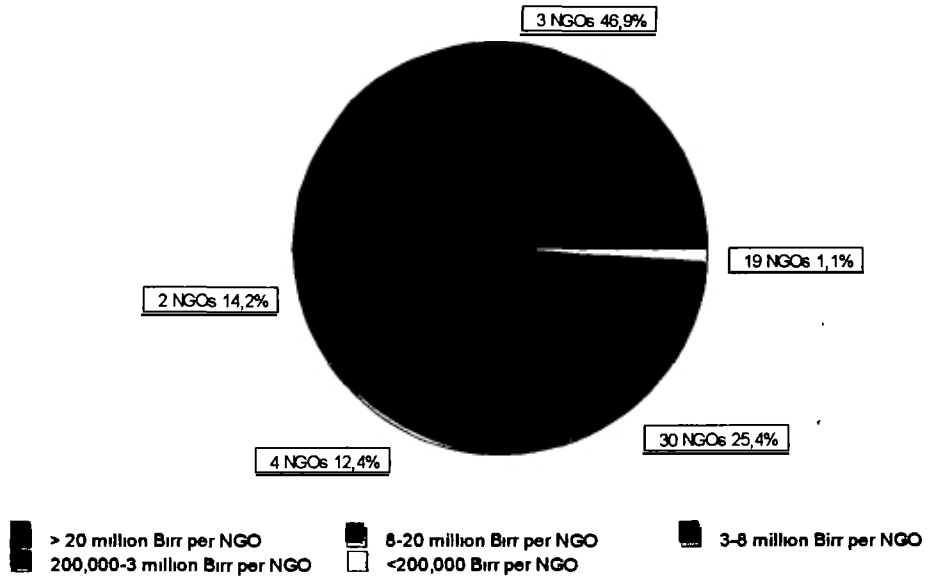

Figure 5: NGO WatSan Expenditures 1991-94 (5 NGOs did not report expenditures)

3.2.7 Geographic Coverage

The distribution of the number of NGOs over the various regions and zones is given in Table 1 and graphically illustrated in Figure 6. Given the inter-regional extent of many of the NGOs activities and the fact that the questionnaire dit not ask the respondents to attempt a regional breakdown of its WatSan expenditures, it is not possible at this stage to quantify the expenditures per zone or region. Coverage of the country by the NGOs appears to be reasonably correlated to the country's population density distribution[8], with a higher concentration of NGOs along the North-South axis of the country and in Eastern Harerghe.

Zones with the highest number of NGOs represented are East Shewa and North Omo. Although all regions reportedly have NGOs working in them (except for the Harar municipality region), a number of zones are without NGO activities. These are: Zones 1-2 and 4 of the Afar region and the Bench, Burji, Konso, Sheficho and Yem zones of SEPAR. The two organizations which reported WatSan activities in Benshangul did not differentiate according to zone.

8 *1984 census data (National Atlas of Ethiopia, 1988).*

Table 1: Number of NGOs in WatSan per Region and Zone[9]							
Region 1 Tigray	**12**	**Region 2 Afar**	**2**	**Region 3 Amhara**	**24**	**Regions 7-11 SEPAR**	**29**
Central	7	Zone 1	0	E Gojam	1	Amaro Kelo	1
Eastern	5	Zone 2	0	W Gojam	1	Bench	0
Southern	4	Zone 3	1	N Gonder	5	Burji	0
Western	1	Zone 4	0	S Gonder	4	Gedeo	3
Region 6 Benshangul	**2**	Zone 5	1	N Shewa	8	Guraghe	13
		Dire Dawa	**2**	N Wello	5	Hadiya	4
Region 12 Gambela			**1**	S Wello	6	Kambata	4
Region 4 Oromia			**31**	**Region 5 Somali**	**6**	Keficho	1
						Konso	0
Arsi	1	Jima	2	Elkere	2	Maji	1
Bale	3	E Shewa	14	Gode	1	N Omo	13
Borena	7	N Shewa	7	Jijiga	3	S Omo	4
E Hararghe	6	W Shewa	7	Shinili	1	Sheficho	0
W Hararghe	1	E Welega	4	**R13: Harar**	**0**	Sidama	3
Illubabor	2	W Welega	5	**R14: Addis Ababa**	**17**	Yem	0

It should be noted that several NGOs responded only with regional and/or subzonal rather than zonal information Where possible additional sources of information, such as the CRDA membership directory where used to include zonal information. The map uses the 1994 administrative boundaries as the most applicable to the reporting period. The thin lines are the zonal boundaries and the thick lines the regional and international borders.[10]

9 *Please note that since one NGO is often active in more than one zone per region, the totals given for the NGOs per region are generally less than the sum of the zonal totals.*

10 *Eritrea seceded formally from Ethiopia in 1993, although defacto independence was already practiced since the change of government in 1991. None of the NGOs active in Eritrea therefore reported on their Eritrean projects. The UNICEF report did include Eritrea.*

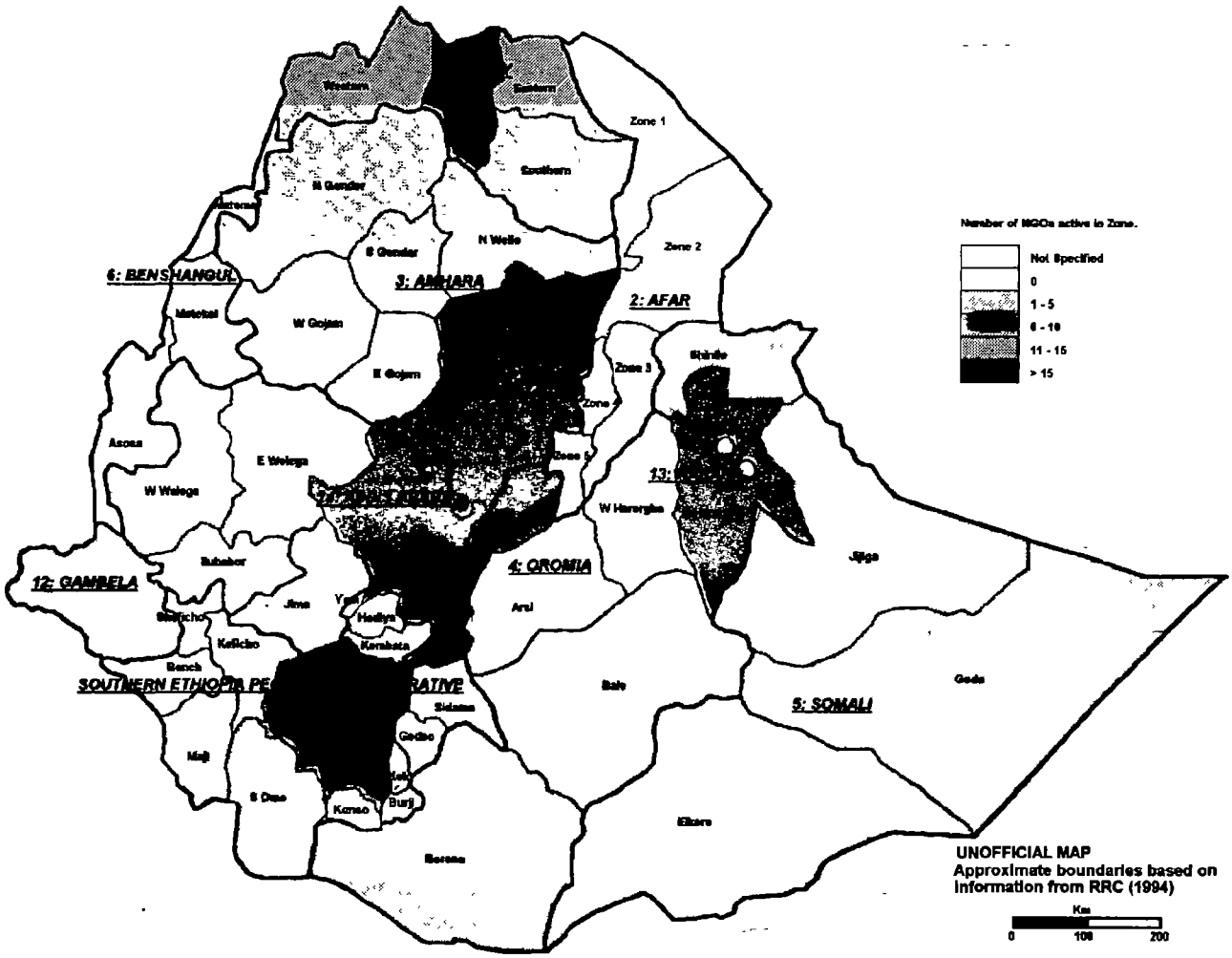

Figure 6: NGO WatSan Activity Distribution in Ethiopia (cf Table 1)

3.3 Management Structure

3.3.1 NGO Staff

51 NGOs employed 30 Master's Degrees, 56 Bachelor's Degrees and 102 (Advanced &) Diploma level national staff members in their WatSan projects in addition to numerous support staff and general management staff which were counted in the above figures. Several PhDs and a number of Medical Doctors were also reported in supervisory capacities of various NGOs.

Specializations of academically trained project staff included: Water resources, civil, hydraulic, agricultural and sanitary engineering, geophysics, (hydro)geology, sociology, public health, medicine, agro-economics, agronomy and others.

3.3.2 Expatriates

A total of 41 expatriates are reported as working in WatSan with 20 of the 64 NGOs during the reporting period, with only one expatriate reportedly working in WatSan with a national NGO.

The number of expats was not reported in the UNICEF study, although the comment was made that for programme management the reliance on expatriate expertise appeared to be strong. The results for the period covered by this study would tend to indicate that the reliance on expatriate expertise is limited among the NGOs, although for a number of organizations additional expatriates were reported to be involved in other than WatSan activities.

3.3.3 External Personnel

12 NGOs said they *often* make use of government expertise in their projects and an additional 18 *occasionally* called in government experts, for example in the fields of hydrogeology, water and civil engineering, surveying, etc.

Private sector sub-contractors were *often* consulted by 11 NGOs and *occasionally* by 18 NGOs. The most common purpose was for building construction. 37 NGOs *often* and 14 *occasionally* used locally hired skilled labour, such as masons and carpenters in their projects, 27 and 18 NGOs respectively *often* and *occasionally* used unskilled local labour.

Food for Work remained a popular medium for employing local people with 16 organizations which used FFW *often* and 11 *occasionally*. Free community labour was *often* used by 34 organizations and 12 used it *occasionally*. Several organizations reported using the services of other NGOs.

3.4 Project Approach

The response to this study gives the impression that many NGOs use a professional approach to the preparation and implementation of their projects.

3.4.1 Baseline & Feasibility Studies

32 organizations indicated that they *always* carry out baseline studies before project implementation (4 *frequently* and 7 *occasionally*), which in nearly all cases included community needs assessment, demographic and socio-economic data collection and other technical paramenters.

21 organizations followed through with some sort of feasibility study which included aerial photography interpretation (8 *always*, 3 *frequently* and 9 *occasionally*), hydrogeological site investigations (17 *always*, 5 *frequently* and 10 *occasionally*), geophysics (11 *always* and 9 *occasionally*) with the electrical resistivity being the most popular method. Environmental impact assessment was *always* carried out by 16 NGOs and *occasionally* by 11.

Topographic information from levelling surveys was collected by 19 organizations and inventory made of community resources by 27. Other studies mentioned were soil survey, water quality tests, market analysis and GPS. Especially the latter should be considered of wider interest to the NGO community and the government agencies, since GPS (global positioning system), is an relatively cheap and simple tool, using satellite tracking systems, to determine the exact location of project sites on the map. This will circumvent many problems in keeping track of project locations for reporting purposes, as well as for monitoring and maintenance.

3.4.2 Community Participation & Role of Women

The involvement of the community in the projects seems to have improved from the traditional role of contributor of free labour, local materials and some cash to a more active voice in project planning and design. 36 organizations reportedly *always* involve the community in project planning and the decision-making process, 6 *frequently* and 1 *occasionally*. As illustrated in Figure 7, 50 organizations *always* consult the community on the choice of project site and 6 do so *frequently*. 18 Organizations *always* allow the community a word in the more complex choice of project design (4 *frequently* and 14 *occasionally*), while only 12 *always* allow the community a choice of technology (5 *frequently* and 6 *occasionally*).

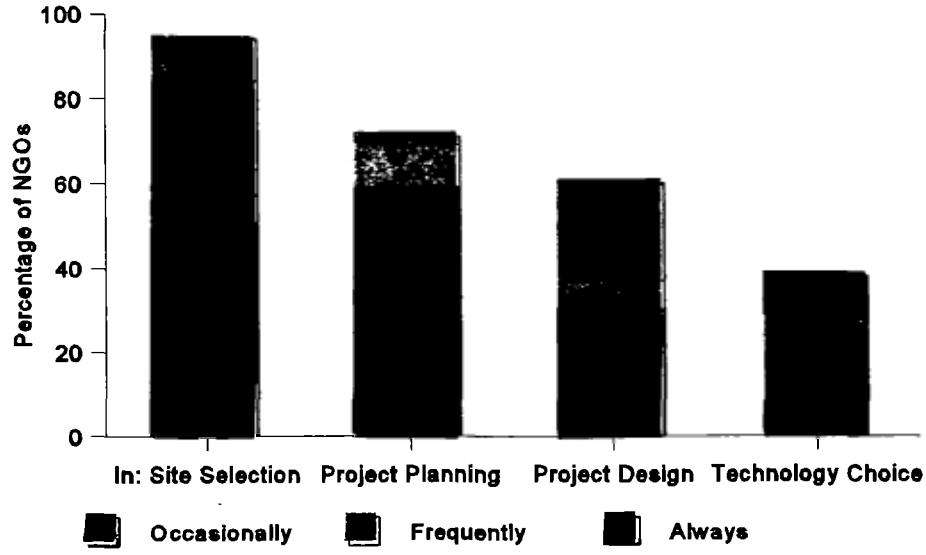

Figure 7: Community Participation in NGO WatSan Projects

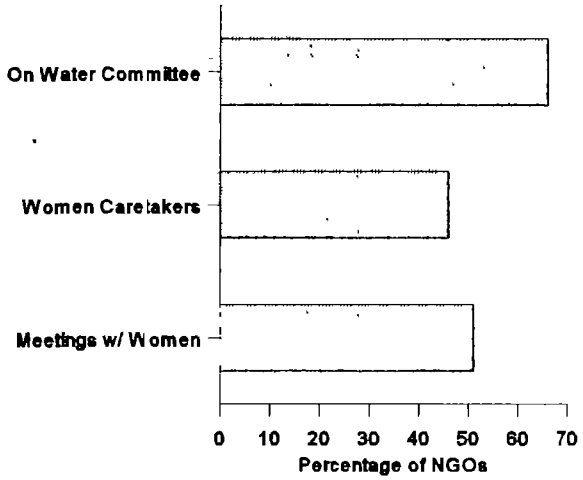

Figure 8: Participation of Women in NGO WatSan Projects

Only one local NGO makes special mention of the attention given to the local traditional and cultural values of the communities it works with. 31 NGOs of the 61 NGOs involved in water supply projects, report that they have special meetings with the women of the communities. Only 28 reported having women as caretakers, while 40 have women on water committees[11] (see Figure 8). Given the fact that in the Ethiopian context it is primarily the women who deal with water, having to collect it and use it in their household chores, these low scores indicates that much can be improved in the gender sensitivity of many NGOs.

Unfortunately, information on the number of women involved in implementing the NGO WatSan projects was not collected during this study, but it is likely that with most NGOs there is still a strong male bias in the decision-making processes, management, project implementation, operation and maintenance.

3.4.3 Project Planning, Design & Monitoring

26 Organizations report that their technical plans and designs are *always* checked by the government (3 *frequently* and 8 *occasionally*), in particular by RRC and WSSA. Donors also keep an eye on the plans and designs, with 28 organizations reporting such checking *always*, 5 *frequently* and 7 *occasionally*. External consultants are used to a lesser extent: 15 *always*, 2 *frequently* and 13 *occasionally*. Project monitoring is consistently carried out by 45 NGOs, while the government is reported to *always* monitor in only 18 cases and donors in 35 cases.

3.4.4 Operation & Maintenance

In terms of project operation and maintenance only 13 organizations remain *always* in charge of the operation and 18 for the maintenance. Responsibility for operation and maintenance was also given to government agencies, in particular WSSA or the Natural Resources Bureau, *always* in 14 and 11 cases respectively (for O&M).

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11 *WSSA guidelines suggest the establishment of water committees consisting of 7 (elected) community members with at least two women members. Practical experience suggests that unless there is a majority of women in the committees they are unlikely to have a voice in the discussions and decision-making processes.*

Most organizations reported however that the first line responsibility for operation and maintenance lay with the communities themselves (in 50 & 44 respective cases *always*). While in principle this is a positive development which should improve the sustainability of the projects at the village level, other conditions are also important, such as proper skills training for caretakers, some basic management and accounting training for water committees, availability of spare parts as well as a setup for cost recovery to allow the community to finance its own O&M.

Only 22 organizations reported that caretakers were responsible for carrying out major repairs to the water system. 18 organizations, partially overlapping with the first group said that the government agencies were responsible for repairs, while 33 have an agreement of sorts whereby they can be called upon to take care of required repairs. 31 provide parts either free, subsidized or at cost from their own stocks. 42 provide training for the caretakers and 40 for the water committees, but 6 expect their caretakers to undertake major repairs without providing any training for them. 17 organizations report water charges per filled pot or container and 18, with an overlap of 3, report periodic payments for water, such as a monthly charge per household or a general charge per maintenance session. This indicates that half of the organizations make no provision for the economic sustainability of their projects.[12]

3.5 Technical Specifications of Water Supply Projects

The project achievements reported by the NGOs for the 1991-1994 period are listed in Tables 2 and 3 and compared where possible to the achievements reported in the UNICEF report for the 1986-1990 period. The current reporting period compares well with the 1986-1990 period, especially in light of the sharp decline in hard currency value of the WatSan projects. If one takes into account that the current reporting period only covers 4 years, while the first covered 5 years, annual production rates have generally increased.

Spring development, borehole and hand-dug well construction take up the bulk of the NGO water supply activities, both in terms of expenditures as well as of beneficiaries.[13]

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12 *One organization reported a differential payment system, which worked well in 2 rural towns, whereby the commercial sector paid 5 Birr per month per household, the otherwise employed, such as government workers, 1 Birr per month/household, while the poor and unemployed could use the water system free of charge This reportedly became a significant source of income for the local administration office.*

13 *Unfortunately the largest pond contruction organization (over 700 ponds in 4 years) did not give an estimate of their expenditures and beneficiares.*

Table 2: Reported NGO WatSan Project Achievements					
Description	1986-1990*	1991-1994			
		No	Costs**	Beneficiaries**	Community Contributions***
Spring Protections	982	1,301	37,039,849	868,814	6,287,288
Hand-Dug Wells	797	1,110	9,265,094	567,761	790,721
Boreholes	608	406	24,447,563	636,534	1,414,001
Roof Catchments	N/R	94	161,912	6,530	45,200
Distribution Systems	34	306	3,379,163	923,050	225,470
Storage Tanks	N/R	212	1,845,000		245,000
Ponds	124	1,005	3,488,265	273,205	177,050
Non-Differentiated Water Projects****			25,856,710	540,725	N/R
Irrigated Surface Area	N/R	11,199 ha	40,724,641	300,740	N/R
Pit Latrines	2822	2,302			
VIP Latrines	513	1,441			
Other Types of Latrines	N/R	105			
Refuse Disposal Pits	611	393	6,441,740	192,280	659,838
		Totals:	**152,649,937**	**4,309,639**	**9,844,568**

N/R *Not Reported*

* *Unicef Data (Not all categories correspond to the current study)*

** *Not all respondents provided project cost estimates, overlaps between the different categories have, as much as possible, been screened out Due to some incomparable data, not all figures could be included*

*** *Including cash and the value of labour and material contributions, not clear from the data whether all respondents included these values in the total project costs.*

**** *Not all respondents differentiated their expenditures and benficiaries according to type of water project*

Table 3: Water Pumping Methods		
Description	1986-1990	1991-1994
Handpumps	1124	1,025
Rope & Bucket Systems	Not Reported	71
Motorized Pumps	193	100
Wind Pumps	58	20
Solar Pumps	26	7
Hydram Pumps	3	3

As listed in Table 3, boreholes and most hand-dug wells are generally fitted with pumps. Most popular are handpumps. Motorized pumps and alternative energy pumping systems seem to have decreased in popularity with the NGOs. Most of the motorized pumps are connected to distribution systems with storage tanks. Some are installed in irrigation schemes. Approximately two thirds of the distribution systems and storage tanks are connected to gravity water supply schemes and their cost and beneficiaries can in principle be added to the spring development costs. The proportional distribution of the various water supply activities is given in Figure 9.

Based on Table 2 some rough averages[14] can be determined regarding overall NGO WatSan performance, which demonstrate the approximate project cost per beneficiary. These are listed in Table 4.

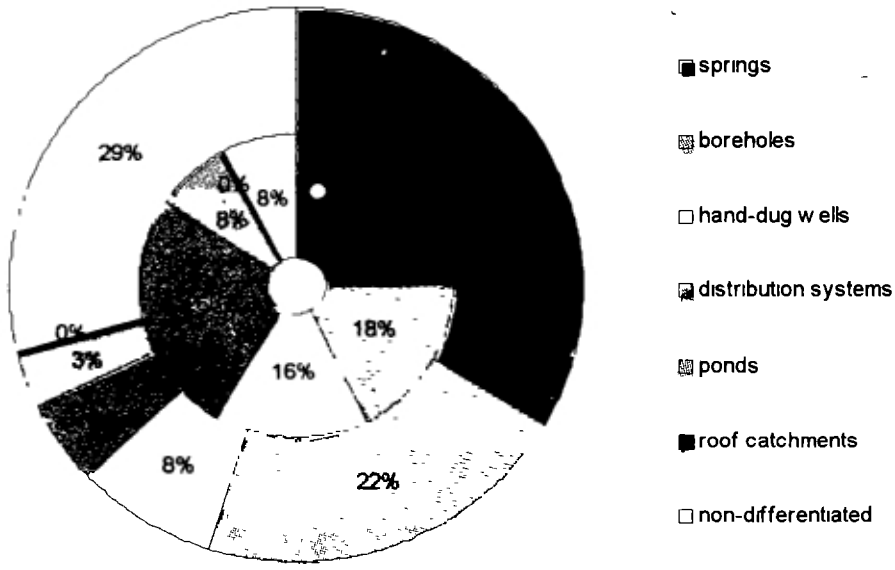

Figure 9 NGO Water Supply Project Distribution Inside: Beneficiaries, Outside. Expenditures

14 *Given the wide variety of project data, the different reporting formats and the occasional absence of data (e g one NGO might report expenditures but not beneficiaries, while another reports beneficiaries but no expenditures) these averages are a bit like comparing apples and pears and should not be regarded as representative for individual NGOs*

Table 4: NGO Project Averages (1991-1994)		
Description	Investment per beneficiary (EB)	Community Contribution
Spring Development	42.63	17.0%
Hand-Dug Wells	16.32	8.5%
Boreholes	38.41	5.8%
Roof Catchments	24.80	27.9%
Distribution Systems*	5.66	9.0%
Ponds**	12.77	5.1%
Per WatSan Sub-Sector		
Water Supply	31.55	11.5%
Irrigation	135.41	n.a.
Sanitation	25.61	11.6%
WatSan Average:	**38.91**	**11.5%*** **

* *Including storage & break pressure tanks*
** *For only 203 ponds (excluding the largest pond constructor because it did not include financial and beneficiary data)*
*** *Excluding irrigation*

Since for most NGOs WatSan programmes are only one component of their development portfolio, it is unlikely that the organizational overheads are included in these sectoral activities. Another item which tends to get excluded from project budgets and expenditures is the cost of the expatriates in the programme. Where relevant they should be added to project costs, since expat salaries and other official benefits, such as travel, housing, etc. can be quite substantial posts. As many donors do not like to be asked to pay for depreciation after they have donated the original funds for buildings, equipment, tools and vehicles in the first place,[15] depreciation is usually also left out of the equation. Adding these posts to obtain a realistic project cost picture is essential when comparing with the government or commercial sector. The financial figures in Table 2 and Table 4 must therefore be considered to reflect the more or less subsidized NGO WatSan expenditures.

Not only the averages are interesting to study. Different figures between the NGOs also yield interesting information. In terms of the value of community contributions for example, the differences of approaches between NGOs often are a stumbling block.

15 *Although not specified as such by the respondents, it would appear that for both the international and local NGOs nearly all funds, except community contributions and in some cases government or other local counterpart contributions, are obtained from overseas donors.*

One NGO under pressure from its donors (or government officials) may seek to construct as many schemes as possible within a limited time period. Since raising support from the local community for a project is generally very time consuming, it is the first to be left out and the community, instead of providing free labour, skills, cash and other local resources, ends up being paid by the NGO for their participation in the project.[16] It is obvious that another NGO trying to work in the vicinity of the first along more participatory lines in practice often faces problems: The community members may refuse to give for free what they see another NGO pay for. Although different geographic, ethnic or socio-economic contexts may ask for project specific methods, it would be to the advantage of both the implementing agencies as well as the communities if the expected role(s) of communities could be more streamlined between NGOs and other WatSan actors, such as the government and bilateral agencies.

3.5.1 Handpumps

Boreholes have decreased in number, but handpumps have remained popular, with a significant shift to the village level operation and maintenance (VLOM) specifications.[17] This is illustrated by the comparisson with the UNICEF report in Table 5. Numbers 4 - 8 in Table 5 are considered VLOM pumps.

The VLOM handpumps are grouped into three categories in Figure 10, showing the suction pumps and direct-action pumps for shallow applications separately from the deeper well lever-operated pumps. The Tara is produced in Bangladesh and India and the Finnish Nira is a more expensive alternative. The Shala is the Ethiopian produced (prototype of the) direct-action pump, but not used by the NGOs, probably since it does not use the positive displacement boyant pump rods, which make pumping the Tara and Nira much easier.

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16 *One ingenious example from a recent bilateral pond construction project illustrates such a community participation component approach: For excavation the local payment rate is EB 10 per labourer; the project only pays EB 7 per labourer, which means that the community contribution is EB 3 per labourer per day This type of approach will negatively affect the motivation of the people in other near-by projects which are trying to work with voluntary community contributions Another example. One large NGO drilling programme seeks a significant community cash contribution towards the high cost of drilling It has nearly been forced to abandon this previously successful approach or otherwise park their drilling rig, because another large NGO driller does not require the same cash contribution, which means that the communities are not willing to cooperate with the first NGO (based on personal communications with the respective organizations).*

17 *The VLOM concept (Arlosoroff, 1987) consists of the following hardware aspects*
- *Easily maintained by a village caretaker, requiring minimal skills and few tools,*
- *Manufactured in-country, primarily to ensure the availability of spare parts;*
- *Robust and reliable under field conditions,*
- *Cost effective.*

A number of software aspects should also be taken into account to increase the effectiveness of village-level management of maintenance
- *The community chooses when to service the pumps,*
- *The community chooses who will service the pumps,*
- *Direct payment to the repairers by the community.*

Table 5: Comparison of Handpumps used by NGOs					
		1986-1990		1991-1994	
Description		Number	%	Number	%
1	India Mark II	412	35.6	85	8.3
2	India Mark II PB Modified			241	23.5
3	Mono	326	28.2	85	8.3
4	Afridev	0	0.0	215	21.0
5	Aquadev	35	3 0	85	8.3
6	Akaki	100	8.7	125	12.2
7	Nira	7	0.6	66	6.4
8	Tara	0	0.0	53	5.2
9	Boswell	33	2.9	63	6.1
10	Others	243	21.0	7	0.7
Totals		**1156**	**100%**	**1025**	**100%**

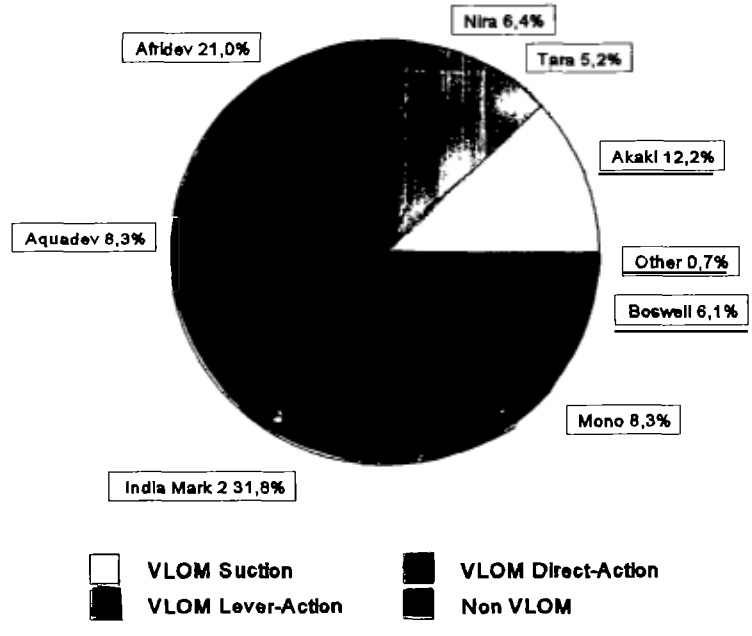

Figure 10: The Contribution of VLOM Pumps in NGO WatSan Projects

The Akaki is an Italian design traditional suction pump (Egeo-3 Alpha) for shallow applications. It also has a submerged pump cylinder model available, again only for shallow applications. The advantage of the Akaki is that it is produced in Ethiopia (in the Akaki Spare Parts Factory under the name *Akaki* or *ASPF* pump) and that it and its spare parts can therefore be purchased with local currency. This in fact is one of the criteria for qualifying as VLOM pump, which is not met by the other VLOM pumps. The development and production of the IBEX prototype by the Akaki Pump factory (not ASPF), as the Ethiopian Afridev, appears to face quality control problems and is not popular with the NGOs. Only one NGO reported having installed a locally produced or procured Afridev.

Several NGOs reported the installation of the Boswell pump which until recently was almost completely manufactured in the country from locally available materials (angle-iron, square tubes and g.i. pipes) by one of the mission organizations. Only the brass pump cylinder with plunger and footvalve was imported. Deeper installation (e.g >10m) requires lifting equipment, but otherwise this pump can be maintained at the village level with normal plumbing tools. The concerned organizations, however, are reportedly switching to the Afridev.

The popularity of the VLOM pumps, from moving from 12.3% to over 50% between the UNICEF and CRDA surveys, shows that NGOs have been keen to follow government recommendations to shift their pump selection to a more appropriate technology level which can be operated and maintained at the village level. A somewhat disturbing trend is the fact that many NGOs install the Afridev on shallow hand-dug wells. A direct-action pump, such as the Tara, would be a better choice at depths less than 15 meters (the Nira will go to 20 meters), since they are cheaper, easier to install, operate and maintain and produce more water for less pumping energy. Given the frequent need for priming as well as the potential for corrosion of the steel components of the Akaki, the direct-action pumps with PVC and HDPE down-hole components also insure better quality drinking water.

Table 5 also shows that the major victim of the popularity of the VLOM concept is the UK-made Mono pump which has seen its market share drop from over 28% to 8.3%. The Mono, however, together with the India Mark 2 continues to be installed on the deeper wells, for which to date no VLOM alternative has been developed.[18] The decline of the Mono has partially been made good by the fact that the Mono manufacturers also produce the Aquadev, the robuster British version of the Afridev, with several modifications to the standard SKAT design. The India Mark 2 and the German modified PB version of the same pump have kept their leading position, basically because the government and several regions have standardized on the India Mark 2 pump.

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18 *A likely candidate to eventually replace the Mono and India Mark 2 according to a recent study, partly carried out in Ethiopia, suggest that the Volanta handpump with a sizable fly-wheel and an open-top reciprocating cylinder comes very close to the VLOM concept It is produced in West Africa and the Netherlands and has been successfully installed at depths up to 100 meters. The main draw back is its high cost (Buitenhuis, 1993).*

While government and NGO maintenance crews have become very familiar with the India Mark 2 pump, community-level maintenance continues to pose problems.

The Afridevs used in Ethiopia are primarily produced in India, by the Inalsa and Ajay pump factories. Some NGOs reported having purchased the more expensive Kenyan-made variety. The quality reports are mixed. Most respondents write that they and the users are extremely happy with ease of installation and the local maintenance characteristics of this pump, while some mention poor workmanship and materials of the Indian Afridev pumps.[19] The nearly three times more expensive UK-made Aquadev, which is almost identical to the Afridev, was reported to be of a robuster construction. The respondents' comments were not detailed enough to make a further qualitative assessment of the performance of the various types of VLOM pumps.[20]

3.5.2 Drilling Activities

Drilling activities are reported by 25 of the NGOs, accounting for a total of 406 boreholes. Approximately 86% of these boreholes were drilled by 13 NGOs which together own 17 rotary drilling rigs and 1 percussion rig, with 4 rigs not being used during the reporting period.[21] An estimated 13% were drilled by the various specialized government agencies, with 1.5% by a private drilling contractor.

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19 *Participants representing 16 NGOs at a recent CRDA VLOM Workshop reported frequent problems with spontaneous disconnection of the glued PVC rising mains and the "quick-connect" steel pump rods of both the Afridev and Aquadev pumps, poor welding and over-all strength of the galvanized pump head (Afridev) and shearing of the pump head anchors in the concrete (Afridev)*

20 *A limited qualitative study of 6 NGOs using various VLOM models (except the Akaki) was carried out under the auspices of AWTI almost simultaneous to this CRDA report (Becks and van Os, 1995), which reported three common short comings with the currently practiced VLOM system.*

1 *The technical functioning of the VLOM pumps remained in many cases below expectations. Partly this appeared to be due to poor design and materials at the factory, but also due to poor well construction and installation practices by various NGOs.*

2 *The institutional functioning of the management of VLOM pumps was in a number of cases inadequate, because NGOs failed to provide adequate training to the operators/caretakers and water committees. Especially the required preventative maintenance was in many cases not carried out at the village level and tools and spare parts were not always provided for or available to the caretakers.*

3 *The economic parameters for the proper functioning of the VLOM systems were in many cases not in place, i.e. local contributions for cost recovery, local or regional availability of spare parts, incentives for the caretakers and water committee to do a good job and the feeling of ownership of the project by the community.*

21 *One of the drilling rigs was transfered to the RRC upon termination of an NGO's water programme in 1993. The RRC subsequently passed the rig on to a local NGO who used it for the remainder of the current reporting period. Another rig appears to have been permanently loaned by one NGO to another NGO. The percussion rig is owned by an NGO which is not included in this survey, but has been on loan to an NGO included in the study. The drilling figures for this percussion rig have therefore been included in the study.*

As illustrated in Figure 11, four organizations with 6 rotary-DTH (down-the-hole hammer) rigs are responsible for nearly 73% percent of total production. The largest driller (a local NGO) averages 24 holes per year and the second largest 17 bore-holes per year, each with one rig. In the third and fourth place come two organizations with just over 15 holes per year for 2(!) rigs each. These figures may somewhat understate the achievable production rates, since due to the insecure conditions in the country during the first year of this reporting period, the high profile and high-value rigs may well have been kept out of production by most organizations. It is not directly clear if the stated production rates also include the number of dry and otherwise abandonned boreholes.

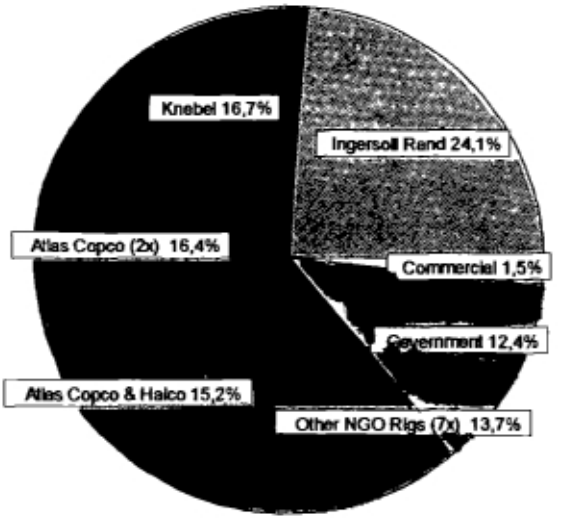

Figure 11 NGO Borehole Production (1991-1994)

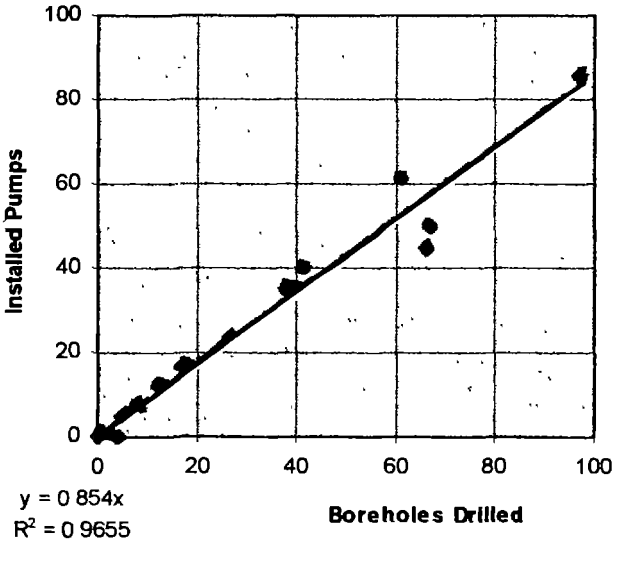

Figure 12: Implied NGO Drilling Success Rates

Figure 12 shows the correlation between the number of wells drilled and the number of motorized, wind and handpumps fitted on the boreholes. The slope of the line drawn through the data pairs implies an average NGO success rate of 85%.[22] The apparent perfect track records of several NGOs (100% pump installation on the boreholes) is rather unrealistic and may indicate that some respondents have screened out the dry, collapsed and otherwise abandoned holes.

Exact drilling costs are not easily distilled from the data. A smaller drilling programme reports EB 1,400 per meter. From two large drilling programmes an approximate cost of EB 1,000 per meter may be distilled (borehole costs divided by the number of holes drilled and the average depth of pump installations).

22 *Care has been taken to screen out the handpumps installed on hand-dug wells by looking at the depth of pump installation data. In ambiguous cases a 100% pump installation on hand-dug wells has been assumed*

This may include the dry holes, but does not appear to include depreciation on the drilling equipment.[23]

3.5.3 Water Quality Testing

One of the common objectives of the NGOs is the promotion of better health among their target communities In terms of water supply projects this is translated as providing safe water for household usage. In this light it is worrying to note that not all NGOs involved in water supply provision actually check the quality of the water which they provide to the communities. Only 37 organizations (i.e. 60% of the total) carry out chemical water quality tests either before or after construction or both and 31 organizations (51%) carry out biological quality tests before and/or after construction of a new water supply system. Only 3 organizations report that they periodically monitor both chemical and biological water quality. Most of the organizations use government laboratories for analysis of the water samples (chemical 73%, biological 81%), with the balance using their own testing kits.

3.5.4 Water Treatment

Water treatment is another related subject which receives little attention from the NGOs. Only three report some involvement in water treatment, respectively in the form of slow sand filtration, defluorization and flocculation using the Moringa seed. On the one hand, given the prevalent usage of more or less contaminated surface water for traditional water supplies, as well as the wide-spread problems with high fluoride levels in groundwater in Ethiopia, this minimal attention for water treatment is surprising On the other hand, if one looks at the common difficulties with the operation and maintenance of water supply systems, it may be that most organizations are unwilling to add an extra level of complexity to the system, since water treatment generally requires higher technical and management skills for effective functioning of the treatment facility.

Well disinfection is practiced by 20 NGOs (i.e. less than 30% of the respondents), with 16 using chlorine, 3 bleaching liquid and one using a local seed (probably Moringa). Eleven only disinfect after the construction of the water supply system has been completed, nine disinfect periodically or after maintenance of the system.

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23 *Despite the rather high drilling costs, taking into account that most NGOs enjoy duty-free privilieges on their project equipment and materials, combined with the fact that most do not appear to include depreciation costs, probably makes it more difficult to set up competitive commercial alternatives to the subsidized NGO drilling programmes.*

3.6 Environmental Sanitation

The increase in number of NGOs which include sanitation projects with their water supply projects compared to the previous 1986-1990 period has already been mentioned in section 3.2. Figure 13 summerizes NGO environmental activities during this reporting period. Five NGOs are responsible for 64% of all sanitation expenditures, including one NGO working in refugee camps which covered 67% of reported pit latrines construction, covering 16.3% of the total NGO sanitation budget and 59.4% of all beneficiaries.

Table 2 earlier showed that the total number of constructed pit latrines in the 1991-1994 period has decreased somewhat, but that the average annual rate of construction has increased a little (564 versus 575)[24]. The number of ventilated improved pit (VIP) latrines increased significantly, with 335 communal VIP latrines built (for use by more than one household) and 1052 VIP household latrines. Of the NGOs which constructed VIP latrines, 17% are responsible for 69% of the numerical output. The average annual construction rate was nearly 3 times higher than during the previous reporting period. A few NGOs have experimented with various other faecal disposal systems, such as borehole latrines, double-vault latrines, the Sanplat latrines (promoted by Unicef as a more hygienic alternative to the traditional pit latrine) and septic tank systems.[25]

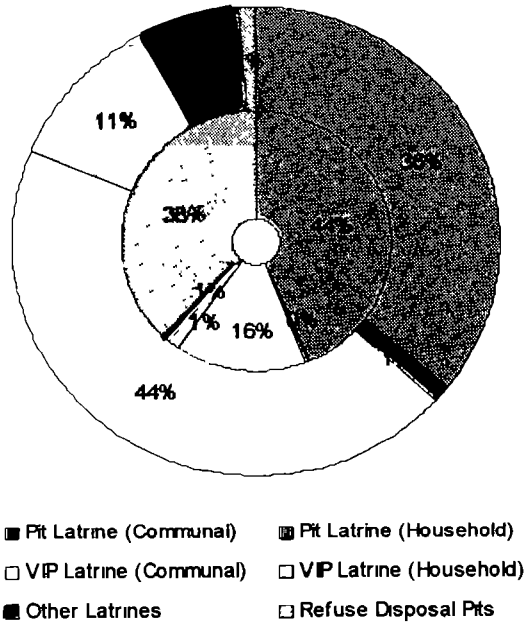

Figure 13 NGO Sanitation Performance Inside Beneficiaries, Outside: Expenditures

The number of beneficiaries per communal pit latrine ranges from 33 to 500. For the communal VIP latrines the range is from 10 to 520 persons per latrine. Although most respondents did not provide information on the number of squat plates/seats per communal latrines, some of the very high concentration of users per latrine quoted by a number of the respondents are unlikely to be sustainable. The accumulation of human waste and cleansing materials is likely to cause a rapid filling of the pits.

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24 *Assuming constant construction rates.*

25 *A number of NGOs mention Pour-Flush latrines. It is clear from the context as well as from other sources that at least in part of these cases what is meant is the w c connected to a septic tank, rather than the asian-type squat plate with a water lock, on top of or off-set from a pit.*

One needs little imagination to visualize the conditions of such latrines within several months of the proposed intensive usage, since manual emptying is generally not practiced and other means not available.

The construction costs provided by the various respondents also varies widely and is generally related to the construction materials used. Using only wood for slab and superstructure the lowest registered cost for a communal pit latrine was EB 150 and the highest unit cost for a concrete and/or stone masonry fully lined communal pit latrine with a corrugated iron roof was reported at EB 25,000. In the latter case the community contributed toward 20% of the cost in the form of materials and labour. No data was available to provide a cost breakdown per individual seat. Based on the data from 29 NGOs on the construction of 2,943 latrines, Figure 14 illustrates the correlation between number of beneficiaries and expenditures for the different types of latrines. Although the fit is not always optimal, trends are indicated by the lines drawn through the data points for each type of latrine. Lower lines indicate lower costs, e.g. pit latrines for communal use (blue line) are cheaper than other types. The inclination of the line is most cases nearly 45 degrees, meaning that with an increase in beneficiaries there is a proportional increase in costs. While this proportion is 1 for most (i.e. the tangent of 45°), the communal VIP latrines (green line) start at a higher average cost than any of the other types, but with an increase of beneficiaries the cost per beneficiary decreases.

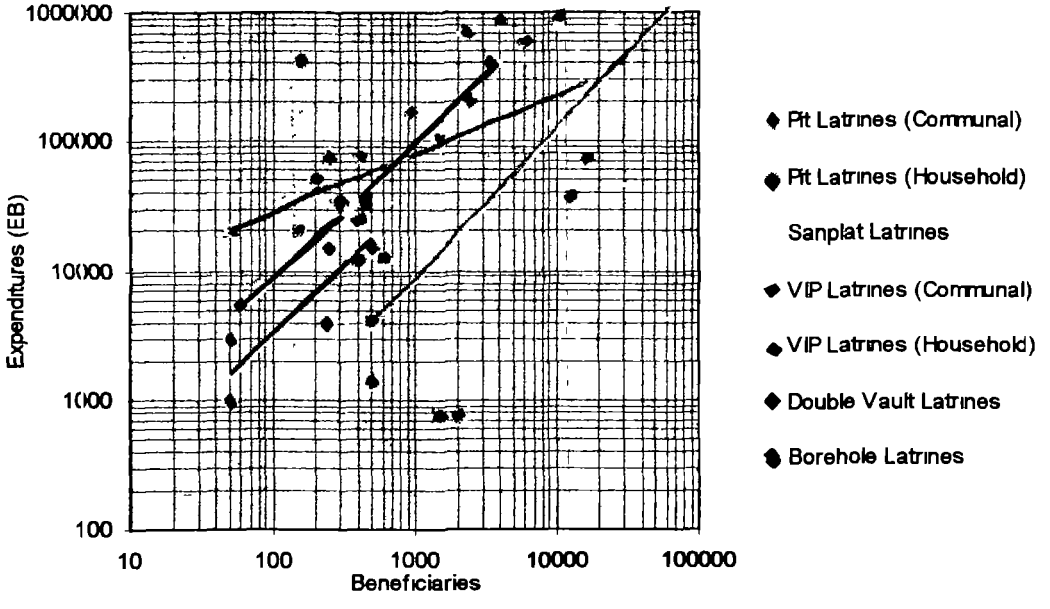

Figure 14: Expenditures of Beneficiaries for Various Latrine Types

The proportion is less than 1 (tan 30° = 0.6) This can primarily be credited to two projects which reported a high number of beneficiaries for relatively low construction costs. Most of the other communal VIP projects follow the general trend. No line could be drawn through the Sanplat, Double-Vault and Borehole latrines respectively, since the data for these was obtained from one project each.

As the spread from the trend lines indicates, the latrine construction costs per beneficiary vary widely. By dividing the total project expenditures by the respective numbers of beneficiaries the average cost per beneficiary becomes visible for the NGO sanitation projects This is done in Figure 15 for each of the latrine types. It shows that as expected VIP communal latrines are most expensive, while regular pit latrines are cheaper. Data for the Sanplat[26] and borehole latrines should probably not be considered representative, since they only reflect conditions of one NGO each. The double vault latrine, not included in Figure 15 for graphical reasons, comes to a staggering EB 2,500 per beneficiary, but again should not be considered representative as apparently it is based on only four four-seater latrines. There will not be many people who can afford to pay such a high price for shared facilities to dispose of their personal waste products.

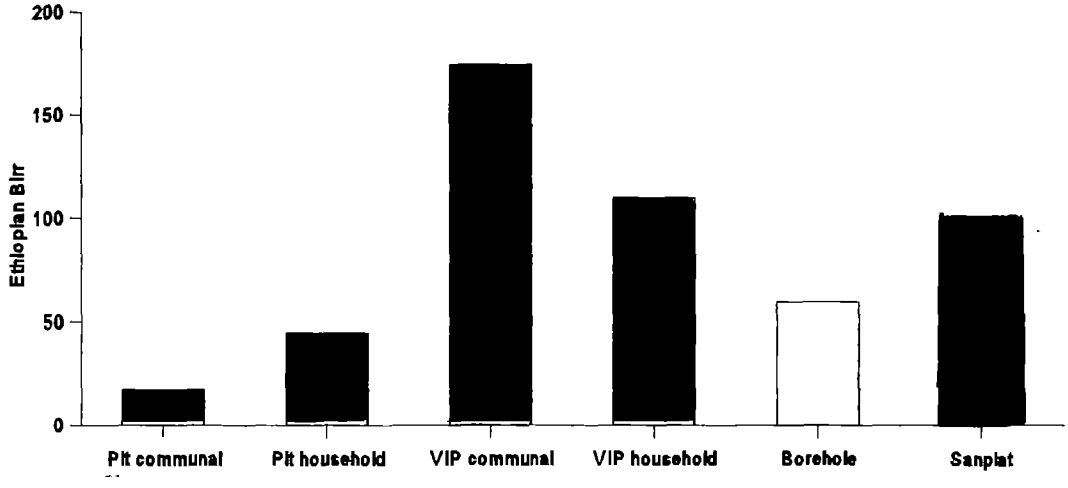

Figure 15: Cost per Beneficiary for Various Latrine Types

In addition to the qualitative assessment of the various designs, which was not carried out by this study, the affordability of the sanitary facilities is a very important precondition for the users to be encouraged to construct their own latrines. As was mentioned earlier in this study, sanitation coverage for the rural population of Ethiopia is exceptionally low, compared to other countries.

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26 *The concerned NGO reported that for slab materials only the Sanplat latrine costs around EB 50 The total cost including staff salaries, transport and other overheads was 10 times higher. If constructed by the community the cost will be closer to the material cost only and therefore more affordable, since digging, superstructure and where appropriate, the lining can be done locally with local materials.*

Latrines should be the sort of facility which require a minimal external intervention, with the individual households ideally being able to cover between 75 to 100% of the cost. Currently the average community contribution is a meager 10% of total reported sanitation expenditures and stands at EB 3.40 per beneficiary.

28 of the 42 organizations involved in latrine construction also monitor the use of the sanitary facilities through site visits, but only 10 try to monitor the effect of the facilities on the health of the user groups, through surveys, interviews and clinics, TBA & CHA reports.

An apparent weakness in NGO programmes is the lack of a structural integration between water supply and environmental sanitation as equally important components. Given the explicit or implicit objective of many NGOs to provide safe water in order to promote better health, an equal if not stronger emphasis on the promotion of proper sanitation and hygiene is absolutely essential.[27]

3.7 Small-Scale Irrigation

Just over 11,000 hectares of irrigated area was reported by the respondents. Surface irrigation is the most common method used by 20 of the 23 NGOs which implemented irrigation works during this reporting period. Irrigation by watering can for small-scale domestic purposes, nurseries, etc. was reported by 4 organizations, high-tech spinkler and drip installations were reported by two organizations. Two NGOs reported being in the design stage of an irrigation project, another as having funded a Ministry of Agriculture irrigation project and a fourth as having provided two pumps for irrigation purposes for a credit scheme. One NGO reported promoting small irrigation plots from the overflow of the spring-fed gravity supply water schemes it constructed.

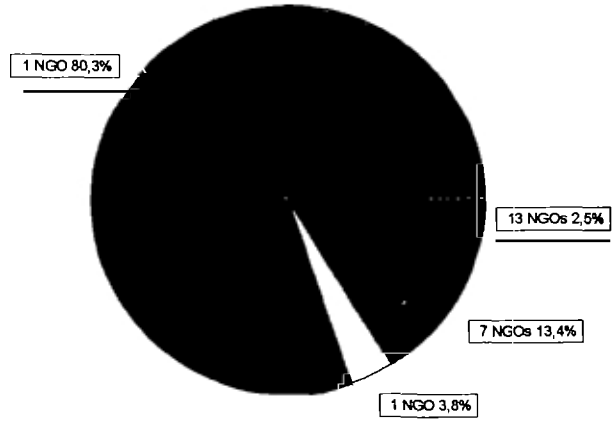

Figure 16. NGO Irrigation Coverage (in Hectares)

27 *Simply stated, sanitation is the primary barrier to prevent pathogens from gaining access to the human environment, hygiene practices (personal and domestic cleanliness) form a secondary barrier to prevent the transmission of pathogens. The provision of pure water (as a tertiary measure) is in itself no guarantee against the transmission or contamination by pathogens. For an excellent quantification of the relationship between water supply and sanitation see the recent paper by UNICEF's Dr. Esrey presented at the 1995 WEDC conference in Kampala, Uganda (cf. Esrey, 1996).*

Not all respondents were clear on the size of the irrigation schemes, nor on the investment costs per hectare. In most cases the projects concerned small-scale irrigation run by farmers' groups with cereals, vegetables, oil seed and fruit as cash crops and subsistence farming. As shown in Figure 16, one NGO reported implementing farmer-managed surface irrigation projects adding up to a total of 9000 ha; 1 NGOs with 425 hectares; 7 with between 100 and 300 ha (average 214 ha), with the remainder reporting surface, domestic sprinkler and drip irrigation schemes of less than 100 ha (average 21 ha).

Few technical and management problems were identified by the NGOs involved in irrigation. High salinity, a problem which occurs when the water supply is not enough to cover the evapotranspiration demand, was for example only mentioned by one organization. *Occasional* water logging, i.e. inadequate drainage of surplus water from the fields, was recorded by two organizations. Wash-out of intake structures was an *occasional* problem for two and a *frequent* problem for one organization. Siltation of the intake and/or distribution system was listed by 5 NGOs as an *occasional* problem. Shistosomiasis and chronic malaria were mentioned as problems by 1 and 5 organizations respectively, although no mention was made of a possible link with the irrigation scheme. And only two organizations reported *occasional* profitability problems of their irrigation schemes, for example through a lack of water in the dry season.

Since annual food production deficits are still common in Ethiopia, small-scale irrigation is a potentially very important tool to increase food production at the community level, with the current irrigation acreage far below its potential.[28] More could be done in this regard, also by the NGOs. However, the NGO response, with only 5 organizations collecting project specific climatic data and 3 using goverment data, and no organization collecting hydrological data for the surface water they use for irrigation, raises some doubts about the effectiveness, efficiency and professionalism of NGO irrigation activities.

With the apparent concentration primarily on the provision of water, the schemes may not be technically or socially optimal and therefore achieve below their potential (for example by losing significant amounts of water through seepage from unlined channels, by failure of dams and weirs shortly after construction, by sub-optimal application of water for the crops, etc.). Further qualitative studies should be carried out to assess the situation in more detail. Based on such an assessment practical training for both NGO and community staff could help to improve and expand this important sector activity.

28 *According to 1992 estimates of the Ethiopian Valleys Development Studies Authority only 4 5% or 160,000 ha is being used out of an irrigable potential of 3 5 million hectares.*

3.8 Micro Hydro Power

With its suitable hydrological regime in many of the highland areas, Ethiopia has a good potential for expanding its hydro power activities. Already the national electricity grid relies on hydro power generation. For small-scale power provision, water may in many places have sufficient head and flow to power small turbines, pumps or water wheels for electricity generation, pumping and grinding purposes. Eight respondents mentioned potential areas where they thought hydro power would be feasible.

10 NGOs reported current or recent activities in the field of alternative energy, although only 5 of those had experience with specific hydro power applications. One of the CRDA members is involved in the construction of turbines for powering grinding mills as well as in the construction of several models of hydram water pumps, using mostly local materials. Some of these have been installed in various parts of the country. 17 organizations expressed an interest in more information and/or training in hydro power applications in Ethiopia. Since the provision of power and electricity is one of the catalysts for development, further research into small-scale applications for water power may prove to be a good alternative for the many generators found in the rural areas of the country where they are used to power pumps, grinding mills and small electricity networks.

3.9 Staff Training

Training for staff members is reported by 61 of the 64 NGOs, with two organizations providing no staff training and one NGO not reporting on the training section. CRDA receives most mention as the organization providing in-country training for the NGOs (50 times). Other commonly mentioned trainers are the various line ministries and sector agencies, such as the Ministry of Health, WSSA, Ministry of Agriculture as well as various non government organizations and consultants Several organizations also report in-house training sessions. 33 NGOs have also sent staff for overseas training. International organizations primarily finance their own overseas training, while CRDA, other donors as well as bilateral agencies (for example the British Council, various embassies, etc.) also provide some overseas training scholarships (see Figure 17).

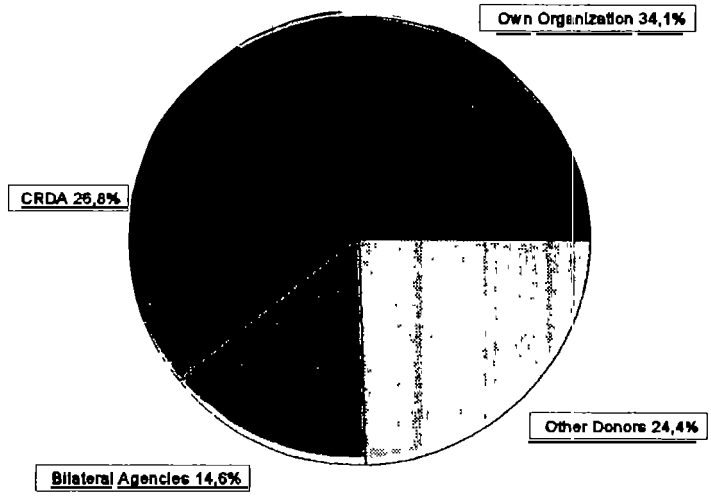

Figure 17: Overseas Scholarships for NGO WatSan Staff

Nine organizations have taken staff with a B.Sc. or Advanced Diploma from the Arbaminch Water Technology Institute and/or have sent their staff to AWTI for specialized diploma or certificate courses in water supply, environmental sanitation and irrigation.

48 NGOs expressed an interest in further specialized training for over 250 staff members on a variety of related subjects. The subject categories are shown in Figure 18. Most subjects were specifically related to WatSan applications. The miscellaneous category included community participation and animation (7), hydro power (3), health (2) and agriculture, project management and water conservation (1 each). 20 NGOs reported to favour training sessions of less than one month duration. 20 were willing to allow their staff to participation in training session lasting between 1 to 3 months and 6 NGOs found longer training periods acceptable.

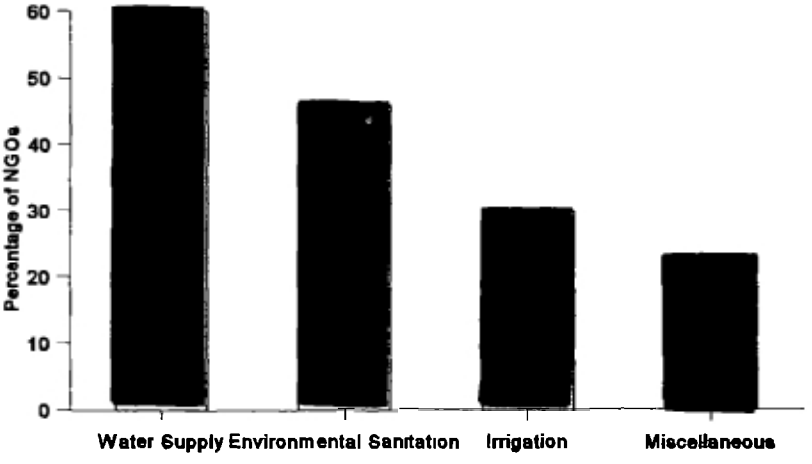

Figure 18: NGO WatSan Training Interests (1995)

4 Conclusions & Recommendations

This report enumerates the quantitative performance of the CRDA membership in water supply, sanitation and irrigation applications and compares their achievements with available external data, such as the survey carried out by UNICEF in 1991. Unfortunately, comparative data from contemporary actors such as the relevant government agencies and bi- and multi-lateral organizations was not available for inclusion in the analysis. In addition to the numerical data, it has been possible to analyze numerical trends, make interpolations and extrapolations and place the data in a more qualitative framework from the information provided by the respondents in the questionnaires, supplementary data, reports and follow-up conversations. This chapter will first seek to draw some relevant conclusions from the listed survey results and then conclude with a number of recommendations to help improve performance and inter-agency cooperation in Ethiopia's WatSan sector.

4.1 Lessons from the Survey

4.1.1 Organizations & Project Activities

This survey shows that the number of actors in the Ethiopian WatSan sector has nearly doubled in the last 5 years, including a quadrupling of the number of national NGOs. Most of the newcomers, however, play only a very modest role, except for three, which are included in the top nine organizations responsible for three quarters of the WatSan output in terms of programme expenditures. Local and international Christian agencies and churches continue to play an important role in the overall output of the NGOs with over 50% of the total WatSan output.

In terms of expenditure water supply projects and programmes receive the major emphasis of the four subsectors reported on. Although relatively few NGOs are active in irrigation, three sizeable NGO programmes produce a significant output which puts irrigation in the second place behind the water supply subsector. Nearly all NGOs combine some aspects of environmental sanitation with their water supply projects and programmes. Some of that is clearly no more than lip service, given the very limited investments in the subsector. Micro hydro power is still in its infancy stage among the CRDA membership with few developments beyond the expression of some interest in the subject and some experimentation. The local manufacture of various turbine and hydram prototypes by one of the NGOs is perhaps the most significant development. More specific conclusions on each of the subsectors are covered below.

4.1.2 Management, Training & Project Approach

One of the positive developments in the NGO activities is the emphasis on the professionalization of its staff. The reliance on field-level expatriate expertise is minimal, although in most international NGOs expats can still be found in the overall organizational management functions.

The report shows a significant amount of well trained individuals in responsible positions, while on-going staff training also receives the needed attention. CRDA is the major supplier of a very diverse package of short training courses and professional workshops, providing a much needed service especially for the many local NGOs for whom access to international training venues are more restricted. Other local and international training opportunities however also appear to be well used. The job market in the water sector appears to be more mobile than a number of years ago and many NGOs now make some use of external in-country expertise from government agencies, the private sector as well as the target communities.

Professionalization of the projects is also evident from the substantial attention given to project preparation, implementation, monitoring and evaluation. Technical, environmental and social feasibility studies are common and probably stem from an increased awareness among NGOs of the need for improved performance through better preparation. With the threat of "donor fatigue" and increased competition for donor funds from fellow NGOs, the need to improve proposals, to professionalize approaches and to upgrade performance and project impact arises from stricter criteria and standards set by donors.

4.1.3 Water Supply

As the previous chapter has demonstrated there has been a marginal increase in the combined NGO output rates with regard to individual project activities. In spite of the devaluation of the Ethiopian Birr, the NGOs have in fact been able to achieve higher production rates with less funds. This evident increase in efficiency counters the argument that NGOs commonly waste valuable resources and funds. At the same time it is quite clear that in spite of a near doubling of the number of NGOs active in the WatSan sector, the numerical project output has not increased very dramatically. This is probably due to the high number of small new local NGOs with only modest WatSan programming. While in most cases the NGO output is becoming more standardized, the NGO performance can certainly be optimized further, as is shown by for example the rather poor overall NGO drilling output. As project and programme approaches are more geared to professional production capacity, it is important for most NGOs to further coordinate their activities with each other and the government agencies and reduce their individualistic approach. This is likely to benefit the overal sector output.

4.1.4 Environmental Sanitation

Compared to the earlier Unicef study, there is a positive movement among NGOs to further combine water supply and environmental sanitation. With the probable exception of some projects, in many cases the sanitation approach however still comes across as an ad hoc activity, haphazardly tacked onto the larger water supply sector. Further integration is definitely needed to increase the qualitative benefits of the water supply projects. The separation between water supply and sanitation in the government agencies aggravates the situation as it unnecessarily distances the formal aspects of the two subsectors.

4.1.5 Small-Scale Irrigation

In a country with chronic food deficits, food production can be increased when the NGOs play a greater role in the promotion of farmer-managed small-scale irrigation schemes. Most of the currently reported NGO irrigation efforts show the need for further professionalization. Social, environmental, technical and management aspects need to be studied in an integrated manner and discussed in detail with the farmers in order to ensure project sustainability and profitability.

4.1.6 Micro Hydro Power

With some notable exceptions, little has been achieved by the NGOs in the micro hydro power subsector. In terms of energy generation for a variety of applications significant potential is available in the country and this is recognized by a number of NGOs. Expertise needs to be developed to assist the interested NGOs in training and project implementation. For hydram applications, used by a number of NGOs, the main issue is water quality, since surface water is commonly used. Further attention to water quality and treatment is essential (also in the regular water supply projects).

4.2 Main Issues in WatSan

4.2.1 Reliability

While more extensive and independent monitoring and evaluation of NGO activities, especially at the field level, would be very useful to make a more thorough assessment of NGO performance, the wealth of information provided by the NGO respondents in the questionnaires is sufficient for the general assessment undertaken in this study. The fact that the NGOs provided the requested information themselves, may be considered suspect by some, as subjective and potentially unreliable.

However, the substantial and voluntary participation in this study of such a high percentage (96%) of the original sample is a clear indication of the good intentions and openess to scrutiny by the respondents. It indicates the willingness to be transparent in order to facilitate better coordination and cooperation between the various WatSan actors, which was in fact the main motivation for this study. Given the representativeness of the sample (estimated at 90%), within normal margins of error, the data should in principle be considered reliable.

4.2.2 Effectiveness

The effectiveness and efficiency of NGO interventions are naturally two of the main concerns in an assessment of NGO performance. The effectiveness of an intervention can be described as the extent to which the measures taken by the agent or agency address and meet the planned objectives, e.g. the improvement in the health of the beneficiaries through the provision of safe water and sanitation. Effectiveness is much more than the establishment of physical water and sanitation structures: It involves the acceptance, integration and use of the innovations in the daily life of the community. Effectiveness can not be measured at the end of the project cycle with an evaluation of the implementation or construction phase. An evaluation at that stage is important, but more to analyze the efficiency of the project cycle components, in particular that of project implementation. Efficiency relates to the optimum management of human, physical, financial and natural resources in which waste of any of those resources is minimized.

Since WatSan facilities have an intended life time or design life, the effectiveness of a project can be measured in terms of the manner in which the facilities are used (useable) as intended for the desired period of time.[29] Without in-depth monitoring it will be difficult to exactly quantify the effectiveness of water projects. One possibility is to ask the local water committee to keep a simple log book in which the system's problems are noted when they occur and when they are solved. Another option would be to ask an independent body, such as the CDRC, to periodically carry out project evaluations of representative random samples of water projects to assess the qualitative condition of existing water projects. Naturally, such an evaluation should not be limited to NGO projects only, but must be carried out irrespective of the type of implementing agency. To improve performance it may be possible to attach a system of rewards and sanctions to the outcome of such evaluations.

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29 *In principle, the effectiveness of a project can be measured in terms of the formula.*

$$\text{Project Effectiveness (\%)} = \frac{\text{Project Design Life - Cumulative Time out of Order}}{\text{Project Design Life}} \times 100$$

A project which on paper has a design life of 10 years (such as most handpumps), but in reality only functions for 2½ years, before permanently being disabled is only 25% effective in achieving its goal of providing water to the community. Arlosoroff (1987) uses the same formula to calculate the effect of temporary breakdowns on the availability of water to the users and calls the outcome the reliability of the system rather than effectiveness. The concept however is the same.

4.2.3 Sustainability

Effectiveness is of course directly related to sustainability, which may be defined simply as the ability of the users by their own means to sustain the use of the facilities over the full design life of those facilities. Practical experience and empirical evidence show that the sustainability of WatSan facilities is a major weak point, both in NGO and government programmes. Since most of the NGOs are involved in WatSan from a development perspective rather than a welfare or relief perspective (such as in refugee camp situations), it is extremely ineffective to artificially lengthen the proper functioning of facilities within their project design life by continued interventions from NGOs. Although most NGOs have a mandate to hand over their projects to the respective sectoral government agencies, in practice a good number continue to take responsibility for maintenance and repair, mainly because the government agencies appear unable to carry out this task on the required scale.

Sustainability, however, demands of a project that the users, i.e. the community would be able to take charge of the maintenance and repair requirements, either by carrying it out themselves, i.e. by a trained mechanic in the community, or by being able to arrange for a mechanic, plumber, electrician, etc. to come in from outside the community at the community's expense to take care of the problem. Back-up services from the external implementing agency are not sustainable, since they are generally beyond the control of the users. The fact that many NGOs subsidize such services does also not allow the community to manage their projects independently. Continued NGO involvement has the opposite tendency of creating financial as well as management dependency.
The key to sustainability is:

1 The community is in charge of when to obtain maintenance and repair services (i.e. at the exact moment when they need it).
2 They are able to obtain back-up service from wherever and whoever it is best available to them (a mechanic from a nearby town rather than from a regional government agency or a national NGO office).
3 The users pay for the full cost of the services without laying claim to any further subsidies, which need to be used for the development of other WatSan projects.[30]

4.2.4 Community Management

In order to be able to manage their facilities properly it is essential for the users to have a strong sense of ownership of and control over the project from the very beginning of the project cycle.

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30 *"Regardless of how the capital costs of CWS projects are financed, recurrent costs (for operation and maintenance) should be borne by the community. ...community management, including financial management, of system operation and upkeep is the only way to achieve acceptable reliability at an affordable cost" (Arlosoroff, 1987: 22).*

Although there is a move for more community participation in the decision-making processes of the NGO projects, there should be a greater awareness among the NGOs concerning the management role which must be played by the local community if the project is to be sustainable. In practical terms this may mean a sacrifice of implementation efficiency with regard to time management in order to promote the effectiveness (read: sustainability) of the project. The process of handing over control to a community once the project is completed and ready for operation is commonly practiced, but insufficient. The control of the project should be in the hands of the community or a users group or representatives of such, from the very start of the project. The willingness and ability of the community to take this task upon itself is not automatically present (as some NGOs appeared to assume from their preoccupation with establishing only the physical water supply structures).

Organization is required to ensure effective and efficient operation and maintenance of the system. More complex systems will require more complex organizational structures. Payment for O&M needs to be collected, accumulated, expended and accounted for to keep the system going without external intervention. Since water systems often introduce new techniques into traditional societies, care must be taken to integrate these techniques and their management requirements into the local societal setup. This can be likened to the software which is indispensable to operate the hardware (imagine having a computer, but no software to run it). To establish the necessary organizational structures or graft the required management techniques into existing community structures is usually a lengthy process, requiring a major effort in mobilizing communities, animation of the important issues, (endless) discussions, training, etc. Unfortunately, this is often not taken into account and tacked onto the implementation process in the last few weeks before project completion. Ideally, it should start before construction has started, with the O&M management requirements being an important criteria for the initial decision-making processes and the choice between alternatives of techniques and service levels.[31]

A partnership approach is necessary in which the community members are the main decision-makers and implementers and the agency is the facilitator of subsidized external human (skill, training) and material (funds, equipment) resources. This means that those NGOs which are currently production or hardware oriented rather than sustainability oriented need to urgently consider changing priorities and may need to renegotiate their WatSan programme priorities with donors and government agencies alike.

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31 *In rural towns one may find that communities are unwilling to participate in a project which proposes a number of communal standpoints, yet at the same time enthusiastically support a project which promises yard or house connections eventhough the required community contribution is much higher (cf. Arlosoroff, 1987).*

4.2.5 Commercial Sector Involvement

With an awareness for the need of safe water and an ability and willingness to pay realistic prices not just for operation and maintenance, but also for project implementation, there may be a possibility to find alternatives to the lengthy community processes by establishing facilities through commercially motivated intermediaries. The price paid by users for water in some NGO established water schemes is generally quite high (as much as EB 2.50/m^3). Several instances were reported where water committees or Kebeles were in the happy circumstance of obtaining significant payments for the provision of water. There is no reason why this ability to pay could not be mobilized through revolving funds, bank loans, or private investments in which the NGOs (or government agency or community organization) tender out the construction work as well as the operation and maintenance.

The commercial approach is likely to work better in villages with an existing, be it small, commercial sector beyond the household level. The financial incentive combined with local commercial management (rather than communal management) may be the key not just for effective facilities, but also an efficient project implementation. Before such a project is feasible, however, safe water must be seen by the users as a commodity worth a price. The NGOs can play an important role in "creating the need" for safe water where this is not already felt, through hygiene education, awareness raising and animation methods. There is also a need for quality control of the implementation phase (design and construction) as well as of the operation and maintenance procedures. Monitoring needs to be undertaken by the funding or subsidizing agency as well as the users, but is in principle also a government task to ensure quality control of the procedures as well as of the product: potable water.

4.2.6 Standardization

Flexible standardization of the hardware of WatSan projects is needed in order to facilitate quality control, ease of operation and maintenance, affordability and appropriateness to local conditions. This report shows that NGOs have been moving towards standardization of handpumps, with the significant shift to VLOM pumps. The government also has the right to expect all WatSan actors to apply professional structural and equipment standards and designs in order to efficiently utilize resources and facilitate in-country skills development, spare-parts availability and quality control. Safety for project workers, installations, users and the environment are also important criteria to be considered in standardization of designs. For large projects environmental impact assessment studies should be required. At the same time flexibility is needed to allow modification of designs to local conditions, to experiment in controlled conditions with potential design improvements or to apply such improvements to standard designs.

However, for efficiency's sake, long technical approval procedures should by all means be avoided. Further (flexible!) standardization of software components will help to avoid conflicting NGO (and government) approaches, such as in the level of community contributions and the extent of community management of projects.

4.2.7 Future Coverage & Investment

Despite the encouraging signs which this study has uncovered in terms of the NGO WatSan performance between 1991 and 1994, the United Nations target of *Water and Sanitation for All by the Year 2000* is clearly impossible to reach.

According to the UNDP (1995), water coverage in Ethiopia has increased from 8% in 1980 to 25% in 1993, averaging at 2% per year over the population growth rate. This growth has however mostly benefitted the urban areas with a 91% coverage, compared to Ethiopia's rural population with only 19% coverage.

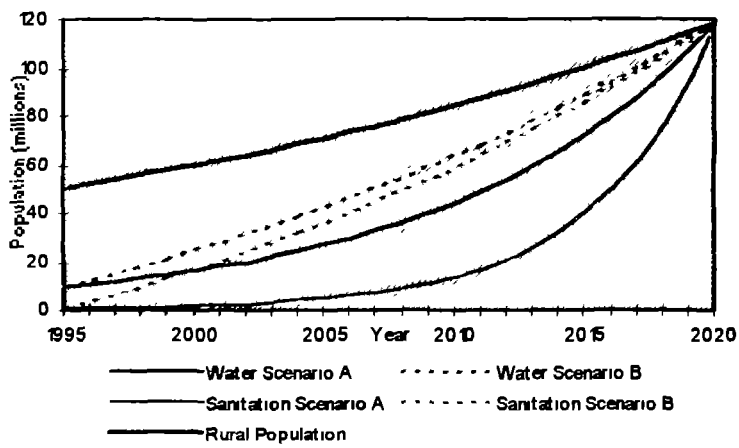

Figure 19 Growth rates required to achieve full WatSan coverage by 2020 AD

Figures 19 and 20 illustrate in two different scenarios the increase in coverage and the projected investments which will be needed in order to provide the whole rural population with access to safe water and proper sanitation facilities by the year 2020 AD. The target date has been set somewhat arbitrarily, but less irrealistically as the earlier year 2000, as an example of the magnitude of effort which will be required from all parties to achieve full WatSan coverage of Ethiopia's rural population. Adding to the magnitude of the task is the high population growth rate of 3.5% per year (UNDP, 1995).

The two scenarios reflect two different approaches as shown in Table 6.

Table 6: Required Annual Growth Rates for Full Coverage in 2020 AD

Scenarios	Water Supply	Sanitation	Remarks
A	10.4%	24.4%	percentage annual growth in coverage
B	5.4%	5.85%	percentage of "uncovered" population

Scenario A shows an initially gradual but subsequently exponential increase in the coverage of both water and sanitation as a function of the current coverage. The costs of this approach also rise exponentially and presuppose an annual inflation rate of 3%. The initial investment figure is based on the average cost per beneficiary over all water projects as determined earlier in this report (i.e. EB 31.50 per beneficiary over 1991-1994), modified to account for somewhat roughly estimated subsidies and depreciation costs (i.e. to a total of EB 50 per beneficiary in 1995). The initial sanitation investment cost per beneficiary is actually set lower than the average costs reported in this study (EB 15 versus EB 33 respectively), reflecting the need for only the most appropriate and affordable sanitation technologies for the rural population and the elimination of NGO overheads.

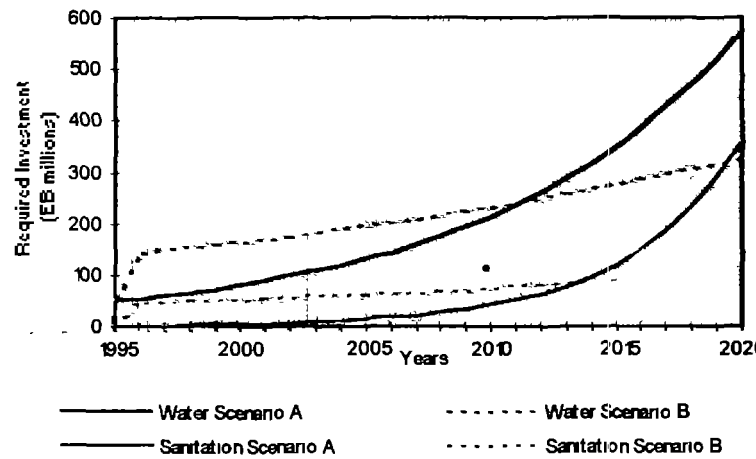

Figure 20 Projected costs of achieving full WatSan coverage by 2020 AD

Scenario B shows a more gradual linear approach to full coverage by taking a standard percentage of the shortfall in coverage as annual target (i.e. a proportion of the balance of the total rural population minus the number with access to proper sanitation facilities). This requires a much greater initial growth in investment in the first year, but spreads the costs more equitably over the years. Since in both scenarios the initial costs as well as the number of beneficiaries remain the same, the projected investment costs add up to the same totals. For water the costs are estimated at approximately EB 5.64 billion and for sanitation EB 1.82 billion. If the sanitation and irrigation expenditures are subtracted the NGOs have spent about 29 million Ethiopian Birr per year (with the 1993 exchange rate: US $5.8m) on rural water supply between 1991-1994. Assuming that the government has spent an equal amount during the same period, NGO and government expenditures will need to be increased by 250% per year (to EB 75m each in 1996) to get off to a good start for the 2020 target.

4.2.8 Integration of Sanitation and Water

As stated in the report, it is essential that in every aspect the provision of safe water is integrated with hygiene education and the construction of sanitation facilities. Ideally, the cost of the physical structure for rural sanitation should be borne for 100% by the users themselves. The task of government agencies and NGOs, as well as other potential actors, such as schools, clinics, etc. is to affirm the link between water and sanitation in the mind and attitudes of the users.

Hygiene awareness and practices and the household level construction and use of sanitation facilities needs more than just lip service from the WatSan actors. More than is happening now affirmative action is required of the NGOs, government and others to promote rural sanitation technologies which are appropriate, affordable and duplicable. Probably the relevant government bodies should consider only giving permission to NGOs to work in the water sector if it is demonstratably integrated with a strong sanitation component. Naturally, the government can only enforce such a point if it integrates its own water and sanitation services: As advocated by Unicef in a recent study (Datta, 1995), for the effective integration of WatSan services, the government's Water Supply and Sewerage Authority should be reshaped into a Water Supply and Sanitation Authority. While the Public Health Department of the Ministry of Health can and should continue to promote hygiene and sanitation, the responsibilities for implementation can more effectively be transfered to WSSA. The different conditions of urban centres may occasion the use of water-based sanitation and sewerage systems as more effective and efficient alternatives. This already comes under WSSA's responsibilities.

4.2.9 Cooperation and Coordination

Through activities of the CRDA Water Interest Group the opportunity exists for NGOs to share experiences, concerns, resources, etc. However, there still appears to be a trend towards isolationism among the NGOs, in which each is protecting his own little or big basket of projects from too much external scrutiny. In light of current government behaviour towards the NGO community, such isolationism may aggravate the confrontation between government and NGOs.

Goodwill, cooperation and coordination between the respective government agencies and NGOs are needed more than ever to meet the challenge of providing sustainable safe water and sanitary facilities for all in Ethiopia. In the current political climate perhaps the growing commercial sector should be encouraged to take a new and prominent role in the installation, operation and maintenance of water, sanitation and irrigation systems as well. Transparency by all actors in the WatSan sector is essential for better cooperation and coordination. Before the end of the century this can be stimulated in the following manner:

a. The legislative aspects of the WatSan sector should be further developed in a national water policy and supported by an integrated and unambiguous framework of qualitative and quantitative guidelines and norms. The institutional structures of WSSA should be built up to facilitate, monitor and control all sector activities (implementing tasks of the government WatSan sector should probably be phased out and privatized since they represent a potential conflict of interest between the legislative and executive duties).

b. An independent national advisory board to WSSA should be set up with elected representatives from government, commerce, NGOs and other professionals, possibly including observers from donor agencies. This body will monitor developments in the sector and the effectiveness and efficiency of WSSA, the NGOs and other actors and provide policy-level recommendations.

c. At the national and regional levels regular meetings should be organized for government, NGOs, commercial and other actors in the WatSan sector. These meetings will facilitate the free exchange of practical information and experience, serve to clarify procedures, identify bottle necks, stimulate interagency cooperation, networking, feedback and back-stopping. Organization of these meetings should be taken on by WSSA.

d. A national, independent bulletin, magazine or journal should be published periodically with up-to-date WatSan sector information, relevant articles, project reports, news items, training information, technology updates, etc. The bulletin will complement the quarterly reports currently required by the government, as such reports have a tendency to remain basically undisseminated and unavailable to those who could benefit most from the information. The bulletin, which can be funded by institutional and individual subscriptions, sector advertisements and initial subsidies from government and interested donors, will serve as a networking tool and increase the transparency of institutions and the accountability of the WatSan actors to each other and the general public.

e. NGOs should be encouraged to provide detailed annual reports of their sector activities. This should also be expected of the other actors, such as the respective government agencies, whose performance in this regard has been rather poor. In addition, updating of the NGO WatSan directory should be carried out annually to provide a better overview and synthesis of NGO activities. Similar directories should be established for the other actors in the sector. Periodically, possibly every 5 years, an in-depth analysis of the sector should be carried out to analyze achievements, issues, trends, roles and problems in the sector.

It is hoped that this study and the organizational profiles on the following pages will contribute to a further improvement of communication and cooperation among NGOs, and between the NGOs and central and regional government agencies and other actors in the sector and thereby serve to increase access to sustainable water and sanitation facilities, as well as promote food production and income-generation through small-scale irrigation, in order to benefit the health and well-being of all in Ethiopia.

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CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION

Membership Water & Sanitation Survey

Part 2: Profiles

Name of Organization: # Abebech Gobena Orphanage and School

Acronym: AGOS
Mailing Address: PO Box 24998 A.A.
Descriptive Address: Woreda 9, Kebele 7
Telephone: 127372/553622 **Fax:**
E-Mail:
Head of Organization: W/o Abebech Gobena
General Manager
Organization: National NGO
Activities: Support Orphans, Community Development, Health, Education, Vocational Training, Income-Generation, Irrigation & Water Supply
Location of Projects: R14: Zone 4 (W9, K7); R4: East Shewa (Guder)

WATER SUPPLY

Water Supply: Spring Protections (1)
Hand-Dug Wells (1)
Handpumps Installed: Mono (1)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 63,543 **Beneficiaries:** 1,800

SANITATION

Hygiene Education: Always: Posters, Audio Cassette
Environmental Sanitation: Pit Latrines (34)
Pour-Flush Latrines(/WC?) (31)
Expenditures: N/R **Beneficiaries:** 459

IRRIGATION

Irrigation: Surface (120-160 ha)
Expenditures: EB 380,000 **Beneficiaries:** 1,572

OTHER

Hydro Power: No

Staff Training: CRDA, MoH, CEVO

Name of Organization: # Action International Contre la Faim

Acronym: AICF
Mailing Address: PO Box 2357 A.A.
Descriptive Address: In front of Plant Genetic Research Center
Telephone: 610534 **Fax:** 610519
E-Mail:
Head of Organization: Gaël Griette
Country Representative
Organization: International NGO
Activities: Water Supply, Health & Environmental Sanitation
Location of Projects: R4: (Moyale, Gimbicho, Negele Borana)

WATER SUPPLY

Water Supply: Spring Protections (24)
Hand-Dug Wells (11)
Boreholes (1)
Roof Catchments (1)
Distribution Systems (1)
Storage Tanks (2)
Handpumps Installed: SWN (?)
Other Pumping Systems: Rope & Bucket (3)
Drilling Rig: PAT 201 Rotary
Expenditures: EB 470,661 **Beneficiaries:** 127,000

SANITATION

Hygiene Education: Always: Pictures, Training
Environmental Sanitation: VIP Latrines (2)
Expenditures: EB 40,000 **Beneficiaries:** 50

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: ActionAid Ethiopia

Acronym: AAE
Mailing Address: PO Box 1261 A.A.
Descriptive Address: Debre Zeit Road near Lancia
Telephone: 654671-6 **Fax:** 653420/654650
E-Mail: actionaid.et@padis.gn.apc.org
Head of Organization: Mr Thomas Joseph
Country Director
Organization: International NGO
Activities: Agriculture, Education, Health, Environmental Protection, Credit Schemes, Water Supply & Sanitation
Location of Projects: SEPA: Guraghe (Dalocha), North Omo (Waka)

WATER SUPPLY

Water Supply: Spring Protections (7)
Hand-Dug Wells (9)
Boreholes (7)
Ponds (2)
Handpumps Installed: Aquadev (6)
India Mark II (1)
Other Pumping Systems: Grundfos (6)
Drilling Rig: via COWDO & WWDA
Expenditures: EB 1,800,000 **Beneficiaries:** 30,000

SANITATION

Hygiene Education: Always: Posters, Flipchart, Leaflets
Environmental Sanitation: Borehole Latrines (62)
House Spraying (6,222)
Expenditures: EB 15,000 **Beneficiaries:** 500

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, WSSA

Name of Organization: # Adventist Development and Relief Agency

Acronym: ADRA
Mailing Address: PO Box 145 A.A.
Descriptive Address: Stadium Road, Opposite RRC
Telephone: 512212 **Fax:** 511319
E-Mail: adra-et@padis .gn.apc.org
Head of Organization: Mr Colin Richardson
Country Director
Organization: International Religious Organization
Activities: Environmental Sanitation, Water Supply & School Construction
Location of Projects: R1: (Mekele); R3: South Gonder; R4: West Shewa, East Shewa, West Welega, Borena; SEPA: Kembata, Guraghe, North Omo, Sidama

WATER SUPPLY

Water Supply: Spring Protections (?)
Hand-Dug Wells (?)
Ponds (?)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: Deep Rock Flamingo Rotary
Expenditures: N/R **Beneficiaries:** N/R

SANITATION

Hygiene Education: N/R
Environmental Sanitation: N/R
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: N/R

Name of Organization: # African Development Aid Association

Acronym: ADAA
Mailing Address: PO Box 100061 A.A.
Descriptive Address: Kotebe, Woreda 28, Kebele 02
Telephone: 189765 **Fax:** c/o CRDA
E-Mail:
Head of Organization: Ato Miesso Nebi
Director
Organization: National NGO
Activities: Health, Education, Afforestation, Credit Schemes, Hostel Service, Water Supply
Location of Projects: R4: North Shewa

WATER SUPPLY

Water Supply: Hand-Dug Wells (2)
Boreholes (1)
Handpumps Installed: Direct-Action (1)
Afridev/Ibex? (1)
India Mark II (1)
Other Pumping Systems: No
Drilling Rig: via WV/I
Expenditures: EB 40,000 **Beneficiaries:** 450

SANITATION

Hygiene Education: Always: Posters, Special Meetings
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # African Rural Development Ethiopia

Acronym: ARDE
Mailing Address: PO Box 1237 A.A.
Descriptive Address: Bole - Megenagna Road Near WRDA.
Telephone: 187521/187522 **Fax:**
E-Mail:
Head of Organization: Ato Datan Wodajo
Director
Organization: National NGO
Activities: Agriculture, Child Care & Water Supply
Location of Projects: R4: West Shewa

WATER SUPPLY

Water Supply: Ponds (4)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 30,000 **Beneficiaries:** 800

SANITATION

Hygiene Education: Never
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, WV/I

Name of Organization: # Africare Ethiopia

Acronym: Africare
Mailing Address: PO Box 2309 A.A.
Descriptive Address: Along Bole Road, in front of Commercial Bank
Telephone: 152484 **Fax:** 511248
E-Mail:
Head of Organization: Mr Blaine D.Pope
Country Representative
Organization: International NGO
Activities: Water Supply, Irrigation & Health
Location of Projects: R1: (Axum, Adigrate); R4: West Shewa, East Shewa; R5: Jijiga; SEPA: Guraghe

WATER SUPPLY

Water Supply: Spring Protections (1)
Hand-Dug Wells (?)
Boreholes (8)
Distribution Systems (?)
Storage Tanks (?)
Handpumps Installed: Mono (?)
Afridev (?)
Other Pumping Systems: Submersible (5)
Turbine (1)
Drilling Rig: Ingersoll Rand TH-10
Expenditures: EB 2,453,757 (+) **Beneficiaries:** 105,000

SANITATION

Hygiene Education: N/R
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (60 ha)
Expenditures: EB 900,000 **Beneficiaries:** 4,000

OTHER

Hydro Power: No

Staff Training: CRDA, AWTI

Name of Organization: Agri Service Ethiopia

Acronym: ASE
Mailing Address: PO Box 2460 A.A.
Descriptive Address: Near CRS
Telephone: 164811 **Fax:** 654088
E-Mail:
Head of Organization: Ato Getachew Worku
Director
Organization: National NGO
Activities: Forestry, Soil & Water Conservation, Action-Oriented Training, Water Supply & Environmental Sanitation
Location of Projects: R3: East Gojam; R4: Bale; SEPA: North Omo

WATER SUPPLY

Water Supply: N/R
Handpumps Installed: PB India Mark II (21)
Other Pumping Systems: Lister (2)
Drilling Rig: via EWWCA
Expenditures: EB 2,802,389 **Beneficiaries:** N/R

SANITATION

Hygiene Education: Always: Leaflets, Posters, Booklets
Environmental Sanitation: N/R
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, NOVIB, PAID

Name of Organization: # American Joint Distribution Committee

Acronym: AJDC
Mailing Address: PO Box 7600 A.A
Descriptive Address: Megenagna, near Shola Park
Telephone: 613826/613827 **Fax:** 612855
E-Mail:
Head of Organization: Dr Girma Tolossa
Country Representative
Organization: International NGO
Activities: Agriculture, Health & Water Supply
Location of Projects: R3: North Gonder (Gonder Zuria)

WATER SUPPLY

Water Supply: Spring Protections (2)
Hand-Dug Wells (20)
Boreholes (3)
Distribution Systems (1)
Storage Tanks (3)
Handpumps Installed: N/R
Other Pumping Systems: N/R
Drilling Rig: via Gov't Agencies
Expenditures: EB 200,000 (+) **Beneficiaries:** N/R

SANITATION

Hygiene Education: Always: Workshops, On-the-job Training
Environmental Sanitation: VIP Latrines (?)
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Baptist General Conference Mission

Acronym: BGCM
Mailing Address: PO Box 2323 A.A.
Descriptive Address: Woreda 20, Kebele 45
Telephone: 650449 **Fax:** c/o CRDA
E-Mail:
Head of Organization: Dr Edwin Erikson
Mission Coordinator
Organization: International Religious Organization
Activities: Health & Water Supply
Location of Projects: R4: West Shewa, East Shewa

WATER SUPPLY

Water Supply: Spring Protections (1)
Hand-Dug Wells (18)
Boreholes (6)
Distribution Systems (1)
Storage Tanks (2)
Ponds (1)
Handpumps Installed: Boswell (18)
Afridev (6)
Other Pumping Systems: N/R
Drilling Rig: Drill Ease S600H Rotary (moved to EENGO)
Expenditures: EB 167,500 **Beneficiaries:** N/R

SANITATION

Hygiene Education: Always
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (7 ha)
Expenditures: EB 6,000 + FFW **Beneficiaries:** 150

OTHER

Hydro Power: No

Staff Training: No

- Water Programme discontinued in 1993 -

Name of Organization: Baptist Mission Ethiopia

Acronym: BME
Mailing Address: PO Box 5539 A.A.
Descriptive Address: Mekanisa Area
Telephone: 711671/200143 **Fax:** 711671
E-Mail: bme@padis .gn.apc.org
Head of Organization: Mr Rob Ackerman
Mission Administrator

Organization: International Religious Organization
Activities: Water Supply, Agriculture, Health, Road Construction, Environmental Sanitation & Irrigation
Location of Projects: R3: North Shewa; R4: North Shewa

WATER SUPPLY

Water Supply: Spring Protections (23)
Boreholes (1)
Distribution Systems (3)
Water Tanks (5)
Ponds (1)
Handpumps Installed: N/R
Other Pumping Systems: Submersibles (2)
Drilling Rig: via KHCDP
Expenditures: EB 626,000 **Beneficiaries:** 25,200

SANITATION

Hygiene Education: Frequently· Teaching & Examples
Environmental Sanitation: Pit Latrine (1)
Expenditures: EB 4,000 **Beneficiaries:** 500

IRRIGATION

Irrigation: Surface (2 ha)
Expenditures: N/R **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, WSSA

Name of Organization: # Canadian Physicians for Aid and Relief

Acronym: CPAR
Mailing Address: PO Box 2555 A.A.
Descriptive Address: Debre Zeit Road near Lancia
Telephone: 653944 **Fax:** 654655
E-Mail: cpar@padis.gn.apc.org.
Head of Organization: Ato Getachew Abegaz
Country Director
Organization: International NGO
Activities: Water Supply & Environmental Sanitation
Location of Projects: R3: South Gonder; R4: North Shewa

WATER SUPPLY

Water Supply: Spring Protections (110)
Hand-Dug Wells (14)
Handpumps Installed: Nira AF 85 (14)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 1,317,000 **Beneficiaries:** 43,400

SANITATION

Hygiene Education: Always
Environmental Sanitation: VIP Latrines (79)
Expenditures: EB 237,000 **Beneficiaries:** N/R

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: Metafaria, Eth Society for Appropriate Technology

Name of Organization: Care International Ethiopia

Acronym: CARE
Mailing Address: PO Box 4710 A.A.
Descriptive Address: Near Shola Mobil Station
Telephone: 613422 **Fax:** 611900
E-Mail: care-et@padis.gn.apc.org
Head of Organization: Mr Robin Needham
Country Director
Organization: International NGO
Activities: Agriculture, Natural Resources Development, Water Supply & Irrigation, Savings & Credit, Infrastructure, Family Planning, AIDS, Early Warning
Location of Projects: R2: (Awash); R3: (Zeghe); R4: East Shewa; West Harerghe, East Harerghe, Borena; R5: Jijiga; R14.

WATER SUPPLY

Water Supply: Spring Protections (107)
Hand-Dug Wells (142)
Roof Catchments (5)
Storage Tanks (65)
Ponds (794)
Water Holes (128)
Cisterns (1)
Handpumps Installed: India Mark II (12)
Tara (2)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 163,000 (+) **Beneficiaries:** 22,080 (+)

SANITATION

Hygiene Education: Always: Workshop, Posters, Pictures, Overhead Projectors
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (426 ha)
Expenditures: EB 80,000 **Beneficiaries:** 10,150

OTHER

Hydro Power: No

Staff Training: CARE, AIRR

Name of Organization: # Catholic Relief Service

Acronym: CRS
Mailing Address: PO Box 6592 A.A.
Descriptive Address: Debre Zeit Road near CRDA
Telephone: 653588 **Fax:** 654450
E-Mail:
Head of Organization: Mr David Piroino
Country Representative
Organization: International Religious Organization
Activities: Water Supply, Environmental Sanitation, Irrigation, Health, Credit Schemes, Ex-Soldiers, Agriculture & Natural Resources Development
Location of Projects: R4: East Harerghe, East Shewa (Mekki); SEPA: Guraghe

WATER SUPPLY

Water Supply: Spring Protections (46)
Hand-Dug Wells (4)
Distributions Systems (2)
Handpumps Installed: Afridev (2)
Other Pumping Systems: No
Drilling Rig: Ingersoll Rand TH-10
Expenditures: N/R **Beneficiaries:** N/R

SANITATION

Hygiene Education: Frequently: MoH Posters, Lectures
Environmental Sanitation: VIP Latrines (21)
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: Surface (12 ha)
Expenditures: N/R **Beneficiaries:** 108 (+)

OTHER

Hydro Power: No

Staff Training: CRDA, CMRS, Haleto, CBS

Name of Organization: # Centro Volontari Marchigiani

Acronym: CVM
Mailing Address: PO Box 8429 A.A.
Descriptive Address: Near Bole Airport
Telephone: 614454 **Fax:** 614463
E-Mail:
Head of Organization: Mr Attilio Ascani
Representative
Organization: International NGO
Activities: Water Supply, Environmental Sanitation & Health
Location of Projects: SEPA: North Omo, South Omo

WATER SUPPLY

Water Supply: Spring Protections (18)
Hand-Dug Wells (20)
Boreholes (12)
Distribution Systems (8)
Storage Tanks (9)
Ponds (5)
Handpumps Installed: Nira & Tara (10)
Afridev (20)
Other Pumping Systems: Windpumps (4)
Submersible BBC (2)
Drilling Rig: via Catholic Church (ECS)
Expenditures: EB 2,500,000 (+) **Beneficiaries:** 61,201 (+)

SANITATION

Hygiene Education: Frequently: Flipcharts
Environmental Sanitation: Pit Latrines (104)
Expenditures: EB 115,000 **Beneficiaries:** 21,000

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: AWTI

Name of Organization: # Cheshire Foundation Ethiopia

Acronym: CFE
Mailing Address: PO Box 31938 A.A
Descriptive Address: Asmara Road - Opposite to WARYT Building
Telephone: 180518/610804 **Fax:** 610804
E-Mail:
Head of Organization: Ato Nigussie W/Sellassie
Coordinator
Organization: International NGO
Activities: Health, Environmental Sanitation & Water Supply
Location of Projects: R14: (W10)

WATER SUPPLY

Water Supply: Distribution Systems (7)
Handpumps Installed: N/R
Other Pumping Systems: N/R
Drilling Rig: N/R
Expenditures: EB 20,000 **Beneficiaries:** 500

SANITATION

Hygiene Education: Frequently: Lectures, Video, Demonstrations
Environmental Sanitation: VIP Latrines (14)
Expenditures: EB 168,000 **Beneficiaries:** 950

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, LCI

Name of Organization: # Christian Children's Fund Inc.

Acronym: CCF
Mailing Address: PO Box 5545 A.A.
Descriptive Address: Bole Road, Woreda 17, Kebele 19
Telephone: 612865 **Fax:** 612866
E-Mail:
Head of Organization: Ato Ketema Abebe
National Director
Organization: International NGO
Activities: Child Development, Education, Health, Nutrition, Water Supply & Environmental Sanitation
Location of Projects: R4: East Shewa; R14: Addis Ababa

WATER SUPPLY

Water Supply: Boreholes (3)
Distribution Systems (15)
Handpumps Installed: No
Other Pumping Systems: Generator + Pump (3)
Drilling Rig: via WSSA
Expenditures: EB 652,500 **Beneficiaries:** 13,500

SANITATION

Hygiene Education: Always: Pictures, Lectures
Environmental Sanitation: Pit Latrines (80)
VIP Latrines (50)
Expenditures: EB 270,000 **Beneficiaries:** 3,040

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, Government Agencies

Name of Organization: # Church of Christ Mission

Acronym: COC
Mailing Address: PO Box 3147 A.A.
Descriptive Address: Mekanisa, Woreda 23, Kebele 15
Telephone: 710981 **Fax:** 712099
E-Mail:
Head of Organization: Dr Behailu Abebe
Director
Organization: International Religious Organization
Activities: Special Education & Vocational Training for the Deaf & Water Supply
Location of Projects: SEPA: Guraghe

WATER SUPPLY

Water Supply: Boreholes (5)
Handpumps Installed: Mono (5)
Other Pumping Systems: No
Drilling Rig: Stover S400
Expenditures: EB 91,000 **Beneficiaries:** 14,500

SANITATION

Hygiene Education: N/R
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CoC

Name of Organization: # Concern World Wide Ethiopia

Acronym: CONCERN
Mailing Address: PO Box 2434 A.A.
Descriptive Address: Near Shola Market, Woreda 16, Kebele 12
Telephone: 611730 **Fax:** 611544
E-Mail: concern.et@ padis.gn.apc.org.
Head of Organization: Mrs Moira Brehony
Field Director
Organization: International NGO
Activities: Credit, Health, Nutrition, Infrastructure Development, Water Supply & Environmental Sanitation
Location of Projects: R3: Wello (North Kalu); SEPA: North Omo (Wolayta), Hadiya; R14 (W4)

WATER SUPPLY

Water Supply: Spring Protections (11)
Hand-Dug Wells (19)
Roof Catchments (3)
Storage Tanks (2)
Ponds (1)
Handpumps Installed: Mono (1)
Afridev (6)
Other Pumping Systems: Rope & Bucket (11)
Drilling Rig: No
Expenditures: EB 767,000 **Beneficiaries:** 42,980

SANITATION

Hygiene Education: Always: Posters
Environmental Sanitation: Pit Latrines (250)
Expenditures: EB 875,000 **Beneficiaries:** 10,000

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: WSSA, CRDA, Building College, Forestry College, CMRS

Name of Organization: # Ethiopian Aid

Acronym: EA
Mailing Address: PO Box 101992 A.A.
Descriptive Address: Along Bole Road (opposite Angola Embassy)
Telephone: 515245 **Fax:** 515158
E-Mail:
Head of Organization: Ato Yeshiwas Bekele
Executive Director
Organization: National NGO
Activities: House Construction/Upgrading, Street Children, Environmental Sanitation, Family Planning, Credit Schemes, Vocational Training, Health
Location of Projects: R14: Zone 4 (W13: K03, K16)

WATER SUPPLY

Water Supply: No
Handpumps Installed: -
Other Pumping Systems: -
Drilling Rig: -
Expenditures: - **Beneficiaries:** -

SANITATION

Hygiene Education: Always: Charts, Pictures, Videos, Lectures
Environmental Sanitation: VIP Latrines (6)
Expenditures: EB 75,000 **Beneficiaries:** 403

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: SCF, FORUM, UCC, AID SRAP, FP

Name of Organization: # Ethiopian Enviromental NGO

Acronym: EENGO
Mailing Address: PO Box 8838 A.A.
Descriptive Address: In front of BERTA Construction, Woreda 20, Kebele 45
Telephone: 167579 **Fax:** 652280
E-Mail:
Head of Organization: Ato Bekele Araressa
Executive Director
Organization: National NGO
Activities: Forestry & Water Supply
Location of Projects: R4: North Shewa, West Shewa

WATER SUPPLY

Water Supply: Spring Protections (1)
Hand-Dug Wells (4)
Boreholes (2)
Storage Tanks (1)
Handpumps Installed: Afridev (6)
Other Pumping Systems: No
Drilling Rig: Stover Drill Ease S600H Rotary (from BGCM)
Expenditures: EB 189,681 **Beneficiaries:** 2,440

SANITATION

Hygiene Education: N/R
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: N/R

Name of Organization: # Ethiopian Evangelical Church Mekane Yesus

Acronym: EECMY
Mailing Address: PO Box 2087 A.A.
Descriptive Address: Amist Kilo, in front of Faculty of Technology
Telephone: 553722 **Fax:** 552966
E-Mail:
Head of Organization: Rev.Yadessa Daba
President
Organization: National Religious Organization
Activities: Water Supply, Education, Health, Relief & Hydro Power
Location of Projects: R1; R3; R4; SEPA; R12; R14

WATER SUPPLY

Water Supply: Spring Protections (204)
Hand-Dug Wells (135)
Boreholes (61)
Roof Catchments (3)
Handpumps Installed: PB India Mark II (196)
Mono (8)
Other Pumping Systems: N/R
Drilling Rig: Atlas Copco Aquadrill Cop 4 / Halco 596
Expenditures: EB 21,462,550 **Beneficiaries:** 200,000

SANITATION

Hygiene Education: N/R
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: N/R

Staff Training: CRDA, NCA, EECMY, AWTI

Name of Organization: # Ethiopian Orthodox Church Development & Inter-Church Aid Commission

Acronym: EOC/DICAC
Mailing Address: PO Box 503 A.A.
Descriptive Address: Arat Kilo, in front of Tourist Hotel
Telephone: 553566/119661 **Fax:** 551455
E-Mail:
Head of Organization: Archbishop Dr. Abune Timotheos
Commissioner
Organization: National Religious Organization
Activities: Forestry, Water Supply & Sanitation, FFW, Rehabilitation
Location of Projects: R1: Central; R3: North Gonder, North Wello; R4: North Shewa

WATER SUPPLY

Water Supply: Spring Protections (30)
Hand-Dug Wells (20)
Roof Catchments (5)
Distribution Systems (30)
Handpumps Installed: Aquadev (7)
Afridev (13)
Other Pumping Systems: No
Drilling Rig: via WWDA
Expenditures: EB 530,000 **Beneficiaries:** 40,500

SANITATION

Hygiene Education: Always: Flipcharts, Pictures, Videos, Lectures, On-the-Job Training
Environmental Sanitation: Pit Latrines (10)
VIP Latrines (15)
Expenditures: EB 21,000 **Beneficiaries:** 500

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, WEDC

Name of Organization: # Ethiopian Relief Organization

Acronym: ERO
Mailing Address: PO Box 8122 A.A
Descriptive Address: Near Bole Printing Press
Telephone: 513893 **Fax:** 517244
E-Mail:
Head of Organization: Ato Shumet Admas
Director
Organization: National NGO
Activities: Water Supply, Environmental Sanitation, Integrated Rural Development, Infrastructure, Irrigation, Agriculture, Forestry, S&W Conservation, ...
Location of Projects: R3: South Gonder, North Gonder, Wag Hamra

WATER SUPPLY

Water Supply: Spring Protections (211)
Hand-Dug Wells (30)
Ponds (8)
Handpumps Installed: No
Other Pumping Systems: Rope & Bucket (?)
Drilling Rig: No
Expenditures: N/R **Beneficiaries:** N/R

SANITATION

Hygiene Education: Never
Environmental Sanitation: Pit Latrines (6)
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: Surface (20 ha)
Expenditures: N/R **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: No

Name of Organization: # Family Development Project

Acronym: FADEP
Mailing Address: PO Box 30104 A.A.
Descriptive Address: Near Asmara Road, Woreda 17, Kebele 14
Telephone: 189677/613403 **Fax:**
E-Mail:
Head of Organization: Ato Abebe Hailu
General Manager
Organization: National Organization
Activities: Integrated Rural Development, Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R4; R6; SEPA

WATER SUPPLY

Water Supply: Spring Protections (25)
Hand-Dug Wells (17)
Boreholes (3)
Storage Tanks (3)
Handpumps Installed: Unknown Model (2)
Other Pumping Systems: Submersible (2)
Drilling Rig: No
Expenditures: EB 111,000 **Beneficiaries:** 130,000

SANITATION

Hygiene Education: Always: Practical Demonstration
Environmental Sanitation: Pit Latrines (120)
Expenditures: EB 12,000 **Beneficiaries:** 600

IRRIGATION

Irrigation: Surface (50 ha)
Expenditures: EB 7,000 **Beneficiaries:** 350

OTHER

Hydro Power: Yes

Staff Training: CRDA, FGAE

- Organization no longer operational -

Name of Organization: # Feed The Children International Ministries

Acronym: FTC
Mailing Address: PO Box 5683 A.A.
Descriptive Address: N/R
Telephone: 511548 **Fax:** 513266
E-Mail:
Head of Organization: Ato Wondimagegnehu Gizaw
Executive Director
Organization: National NGO
Activities: Water Supply & Other
Location of Projects: SEPA: Guraghe

WATER SUPPLY

Water Supply: Spring Protections (8)
Hand-Dug Wells (3)
Boreholes (12)
Ponds (6)
Handpumps Installed: Mono (?)
Other Pumping Systems: N/R
Drilling Rig: via KHCDP
Expenditures: N/R **Beneficiaries:** N/R

SANITATION

Hygiene Education: Frequently: Oral, Pictures
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Finnish Mission

Acronym: FM
Mailing Address: PO Box 1102 A.A.
Descriptive Address: W08, K05, H199
Telephone: 755000 **Fax:** 751733
E-Mail:
Head of Organization: Mr Heikki Penttinen
Director
Organization: International Religious Organization
Activities: Health, Water Supply, Education & Child Support
Location of Projects: R4: East Shewa (Illubabor), West Shewa; SEPA: Sidama

WATER SUPPLY

Water Supply: Spring Protections (21)
Hand-Dug Wells (40)
Handpumps Installed: Nira AF 85 (40)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 604,542 **Beneficiaries:** 17,085

SANITATION

Hygiene Education: Frequently
Environmental Sanitation: Integrated with PHC Programmes
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, WSSA

Name of Organization: # Food and Agricultural Research Management Africa

Acronym: FARM
Mailing Address: PO Box 5746 A.A.
Descriptive Address: Near English Sanford School
Telephone: 551208/552684/553415 **Fax:** 552143
E-Mail:
Head of Organization: Dr Assefa W/Giorgis
Country Representative
Organization: International NGO
Activities: Agriculture, Dairy Goat Development, Water Supply
Location of Projects: R1: Central; R3; R4

WATER SUPPLY

Water Supply: Spring Protections (3)
Hand-Dug Wells (2)
Roof Catchments (4)
Storage Tanks (4)
Handpumps Installed: Rower (1)
Afridev (1)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: N/R **Beneficiaries:** N/R

SANITATION

Hygiene Education: Never
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Food for the Hungry International

Acronym: FHI
Mailing Address: PO Box 4181 A.A.
Descriptive Address: Kasanchis near Indrase Hotel, Woreda 15, Kebele 29
Telephone: 514377/154966 **Fax:** 512808
E-Mail: paul_erickson@ padis .gn.apc.org.
Head of Organization: Mr Paul Erickson
Country Director
Organization: International Religious Organization
Activities: Conservation, Agroforestry, Agricultural Extension, Water Supply, Environmental Sanitation & Health
Location of Projects: R3: South Gonder; SEPA: Guraghe (Alaba, Timbaro)

WATER SUPPLY

Water Supply: Spring Protections (12)
Hand-Dug Wells (15)
Roof Catchments (5)
Ponds (5)
Handpumps Installed: Afridev (15)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 32,000 (+) **Beneficiaries:** 12,000

SANITATION

Hygiene Education: Always: Pictoral Handouts, Posters
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Domestic (20)
Expenditures: EB 10,000 **Beneficiaries:** 20

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Goal Ethiopia

Acronym: GOAL
Mailing Address: PO Box 6552 A.A.
Descriptive Address: Near Rwanda Embassy, off Bole Road
Telephone: 612136 **Fax:** 614199
E-Mail: goal@padis.gn.apc.org
Head of Organization: Ms Fiona Quinn
Field Director
Organization: International NGO
Activities: Health Care, Water Supply & Environmental Sanitation
Location of Projects: SEPA: Guraghe; R14

WATER SUPPLY

Water Supply: Spring Protections (1)
Hand-Dug Wells (1)
Distribution Systems (1)
Storage Tanks (1)
Handpumps Installed: Afridev (1)
Other Pumping Systems: Lister-Petter Capriari (1)
Drilling Rig: No
Expenditures: EB 704,122 **Beneficiaries:** 16,000

SANITATION

Hygiene Education: Always: Visual Aids, Group Discussions, Videos, Audio Tapes
Environmental Sanitation: VIP Latrines (8)
Expenditures: EB 140,000 **Beneficiaries:** N/R

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Good Shepherd Family Care Service

Acronym: GSFCS
Mailing Address: PO Box 8046 A.A.
Descriptive Address: near Amist Kilo
Telephone: 551950/122514 **Fax:** 553937
E-Mail:
Head of Organization: Ato Mulugeta Abebe
Managing Director
Organization: National NGO
Activities: Income Generation, Health, Water Supply & Environmental Sanitation
Location of Projects: R14: Zone 4 (W13)

WATER SUPPLY

Water Supply: Hand-Dug Wells (1)
Distnbution Systems (1)
Handpumps Installed: Aquadev (1)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 35,000 **Beneficiaries:** 40

SANITATION

Hygiene Education: Always: Film Show, Charts, Leaflets, Posters
Environmental Sanitation: VIP Latrines (26)
Expenditures: EB 27,000 **Beneficiaries:** 2,210

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, AAE, RB

Name of Organization: # Hope International Development Agency

Acronym: HIDA
Mailing Address: PO Box 100968 A.A.
Descriptive Address: Kale Heywet Church Building near OAU
Telephone: 518674 **Fax:** 518683
E-Mail:
Head of Organization: Mr Douglas Manzer
Country Representative
Organization: International NGO
Activities: Water Supply & Environmental Sanitation
Location of Projects: SEPA: North Omo (Chencha, Gidole)

WATER SUPPLY

Water Supply: Spring Protections (5)
Distribution Systems (7)
Storage Tanks (5)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 618,000 **Beneficiaries:** 10,700

SANITATION

Hygiene Education: Always: Pictoral Chart, Flipcharts, Books
Environmental Sanitation: Pit Latrines (1)
Expenditures: EB 1,400 **Beneficiaries:** 500

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Integrated Holistic Approach Urban Development Programme

Acronym: IHA-UDP
Mailing Address: PO Box 6889 A.A.
Descriptive Address: Near Abbay Soft Drinks Bottling Factory
Telephone: 156375 **Fax:** 512177
E-Mail:
Head of Organization: Sr. Jember Tefera
Project Coordinator
Organization: National NGO
Activities: Environmental Sanitation & Water Supply
Location of Projects: R14: (W3: K30, K41, K42, K43)

WATER SUPPLY

Water Supply: Distribution Systems (5)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 25,000 **Beneficiaries:** 4,000

SANITATION

Hygiene Education: Always: Posters, Leaflets, Film, Role Play
Environmental Sanitation: VIP Latrines (55)
Refuge Disposal Pits (357)
Expenditures: EB 83,830 **Beneficiaries:** 5,900

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, IHA-UDP

Name of Organization: Inter Aide France

Acronym: IAF
Mailing Address: PO Box 100231 A.A.
Descriptive Address: Bole Road near Bole Printing Press
Telephone: 159914 **Fax:** 514708
E-Mail:
Head of Organization: Mr Fransois Denizot
Country Representative
Organization: International NGO
Activities: Water Supply, Environmental Sanitation, Feeder Roads & Bridge Construction
Location of Projects: SEPA: North Omo (Woleyta, Offa, Kindo Koisha)

WATER SUPPLY

Water Supply: Spring Protections (82)
Distribution Systems (82)
Storage Tanks (1)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 1,400,000 **Beneficiaries:** 25,000

SANITATION

Hygiene Education: Frequently: Site Training
Environmental Sanitation: Pit Latrines (3)
Expenditures: EB 750 **Beneficiaries:** 1,500

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: AIF

Name of Organization: # Japan International Volunteer Center

Acronym: JVC
Mailing Address: PO Box 6941 A.A.
Descriptive Address: In front of AMCE, Woreda 17, Kebele 24
Telephone: 614555 **Fax:** 614555
E-Mail:
Head of Organization: Ms Akino Katazume
Country Representative
Organization: International NGO
Activities: Agro-Forestry, Water Supply, Irrigation & Environmental Sanitation
Location of Projects: R3: South Wello (Mekedela)

WATER SUPPLY

Water Supply: Spring Protections (12)
Handpumps Installed: India Mark II (1)
Nissaku (1)
Other Pumping Systems: No
Drilling Rig: via RRC (Koken OE-8L)
Expenditures: EB 48,000 **Beneficiaries:** 12,000

SANITATION

Hygiene Education: Frequently: Posters, Leaflets
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (120 ha)
Expenditures: EB 705,000 **Beneficiaries:** 1,500

OTHER

Hydro Power: No

Staff Training: ASE, CRDA

Name of Organization: Jesuit Refugee Service

Acronym: JRS
Mailing Address: PO Box 30105 A.A.
Descriptive Address: Near Lancia Building, Debre Zeit Road
Telephone: 653168/651237/162234 **Fax:** 654830
E-Mail: jrs@pedis.gn.apc.org
Head of Organization: Fr. Jan W.M. Emers
Country Director

Organization: International Religious Organization
Activities: Integrated Rural Development, Water Supply & Irrigation
Location of Projects: R1: (Hawzien)

WATER SUPPLY

Water Supply: Distribution Systems (1)
Storage Tanks (3)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 51,841 **Beneficiaries:** 3,000

SANITATION

Hygiene Education: Never
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Funding to MoA
Expenditures: EB 55,168 **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Kale Heywet Church Development Programme

Acronym: KHCDP
Mailing Address: PO Box 5829 A.A.
Descriptive Address: Opposite OAU near Mexico Square
Telephone: 515844/151570/156616 **Fax:** 512723
E-Mail:
Head of Organization: Dr Mulatu Baffa
General Secretary
Organization: National Religious Organization
Activities: Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R3: South Wello; R4: East Shewa; SEPA: Guraghe, Hadiya, Kambatta, North Omo

WATER SUPPLY

Water Supply: Spring Protections (47)
Hand-Dug Wells (4)
Boreholes (97)
Roof Catchments (1)
Distribution Systems (5)
Storage Tanks (10)
Handpumps Installed: Aquadev (32)
Afridev (4)
Mono (40)
Other Pumping Systems: Grundfos/Franklin (14)
Drilling Rig: Ingersoll Rand TH 10
Expenditures: EB 8,500,000 **Beneficiaries:** 207,000

SANITATION

Hygiene Education: Always: Posters, Stories, Drama, Oral Presentations, Slide Films
Environmental Sanitation: Pit Latrines (10)
Refuse Pits (5)
Sanplat Latrines (16)
Expenditures: EB 18,000 **Beneficiaries:** 1,780 (+)

IRRIGATION

Irrigation: Drip (5 ha)
Domestic (?)
Expenditures: EB 1,000,000 **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, WSSA, KHCDP, WEDC, Warwick U., Silsoe U.

Name of Organization: # L'Esperance Children's Aid Organization

Acronym: LCAO
Mailing Address: PO Box 100713 A.A.
Descriptive Address: Near Akaki Health Centre
Telephone: 340284 **Fax:** c/o CRDA
E-Mail:
Head of Organization: Ato Gebre Assefa
Director
Organization: National Religious Organization
Activities: Water Supply, Irrigation & Environmental Sanitation
Location of Projects: R1: Southern (Mekele); R4: East Shewa (Zway, Kimphe); R14: (Akaki)

WATER SUPPLY

Water Supply: Spring Protections (1)
Boreholes (5)
Distribution Systems (2)
Storage Tanks (2)
Handpumps Installed: Unknown Model (2)
Other Pumping Systems: Submersible UPA 100 (1)
Drilling Rig: via KHCDP
Expenditures: EB 314,000 **Beneficiaries:** 3,950

SANITATION

Hygiene Education: Never
Environmental Sanitation: VIP Latrines (1)
Refuse Disposal Pits (4)
Expenditures: EB 51,200 **Beneficiaries:** 400

IRRIGATION

Irrigation: Surface (3.5 ha)
Expenditures: EB 12,250 **Beneficiaries:** 2,000

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Lay Volunteers International Association

Acronym: LVIA
Mailing Address: PO Box 102348 A.A.
Descriptive Address: Near St Gabriel Hospital
Telephone: 613992 **Fax:** c/o CRDA (652280)
E-Mail:
Head of Organization: Mr Gusseppe Magri
Country Representative
Organization: International NGO
Activities: Social Work, Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R4: North Shewa (Mendida); R14

WATER SUPPLY

Water Supply: Spring Protections (23)
Hand-Dug Wells (125)
Boreholes (17)
Roof Catchments (60)
Distribution Systems (7)
Storage Tanks (41)
Ponds (1)
Handpumps Installed: Akaki Alpha (125)
Other Pumping Systems: Windpumps (16)
CBS-Capriari (4)
Drilling Rig: on loan from ADRA
Expenditures: EB 4,057,000 **Beneficiaries:** 416,000

SANITATION

Hygiene Education: Always: Posters, Teaching, PHC
Environmental Sanitation: VIP Latrines (200)
Expenditures: EB 400,000 **Beneficiaries:** 3,500

IRRIGATION

Irrigation: Surface (7 ha)
Expenditures: EB 7,000 **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, Mendida Technical School

Lutheran World Federation

Name of Organization: Lutheran World Federation
Acronym: LWF
Mailing Address: PO Box 40132 A.A.
Descriptive Address: Amist Kilo opposite National Museum
Telephone: 553288/551327 **Fax:** 552514
E-Mail: lwf@padis.gn.apc.org
Head of Organization: Mr Paavo Faerm
Resident Representative
Organization: International Religious Organization
Activities: Irrigation, Soil & Water Conservation, Forestry & Water Supply
Location of Projects: R4: West Welega (Dembidolo), West Harerghe, East Harerghe; R5: Shinele; SEPA: Sidama, Gedeo; Dire Dawa

WATER SUPPLY

Water Supply: Spring Protections (8)
Hand-Dug Wells (8)
Distribution Systems (29)
Storage Tanks (8)
Ponds (12)
Handpumps Installed: No
Other Pumping Systems: Rope & Bucket (8)
Centrifugal Surface (3)
Drilling Rig: No
Expenditures: EB 1,480,000 **Beneficiaries:** 37,500

SANITATION

Hygiene Education: Always: Posters, Oral
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (9000 ha)
Expenditures: EB 28,350,000 **Beneficiaries:** 200,000

OTHER

Hydro Power: No

Staff Training: CRDA, NCA, MoA

Name of Organization: Medicins Du Monde

Acronym: MDM
Mailing Address: PO Box 2339 A.A.
Descriptive Address: Near Airport Motel
Telephone: 613057/613058 **Fax:** 613059
E-Mail:
Head of Organization: Mr Jose Fernandez
Country Representative
Organization: International NGO
Activities: Health, Water Supply & Environmental Sanitation
Location of Projects: R3: North Shewa (Menze Gishe)

WATER SUPPLY

Water Supply: Spring Protections (4)
Hand-Dug Wells (1)
Distribution Systems (4)
Storage Tanks (4)
Handpumps Installed: No
Other Pumping Systems: Rope & Bucket (1)
Drilling Rig: No
Expenditures: EB 52,500 **Beneficiaries:** 9,741

SANITATION

Hygiene Education: Occasionally: Discussions
Environmental Sanitation: Pit Latrines (7)
Refuse Disposal Pits (6)
Expenditures: EB 14,000 **Beneficiaries:** N/R

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, Galilee College, AWTI

Name of Organization: Medicins Sans Frontieres (Belgium)

Acronym: MSF-B
Mailing Address: PO Box 2441A.A.
Descriptive Address: Near Misrak Comprehensive Highschool
Telephone: 610398/612670/610011 **Fax:** 610535
E-Mail: msf-baa@padis.gn.apc.org.
Head of Organization: Mr Patrick Vercammen
Country Coordinator
Organization: International NGO
Activities: Health, Water Supply & Environmental Sanitation
Location of Projects: R5: (Aware, Gode, Aisha, Dilchora, Jijiga); Dire Dawa

WATER SUPPLY

Water Supply: Roof Catchments (2)
Handpumps Installed: No
Other Pumping Systems: Dewatering Pump (2)
Drilling Rig: No
Expenditures: EB 22,912 **Beneficiaries:** N/R

SANITATION

Hygiene Education: Never
Environmental Sanitation: Pit Latrines (1500)
VIP Latrines (10)
Refuse Disposal Pits (15)
Expenditures: EB 1,058,800 **Beneficiaries:** 115,000

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, EMI, MoH, Computer Co, MSF/B

Name of Organization: # Medicins Sans Frontieres (France)

Acronym: MSF-F
Mailing Address: PO Box 8225 A.A.
Descriptive Address: Near Misrak Comprehesive Highschool
Telephone: 613735 **Fax:** 613096
E-Mail:
Head of Organization: Dr Guillerao Bertoletti
Country Representative
Organization: International NGO
Activities: Health, Environmental Sanitation
Location of Projects: R3: (Sekota, Woldiya, Lalibela); R4: Moyale

WATER SUPPLY

Water Supply: No
Handpumps Installed: -
Other Pumping Systems: -
Drilling Rig: -
Expenditures: - **Beneficiaries:** -

SANITATION

Hygiene Education: Always: Graphic Materials, Posters, Leaflets, Handouts
Environmental Sanitation: VIP Latrines (25)
Expenditures: EB 45,000 **Beneficiaries:** 13,000

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: Yes

Name of Organization: Medicins Sans Frontieres (Holland)

Acronym: MSF-H
Mailing Address: PO Box 34357 A.A.
Descriptive Address: Along Debre Zeit Road, 200 m from Lancia Co.
Telephone: 653739/163819 **Fax:** 654933
E-Mail: msf-h@padis.gn.apc.org
Head of Organization: Dr Luc Pyman
Country Representative
Organization: International NGO
Activities: Health, Nutrition, Water Supply & Environmental Sanitation
Location of Projects: R5: (Hagele, Jereti, Woldia, Dolo-Odo, Shakissa, Afder)

WATER SUPPLY

Water Supply: Hand-Dug Wells (10)
Handpumps Installed: Afridev (10)
Other Pumping Systems: Rope & Bucket (10)
Drilling Rig: No
Expenditures: EB 289,280 **Beneficiaries:** 3,500

SANITATION

Hygiene Education: Always: Training Materials, Posters, Slide Film
Environmental Sanitation: VIP Latrines (10)
Refuse Disposal Pits (5)
Expenditures: EB 4,500 **Beneficiaries:** 225

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: IBM, Toyota

Name of Organization: Mennonite Mission Ethiopia

Acronym: MME
Mailing Address: PO Box 70367 A.A.
Descriptive Address: Near Zenebe Work Hospital
Telephone: 203684/712412 **Fax:** c/o CRDA (652280)
E-Mail: mennonite@padis.gn.apc.org.
Head of Organization: Mr Jerrold Grosh
Field Director
Organization: International Religious Organization
Activities: Irrigation
Location of Projects: R3: South Wello (Dessie)

WATER SUPPLY

Water Supply: No
Handpumps Installed: -
Other Pumping Systems: -
Drilling Rig: -
Expenditures: - **Beneficiaries:** -

SANITATION

Hygiene Education: N/R
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: 13km of Canal for Surface Irr.
Expenditures: EB 13,000 **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, CFGB

Name of Organization: # Meserete Kirstos Church Relief & Development Programme

Acronym: MKC-RDP
Mailing Address: PO Box 24227 A.A.
Descriptive Address: Between Urael and Bole Telecom, behind Atlas Hotel
Telephone: 184022 **Fax:**
E-Mail:
Head of Organization: Ato Bedru Hussien
Executive Secretary
Organization: National Religious Organization
Activities: Water Supply & Health
Location of Projects: R4: East Shewa (Zway, Dugda); R14: (W18)

WATER SUPPLY

Water Supply: Hand-Dug Wells (1)
Boreholes (2)
Distribution Systems (4)
Storage Tanks (3)
Handpumps Installed: Unknown Model (1)
Other Pumping Systems: Unknown Model (2)
Drilling Rig: via WV/I
Expenditures: EB 309,250 **Beneficiaries:** 33,744

SANITATION

Hygiene Education: Always: Posters, Flipcharts, Oral, Demonstrations
Environmental Sanitation: Pit Latrines (?)
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, WV/I, Compassion, MME

Name of Organization: Nazret Children's Center & Integrated Community Development

Acronym: NACID
Mailing Address: PO Box 40943 A.A.
Descriptive Address: Near Vatican Embassy
Telephone: 200081/200606 **Fax:** 711286
E-Mail:
Head of Organization: Ato Kassaye Haile
General Manager
Organization: National Religious Organization
Activities: Education, Health, Agriculture, Income Generation, Conservation, Relief & Rehabilitation, Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R1: (Adigrate, Bezet); R4: East Shewa (Nazret); R14: (W16, W23)

WATER SUPPLY

Water Supply: Boreholes (9)
Distribution Systems (9)
Storage Tanks (9)
Ponds (4)
Handpumps Installed: No
Other Pumping Systems: Submersible (5)
Grundfos, Lister, Seare (4)
Drilling Rig: via Hydro, KHCDP
Expenditures: EB 4,000,000 **Beneficiaries:** 120,000

SANITATION

Hygiene Education: Always: Posters, Pamphlets, Films, On-Site Training
Environmental Sanitation: VIP Latrines (100)
Expenditures: EB 720,750 **Beneficiaries:** 16,200

IRRIGATION

Irrigation: Sprinkler (40 ha)
Expenditures: N/R **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, CEVO, CRS, NACID

Name of Organization: Norwegian Church Aid

Acronym: NCA
Mailing Address: PO Box 1248 A.A.
Descriptive Address: Near Ibex Hotel
Telephone: 512922/512929/511291 **Fax:** 518167
E-Mail: ncae@padis.gn.apc.org
Head of Organization: Mr Kjell Solberg
Resident Representative
Organization: International Religious Organization
Activities: Water Supply, Health, Irrigation & Environmental Sanitation
Location of Projects: R4: Bale, Borena; R5: (Dolobaye); SEPA: North Omo, South Omo

WATER SUPPLY

Water Supply: Spring Protections (11)
Hand-Dug Wells (39)
Boreholes (67)
Distribution Systems (14)
Storage Tanks (14)
Handpumps Installed: Mono, PB India Mark II, Afridev (85)
Other Pumping Systems: Submersibles Grundfos, Lister (8)
Drilling Rig: Knebel Rotary HY76BRS
Expenditures: EB 6,375,000 **Beneficiaries:** 116,960

SANITATION

Hygiene Education: Always: Flipcharts, Handbills, Oral, Film
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (30 ha)
Expenditures: N/R **Beneficiaries:** 240

OTHER

Hydro Power: No

Staff Training: CRDA, WSSA, IIRR, Daystar, PAID, AWTI, IRC, DANU, GLOBAL

Name of Organization: Oromo Relief Association

Acronym: ORA
Mailing Address: PO Box 8360 A.A.
Descriptive Address: Bole Road in front of Addis Bank
Telephone: 511502/155903 **Fax:** 518153
E-Mail:
Head of Organization: Ato Addisu Beyene
Excutive Director
Organization: National NGO
Activities: Forestry, Road Construction, Veterinary Services, Water Supply & Irrigation
Location of Projects: R4: Borena, East Harerghe, West Welega

WATER SUPPLY

Water Supply: Spring Protections (39)
Hand-Dug Wells (3)
Ponds (25)
Handpumps Installed: No
Other Pumping Systems: Rope & Bucket (3)
Drilling Rig: No
Expenditures: EB 1,557,450 **Beneficiaries:** 114,950

SANITATION

Hygiene Education: Frequently: Oral
Environmental Sanitation: Pit Latrines (5)
Expenditures: EB 750 **Beneficiaries:** 2,000

IRRIGATION

Irrigation: Surface (120 ha): design only
Expenditures: EB 16,700 **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, AAE, PAID

Name of Organization: # Oromo Self Help Organization

Acronym: OSHO
Mailing Address: PO Box 1214 A.A.
Descriptive Address: Debre Zeit Road next to CRDA
Telephone: 653104/161764 **Fax:** 653094
E-Mail:
Head of Organization: Ato Zegeye Yemanebrehan
General Manager
Organization: National NGO
Activities: Water Supply, Rehabilitation & Irrigation
Location of Projects: R4: East Shewa (Inchine, Zway), East Welega (Nekempt)

WATER SUPPLY

Water Supply: Hand-Dug Wells (10)
Boreholes (1)
Distribution Systems (1)
Storage Tanks (1)
Handpumps Installed: No
Other Pumping Systems: Submersible (1)
Drilling Rig: via Africare
Expenditures: EB 900,000 **Beneficiaries:** 13,000

SANITATION

Hygiene Education: N/R
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (?): design only
Expenditures: N/R **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, CEVO, Galilee College

Name of Organization: # OXFAM (UK)

Acronym: OXFAM-UK
Mailing Address: PO Box 2333 A.A.
Descriptive Address: Near Hillbelt Restaurant and Imperial Hotel
Telephone: 613344 **Fax:** 613533
E-Mail:
Head of Organization: Ms Harriet Dodd
Country Representative
Organization: International NGO
Activities: Relief, Integrated Rural Development, Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R1; R2 (Asaita, Sabure); R3: North Welo (Delanta); R4: East Harerge (Deder); R5: (Jijiga, Harti Sheke); SEPA: North Omo (Woleyta)

WATER SUPPLY

Water Supply: Spring Protections (39)
Hand-Dug Wells (110)
Distribution Systems (3)
Ponds & Birka (26)
Handpumps Installed: Nira, Tara (13)
Afridev, Aquadev (65)
Other Pumping Systems: Rope & Bucket (32)
Drilling Rig: No
Expenditures: EB 3,601,482 **Beneficiaries:** 820,505

SANITATION

Hygiene Education: Occasionally: Posters, Lectures, Practicals, Home Visits
Environmental Sanitation: Pit Latrines (88)
Expenditures: EB 35,200 **Beneficiaries:** 440

IRRIGATION

Irrigation: Supplied 2 irrigation pumps to credit schemes
Expenditures: N/R **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: CRDA, AWTI, WEDC, OXFAM

Name of Organization: # Petsalozzi Children's Foundation

Acronym: SKIP
Mailing Address: PO Box 3285 A.A
Descriptive Address: 200 m from Total Fuel Station, Gojam Road
Telephone: 553827/553829 **Fax:** 553833
E-Mail:
Head of Organization: Ato Workineh Denekew
Resident Representative
Organization: International NGO
Activities: Feeder Road Construction, Family Planning, PHC, Water Supply & Environmental Sanitation
Location of Projects: R4: Jimma; R14: (W10: K01)

WATER SUPPLY

Water Supply: Spring Protections (18)
Hand-Dug Wells (4)
Distribution Systems (3)
Handpumps Installed: No
Other Pumping Systems: Submersible (1)
Drilling Rig: No
Expenditures: EB 47,000 **Beneficiaries:** 10,500

SANITATION

Hygiene Education: Always: Site Training, Posters, Overhead Projector
Environmental Sanitation: Pit Latrines (18)
VIP Latrines (3)
Expenditures: EB 24,600 **Beneficiaries:** 1,000

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, MoA, MoH

Name of Organization: Redd Barna Ethiopia

Acronym: RBE
Mailing Address: PO Box 6589 A.A.
Descriptive Address: Sudan Street near National Bank of Eth.
Telephone: 518964 **Fax:** 515286
E-Mail:
Head of Organization: Mr Helge Espe
Country Representative
Organization: International NGO
Activities: Integrated Rural Development, Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R3: (Wegeda); R4: (Gera, Nazret); SEPA: South Omo (Hammer)

WATER SUPPLY

Water Supply: Spring Protections (25)
Hand-Dug Wells (16)
Ponds (20)
Handpumps Installed: Afridev (16)
Other Pumping Systems: Rope & Bucket (3)
Lister (1)
Drilling Rig: No
Expenditures: EB 442,000 (+) **Beneficiaries:** 11,850 (+)

SANITATION

Hygiene Education: Always: Posters, Leaflets, Drama, Film
Environmental Sanitation: VIP Latrines (76)
Refuse Disposal Pits (6)
Expenditures: EB 668,000 **Beneficiaries:** 6,080

IRRIGATION

Irrigation: Surface (300 ha)
Domestic (10)
Expenditures: N/R **Beneficiaries:** N/R

OTHER

Hydro Power: No

Staff Training: WSSA, CRDA

Name of Organization: # Relief Society Of Tigray

Acronym: REST

Mailing Address: PO Box 8078 A.A. (Box 20, Mekele)

Descriptive Address: Bole Road, First Floor Meskerem Supermarket Bld.

Telephone: 514378/03-400935 **Fax:** 512694/03-402629

E-Mail:

Head of Organization: Ato Teklewoini Assefa
Executive Director

Organization: National NGO

Activities: Irrigation, Water Supply, Environmental Sanitation, Credit & Savings Schemes, Environmental Rehabilitation & Agricultural Development

Location of Projects: R1: all zones

WATER SUPPLY

Water Supply: Spring Protections (32)
Hand-Dug Wells (127)
Boreholes (29)
Urban Water Points (9)

Handpumps Installed: Tara (40)
Afridev (63)
India Mark II (29)

Other Pumping Systems: Rope & Bucket (10)

Drilling Rig: via Gov't Agency

Expenditures: EB 6,580,000 **Beneficiaries:** 89,900

SANITATION

Hygiene Education: Always: Charts, Posters

Environmental Sanitation: 4-Seat Double Vault Latrines (4)

Expenditures: EB 400,000 **Beneficiaries:** 160

IRRIGATION

Irrigation: Surface (270 ha)

Expenditures: EB 6,750,000 **Beneficiaries:** 1,800

OTHER

Hydro Power: No

Staff Training: REST, NORAGRIC

Name of Organization: # Save The Children Federation (USA)

Acronym: SCF-USA
Mailing Address: PO Box 387 A.A.
Descriptive Address: Near Mobil Mini Mart, off Debre Zeit Road
Telephone: 653283 **Fax:** 510998
E-Mail: ethiopia@savechildren.org
Head of Organization: Mr Jim Criste
Area Director Horn Of Africa
Organization: International NGO
Activities: Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R3: North Shewa; R4; R5 (Dolo)

WATER SUPPLY

Water Supply: Spring Protections (2)
Hand-Dug Wells (20)
Handpumps Installed: Mono (20)
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 680,000 **Beneficiaries:** 22,500

SANITATION

Hygiene Education: Always: Charts, Posters, On-Site Teaching
Environmental Sanitation: VIP Latrines (25)
Expenditures: EB 75,000 **Beneficiaries:** 240

IRRIGATION

Irrigation: Surface (15 ha)
Expenditures: N/R **Beneficiaries:** 250

OTHER

Hydro Power: No

Staff Training: CRDA

Name of Organization: # Save The Children Fund (UK)

Acronym: SCF-UK
Mailing Address: PO Box 7165 A.A.
Descriptive Address: Airport Motel
Telephone: 611177/611178 **Fax:** 611055
E-Mail: 5:751 / 1.123
Head of Organization: Mr Benjamin Foot
Field Director
Organization: International NGO
Activities: Water Supply & Environmental Sanitation
Location of Projects: R3: South Wello; R4: East Hararghe

WATER SUPPLY

Water Supply: Spring Protections (3)
Roof Catchments (1)
Distribution Systems (2)
Storage Tanks (4)
Handpumps Installed: N/R
Other Pumping Systems: N/R
Drilling Rig: No
Expenditures: EB 188,541 **Beneficiaries:** 6,880

SANITATION

Hygiene Education: Frequently: Posters, Leaflets, Pictures, Flipcharts, Whiteboards
Environmental Sanitation: VIP Latrines (12)
Expenditures: N/R **Beneficiaries:** 800

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, AWTI

Name of Organization: # Selam Children's Village

Acronym: SCV
Mailing Address: PO Box 8075 A.A.
Descriptive Address: Kotebe
Telephone: 188120 **Fax:** 610388
E-Mail:
Head of Organization: Ms Tsehay Roschli
General Manager
Organization: National NGO
Activities: Water Supply, Environmental Sanitation & Hydro Power
Location of Projects: R4: West Shewa (Guder); R14: Zone 3 (W28)

WATER SUPPLY

Water Supply: Boreholes (3)
Distribution Systems (3)
Storage Tanks (3)
Handpumps Installed: No
Other Pumping Systems: Hydram (3)
Submersible (3)
Drilling Rig: via WWDA
Expenditures: EB 462,235 **Beneficiaries:** 1,500

SANITATION

Hygiene Education: Frequently: Oral
Environmental Sanitation: WCs (7)
Septic Tanks (3)
Refuse Disposal Pits (1)
Expenditures: N/R **Beneficiaries:** 1,220

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: Yes: Grinding Mills, Production of HP Turbines

Staff Training: CRDA, Warwick U.

Name of Organization: # Self Help Development International

Acronym: SHDI
Mailing Address: PO Box 1204 A.A.
Descriptive Address: Bole Road near Indian Embassy Residence
Telephone: 150681/150757 **Fax:** 517599
E-Mail:
Head of Organization: Dr Awole Mela
Director East African Dev't
Organization: International NGO
Activities: Water Supply, Environmental Sanitation, Health & Irrigation
Location of Projects: R4: East Shewa (Meki, Adami Tulu); SEPA: (Mareko)

WATER SUPPLY

Water Supply: Boreholes (11)
Distribution Systems (6)
Storage Tanks (6)
Ponds (35)
Handpumps Installed: No
Other Pumping Systems: Windpump (3)
Berkley Solar Pump (3)
Submersibles 3
Surface Pumps (5)
Drilling Rig: via LVIA, EWWCA
Expenditures: EB 1,775,000 **Beneficiaries:** 180,000

SANITATION

Hygiene Education: Always: Overhead Projectors, Slides, Video, Oral Teaching
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: Surface (215 ha)
Expenditures: EB 64,500 **Beneficiaries:** 1,000

OTHER

Hydro Power: No

Staff Training: CRDA, MDF

Name of Organization: Society of International Missionaries

Acronym: SIM
Mailing Address: PO Box 127 A.A.
Descriptive Address: Near Black Lion Hospital
Telephone: 552348/552678 **Fax:** 511242
E-Mail: postmaster@simadd.sim.org
Head of Organization: Mr Tim Fellows
Country Director
Organization: International Religious Organization
Activities: Water Supply, Environmental Sanitation & Irrigation
Location of Projects: SEPA: Sidama, North Omo, South Omo

WATER SUPPLY

Water Supply: Spring Protections (16)
Hand-Dug Wells (8)
Boreholes (4)
Distribution Systems (23)
Handpumps Installed: Boswell
Other Pumping Systems: No
Drilling Rig: Deep Rock (4) / Stover (1)
Expenditures: EB 262,033 **Beneficiaries:** 38,609

SANITATION

Hygiene Education: Frequently: Posters, Books, Leaflets
Environmental Sanitation: VIP Latrines (12)
Expenditures: N/R **Beneficiaries:** 4,297

IRRIGATION

Irrigation: Surface (?)
Expenditures: N/R **Beneficiaries:** 6726

OTHER

Hydro Power: No

Staff Training: CRDA, SIM

Name of Organization: # SOS-Sahel International (UK)

Acronym: SOS-Sahel
Mailing Address: PO Box 3262 A.A.
Descriptive Address: Asmara Road, near Ministry of Water Resources
Telephone: 189585 **Fax:** 613744
E-Mail: sos-sahel@padis.gn.apc.org.
Head of Organization: Ato Woldemichel Kelecha
Country Representative
Organization: International NGO
Activities: Agriculture & Water Supply
Location of Projects: R3: North Wello

WATER SUPPLY

Water Supply: Spring Protections (7)
Handpumps Installed: No
Other Pumping Systems: No
Drilling Rig: No
Expenditures: EB 23,784 **Beneficiaries:** 5,250

SANITATION

Hygiene Education: Never
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, FARM

Name of Organization: # Swedish Philadelphia Church Mission

Acronym: SPCM
Mailing Address: PO Box 529 A.A.
Descriptive Address: Kasanchis along the Road from Menaheria Hotel to Red Cross.
Telephone: 516830 **Fax:** 512754
E-Mail:
Head of Organization: Mr Roland Moberg
Country Representative
Organization: International Religious Organization
Activities: Health, Education, Environmental Sanitation, Irrigation & Water Supply
Location of Projects: SEPA: South Omo (Kuraz)

WATER SUPPLY

Water Supply: Spring Protections (56)
Hand-Dug Wells (4)
Ponds (3)
Handpumps Installed: N/R
Other Pumping Systems: Surface Pump (1)
Drilling Rig: via NCA
Expenditures: EB 181,100 **Beneficiaries:** 13,900

SANITATION

Hygiene Education: N/R
Environmental Sanitation: Pit Latrines (7)
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: Surface (300 ha)
Expenditures: EB 1,950,000 **Beneficiaries:** 60,000

OTHER

Hydro Power: No

Staff Training: CRDA, Daystar, SPCM

Name of Organization: # Swiss Evangelical Nile Mission

Acronym: SENM
Mailing Address: PO Box 8076 A.A.
Descriptive Address: Amist Kilo, 200 m East from Traffic Light
Telephone: 120465 **Fax:** 552911
E-Mail:
Head of Organization: Mr Rudolf Hermann
Country Representative
Organization: International NGO
Activities: Rehabilitation of Disabled, Health, Water Supply, Environmental Sanitation & Hydro Power
Location of Projects: SEPA: Guraghe

WATER SUPPLY

Water Supply: Spring Protections (2)
Boreholes (22)
Handpumps Installed: Aquadev (7)
Mono (14)
Other Pumping Systems: Grundfos (1)
Drilling Rig: via KHCDP
Expenditures: EB 570,000 **Beneficiaries:** 17,606

SANITATION

Hygiene Education: Always: House to House Visits, Teaching
Environmental Sanitation: No
Expenditures: - **Beneficiaries:** -

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: Turbine under Construction

Staff Training: CRDA, MoH, KHCDP, CBM

Name of Organization: # Water Aid

Acronym: Water Aid
Mailing Address: PO Box 4812 A.A.
Descriptive Address: Along Bole Road Infront of UN/FAO
Telephone: 515752/512460 **Fax:** 518244
E-Mail: wateraid@padis.gn.apc.org
Head of Organization: Ato Amsalu Nigussie
Country Representative
Organization: International NGO
Activities: Health Education, Water Supply & Environmental Sanitation
Location of Projects: R1: Central; R3: North Gonder, North Shewa; R4: Arsi; SEPA: Guraghe.

WATER SUPPLY

Water Supply: Spring Protections (29)
Hand-Dug Wells (12)
Boreholes (1)
Distribution Systems (7)
Storage Tanks (44)
Break-Pressure Tanks (8)
Handpumps Installed: Aquadev (7)
Other Pumping Systems: Rope & Bucket (1)
Drilling Rig: via EWWCA
Expenditures: EB 21,750,000 **Beneficiaries:** 221,328

SANITATION

Hygiene Education: Always: Posters, Oral
Environmental Sanitation: Pit Latrines (49)
VIP Latrines (112)
Expenditures: EB 127,750 **Beneficiaries:** 800

IRRIGATION

Irrigation: No
Expenditures: - **Beneficiaries:** -

OTHER

Hydro Power: No

Staff Training: CRDA, WaterAid, AWTI

Name of Organization: # World Vision International Ethiopia

Acronym: WVIE
Mailing Address: PO Box 3330 A.A.
Descriptive Address: From Megenagna to Bole Road behind Anbessa Garage
Telephone: 610550, 610539 **Fax:** 610951
E-Mail:
Head of Organization: Ato Mulugeta Abebe
Country Director
Organization: International Religious Organization
Activities: Health, Agriculture, Infrastructure, Child Care, Water Supply, Environmental Sanitation & Irrigation
Location of Projects: R1; R3; R4; SEPA

WATER SUPPLY

Water Supply: Spring Protections (55)
Boreholes (66)
Distribution Systems (19)
Storage Tanks (19)
Ponds (52)
Handpumps Installed: India Mark II (30)
Other Pumping Systems: Grundfos Solar Pump (1)
Grundfos/Pluger/Jet Submersibles (11)
Motorized Monolift (3)
Drilling Rig: Atlas Copco Rotamex-50 / Atlas Copco Ru 120
Expenditures: EB 1,540,500 **Beneficiaries:** 464,750

SANITATION

Hygiene Education: Always: Flipcharts
Environmental Sanitation: VIP Latrines (579)
Expenditures: N/R **Beneficiaries:** N/R

IRRIGATION

Irrigation: Surface (145 ha)
Expenditures: EB 1,391,673 **Beneficiaries:** 9,505

OTHER

Hydro Power: No

Staff Training: CRDA

CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION

Membership Water & Sanitation Survey

Annex: Questionnaire

CRDA Membership WatSan Questionnaire

A General Information

1 Name of Organization

2 Acronym

3 Mailing Address

4 Descriptive Address

5 Telephone

6 Fax

7 Telex

8 Email Address

9 Name and Title of the Head of the Organization

10 Name and Title of Person answering the Questionnaire

11 Type of Organization (please tick one ✔):

Central Government Organization		International NGO	
Regional Government Organization		National NGO	
Parastatal Organization		Commercial Company	
(International) Multilateral Organization		Community Organization	
(International) Bilateral Organization		Other	

12 Please tick box ✔ if your organization is a religious organization or a church

13 What is the general aim of your organization

14 If your organization is <u>not</u> an Ethiopian government agency, with which government organization have you signed a basic agreement

15 With which government organizations have you signed specific project or programme agreements

At the Central Level

At the Regional Level

B Organizational Activities

Which of the following project and programme activities has your organization been involved in over the last four years and how would you rank them in terms of importance (priority) and expenditures.

Activities carried out by your organization	please tick ✔	Rank your five most important activities (*1* high - *5* low) in terms of: Priorities	Expenditures
1 Water Supply			
2 Sanitation			
3 Irrigation			
4 Small-Scale Hydro Power			
5 Other:			

Please indicate for 1991 to 1994 in which administrative zones your organization has carried out the following projects:

	Zone(s)
6 Water Supply	
7 Sanitation	
8 Irrigation	
9 Hydro Power	

C Management Information

Please indicate the number and specialization of personnel at the different educational levels:

Educational Level & Specialization	Water Supply		Sanitation		Irrigation		Hydro Power	
	Nat	Expat	Nat	Expat	Nat	Expat	Nat	Expat
1 M.Sc.								
Specialization								
2 B.Sc.								
Specialization								
3 Technical School								
4 Other								

Please attach an organizational chart showing the management structure of your organization and which departments are responsible for the various activities.

Please specify what other personnel you use in your organization:

	Function/Profession	Frequency		
		Often	Occasionally	Never
5 Government Employees				
6 Private Sector Sub-Contractors				
7 Locally Hired Skilled Labourers				
8 Locally Hired Unskilled Labourers				
9 Food for Work Labour				
10 Free Community Labour				
11 Other				

D Project Management

Water Supply	Sanitation	Irrigation	Hydro Power	
				1 Do you carry out Baseline Surveys Yes ☐ No ☐ If yes , what data do you collect:
				- Needs Assessment
				- Demographic Data
				- Socio-Economic Data
				- Technical / Site Information
				- Other:
				2 Do you carry out Feasibility Studies Yes ☐ No ☐ If yes, what are they based on:
				- Aerial Photography
				- Satellite Imagery
				- Hydro(geo)logical Site Investigations
				- Geophysical Surveys Method(s):
				- Environmental Impact Assessment
				- Community Resources Inventory
				- Topographic Surveys / Levelling
				- Other Technical Investigations:

⇨For each category fill in where appropriate A=Always, F=Frequently, O=Occasionally, N=Never

WS	San	Irr	HP	
				3 Does the community participate in the planning and decision-making process
				- Choice of Site/Location
				- Choice of Design
				- Choice of Technology
				- Other:
				4 Is your organization in charge of drawing up the project plans and designs
				5 Is there any external checking of the project plans and designs If yes, by whom:
				- Government Agency Which:
				- Donor
				- Consultant
				- Other:
				6 After implementation do you remain responsible for project operation If not, who is:
				- Government Agency Which:
				- Community (Caretaker/Committee)
				- Other:
				7 During project operation do you remain responsible for maintenance If not, who is:
				- Government Agency Which:
				- Community (Caretaker/Committee)
				- Other:
				8 Do you monitor and evaluate your projects after completion
				9 Is there any external evaluation after project completion If yes, by whom:
				- Government Agency
				- Donor
				- Consultant
				- Other:

E Water Supply Overview

Please give an overview of the water supply projects your organization has carried out over the last four years (1991 - 1994)

	Number Con-structed	Project Expen-ditures	Estimated Value of Community Contributions Cash	Materials	Labour	No of Bene-ficiaries	Design per capita consumption	Expected Project Lifetime	Project Materials[1]
1 Spring Protection									
2 Hand-Dug Wells									
3 Boreholes									
4 Roof Catchments									
5 Distribut. Systems									
6 Storage Tanks									
7 Ponds									
8 Other									

[1] RC=Reinforced Concrete, FC=Ferro Cement, CB=Cement Blocks, M=Masonry, W=Wood, B=Bamboo, E=Earth, GI=Galvanized Iron, HD=Polyethylene, PV

Please tick ✔ and fill in the details where appropriate:

9 Do you carry out Chemical Water Qual.Tests ☐ No ☐ Before Construction ☐ After Construction ☐ Periodically
Where do you do the testing: ☐ Your own testing kit ☐ Gov't Laboratory Other:

10 Do you carry out Biological Water Qual.Tests ☐ No ☐ Before Construction ☐ After Construction ☐ Periodically
Where do you do the testing: ☐ Your own testing kit ☐ Gov't Laboratory Other:

11 Caretaker(s) ☐ None ☐ Appointed/Elected by Comm. ☐ Appointed by you
☐ Unpaid ☐ Paid by Community ☐ Paid by you

12 Water Committee ☐ None ☐ Appointed/Elected by Comm. ☐ Appointed by you
☐ Unpaid ☐ Paid by Community ☐ Paid by you

13 Participation of Women ☐ Special meetings with women beneficiaries during project preparation & implementation
☐ Women Caretakers ☐ On Water Committee Other:

14 Operational Costs ☐ Water charge per pot ☐ Periodic Water Charge per Household
☐ Covered by you Other:

15 Major Repair ☐ by Caretaker(s) ☐ by Government Agency ☐ by your Organization
☐ by Commercial Sector Other:

16 Spare Parts ☐ Free from your Stock ☐ Subsidized from your Stock ☐ At Cost from your Stock
☐ Locally Available ☐ From Gov't Agency Other:

17 Training provided ☐ for Caretakers ☐ for Water Committee ☐ for Communities
☐ for Project Staff ☐ by your organization by Others:

Water Treatment Systems	No. Installed	Approx.Installation Cost	Approx.Maintenance Cost	Maintained by
18 Coagulation				
19 Sedimentation				
20 Flocculation				
21 Roughing Filter				
22 Slow-Sand Filter				
23 Rapid-Sand Filter				
24 Aeration				
25 Chlorination				
26 Other				

27 Do you use local water treatment methods ☐ No ☐ Yes Which Method:

28 Do you disinfect your water systems ☐ No ☐ After Construction ☐ After Maintenance ☐ Periodically

What method do you use for disinfection:

F Pumping Equipment

Please list the type and number of handpumps you have installed over the last 4 years at the various depths:

	Depth	Handpump Type	Made in	Number Installed	Ave. Cost per Unit[1]	Maintenance Requirement[2]
1	<15m					
2	15-45m					
3	>45m					

4 Please explain why you selected these particular handpumps:

Please list the type and number of other pumping systems installed over the last 4 years:

	Type	Made in	Number Installed	Average Depth	Ave. Cost per Unit[1]	Maintenance Requirements[2]
5	Rope & Bucket					
6	Rope & Washer					
7	Hydram					
8	Wind Pump					
9	Solar Pump					
10	Electric Mains Pump					
11	Generator + Pump					
12	Other					

13 Which pump(s) has(have) given you the best performance? Please explain:

14 Which pump(s) has(have) shown poor performance? Please explain:

15 Which pump(s) has(have) the communities prefered to use? Please explain:

16 Does your organization have its own drilling rig

☐ Yes ☐ No If yes, please specify the brand, model, type, year of manufacture and year of entry in Ethiopia:
If no, please indicate, if applicable, which organization drills boreholes for you:

[1] Average Cost delivered to Addis Ababa by sea

[2] Maintenance Low - Community Level Maintainable (after installation expert advice & equipment generally not required)
Medium - Infrequent Expert Advice & Equipment Required (once per year)
High - Frequent Expert Advice & Equipment Required (more than once per year)

G Environmental Sanitation Overview

1 Do you provide community education services on hygiene and sanitation alongside your water supply development activities? (please tick ✔ one box)

Always ☐ Frequently ☐ Occasionally ☐ Never ☐

2 Please explain what type of training materials you use:

Please list the type and number of (human) waste disposal systems you have constructed:

Type of System	Number Installed Com-munal	Number Installed House-hold	Number of Beneficiaries	Ave. Cost per Unit	Est. Value of Community Contrib. Cash	Est. Value of Community Contrib. Material	Est. Value of Community Contrib. Labour	Materials Used for the Construction of[1] Lining	Foundation	Slab	Superstruct
3 Traditional Pit Latrines											
4 VIP Latrines											
5 Sanplat Latrines											
6 Double Vault Latrines											
7 Compost Latrines											
8 Borehole Latrines											
9 Pour-Flush Latrines											
10 Aqua Privies											
11 Septic Tanks											
12 Sewerage Systems											
13 Refuse Disposal Pits											
14 Other											

[1] E=Earth, C= Cement, W=Wood, S=Stone, B=Brick O=Other

15 Do you monitor the use of the latrines Yes ☐ No ☐ If yes, how:

16 Do you monitor the effect of these measures on community health: Yes ☐ No ☐ If yes, how:

H Irrigation Overview

	No of Systems Constructed	Total Area Covered (ha)	Number of Beneficiaries	Investment Cost per Hectare	Irrigation Managed by[1]	Water Source[2]	Pumping System[3]	Distribution System[4]	Major Crops
1 Surface Irrigation									
2 Sprinkler Irrigation									
3 Drip Irrigation									
4 Domestic Irrigation[5]									
5 Other									

1 F=Farmers, C=Cooperative, S=State Farm, Y=Your Organization, O=Other
2 W=Weir, ED=Earth Dam, MD=Masonry Dam, RD=Rock-Fill Dam, AD=Arch Dam, S=Spate Flooding, L=Lake, B=Borehole(s), N=Natural Spring, O=Other
3 G=Gravity, Sol=Solar Pump, W=Wind Pump, Sub=Submersible Pump, C=Centrifugal Suction Pump, A=Axial Flow Pump, O=Other
4 U=Unlined Canals, C=Concrete-Lined Canals, B=Buried Pipes, M=Movable Installation, O=Other
5 Back Yard or Home Garden Irrigation at the individual household level

Please indicate if you have come across any of the following problems in your project(s):

	Never	Occasionally	Frequently	Please comment:
5 High Salinity of Fields				
6 Water Logging in Fields				
7 Washout of Intake Structure				
8 Siltation of Intake/Canals/Pipes				
9 Tail-End Problems				
10 Shistosomiasis (Bilharzia) among Farmers				
11 Chronic Malaria among Farmers				
12 Profitability/Sustainability Problems				

	Yes	No	If yes, please explain which data you collect:
13 Do you collect and record project meteorological data			
14 Do you collect and record project hydrological data			

I Hydro-Power Overview

1 Has your organization been involved in energy provision for small scale projects:

☐ No ☐ Grain Mills ☐ Water Pumping ☐ Cooking ☐ Electricity

☐ Other:

2 Have you used hydro power for any of these projects:

☐ No ☐ Yes If yes, please specify:

3 Have you come across conditions where you thought small-scale hydro power generation would be feasible:

☐ No ☐ Yes If yes, can you describe those particular conditions:

4 Would you be interested to learn more about hydro power as an alternative energy source:

☐ No ☐ Yes If yes, can you specify your interest:

J Training

1 Does your organization encourage staff upgrading through local training courses Yes ☐ No ☐

Which organization has provided such training for you

Do you send staff overseas for specialized training courses Yes ☐ No ☐

Which organization has provided such training for you

Who pays for such training

2 Have any of your staff received training at the Arbaminch Water Technology Institute Yes ☐ No ☐

If yes, please indicate the number of staff which attended the various courses:

B.Sc. Degree ☐ Advanced Diploma ☐ Diploma ☐ Certificate ☐

3 Is there a need in your organization for staff training in water, sanitation & irrigation Yes ☐ No ☐

If yes, what subjects would be of particular interest to you: 1

2

3

For how many staff members ☐ For what duration: <1 mth ☐ 1-3 mths ☐ > 3 mths ☐

4 Would you be willing to provide 3-12 mth apprenticeship positions in your water & sanitation related projects for one or two AWTI graduates with a basic cost of living allowance:

No ☐ Yes ☐ Who should be contacted for this purpose:

K Miscellaneous

Please use the space below if you ran out of space for any of your answers in the previous sections. Make sure you give the section and number of the question you are refering to (e.g. E13). You may also use this space (and additional sheets of paper) for any other comments or suggestion you have.

Please attach any organizational and/or project reports and other specifications to this questionnaire. It will help us to better evaluate the data.

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CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION

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ADDIS ABABA (Ethiopia)

Date

5th February 1997

Ms Nicolette Wildeboer
Water Newsletter
PO Box 93190
2509 AD
The Hague
The Netherlands

Dear Ms Wildeboer,

From studying the material covered in the Water Newsletter, we believe that the enclosed 'Water & Sanitation Survey' may be of interest to you.

I also attach details of CRDA, which is a consortium of over 120 NGOs and church agencies operating throughout Ethiopia.

Yours sincerely

Catherine Feeney
Head, Communications Unit