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PROCEEDINGS OF

WORKSHOP ON COMMUNITY PARTICIPATION

IN WATER SUPPLY PROJECTS

August 24, 1989

CCRDA

Table of Contents

	Page
Welcoming Address by Ato Hagos Araya, CRDA	1
Chairman's Address by Andy Meakins, KHCDP	2
WSSA's Community Participation, Policy, Practices and Experience by Ato Tesfom Haile, WSSA	3
Discussion of Ato Tesfom's Presentation	6
Community Participation in Water Supply Programmes: The BGCM Approach by Mr. Walter Eshenaur, BGCM	7
Discussion of Mr. Eshenaur's Presentation	11
FFHC/AD Project: A Case Study by Mr. William Bradfield, FFHC/AD/FAO	13
Discussion of Mr. Bradfield's Presentation	16
Discussion Group Reports	17
APPENDICES	
Appendix I: Workshop Programme	21
Appendix II: List of Participants	22
Appdndix III: Summary of Participants Evaluation	24
Appendix IV: Water Resources Group Statement of Objectives	27
Appendix V: Inventory of Members' Experiences in Water and Related Development	29
Appendix VI: Books Available at CRDA Library on Water, Health and Sanitation	38
Appendix VII: Norwegian Church Aid Ten-Step Plan	41

CCRDA

Welcoming Address

by Ato Hagos Araya
Deputy Executive Director
CRDA

Ato Hagos welcomed the participants to the workshop.

He recalled that at the CRDA workshop on water development for rural communities held last April, a proposal was made to establish a water resources interest group. The major objective of this group would be to serve as a medium for the exchange of information and field experiences among the CRDA member churches and agencies in the areas of water, health, sanitation and related areas of development.

Ato Hagos explained that the water resources interest group has since been established. Through meetings and workshops the group will attempt to improve coordination among the CRDA members involved in water development. The present workshop on community participation in water supply projects is the first workshop organized by the new group.

Over the past several years there has been a growing emphasis on the participation of beneficiaries in determining self-reliant development strategies. The traditional paternalistic strategies are now being replaced by a more participatory process.

Traditional communities have a vital role to play in sharing information and resources. Participation is essential in the identification of projects, their implementation, organization and evaluation. As a source of invaluable information about the environment and local practices, the members of the community must be consulted. If a project is endorsed by the community, it is more likely to meet the needs and to be adopted. Often projects fail because they are not directed to local priorities.

In the area of water supply it is also clear that a key element in ensuring long-term success is that of involving the community in every level and phase of the project.

While engineers are well versed in the technical planning and logistics for the construction of water and sanitation systems, they usually lack the social background that is necessary to effect the integration of the user into the planning, design, construction, operation and maintenance process.

Ato Hagos expressed his hope that the deliberations and recommendations of the workshop would contribute to improvements in bridging the gap between the village and the technician.

Finally, he wished all participants a successful workshop and thanked the newly established Water Resources Group for organizing it.

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Chairman's Address

by Andy Meakins
Kale Heywot Church Development Programme

Mr. Andy Meakins, Chairman of the CRDA Water Resources Interest Group, thanked Ato Hagos and CRDA for the logistical organization of the workshop.

Mr. Meakins explained that WRIG was set up to exchange information on water development and sanitation. He informed the meeting that copies of WRIG's objectives were available (Editor's note — these objectives have also been included in the appendices of these proceedings).

The topic of community participation was suggested at the first WRIG meeting. He noted that community participation was critical to the success of many projects. Mr. Meakins emphasized that the failure of many projects results from having neglected to involve the community.

Mr. Meakins then introduced the workshop's speakers; Comrade Tesfom Haile of the Water Supply and Sanitation Authority (WSSA), Mr. Wally Eshenaur of the Baptist General Conference Mission (BGCM) and Mr. Bill Bradfield of the Freedom From Hunger Campaign of the Food and Agriculture Organization (FFHC/FAO).

The WRIG chairman commented that a considerable amount has been written on water development world-wide. Ethiopia has, however, its own political, special and economic characteristics. The present workshop would address the issue of water development from the Ethiopian perspective.

Mr. Meakins explained that water projects are carried out in three phases: 1) investigation and planning; 2) implementation (construction); and 3) follow-up (maintenance, administration and evaluation).

The speaker commented that often engineers are good at building things, but weak on the social aspects of water development. For precisely this reason, the present workshop would focus on the social side of water development.

Mr. Meakins then turned the floor over to Comrade Tesfom of WSSA.

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WSSA's Community Participation, Policy, Practices and Experience

by Ato Tesfom Haile
Water Supply and Sewerage Authority

The presenter began by noting that 80% of Ethiopia's rural population and 20% of the urban population do not have access to safe water. 80% of fatal diseases in the country are associated with water. Millions of women and children spend long hours fetching water from considerable distances.

In much of Ethiopia, the existing water supply systems are malfunctioning or in complete disrepair. There is no overall coordination of government and non-governmental agencies working in water development.

Ato Tesfom then proceeded to explain the community participation approach adopted by WSSA.

The policy and objectives of WSSA's CPPS are:

- organizing beneficiary communities to carry out water supply projects
- encouraging communities to mobilize their resources to cover the costs of water supply projects
- developing and increasing the community's awareness and sense of belonging as well as its sense of responsibility
- preparing educational materials
- collecting socio-economic data
- organizing water committees
- selecting pump attendants

Crucial to achieving these objectives and implementing these policies is the understanding that for projects to be successful, there must be a felt need from the community. Requests for water development should be voiced by the people themselves.

More than merely enabling the community to cover the project costs partially or fully, the concept and practice of community participation requires that the community be sensitized so that it coordinates its experiences and resources with government and other agencies and eventually achieves self-reliance in initiating and managing its own projects.

Ato Tesfom listed some of the factors which make community participation important. Community participation:

Enables wide coverage - Water supply and sanitation facilities have been limited and have not reached the disadvantaged rural masses primarily because the construction and maintenance have been done by governmental and non-governmental agencies with community participation.

Reduces the overall cost of the projects - Before the introduction of community participation, the external input was 100% while the local people contributed nothing. Now communities are assuming their fair share in the activities that they are capable of undertaking.

Promotes self-reliance - Actual participation makes the people believe that they have the power and means of changing their life and environment by their own efforts.

Creates sense of ownership of the projects - Water supply schemes built by the people's will, decision, labour and materials foster feelings of ownership and responsibility. Since the community mem-

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bers invest in free labour, material and in some cases cash, they feel proud of their achievements.

Ensures that development activities are done properly - The compatibility of the technical work executed by professionals with the conditions of the project area can only be ascertained when the population participates right from the inception of the projects. This is true because the local people have a comparatively wider knowledge about their surroundings, which they have accumulated throughout the years than their counterparts from outside agencies.

Assists and enhances useful indigenous experiences - Experiences have shown that the use of excessive modern technology does not pay. The introduction of modern technology without due consideration for local or traditional technology has failed in areas of operation, maintenance as well as replicability. One must also note the fact that as the exclusion of traditional technical know-how is not advisable and so is the exclusion of modern technology. The best way is to mix the two in the right proportion. This scenario will definitely allow people to upgrade their skills.

Raises the level of consciousness - In the process of identifying and solving their own problems through their own efforts or in collaboration with other agencies, local people are able to learn a great deal. Experience and awareness gained in this manner will enable them to plan and implement future development programmes in a spirit of cooperation.

Ato Tesfom then explained the role of WSSA's Community Participation Department.

Under the umbrella of WSSA's objectives of providing safe and reliable water supply and sewerage services in all areas of Ethiopia, except Addis Ababa, the community participation promotion service carries out the following.

- the organizing of beneficiary communities to carry out self-help water supply schemes
- the encouragement of communities to mobilize their resources (i.e., labour, material and financial) effectively in order to cover the construction, operating and maintenance costs of water supply systems.
- the developing and increasing of the community's awareness and sense of belonging and responsibility in order to ensure the success and sustainability of rural water schemes
- the preparation of educational materials on safe drinking water and sanitation
- the promotion of health and water education

Ato Tesfom then explained the areas and scope of community participation.

During the planning and designing period, local participation is dependent on the particular conditions of a locality at a given period of time. Ideally, the problems and needs of the community should be identified by the local people themselves. They should provide all the necessary socio-economic data regarding the project. Beneficiaries should also assist in suggesting project sites and work schedules.

During the implementation phase, community participation can be high or low. Where simple, locally appropriate technology is used, community participation is at its maximum. However, in areas where sophisticated technology is introduced or where people are nomadic or newly settled because of natural or man-made calamities, participation is either very low or even nil.

Whenever and wherever possible, community participation during the implementation stage should include general social mobilization, contribution of local materials (e.g. stone, sand and wood), free

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labour (unskilled or semi-skilled) for digging wells and pipeline trenches, construction of access roads and cleaning of project sites. The community should also safeguard project material and equipment and provide construction crews with warehousing and shelter.

The whole exercise of participatory development is not merely aimed at cost reduction or recovery, but more importantly, it is intended to sensitize local beneficiaries to the fact that they are the sole owners of the projects and should manage them properly.

Often completed schemes are not well managed by the community. These schemes are left to the community's care without institutionalized support. Consequently, a large proportion of these systems are either in absolute disrepair or poorly functioning.

One practical measure to minimize the rate of breakage or malfunction is to train the local people in maintenance repair. To this end, peasant pump technicians are selected and trained by both WSSA and EWWCA in all regions. Minor and preventive maintenance are now being undertaken by the trained local personnel. For major repairs, they report to WSSA regional office.

Keeping a sinking fund, generated from water sales, is one of the community's main duties. These funds, if managed properly, should cover all operation and maintenance costs. Cleaning and fencing water points are also the community's responsibility.

Finally, speaking on the participatory approach during monitoring and evaluation, Ato Tesfom made the following points.

Any development activity requires continuous follow-up and assessment in order to ensure that things are done well or to correct them in case they are done wrong. Genuine participation of the local community is needed during this stage, but this participation can only be ensured if the community has been allowed to be involved in the previous stages fully and willingly.

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Discussion of Ato Tesfom's Presentation

Ato Tadesse Belachew, SCF/USA, asked how WSSA could assist NGOs in water development activities.

Ato Tesfom explained that WSSA is prepared to assist NGOs in implementing a community participation approach.

Asked about agreements between NGOs and WSSA, Ato Tesfom explained that WSSA is a signatory to tripartite agreements with the RRC and NGOs.

Mr. Andy Meakins, KHCDP, asked if the water committees were set up only for larger projects or also for spring protection or boreholes.

Ato Tesfom replied that there is the most community participation when the technology is the simplest. In any case, WSSA establishes water committees for all water supply schemes.

Ato Girma Begashaw, World Vision, noted that there are cases of water schemes with water committees where WSSA continues to take care of the complete management of the scheme.

The presenter responded that the ONCCP guidelines do specify the rights, role and obligations of the water committees, but things take time and the water committees require time to run the water schemes themselves.

Ato Tesfom stressed that there is a conceptual problem in that technical people think they can do miracles and therefore neglect social aspects. He noted that for every technical change, there is a corresponding social change.

Ato Shimelis Derebe, NCA, asked if WSSA has guidelines for the management of projects from their start to their handing over to the community. He mentioned that NCA has devised its own guidelines for community participation (editor's note - these guidelines have been included in the appendices of this report).

The presenter said that WSSA has a mechanism for community participation but this mechanism is not yet being implemented as effectively as it could. He explained that this mechanism was the result of a series of workshops done at WSSA on this subject.

Ato Sahle-Mariam Mogus, CRDA, noted that women are primary beneficiaries in water schemes and advised that the various women's groups should be consulted. NGOs are also involved at the grassroots level. He asked Ato Tesfom for his advice on the establishment of water committees.

Ato Tesfom pointed out that according to the ONCCP guidelines, at least two of the seven members of a water committee must be women. He noted that water committees are not politics free. In order to implement things, one has to include political leaders.

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Community Participation in Water Supply Programmes : The BGCM Approach

by Walter Eshenaur
Projects Engineer
Baptist General Conference Mission

Mr. Eshenaur began his presentation with a brief anecdote about the need for communities to work together if they want to achieve independence and prosper.

He then proceeded to introduce BGCM's approach to community participation.

He noted that any approach to development is derived by careful thought and by listing assumptions which set the stage for that particular approach. Thus, before any discussion of community participation in development activities can take place, working assumptions must be made. With BGCM, one such assumption prevails: *people want to improve their lives.*

Mr. Eshenaur stressed that while this assumption is not earth- shattering, it does lay an important foundation from which further assumptions can be made. Some secondary assumptions which relate to the main assumption are:

- People will not always know how to improve their lives.
- People will become actively involved in improving their lives in direct relation to perceived gains.
- People want to learn new skills if these skills will directly impact their efforts to improve their lives.
- People will accept new concepts only after thoroughly understanding how they relate to improving their lives.
- People may not always understand the root problems which prevent them from improving their lives.

Mr. Eshenaur explained that from the standpoint of NGOs, a definition of development is "helping people help themselves."

Accordingly, NGOs can be involved in development by carrying out the following activities.

Bringing the members of the community together to clearly define their problems and needs - This implies the role of a catalyst. It does not, in light of the definition of development, imply listing the community problems as observed from outside.

Guidance in problem solving - The NGO, after assisting a community in defining problems and needs, simply presents options which would effect solutions.

Assessment of community resources - The NGO may have knowledge of resources which the community has not viewed as resources. Again, presentation of options is the only task.

Assessment of external resources - These resources could be introduced only after careful discussion with the community and all implications are carefully weighed.

Technical assistance - This would take the form of an expert whose knowledge will serve the community as they help themselves.

Introduction of new concepts and skills -After a careful assessment of available community resources, the NGO with com-

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munity support (and request) may introduce a completely new concept which is external to the community's knowledge base. This active role implies that the NGO will have a long-term relationship with the community since new knowledge takes time to assimilate.

Follow-up and encouragement - As the community endeavours to help themselves with external support, assistance and knowledge, the NGO's responsibility moves from a catalyst to an encourager. Community spirit and energy which are centred on the task at hand must be maintained and shortcomings marked for further attention.

Mr. Eshenaur then explained BGCM's involvement in development in Ethiopia and the approach the organization takes to its development programming.

BGCM has been active in development programming in Ethiopia since 1950. Before the revolution, the organization provided medical services in the Shewa and Arsi Administrative Regions. These medical services were turned over to the government between 1977 and 1980. Since then, the organization has only been involved in curative medicine through a clinic in the town of Guder.

In 1985, BGCM was requested to provide relief assistance in Northern Shewa. This assistance ended in 1986. In that year, BGCM began a programme in pure water supply in the Selale Awraja of northern Shewa. It was through these efforts to deliver pure water that the organization began to implement its current community participation approach. BGCM's staff in Selale spent considerable time determining what the specific parameters of its involvement in Selale would be. A detailed plan and process of community organization and participation was drawn up and has been followed.

The underlying assumptions of the BGCM community participation process are as follows.

- People learn best by experience and demonstration. Rural Ethiopian communities with their low level of schooling do not understand abstract ideas or concepts. Hands-on demonstration is necessary in order to convey a new concept or to shed new light on an old idea.

- Some communities may require discussion and persuasion to see root problems which prevent improvement.

- A relationship of trust with the community must be established before any external involvement of BGCM in the community will be successful.

- Continued training of BGCM employees will ensure, to a large extent, that they will possess a clear vision of the need for development and experience excitement at being individually involved in the process of helping people help themselves.

- It takes time to achieve true community participation in development.

- It is the process rather than the goal which ensures good community participation.

- Some government participation must be expected which may or may not lead to an increase in community participation.

These assumptions imply both active and passive roles for BGCM in community development. BGCM acts in the majority of instances as the implementor of water supply systems with the community actively participating as their resources allow. The organization works in an area where the poor are truly poor and do not have many resources save physical labour.

The BGCM approach was summarized as follows.

Step 1 - Initial visit to village

- visit with the chairman of the local farmers association

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- conduct initial technical water survey
- fill out initial technical survey form
- set up appointment with the executive committee of the farmers association.

Step 2 - Second visit to village

- visit with the executive committee of the farmers association
- guidelines for meeting with the executive committee:
  - find out what the priorities of the village are in terms of development
  - determine what water problems there are
  - let the committee know that BGCM works only in water at the present time
  - ask what the village's "natural resources" are including trained individuals
  - finally, request the executive committee to begin forming a development committee

Step 3 - Contact with the awraja development committee

- write a letter with the following contents to the awraja development committee.
  - tell them what has been done so far
  - request the committee to write a supporting letter to the farmers association for the formation of a development committee
  - give the committee the requirements for the development committee including who should be members (not individuals but offices)
  - set up a meeting between the new development committee and BGCM
- insist that the awraja development committee write a letter within 2 weeks of receiving the BGCM letter

Step 4 - Development Committee formation and first meeting

- the first meeting should include the following:
  - introduction
  - presentation of formal questions (verbal interview)
  - continue physical survey in the presence of the committee and obtain their opinions as to what sites are appropriate
  - if possible, choose a site for a water installation in consultation with the committee
  - set up appointments for health education team to begin their teaching (see step 5)

Step 5 - Building physical structure

- if a specific site has not been chosen, set up another meeting with the development committee and choose a site
- discuss with the development committee what its inputs may include, for example:
  - schedule of work for individuals
  - choosing individuals for FFW participation (those who need help the most)
  - determine rotation of workers if project will be longer term
- basic guidelines for project construction

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- no pay for those working directly with water team on short term basis
- pay for those things that the farmers association can do themselves without input or supervision from water team on a long-term basis

- begin formal health education teaching

Step 6 - Physical structure(s) completed, Health Education

- When the physical structure is finished:
  - choose individuals who will be trained on maintenance
  - set up appointments for continuing education
- When maintenance training is finished:
  - set up formal handing-over time and activities
  - continue health education

Step 7 - Final

- complete health education
- set up any continuing training and teaching programmes
- inform the awraja development committee that the process has been completed

Mr. Eshenaur ended his presentation by stressing that building up a partnership of trust is extremely important. This takes time. He advised NGOs that in order to build a conducive atmosphere with the community, they should "get to know the people and get to know them well."

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Discussion of Mr. Eshenaur's Presentation

Ato Tesfom asked who takes care of BGCM's water supply projects when the construction is completed.

Mr. Eshenaur explained that water committees are set up. The membership of these committees includes representatives from the local farmer's association, women's association and youth association.

BGCM at this point does all the maintenance. This is because of the past emphasis of quantity over quality. The presenter explained that his agency has chosen to construct only 30 water supply systems over the next three years. This is in order to give attention to fostering community participation and training local maintenance workers.

Ms. Karen Moore, CARE, asked Mr. Eshenaur to define a community. He responded by defining a community as "a collection of people who are able to work together to implement a life-improving system.

Ms. Moore asked how the BGCM agents contact the ordinary community members.

The presenter explained that the BGCM team leader and health supervisor both work with the community. Once the water committee is set up, the team then works through it. The BGCM health supervisor, on the other hand, works continuously with ordinary community members.

Although the team leader works through the water committee, there are also ongoing informal relationships with members of the community.

Mr. Eshenaur advised against trying to go around these types of committees. He also stressed that the women's and youth associations are very successful in electing motivated people to these committees.

Ato Girma Begashaw, World Vision, asked if BGCM has a working relationship with WSSA.

Mr. Eshenaur replied that his agency has not yet had such a relationship but that it was likely that in the future BGCM would sign tripartite agreements which would include WSSA.

Ato Yilma Mengistu, SCF/US, asked what problems BGCM has encountered to date in implementing its water projects.

The presenter explained that building physical structures in Selale has involved FFW programming. He expressed his view that FFW suppresses true participatory spirit. In an absolute sense, it is impossible to do true development work on an FFW basis. Despite this, FFW does play a critical role in mobilizing a labour force.

To minimize the negative effects of FFW, BGCM rotates FFW workers every 12 days.

Mr. Eshenaur also pointed out that community participation depends largely upon the basic energy level of a community. With strong energetic leadership, a community's participation will be great. With weak leadership participation will be non-existent.

Another problem is that of the willingness of the community to maintain the water supply system. BGCM expects communities to perform several tasks without FFW payments, these include constructing fences and rock aprons around the water site. After turning over the system to the community, often these components are not completed. In these cases, BGCM has

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found itself in the unfortunate role of acting as a "policeman" and locking the water systems until the components are carried out.

The presenter also pointed out the problem of the community controlling the use of water. To operate a water system, one or two people must be selected by the community to act as "controllers." Unfortunately, these individuals are not in most cases remunerated for their efforts and soon lose interest in the job. The taking of water from the system quickly reverts to a free-for-all, tempers rise and fights begin. On one or two occasions, the PA committee has requested BGCM to lock a system until some workable management system can be implemented.

Mr. Ian Shaw, CRDA, asked what BGCM is doing about the transport of water from the water system to the home. He noted that in rural Ethiopia the transport of water is assumed by women who traditionally have a heavy workload.

Mr. Eshenaur agreed that the conveyance of water is a critical issue and there is a need to shorten the distances that women have to walk to obtain potable water. BGCM has dealt with this by concentrating on water systems which are closer to the communities than the present water resources. The beneficiaries are therefore not tempted to use the unsafe water sources over the new water systems.

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FFHC/AD Project: A Case Study

by William Bradfield
FreedomFromHunger
Campaign/Action for Development
Food and Agriculture Organization

Mr. Bradfield began his presentation by explaining the background of the FFHC/AD project in Ethiopia.

FAO's involvement in rural water development is usually confined to irrigation or livestock water supply so the involvement here with domestic water supplies such as wells is not common.

The FFHC/AD project is concerned with agricultural development/rehabilitation in a number of service cooperatives in famine prone areas, notably North Omo, Borena, Welayita and one subproject in south Shewa. Water development is of course an integral part the FFHC/AD project.

The executing of the project is carried out by the Ministry of Agriculture with FFHC staff largely fulfilling a monitoring role. Having no water development team as such, the FFHC/AD staff are technically meant to be working through the rural infrastructure department of the Ministry of Agriculture, but in reality also through the Water Authority and NGOs who are operational in a particular area and equipped to do the work. FAO funds are channelled where necessary.

Mr. Bradfield then defined what a service cooperative was.

A service cooperative (SC) is set up to provide various services to farmers within a group of peasant associations (PA) and is run by an executive committee. There is usually at least one development agent assigned by the Ministry of Agriculture to the SC. His job is to provide extension advice to the farmers. The PA as an entity is not a member, only the farmers within it who wish to join. If the SC is well supported by the community, it can play an important role in coordinating activities. It is also in a position to hire staff for various purposes.

According to the presenter, community participation in the context of water development means that the community which will be using the water point is involved as much as possible throughout the project life, i.e. starting from its siting and determining the form it will take, through its construction to its long term maintenance. Notwithstanding, there are technical aspects to a water project and trained personnel are required in many cases to carry out much of the work, or simply to be present in a supervisory capacity.

Water points are either going to be used by one community, i.e. one PA, or by a number of them. The FFHC role has so far been confined to carrying out surveys and making recommendations as to what should be done. It is obvious that it has to be brought down to the PA level, i.e., what the requirements of each PA and the water potential are within the area. Where there are obvious potential sources, it is important to identify which PAs are going to use them. It is not as important to talk to the leader of the SC as much as to dialogue with the leaders of the PAs and, just as importantly, with the ordinary PA members. The office holders in the PAs (as well as SCs) are often the younger more educated men. It is frequently the older men who know where the best potential water sources are. One sees quite a few cases of failure due to the fact that initial consultation over siting was not properly made.

Mr. Bradfield stressed that the work must be at the level of the PA, not the SC.

If the water source located will only be used by only one PA, it makes life a lot easier. However, often it may be used by a number of communities. The presenter explained

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that he has come across many cases of water points not being maintained and often the neglected water points are located where more than one community is using them.

So far the only steps Mr. Bradfield has taken in such cases is to advise the development agent on what needs to be done and ask him to try and organize it, but as previously mentioned it is within the power of SC committee to appoint or organize persons who would be entrusted with the proper management of the water point. This is something to be looked at more closely in the future. Much of course does depend on the level of community support that the SC enjoys.

As a second part to his presentation, Mr. Bradfield put forward a case study. It involves the construction of ponds in a dryland area.

The SC in question was in South Shewa in an area with less than 900 mm. of rainfall per annum. The ground water tended to be salty and had a high fluoride content. Part of the SC area was supplied by a hydram system pumping water 16 km. For the rest of the PAs, the only alternative was surface catchment, i.e. ponds.

Sources of water were needed urgently so in September last year, five of the PAs made a start on four ponds (2 of PAs combining on one pond). They selected the sites themselves and the dimensions 60 metre by 40 metres with a minimum depth of 3 metres were marked out. The capacity would be therefore at least 7,200 cubic metres. From the experience of other projects such as the Third Livestock Development Project, this capacity is considered to be appropriate for one community to maintain. Each of the PAs comprised approximately 100 households, so that except for one of the sites, there were approximately 100 men available for digging each pond. They worked for 6 months, totally voluntarily until March of this year when rain fell and the men had other duties to perform. During this time they had dug down approximately one metre.

Here was a case of a single community without any outside help fully participating in the construction of the water source that they will rely on. From a sustainable, community participation point of view, it was perfect but the available manpower from within the community was not enough for the task.

According to Mr. Bradfield, the maximum that a man can dig, cart and dump at the best of times is one cubic metre per day. So theoretically it would take 100 men at the very least 72 working days to complete the pond. Mr. Bradfield cautioned the audience against presuming that the rural dweller has little else to do with his time when in fact he can be very busy. Therefore, to build a pond large enough to store water throughout the year, some incentive was necessary. It was a matter of getting the ponds completed in a reasonable length of time without eliminating that element of community participation so essential for the long term viability of the pond.

There were three possibly four options: 1) the use of food for work; 2) paid hand labour; 3) the use of machinery; and 4) the ox scoop.

1. Food for Work

The presenter commented that he had seen very good ponds of the desired dimensions which were built with food for work. However, the time scale was often 2 years with a labour force of 100 men who were not necessarily from the community. He expressed his reservations over what happens when food for work is withdrawn. At various times ponds have to be desilted, repaired and improved. Mr. Bradfield noted that communities lack interest in doing maintenance work on FFW-built ponds unless FFW payments are also offered for the maintenance work. Possibly, better education and organization at the beginning with

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food distribution being limited to the beneficiary community might be the answer.

2. Paid Labour

This has an advantage in that it brings income directly into the community, but any community involvement will be destroyed by outsiders coming in. If one pays on the basis of one cubic metre of soil per day (if this much turns out to be possible) at the minimum wage of 2 Birr/day, it will work out to be a very expensive pond. Also, on what basis does one pay for the peripheral work that has to be done such as catchment protection and fencing.

3. Machinery

One can use machinery to do the real heavy work with the community carrying out the other necessary work, i.e. catchment and spillway protection, silt traps and fencing. A 150 b.h.p. machine can push out the soil of a 7,200 cubic metre pond in 5 days. At a rate of 75 Birr/hr. working an 8-hour day it has its attributes. It has been known for a community to contribute to the running costs of the machine, i.e. providing the diesel and paying the driver.

It is also important to make sure that the community carries out the peripheral tasks as a pre-condition for bringing the machine.

4. Ox scoop

Mr. Bradfield noted that the ox scoop has its attractions for a community based project, but he added that so far he has not found many successful examples of the use of this technology. The farmers' complaint seems to be that the standard ILCA design is too large and heavy but the real reason could be that the farmer is reluctant to work his animals during the dry season fearing that they will lose condition for the ploughing season. In any case, a lot of organization and a well-led community are essential for the successful use of this technology.

Mr. Bradfield ended his presentation by presenting the solution that he had chosen. A 150 b.h.p. machine was brought in and the community contributed partially to the running costs. As there was uncertainty as to whether the machine would come or not it was impossible to make the pre-condition that all peripheral work should be done beforehand. Nonetheless, 3 out of the 4 communities have since completed all the peripheral tasks requested of them.

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Discussion of Mr. Bradfield's Presentation

Mr. Eshenaur asked if the FFHC ponds were water-tight.

Mr. Bradfield explained that the ponds are located in southern Shewa. To make them water tight in this region, it was necessary to line the ponds with plastic sheeting and place sacks filled with soil along the perimeter.

In the Borena area, Mr. Bradfield explained, FFHC hopes to work with CARE. There, he intends to mix Bentonite with surface soil to form a water-tight lining for the pond.

Ms. Karen Moore, CARE, asked if the four options cited were put forth by the community.

The presenter replied that he had devised these options and then discussed them with the community. However, since FFHC does not allow for cash payments for community labour, there were really only three options that could be considered. He noted that both FFHC and the community wanted the ponds quite quickly and this was an influential factor.

Ato Tesfom commented that in his opinion FFHC has not come up with a workable community participation approach. He noted the need to train community members to take care of the water supply systems.

Mr. Bradfield agreed. He explained that FFHC's water department composed of only himself was merely a few months old. Often the department works through other agencies (NGOs/churches) so it is hard for one agency to lay down guidelines for another agency which already has its own guidelines.

Ato Yilma Mengistu, SCF/USA, asked if FFHC was disinfecting the water catchments that it is building.

Mr. Bradfield replied that he is looking at a sand-filtration system. For FFHC the first priority is getting water and the second is keeping it clean.

Ms. Moore asked Ato Tesfom if WSSA was in a position to train MoA development agents in community extension approaches.

Ato Tesfom explained that first of all there is the problem of finances and secondly, WSSA does not intend to extend training to other government agencies. Its priority is to extend its own training capacity.

Mr. Bradfield was asked about the Third Livestock Water Development Programme. He explained that Third Livestock had determined that a 7,000 - 10,000 MT pond was an appropriate size for one community to maintain. Larger ponds attract too many animals and smaller ponds are insufficient for community needs.

Mr. Shaw asked about the coordination of water development in the large southern area where FFHC is working.

The presenter explained that in Welayita three NGOs are involved with FFHC - financed projects. As well, other NGOs are working in the area. Some of these have a definite longer term commitment while others construct water supply systems and then move on.

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Discussion Group Reports

The workshop participants were assigned to three discussion groups where they examined the following topics.

Group 1 - Community Participation in Investigation and Planning

Group 2 - Community Participation in Project Implementation

Group 3 - Community Participation in Operation, Maintenance and Administration of Water Supplies

After thoroughly discussing these topics, the groups made the following reports to the plenary session.

Group 1

Mr. Ken Litwiller, Mennonite Mission of Ethiopia, delivered the report for the group.

The group was given the following guidelines and questions.

1. Set out guidelines on how NGOs can meaningfully involve communities in the identification of need, and investigation and planning of water projects.

2. How can a community's true values and beliefs about water and their felt needs be determined accurately?

3. How can we ensure that the views of women, the main consumers of water, are considered in our investigations?

4. How can we avoid imposing what we think the community needs when it does not reflect what the users want?

In response to Question One above, the group suggested the following.

First, the implementing agency should choose a community or a group of communities within which to work. This choice would have to take into consideration government contracts and the previous involvement of the NGO with the target group. The group noted that contracts with the government may pre-determine what development work can be done and what experts will be allowed.

Secondly, the agency should gather general data on the community. This data would include information on the history, society, economy and religions of the area. The group emphasized that the general data should not prevent the agency from paying attention to specific local conditions.

Thirdly, the NGO should become known or established in the area. This involves introducing oneself to the various levels of community leadership and beginning some activities.

The fourth step is to determine the felt needs. The group advised agencies to do this simultaneously from the top down and the bottom up. From the top down, the agency would start with the development committee at the regional level then at the awraja level moving down to the PA executive and development committees, and finally to the communities. At the same time, the agency should be working through this list from the communities upwards. While the downward approach is meant to ensure the cooperation of concerned government bodies, the bottom up methodology seeks to determine felt needs.

Mr. Litwiller explained that the group debated some important issues of determining the felt needs. First, what questions should be asked. Does an agency hide what eventually it can offer the community so as not to bias the process? Should there be group discussions or individual sample surveys? Which gives the truest picture of needs? How can women be effectively involved? Here the group felt that women's participation could be best assured by

CRDA

separating them from men when asking the questions.

The fifth step proposed by the group was to educate the community in a way to lead it from problems to solutions. For example, education could focus on showing the community the relationship between health and clean water. It is also important to educate the community to prioritize its requests.

Finally, the group suggested that implementation must be done through local structures. This raised the following issues. Duplication of effort must be avoided by consulting government authorities and being aware of well organized, vocal communities. The road bias, i.e. the tendency to plan projects near good access roads should also be avoided. Finally what should be done with requests outside of the NGO's capacity was also looked at by the group. Referral to other NGOs was one possible solution to this last problem.

Group 2 Presentation

The report of Group 2 was given by Mr. Wally Eshenaur.

This group was given the following questions and guidelines for discussion purposes.

1. Draw up guidelines on how to involve the community in the construction of its own water supply? How can the work be organized to avoid wastage of manpower?
2. On technically sophisticated projects such as well drilling, how can the community make a meaningful contribution to the construction?
3. Can an NGO ask a community to make a financial contribution to the project costs? If so, up to what level can this be expected?

Group 2 began by defining "implementation." This term was defined as the putting of things into effect; the accomplishing of objectives; and the mobilizing and organizing of both human and physical resources. In the context of water supply schemes, implementation also involved training in construction work.

In implementing a water supply scheme, the group said that it was important to determine community inputs and the inputs of the outside organization. Then the delivery time of these inputs should be determined and ensured.

The community contribution could be in the following forms.

- mobilization of the workforce
- provision of sand, gravel, rocks and tools
- provision of shelter for skilled labour
- possible financial participation in the purchase of external inputs

In terms of the actual construction, the group offered the following advice. Before construction begins, there should be health awareness. It is indispensable that the community explicitly requests the construction. Discussion with the community should take place as to when the construction work should begin. Health education is also important in order to mobilize the work force and schedule the work. If possible, arrangements should be made for community representatives to visit other projects. The water committee should assign workers on a rotational basis so that those not working on the project will be able to farm for the others. Finally, the community should provide guards and storage facilities and select group leaders.

For sophisticated projects, the above also apply except less so in terms of manpower and time. For sophisticated projects, community participation is particularly important for support activities such as terracing. The community can also be called upon to provide labour in terms of loading, unloading and gravel packing as well as providing funds for the operating costs of machinery

CCRDA

Group 2 addressed the issue of scheduling work so as to avoid wasting manpower. It felt that an NGO could properly schedule activities through the water committee in order to avoid wasting valuable manpower. It was suggested that the work could be done in small groups each led by a supervisor. Dividing the work force into five or six groups of fifty workers and organizing the activities on a piece rate basis was proposed.

The group felt that FFW was appropriate if done with community participation. It also advised against trying to do activities during the rainy season.

In terms of financial inputs, the NGO is in the best position to provide these. Generally speaking, the extreme poverty of the Ethiopian rural communities precludes them from making a significant contribution.

Group 3 Presentation

Ato Shimelis Derebe, NCA, presented the Group 3 report. This group was given the following guidelines and questions.

1. Draw up guidelines for ensuring that the benefiting community takes responsibility for the operation, maintenance and administration of their own water system.

2. Discuss some of the factors which contribute to the early failure of many water supplies.

3. What steps can be taken to strengthen the central (WSSA) and local maintenance structures?

4. Discuss any problems you have experienced in establishing water committees. How can they be well motivated, empowered and effective?

5. How can we help the community to evaluate and monitor their own water system?

With reference to Question One above, Group 3 advised the following.

Water/health committees should be established. These committees should be empowered with the appointment of water source attendants and should be permitted to collect funds from the community for spare parts, fuel and the salaries of attendants.

Regarding Question Two, the group felt that the following factors contribute to the early failure of water supply projects.

- lack of preventive maintenance
- poor construction/placement
- mishandling of project resources
- lack of ownership
- lack of motivating community as a whole; lack of community input
- misappropriation of funds
- lack of sanitation and health education
- inappropriate technology
- lack of spare parts
- lack of follow-up by government or public organizations

Group 3 made the following suggestions for the strengthening of WSSA.

- WSSA should be provided with structures so as to provide services to the water development activities of government and NGOs.
- WSSA should be equipped with spare parts
- A closer relationship with WSSA and NGOs should be established

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- All NGOs and government agencies should take the time to meet and discuss with WSSA how programmes should be implemented

- WSSA's maintenance and operation unit should be strengthened in manpower by seeking funds locally and abroad.

The members of Group 3 reported that they had encountered problems in the following areas.

First, some suffered from an absence of detailed discussions on water supply schemes. Others saw the failure to send appropriate community participation motivators or social workers as a problem. They said that usually only technical people are sent to work on projects. They also noted that motivators should be knowledgeable of the local language and culture.

Group 3 stressed that the water committee should participate in all stages of the project. Moreover, there should be more women and elderly people in the water committee.

Finally, the group advised for the follow-up to be done by an external body.

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Appendix I: Workshop Programme August 24, 1989

Registration	08:30 a.m. - 08:45 a.m.
Welcoming Address	08:45 a.m. - 09:00 a.m.
by Ato Hagos Araya Deputy Executive Director, CRDA	
Presentation 1: Water Supply and Sewerage Authority in Community Participation: Policy, Practices and Experience	09:00 a.m. - 09:30 a.m.
By Ato Tesfom Haile, WSSA	
Discussion of Presentation 1	09:30 a.m. - 10:00 a.m.
COFFEE/TEA BREAK	10:00 a.m. - 10:15 a.m.
Presentation 2 : Theory and Practice in Community Participation. The BGCM E Experience	10:15 a.m. - 10:45 a.m.
By Wally Eshenaur, BGCM	
Discussion of Presentation 2	10:45 a.m. - 11:15 a.m.
Presentation 3: Experience in Community Participation with Service Cooperatives	11:15 a.m. - 11:45 a.m.
By William Bradfield, FFHC/FAO	
Discussion of Presentation 3	11:45 a.m. - 12:15 p.m.
LUNCH	12:15 p.m. - 01:15 p.m.
Water Resources Group Business and Introduction to Group Discussions	01:15 p.m. - 01:30 p.m
Group Discussions	01:30 p.m. - 02:45 p.m.
COFFEE/TEA BREAK	02:45 p.m. - 03:00 P.m.
Summary of Group Discussions	03:00 p.m. - 04:00 p.m.
by Group Reporters	

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APPENDIX II: List of Participants of Community Participation in Water Supply Projects August 24, 1989

1. Laura D. Litwiller	Mennonite Mission
2. Kenneth E. Litwiller	Mennonite Mission
3. Etsegenet Yoseph	Jesuit Relief Service
4. Shimelis Derebe	Norwegian Church Aid
5. Shiferaw Legesse	Finnish Mission
6. Getnet Kebede	Action Internationale Contre la Faim
7. Teshome Ali	Food for the Hungry International
8. Megbar Debebe	Food for the Hungry International
9. Tesfom Haile	Water Supply and Sewerage Authority
10. Beyene Megersa	Lutheran World Federation/WS
11. Solomon Tesfaye	Africare
12. Thomas Ketema	Japan International Volunteer Centre
13. Shikur Admasu	Japan International Volunteer Centre
14. Luca Fabbri	Lay Volunteers International Association
15. Bahru Bedasso	Ethiopian Orthodox Church/DICAD
16. Andy Meakins	Kale Heywet Church Development Programme
17. David Hardware	Adventist Development and Relief Agency
18. Addisu Haile	Baptist General Conference Mission
19. Gezahegn Duga	Baptist General Conference Mission
20. Alemu Fida	Baptist General Conference Mission
21. Fenede Yetbarek	Redd Barna
22. Worku Kumsa	Redd Barna
23. Walter Eshenaur	Baptist General Conference Mission
24. Claudia Futterknecht	CARE
25. Dessalegne Simachaw	German Agro Action
26. Mogus Mehari	Kale Heywet Church Development Programme
27. Bereket G/Tsion	Kale Heywet Church Development Programme
28. Deggefa G/Mariam	Kale Heywet Church Development Programme
29. Berhane G/Hiwot	Oxfam
30. Tesfodros Yared	Church of Christ
31. Burton Rudolph	Baptist Mission of Ethiopia
32. Alemayehu Girma	Redd Barna
33. Andrew Hood	Kale Heywet Church Development Programme
34. Bruce Rowse	Society of International Missionaries
35. Desta Demessie	Kale Heywet Church Development Programme
36. Tadesse Belachew	Save the Children Federation/USA
37. Fikre Negussie	Lay Volunteers International Association
38. Girma Begashaw	World Vision International/Ethiopia
39. Girma Mamo	World Vision International/Ethiopia
40. Yeneshawork Merene	World Vision International/Ethiopia
41. Belai Kebede	World Vision International/Ethiopia

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42. Earmias Kaffe	World Vision International/Ethiopia
43. Attilio Ascani	Self Help
44. Bill Bradfield	FFHC
45. Wondimagegnehu Gizaw	Feed the Children International Ministries
46. Yonas Ttabor	FAO
47. Patricia Hotchkiss	UNHCR
48. Karen Moore	CARE
49. Anthony Shanley	Catholic Relief Services
50. Sahle Mariam Mogus	CRDA
51. Yabowerk Haile	CRDA
52. Ian Shaw	CRDA
53. Zewditu Tadesse	CRDA
54. Hagos Araya	CRDA

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APPENDIX III: Summary of Participants' Evaluation of the Workshop

Thirty-three questionnaires were returned.

Question 1. Did you find the workshop useful?

All the respondents replied "yes."

Question 2. How could it be improved? Please make suggestions.

- A field visit would be useful. (6)
- Emphasis should be given to presentations dealing with innovative, cost effective and unsophisticated utilization of natural resoruces, e.g. small-scale ruralf water supply and irrigation schemes.
- Long-term solutions to operation and maintenance problems need to be dealt with detail.
- Set clean objectives the accomplishment of which can be measured in the evaluation form.
- Identify good facilitators for small group discussions.
- Use more visual aids, e.g. flip charts and slides.
- Encourage presenters to use more case studies in their presentations as it helps to animate and bring home the reality of situations.
- Provide in advance written material in order to stimulate people's thinking on certain issues.
- The workshop should not be limited to certain points of discussion, but should be extended in terms of time and topics.
- Assign specific goals to group leaders.
- More government representatives should be invited.
- Invite more professional presenters (3)
- Have more presentations/case studies or experiences which relate to water supply schemes.
- Written material should be distributed prior to the workshops (2).
- More itme is needed for this type of workshop (2).
- The workshops should be on a monthly basis.
- More time for discussion would be useful.

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- Instead of concentrating on abstract ideas for establishing guidelines for organizations, more time could be spent discussing case studies.
- Before the meeting, discussion points should be collected from the participants.
- Reference books must be made available.
- Presenters should use more audio-visual aids.
- There should be fewer topics and more time for each topic.
- The workshop should be made more participatory so that all participants will give their ideas freely.
- The workshop should take place at regular intervals, e.g. quarterly.
- CRDA should publish a magazine covering the work and experiences of NGOs.
- Examine case studies comprising all phases of community participation in water supply, especially those including successful phases of follow-up.

Question 3. What aspects of the workshop did you find most interesting?

- Ato Tesfom's and Mr. Eshenaur's presentation's (3)
- all of the workshop
- group discussions
- hearing different attitudes toward community participation
- all the presentations (3)
- Ato Tesfom's presentation
- Mr. Eshenaur's presentation
- the case study in Mr. Bradfield presentation
- learning how other agencies are dealing with how to increase community participation
- the discussions on determining the felt need of communities, the process of setting up water committees, the relationship between NGOs and WSSA and WWSA's support for community participation promotion.

Question 4. Will the workshop have any effect on your work?

Twenty respondents answered yes and two answered no. The following comments were given.

- I will use WSSA services more than before in order to promote community participation.

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- I have made useful contacts for resources that we could tap to improve our programmes.
- I gained some very useful information in the area of community participation in water supply projects, in which our organization might be more involved in the future.
- The workshop has strengthened our resolve to do development through community participation, has given specific insights on how to enhdance community participation and has opened up the possibilities for future relationships with fellow participants.
- The information from the workshop will facilitate better coordination with government efforts.
- I have become more aware of the necessity of establishing trust within the community.
- The information on community participation and the setting up of water committees will have a great effect on my next construction implementation programmes.
- The information on the means and ways to being about community participation and the role of WSSA as explained by Ato Tesfom.
- The workshop information will help me to exploit local resources and enhance the sustainability of the project.
- It will facilitate the task of bringing about community participation in the operation, maintenance and administration of water supply projects.
- I gained a better awareness of government regulations and various ideas.
- I learned from the workshop a) how to avoid the wastage of manpower; b) what health activities to undertake before providing clean water to the community; c) how to mobilize the community and locally available resources.
- I gained a better awareness of the importance of involving women in the decision-making process for the implementation of water supply projects.
- This workshop gave me some ideas and suggestions on how to improve formal and informal contact with the target communities.
- Ideas on how to strengthen water committees and ensure better follow-up.
- I appreciated the guidelines for a community participation approach with relation to general development needs.

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Appendix IV: Water Resources Group Statement of Objectives

The objectives of the Group, which meets under the auspices of CRDA, are outlined as follows:

1. To serve as a medium of information exchange on both practical and social aspects of water, health and sanitation, and related areas of development. This sharing of information will be carried out through meetings/workshops, newsletters and field trips.

2. Through meetings/workshops and newsletters the Group will aim to improve cooperation among those CRDA members involved in water, health, sanitation and related development.

3. Participants at the Group's meetings will be encouraged to provide up to date information on their programmes and needs in order to facilitate the coordination efforts of CRDA and to avoid duplication of efforts by members. This information will be made available to members and donors.

4. The Group will explore various ways of enhancing the professional development of CRDA members' staff working in water development.

5. The Group will be encouraged to share experiences gained and information about systems, designs, products and new innovations, and government polices for the benefit of all members. This will include discussions on technical matters and sociological issues.

Responsibilities of the Organizing Committee

To coordinate the activities of the Group a committee will be formed with the following duties and responsibilities:

1. Prepares a schedule for at least four meetings/workshops to be held each year.

2. Based on the needs of members decides on topics to be covered by each meeting/workshop.

3. Prepares a list of possible speakers on selected topics.

4. Prepares a list of suitable sites for field visits and makes arrangements for the same.

5. Prepares agenda for meetings/workshops.

6. Schedules speakers who are willing to make presentations.

7. Prepares reports on meetings/workshops and field visits and passes them to CRDA Executive Director.

8. Plans the format and contents of the newsletter.

9. Solicits volunteers to write articles on topics pertaining to water and related issues.

10. Collects articles two months before publication.

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12. Passes the final draft of the newsletter to the CRDA Executive Director

Responsibilities of CRDA

Assign at least one person to serve on the Committee who will be responsible for the coordination of all the meetings of the Committee and the Group as well as newsletter. Their responsibilities and duties are given as follows:

1. Participates in all Committee Meetings which will be held at CRDA.
2. Invites speakers for meetings/workshops.
3. Circulates the Group's programme to all interested members.
4. Produces the newsletter and any other documents or papers.
5. Distributes newsletters, documents and papers to member churches/agencies as well a concerned Government agencies.
6. Endeavours to obtain resource material on matters of interest to the Group.
7. Serves as an information centre for resources available including consultants available or visiting Ethiopia.

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Appendix V: Inventory Of Members' Experiences In Water And Related Development

Compiled by Andy Meakins

The Water Resources Group within CRDA was set up with the purpose of acting as a forum for the exchange of information and experience in the field of water, health and sanitation and related areas of development.

In order to facilitate the coordination role of CRDA and to provide a directory to help members to share experiences, the Organizing Committee of the Group drew up a questionnaire, which was circulated to all members. 19 member organizations returned the questionnaire giving a partial picture of members involvement in water and related fields. A number of organizations heavily committed to these fields did not return a questionnaire and are not therefore included. A summary of results have been tabulated on Tables I and II.

Those members who replied are involved in a wide variety of projects, the most common being hand-dug wells with 68% of members involved. Other sources of water being developed include catchment ponds and reservoirs (63%), spring protection (47%), drilled wells (32%) and roof catchments (21%).

The most used type of water lifting device is the hand pump (79%) with motorized, wind and solar powered pumps also being installed. Here it is interesting to note that among 15 members installing hand-pumps a total of 8 different types are being used. The Mono pump is the most popular with the India mark II as second. This clearly indicated a need for standardization, which is also a government priority at this time.

68% of members who replied have integrated water with health. A health education component is incorporated in over half of the water programmes. Sanitation programmes lag behind water with only 37% constructing latrines.

It is encouraging to see over half of the members training villagers in maintenance of water systems. The same number are training water technicians, health educators and extension workers.

The survey also gives information on motor pumps, water storage and piping systems, geophysical equipment, education material and water testing facilities and equipment used by those organization questionnaires. The results are summarized on Table I.

The geographical spread of recent and current activities are shown by region and new awraja on Table II. The 19 members completing the questionnaire have completed or ongoing projects in 69 awrajas out a total of 351. There appears to be little overlap with no more than two NGOs working in the same awraja, with the exception of Addis Ababa. Some members are concentrating their efforts in one awraja or one region, i.e. NCA works exclusively in Bale region. Others are spreading their efforts far more widely, possibly to fit in with their other projects.

The inventory can be used by members for the exchange of information on methods or approaches and to obtain data on specific geographical areas. It is hoped that it will help to increase cooperation between members.

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INVENTORY OF MEMBERS' EXPERIENCE IN WATER DEVELOPMENT

Key To Members Returning Questionnaire

Organization	Address (p.o.box)	Tel. No.	Contact Person	Position
ActionAid	1261	120937	Peter Walker	Director
Africare/Ethiopia	2309	152484 151798	Vincent Parker	Representative
BGCM	2323	650449 651071	Roger Erickson	Development Director
CARE	4710	519055 511345	Karen Moore	Programme Coordinator
CVM	1204	150757	Attilo Ascani	Coordinator
EOC/DICAD	503	119661	Abune Garima	Executive Secretary
FCDM	5683	511548 511549	Wondimagegnehu Gizaw	Field Director
Finnish Mission	3833	750139	Shiferaw Legesse	Sanitarian
FHI	4181	154966 154959	Teshome Ali	Water Consultant
Action	1866	150335	Wolfgang Mach	Country Representative
JVC	6941	185109	Naoki Suzuki	Representative
JRS	30105	551280 550326	Fr. Joseph Rodrigues	Coordinator
KHCDP	5829	156618 154170	Andy Meakins	Water Project Coordinator
LWIA	102346	182041	Terry Dutto	Country Representative
NCA	1248	512922	Shimelis Derebe	BWP-Coordinator
OXFAM	2333	610343 613344	Stephen Lloyd	Acting Representative
Redda Barna	3457	152611	Ferede Yetbarek	Consultant/Eng.
			Admasse Wondemu	Consultant/Health
SCF/USA	387	511561	Tadesse Belachew	Water Engineer
SIM	127	552348	Gordon Creighton	SIM-AID Director

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CRDA - WATER RESOURCE GROUP

TABLE I

INVENTORY OF MEMBERS EXPERIENCE IN WATER DEVELOPMENT

AUGUST 1989

	ORGANIZATION (See seperate key)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	PERSONNEL																			
	Water & Sanitation	5		40	100	9			4		13	1	1	19	15	59	61	26	14	6
	Related fields	10		20	2	5			8			1	3		3	15	5	28		14
	Engineers	1		1							1			3	2	2	3	10	2	4
	Technical school graduates			1	1	3								4	2	8	2	3	1	
	Drillers					2								1		13				
	Water works foremen			1		5		1			2		1	4	3	2		5	3	
	Water workers	3		1		1		2	1					6	7	5		5	8	17
	Health educators	10		7	2	3		1					3		1	4	5	16		7
	Mason & Carpenter										10			1						
	Driver/driller																			
2	ACTIVITIES																			
2.1	WATER DEVELOPMENT																			
	Well drilling		*	*		*								*		*				*
	Hand dug wells			*	*		*	*	*	*	*			*	*		*	*	*	*
	Hand-pump installations			*	*	*		*	*	*	*		*	*	*	*	*	*	*	*
	Water lifting devices			*											*		*			
	Motorized pump installations		*												*	*	*			
	Windmill pumps					*									*					
	Solar pumps	*				*										*				
	Storage tanks	*		*	*	*		*			*			*	*	*	*		*	*
	Catchment ponds/reservoirs			*	*		*	*		*			*	*	*		*	*	*	*
	Roof catchments				*								*	*	*		*		*	
	Irrigation		*	*			*								*			*		
	Diversion weirs/structures		*		*								*	*	*					
	Fish ponds			*										*						
	Water power for grinding mills						*													
	Slow sand filter														*					
	Cattle trough + clothes wash stand																			
	Spring protection			*	*		*		*	*		*		*		*			*	
	Gravity pipelines			*										*						*
																			*	*

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CRDA - WATER RESOURCE GROUP

TABLE I cont...

INVENTORY OF MEMBERS EXPERIENCE IN WATER DEVELOPMENT

AUGUST 1989

	ORGANIZATION (See seperate key)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2.2	HEALTH & SANITATION																			
	Integrated Dev - water + health	*		*				*	*	*		*	*	*	*	*	*	*	*	*
	Health Education including water	*		*					*	*		*	*		*	*	*	*		*
	Construction of latrines		*			*			*								*	*		
	Construction of septic tanks																	*		
	Urban sanitation projects																*			
2.3	TRAINING																			
	Water technicians			*	*	*				*				*	*	*			*	
	Health educators	*		*	*	*	*						*		*	*				
	CPPA's/Extension workers	*		*											*	*	*	*	*	*
	Villagers in maintenance	*		*	*	*														
	CHA/TBA								*											
	MATERIALS & EQUIPMENT																			
3.1	DRILLING RIG																			
	TH10		*											*						
	TH60			*												*				*
	Stover																			
3.2	HAND PUMPS																			
	Mono				*				*	*			*	*			*	*	*	
	India Mark II					*		*					*	*		*	*			*
	SIM Boswell			*						*										
	FHI/BSCM								*											
	Nira										*									
	Aquadev														*					
	Egeo 3														*					
	Alpha Pompe																			
3.3	MOTOR PUMP																*			
	Lister/Petter diesel engine		*		*						*					*				
	Submersible with diesel gen.														*					
	Mono with diesel engine																	*		
	Alpha with Lombardini diesel eng.	*																		

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	Alpha with Lombardini diesel eng.									*										
	BP solar de-watering pump	*												*						
	Grundfos			*														*		

CRDA - WATER RESOURCE GROUP TABLE I cont...

INVENTORY OF MEMBERS EXPERIENCE IN WATER DEVELOPMENT

AUGUST 1989

	ORGANIZATION (See seperate key)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
3.4	WATER STORAGE SYSTEMS																			
	Reinforced concrete	.		*				*	*		*			*	*					*
	Ferro-cement							*				*		*	*					*
	Masonry			*	*			*			*		*	*				*	*	
	Block-work														*					
	Welded steel		*	*						*					*			*	*	*
	Galvanized steel					*														
	Earth	*																		
	Plastic tank															*				
	Prefabricated corrugated steel																*			
	Bamboo reinforced concrete														*					
3.5	WATER PIPES																			
	Galvanized steel		*	*	*	*		*	*	*	*		*	*	*	*	*	*	*	*
	UPVC					*		*								*	*			
	Heavy-duty plastic (HDP)														*		*			
	Cast iron																			
	Iron											*								
3.6	GEOPHYSICAL EQUIPMENT																			
	VLF, Slingram, Wady															*				
	Hand auger																*			
	Terremeter/resistivity			*										*						
3.7	EDUCATIONAL MATERIALS																			
	Own materials	*				*						*								
	World Neighbors film strip													*						*
	Flannel graph + pamphlets			*											*					
	Flip charts + Handbills															*				
	Audio visuals																		*	
	WSSA																*			
	EOC/Ministry of Health						*													

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TABLE I cont...

CRDA - WATER RESOURCE GROUP

INVENTORY OF MEMBERS EXPERIENCE IN WATER DEVELOPMENT

AUGUST 1989

	ORGANIZATION (See seperate key)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4	WATER TESTING			*		*			*			*		*	*	*	*		*	*
4.1	BACTERIOLOGICAL TESTS			*		*									*					
4.2	CHEMICAL TESTS													*		*		*		
4.3	LABORATORY USED																	*		
	Government labs					*			*			*	*	*						
	WSSA in Awassa										*									
	Central Lab (Pasteur) AA														*				*	
	AA University			*																
	Own equipment																			
	Portable - Merks																			
4.4	EQUIPMENT														*		*		*	
	Merks																			
	Delagua																			
	Hach			*																
	Micropore																			

CRDA

INVENTORY OF AGENCY EXPERIENCE IN WATER AND RELATED DEVELOPMENT

AREAS OF RECENT AND PRESENT INVOLVEMENT

TABLE II

AUGUST 1989

ORGANIZATION	A.AID 1	AFRIC 2	BGCM 3	CARE 4	CVM 5	EOC 6	FCMI 7	F.M 8	FHI 9	GAA 10	JVC 11	JESUIT 12	KHCDP 13	LVIA 14	NCA 15	OXFAM 16	R.B 17	S.C 18	SIM 19
REGION AND AWRAJA																			
ERITREA																			
South Hamasen													D,P						
NORTH GONDER																			
Dembia																			
Chilga						S				A									
SOUTH GONDER																			
Simada									H,S										
Gaynt									S	I									
NORTH WOLLO																			
Delanta & Dawint																H,S			
SOUTH WOLLO																			
Borena																H,S			
Kelala & Legahido																H,S			
Saynt																H,S			
S. Kala																H,S			
Werehimenu											S					H,S			
EAST GOJAM																			
Bichena										A									
WEST GOJAM																			
Bahir Dar						S													
NORTH SHEWA																			
Abichu & Tera																			
Bulga													D,I,S						
Bure Mudayitu																	I		
Debre Libanos			G,H															G	
Tegulet																			
Yifrate & Timuga													B				I		
Yifat						S												G	
																		G	

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KEY

A = Integrated Agriculture
B = Diversion Weir/Irrigation
C = Soil and Water Conservation
D = Hand-dug wells
E = Emergency Water Supplies
G = General Water
H = Health/Health Education
I = Integrated Dev/Rehabilitation
P = Ponds/Dams
S = Spring Protection
W = Well Drilling
X = Pumps

TABLE II cont...

RGANIZATION	A.AID 1	AFRIC 2	BGCM 3	CARE 4	CVM 5	EOC 6	FCMI 7	F.M 8	FHI 9	GAA 10	JVC 11	JESUIT 12	KHCDP 13	LVIA 14	NCA 15	OXFAM 16	R.B 17	S.C 18	SIM 19
EST HARARGE				C															
Chercher				C															
Habro																E,G			
AST HARARGE				C															
Garamuleta				C															
Jigiga						S													
Wobera													G,B						
AST SHEWA																			
Adea																			
EST SHEWA			H						D,H,S										
Ambo		W																	
Cheha			G,H				G												
Cheliya																		I	
Enemor & Ener													W						
ADDIS ABABA		W				S							W						
Addis Ababa		W							D,H,S										
Akaki																			
Welmera									P				D,S						
SOUTH SHEWA														G,I					
Alaba Seraro													D,S	G,I					
Angecha													S						
Adami Tulu	P												D,S,W						
Dalocha Lanfiro													D,S,W						
Haykoch																			
Kedida Gamela																			
Konteb																			
Limu																			
ASSOSA							D												
Dul																			
ILUBABOR							S												
Jimma		W																I	
KEFA																			
Gaba													G,I						
Gaba Gojeb																			

KEY

CCRDA

Gaba											G,I									
Gaba Gojeb																				

KEY

TABLE II cont..

ORGANIZATION	A.AID 1	AFRIC 2	BGCM 3	CARE 4	CVM 5	EOC 6	FCMI 7	F.M 8	FHI 9	GAA 10	JVC 11	JESUIT 12	KHCDP 13	LVIA 14	NCA 15	OXFAM 16	R.B 17	S.C 18	SIM 19
NORTH OMO																			
Boloso Suri																	G,I		
Damota					S,W,X														S,W
Damot Gale						S										D			S,W
Kamba																			S,W
Oba Zala													S						
SOUTH OMO																			
Bako Gaza																			S,W
Hamer																	G,I		
Sala Mago																			D
Weyto																			P
SIDAMO																			
Wenago																			S
Yirga Chefe																			S
BALE																			
Delo															W				
Genale															S,W				
Ghinir															S,W				
Goro															W				
Harena																	G,I		
Hora															W				
Mendeyu						S													
Rayta															W				
Sewena															W				
Wabe															W				
BORENA																			
Arero				D,I,P															
Dire				D,I,P															
Teltele Yabelo				D,I,P															

KEY

A = Integrated Agriculture
B = Diversion Weir/Irrigation
C = Soil and Water Conservation
D = Hand-dug wells
E = Emergency Water Supplies
G = General Water
H = Health/Health Education
I = Integrated Dev/Rehabilitation
P = Ponds/Dams
S = Spring Protection
W = Well Drilling
X = Pumps

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Appendix Vi

CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION
BOOKS AVAILABLE ON WATER, HEALTH AND SANITATION AND RELATED DEVELOPMENT

TITLE OF THE BOOK	AUTHOR	QTY	EDITION YEAR
Water, Wastes and Healh in Hot Climates	Feachem/Mc Garry/Mara	1	1983
Appropriate Technology for African Women	ECA	6	1978
Village Technology handbook	Vita	1	1981
Rural Africa Development Project (Zambia)	Mann. R.D	1	1977
Building Ponds with Animal Power in Eth.	Astatke,Bunning		
The Field Directors' Handbook An OXFAM Manual for Development Workers	Boyden PHD & Pratt, PHD	28	1986
Appropriate Technology Source book (A Guide to Practical books for Village and Small Community Technology)	Darrpw & Saxenian	1	1986
Handbook of Gravity-Flow Water Systems for Small Communities	D. Jordan T.	1	
Appropriate Sanitation Alternatives: A Planing & Design Manual	Kalber Matter, Julians Gunnerson & Mara	1	1982
Village Water Supply in the Decade	Glenie C	2	
Environmental Health Engineering in the Tropics	Cairncross & Feachem	2	
Surface Water Treatment for Communities in Developing Countries	Shulz & Okun	1	
Ventilated Improved Pit Latrines: Recent Developments in Zimbabwe			
Small Community Water Supply	Hofres EH	1	
Evaluation for Village Water Supply Planning			
Working Together for Better Water			
Rural Water Supply in Developing Countries (ICRC Publication)			

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TITLE OF THE BOOK	AUTHOR	QTY	EDITION YEAR
Sanitation in Developing Countries (ICRC Publication)			
Appropriate Technology For Water Supply & Sanitation: Health Aspects of Excretar & Sullage Management	Feachem, Bradley, Garelick and Mara	1	
A Model for the Development of a Self-Help Water supply Programme			
Appropriate Technology. A Handbook	Canadian Hunger Foundation	2	197
Small Scale Irrigation	Stern	2	198
Community Health	C.H Wood, J.P Vaugham, Hide Glanville AMRF		
Health Education	N. Scotney, AMRF	3	
Community Health	C.H. Wood, J.P Vaugham H. de Glanville		
Complete Rural Health	African Medical & Research Foundation (AMRF)		
Appropriate Technology for Development Fresh Water Fish	VITA		
Pond Culture & Management	Chakroff, M	1	197
Participation of Women in Water Supply and Sanitation	Wijk-Sijbesma	1	198
Ground-Water Dams for Rural Water Supplies in Developing Countries	P.H.D. Geology	1	19
Rain Water Harvesting (The Collection of Rainfall and Runoff in Rural Areas)	Pacey/Cullis	1	19
Water Supply-Ethiopia (An Introduction to Environmental Health Practice)	G/Emanuel Teka	1	19

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TITLE OF THE BOOK	AUTHOR	QTY	EDITION YEAR
How to Build A Cretin Sail Wind Pump	Mann R.D	1	1983
Organization & Management of Water Supplies in Tropical Africa	Sandford S. ILCA	1	1983
How to Build and Use a Compost Latrine	Winblad/Kilama/ Torstensson	1	1981
Rural Water Supply Hand pumps project (UNDP) Project Management Report No. 2, 4 and 5	Arlosoroff, Grey, Journey Karp, Langenegger, Rosenhall & Tschannerl		
A Model for the Development of a self-help Water Supply Programme Paper No. 1	Glenie C.	1	1982
Community Water Supply (The Hand pump Option)	Community Water Supply	1	1981
Sanitation in Developing Countries	IDRC-198e	1	1980
Appropriate Sanitation Alternatives, A Planning and Design Manual	Kalbermatten, Julius Gunnerson, Mara	1	1982
Developing World Water	Grosvenor Press Int.	1	1988

WORLD NEIGHBORS FILMSTRIPS (AT CRDA)

Title (one each)	No. of Scripts
Sources of water	-
Getting water to the plants	-

Scripts only (one each)

Drink pure water

FLIPCHARTS, PHOTO SERIES, POSTERS (AT CRDA)

Title	Quantity
Cleanliness brings health (Flipchart)	1
What is disease? (")	1
How disease travels (")	1

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Appendix VII: Norwegian Church Aid - Bale Water Project

TEN-STEP PLAN
FOR COMMUNITY PARTICIPATION AND
IMPLEMENTATION OF HAND-PUMP WATER SCHEMES

October 1, 1988

ABBREVIATIONS

BWP	Bale Water Project
CHA	Community Health Agent
CHS	Community health Service
CP	Community Participation
DDP	Dello Development Project
DWP	Domestic Water Point
HA	Health Assistant
MoH	Ministry of Health
NCA	Norwegian Church Aid
O&M	Operation and Maintenance
PA	Peasant Association
SA	Scheme or Pump Attendant
TBA	Traditional Birth Attendant
WaSH	Water, Sanitation and Health
WHC	Water and Health Committee
WSSA	Water Supply and Sewer Authority

Step 1: Project Preparation and Coordination Meeting.

Purpose: To make a detailed plan of all activities with dates and work calendar for the current scheme village.

Responsibility: BWP Coordinator.

Participants: BWP Coordinator, CP Coordinator, hydro-geologist, WSSA representative.

Agenda:

1. BWP Coordinator opens the meeting and takes down minutes of the discussion.
2. WSSA surveyor or hydro-geologist presents village information, survey results and scheme design.
3. Those present jointly make a tentative calendar of all ten steps.
4. A precise date is set for step 1 and approximate dates for steps 3 and 5, mentioning the participants of each step meeting.

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Documentation: 1. A new village-scheme file is opened, to be the BWP office in Robe.

2. A bar-chart of the 10 steps is prepared.

3. Step 1 minutes are filed and distributed to each participant.

Notes: This is a coordination meeting. It is important that everyone is thoroughly informed and agrees to the calendar put up.

At times, it will be desirable to plan several new schemes at the same step 1 meeting. The calendar for each scheme must be clear to all. the allocation of manpower must be discussed in some detail.

Step 1 meeting minutes should have a wide right margin in wh are written the name of the responsible implementor f each action to be taken. The action itself should be underscored in the minutes.

Step 2: Visit to the Scheme Village.

Purpose: To meet local leaders and fix the Step 3 date.

Responsibility: CP coordinator with CP team members.

Participants: PA leaders and women's representatives. Also any members of existing Health or Water committees.

Agenda: 1. The CP team informs the PA leaders of plans to install a new water scheme in their village.

2. In informative letter is delivered to the PA and women's leaders.

3. Dates are set for the step 3.A. and 3.B. meetings and written into the informative letters.

4. A village information form is filled in from answers provided by the PA leaders.

Documentation: 1. Copy of informative letter with dates filled in.
2. Village information form duly filled in.
3. CP team leader's written report.
4. CP Coordinator's monitory report.

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Notes: It must be made clear at this visit that villagers will be involved both in decision-making and in work assignments. The water agencies will assist in getting water, but the PA will be responsible to operate the scheme. These points will be presented to the community at the step 3 meetings, and so the leaders must be prepared for it.

The PA leaders must understand that there is to be a separate women's meeting, and the CP team must meet a women's representative to explain this fact. It must be clear that there will be no scheme construction without a women's meeting, because it will be the women who receive the subsequent health education. Village hygienic standards will rise only if women begin using more water and use it properly.

Step 3: Village Information Meetings.

A. General Informative Meeting.

Purpose: To inform thoroughly a large group of villagers on plans for a new water scheme and WaSH education programme.

Responsibility: CP Coordinator.

Participants: CP coordinator, CP team leader, hydro-geologist, drilling foreman, health assistant. Prominent local people, including: formal and traditional leaders, TBAs, healers, religious figures, teachers, officials, extensionists; in all some 50 influential people, enough to ensure that the whole community will be informed.

Agenda:
1. Opening by the PA chairman.
2. Introduction of agency personnel by the CP Coordinator.
3. Health lesson on 'Why We Need Clean Water, by Health Assistant (or CP worker) using flip chart.
4. Lesson on 'Constructing a New Water Scheme' by a CP worker using a flip chart.
5. Comments by the hydro-geologist and drilling foreman.
6. CP coordinator explains responsibilities of both the PA and the water agencies.

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7. CP Coordinator explains the duties of Water and Health committee and asks the PA to form one separate meeting.

8. CP Coordinator presents the proposed agreement Agreement (form 3).

9. A date is set for meeting again (step 5) to sign the Agreement.

10. General discussion and airing of villagers views and queries.

Documentation: 1. Date for the signing of the agreement (st

2. CP Coordinator's written report to be distributed to the PA chairman and BWP Coordinator.

Notes: While it is not expedient to have the entire villa present at step 3, there must be enough people to e that the information will later reach into the loc communicative networks. The aim is both to inform many as possible and to motivate them to participa scheme construction.

CP must never be viewed as a way of obtaining chea labor or to force people to work for free. To do s will result in abandonment, in protest or, at leas requests for salaries.

In the BWP, people are working for their own benef and so we will pay no salaries. If people want wa they will give some work to get it. If they will then the BWP will withdraw from the scheme. This approach will seem unusual to some, so we can neve give people enough information.

So use this meeting well and always take time to e things to people. Take note of their comments, fo might give hints at to later problems. Use any opportunity in the village to inform people about scheme and to communicate with them.

It is imperative that the water agency personnel re from selecting any members of the WHC.

B. Women's meeting.

Purpose: To inform women in particular. For men usually wi sufficiently inform women whose cooperation is so essential.

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Responsibility: Women CP team members.

Participants: It is best if no men are present, but this requires a woman CP worker who is a capable leader.

Agenda:

1. Opening by the women's association leader.
2. Introduction of the women CP worker(s).
3. General orientation of the water scheme and the BWP personnel who were present at the Step 3.A. meeting.
4. Health education lesson as above, by the health assistant, who may be called in for this, or by a woman CP worker.
5. Lesson on water scheme by woman CP worker using a flip chart.
6. Presentation of the proposed Agreement and of the PA responsibilities.
7. Inform about the WHC and choice of its women members at the up-coming step 4 meeting.
8. General discussion. The women CP workers will take notes on the women's views and promise to come back with answers to difficult questions.

Documentation: Woman CP worker's report.

Notes: The importance of women's involvement in the water scheme might not be fully understood by PA leaders, hence the necessity of this separate meeting.

The health lesson is especially important for the women, for it is mainly they who fetch water and who will undertake to improve their children's family's hygiene and thereby their health. If clean water is not properly and abundantly used, there is little reason to build a big scheme.

All the water agency personnel, including the CP workers, will withdraw from the community for two or three weeks until step 5.

Step 4. Village mass-meeting without outside representation.

Purpose: To form a WHC consisting of both men and women, and to select two scheme attendants.

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Responsibility: PA chairman.

Participants: As deemed appropriate by the community leaders.

Agenda: Thorough discussion of the village's responsibilities in the water scheme.

Documentation: PA Chairman's report to be delivered during step 5.

Notes: It is important that the villagers have enough time to hold their own meeting, at least one week. During his visits to the village, the CP Coordinator should spend time with the PA Chairman explaining and encouraging him to hold the step 4 meeting.

It is especially important that the community form an effective WHC, which will serve as the PA representatives during the construction of the scheme.

The SAs should be respected and mechanically capable men who are likely to remain in the village for years to come. Furthermore, the PA Chairman must clearly understand that the water scheme will belong to the community, and not to the water agencies. And therefore the agencies will pay no salaries for work contributed by the PA. He should explain this carefully to the villagers.

Step 5: Official meetings with village leaders.

A. Signing of agreement.

Purpose: To sign the agreement and to explain the PA, BWP, and WSSA responsibilities.

Responsibility: CP Coordinator.

Participants: PA chairman and council members, CP coordinator, WSSA representative, hydro-geologist, WHC members and the SAs.

Agenda:
1. Go over the agreement together.
2. Sign it.
3. Review WHC duties and responsibilities.
4. Arrange for setting up a drilling camp.
5. Estimate the arrival date of the drilling rig.

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Documentation: 1. Agreement signed in three copies, one for village, another for NCA, and a third WSSA.

2. CP Coordinator's written report to the BWP Coordinator on the step 5 meeting and on the dates that were set.

Notes: The CP Coordinator should not sign the agreement if the PA chairman cannot attest that a Step 4 meeting was held, or if that meeting was sparsely attended.

The CP Coordinator shall, based on his own participation and the reports of the CP workers in that village, form a judgment on whether the community is sufficiently informed about the scheme and the PA's responsibilities. Where not, it is wiser to go back to step 2 than to go on now to step 6.

B. Briefing of the Water and Health committee.

Purpose: To recognize the WHC and clarify their duties both during scheme implementation and in the WaSH programme that will follow.

Responsibility: The CP team.

Participants: The CP team and the WHC members.

Agenda: 1. Go over the scheme construction programme and schedule, including arrival date of the rig.

2. Explain the WaSH education programme.

3. Present a letter of recognition to the WHC and/or the WHC 'Guidelines'.

4. Review the WHC water scheme responsibilities.

Documentation: CP team report to CP Coordinator and his monitory report to the BWP Coordinator.

Notes: The WHC is the BWP's main point of contact with the PA. They must clearly understand that it is they who will assist the BWP personnel when needed, who will secure villagers' cooperation, and who will keep the PA leaders informed on the progress of the water scheme.

C. Briefing of the Scheme Attendants.

Purpose: To inform the SAs of their forthcoming training and their O&M duties after the PA takes over the new water scheme.

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Responsible: CP team.

Participants: CP team and SAs.

Agenda:
1. The CP teams briefs the SAs on their duties during scheme construction and O&M.
2. CP team presents a tri-part agreement for later signing by the PA, by WSSA and by the SAs.

Documentation: CP team report to CP Coordinator and Coordinator's monitory report to the BWP Coordinator.

Notes: The CP team will give the SAs an initial briefing on their duties and forthcoming training. The matter of remuneration for the SAs should be raised in their presence with the PA leaders. The BWP will not pay the SAs, only support them with training.

Step 6: Location of Well Sites.

Purpose: To allow the community to participate in well-site location.

Responsible: The BWP hydro-geologist.

Participants: Hydro-geologist, CP worker, WHC.

Agenda:
1. Hydro-geologist brings maps and data.
2. He suggests some likely locations, explaining the problems of finding water.
3. The group goes and sees the suggested locations.
4. They discuss the locations and agree on which will become DWPs.

Documentation:
1. Written report by CP worker, stating who were the participants and the reasons given for the decisions taken.
2. The hydro-geologist records the chosen sites on a map.

Notes: Although only the hydro-geological data can determine the likely productive areas, the community alone can avoid placing wells at sites unacceptable to the local users.

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Step 7: Drilling and Construction.

A. Drilling, test-pumping, slab-laying, and pump-stand installation.

Purpose: To prepare well-site for pump installation.

Responsible: Drilling foreman.

Participants: Drilling crew.

Agenda: Technical sequence.

Documentation: Technical report.

Notes: Some amount of local labor and material may be required. This will be obtained by the WHC as part of the agreement made with the PA. A CP worker may staay in the village part of this step.

B. Pump installation, fencing, and facilities construction.

Purpose: To provide complete DWPs while further training the pump attendants (SA).

Responsible: CP worker trained in pump installation and O&M.

Participants: SAs, mason, villagers to do communal labor.

Agenda:
1. Install hand pump.
2. Construct laundry slab and bath house.
3. Give basic training to SAs.
4. Hand over tools and a set of spare parts.

Documentation: CP worker's written report.

Notes: The training of SAs during this step is crucial to later BWP maintenance. They should learn:

1. How the pump functions.
2. Correct operation of the pump.
3. How to take the pump up again.
4. Maintenance and small repair of the pump.

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A PA will normally receive 2 to 4 wells with handpumps, and appoint two (2) SAs to maintain them. No pump installation should be done without the presence and participation of both pump attendants.

Check-lists on pump maintenance should be worked up and given to the WHC and to the SAs. The CP worker shall see to it that each SA demonstrates ability to perform each maintenance operation.

Step 8: Health Education Programme.

A. Initial two training workshops.

Purpose: 1. To bring villagers and health workers into participation in health education.

2. To use locally controlled media to formulate local health messsages.

Responsible: CP Coordinator with area health workers.

Participants: CP team, health workers, WHC, and invited villagers.

Agend:

1. Opening remarks and introductions.
2. Drama by CP workers and comments by health worker.
3. Lecture with use of a flip chart.
4. Lecture on media production and use.
5. Group media work, including drama, story-telling, song-making, cassette use, flip chart.
6. Presentation of group media productions.
7. Winding up remarks with report on progress of the water scheme and WaSH education program.

Documentation: CP Coordinator's written report.

Notes: The first drama should be prepared in advance at a medi training workshop led by the communication training officer. It might be a ten-minute skit about someone wh fetches and gives dirty water to a child who then falls sick.

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Next they fetch clean water that gets contaminated at home and again makes the child sick. Finally the TBA comes and explains about the problem of dirty water. The family makes a safe storage for water and the child has no more trouble with diarrhoea.

CP workers can coach the media groups but should not themselves produce the media. Each media uses the ideas presented in the teaching, expressing them in their own ways. During the media presentations, many local people may watch and listen, receiving the health message in unforgetable forms. The presentations may also be recorded on magnetic tape for later inclusion in cassette teaching tapes.

Six-month WaSH promotion programme.

Purpose: 1. To teach people how the water scheme relates to improved hygiene.

2. To promote new water-usage and hygienic practices through educational activities and media materials.

Responsible: CP Coordinator with CHS Coordinator and sanitarian from the health center, responsible health assistant from the health station.

Participants: 1. CP team.

2. MoH personnel to give professional inputs.

3. Local CPA and TBA.

4. Other villagers.

Agenda: 1. Presentation of WaSH education lectures.

2. Group work, message formulation and media production.

3. Planning of a training programme for TBAs and CHAs to be followed up by an HA.

Documentation: Written reports submitted to the BWP Coordinator.

Notes: See attachment 'WaSH Education Program'.

Workshops are more intense occasions for formulating appropriate massages that draw from both expert and local knowledge, and for producing and testing new media for later reproduction and use with community groups.

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Step: 9: Operation and Maintenance Test Period.

Purpose: To put the water scheme and the SAs through a thorough test period, so as to ensure that the O&M functions satisfactorily.

Responsible: Trained CP worker.

Participants: SAs at work in the village.

Agenda: 1. Open the pump and take up the pump cylinder.

2. Go over all parts and let the SAs change leather-c and do a complete maintenance operation.

3. Verify that the SAs have all their tools and a se spare parts.

Documentation: Written report submitted to the BWP Coordinator.

Notes: The test period continues for two or three months after pump installation. During this time, either the pumps have proven reliable or the SAs have had a chance to respond to problems.

During this period, the WSSA mobile workshop will have contacted the SAs, so they can know each other and arrange how SAs can contact the workshop in case of nee outside regular workshop visits.

India Mark II pumps are highly reliable and may run for several years without need or repair. Thus the SAs ma forget much of their training. So it is important that they have the experience of opening the pump and removing the cylinder.

Step: 10: Handing-over of Scheme to Peasants' Association.

Purpose: To publicly mark the transfer to the PA of the water scheme and it O&M.

Responsible: BWP Coordinator.

Participants: BWP Coordinator, CP Coordinator, hydro-geologist, WSSA representative, MoH Health Education representative, PA leaders, WHC, other concerned parties.

CRDA

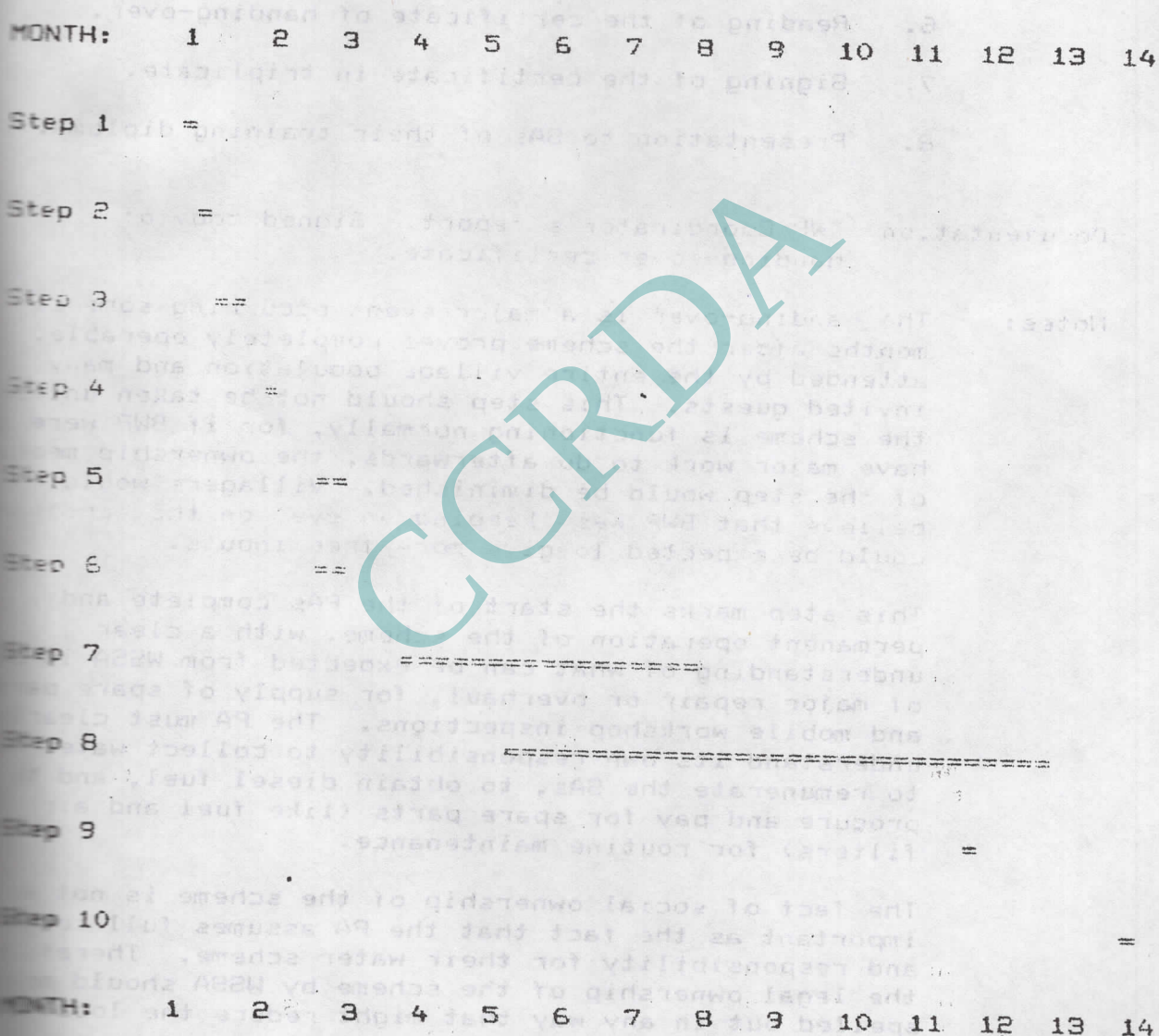
BALE WATER PROJECT

GANTT VIEW OF TEN STEPS

TO IMPLEMENTATION OF

HAND-PUMP WATER SCHEMES

October 1988



CCRDA

Agenda:

1. Introduction of prestigious persons.
2. Recounting of the history of the scheme.
3. Public reading of the agreement.
4. Review of the WHC functions.
5. Clarification of PA and WSSA responsibilities.
6. Reading of the certificate of handing-over.
7. Signing of the certificate in triplicate.
8. Presentation to SAs of their training diploma.

Documentation: BWP Coordinator's report. Signed copy of handing-over certificate.

Notes: The handing-over is a major event occurring some six months after the scheme proves completely operable, attended by the entire village population and many invited guests. This step should not be taken unless the scheme is functioning normally, for if BWP were to have major work to do afterwards, the ownership meaning of the step would be diminished. Villagers would believe that BWP was 'keeping an eye' on the scheme and could be expected to give more free inputs.

This step marks the start of the PAs complete and permanent operation of the scheme, with a clear understanding of what can be expected from WSSA in case of major repair or overhaul, for supply of spare parts and mobile workshop inspections. The PA must clearly understand its own responsibility to collect water fees to remunerate the SAs, to obtain diesel fuel, and to procure and pay for spare parts (like fuel and air filters) for routine maintenance.

The fact of social ownership of the scheme is not as important as the fact that the PA assumes full control and responsibility for their water scheme. Therefore the legal ownership of the scheme by WSSA should not be spelled out in any way that might reduce the local sense of pride, responsibility and control.

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