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RURAL WATER SUPPLY, SANITATION AND HEALTH EDUCATION PROGRAMME
FOR THE LAKE REGIONS IN TANZANIA (HESAWA)

ASPECTS OF INTEGRATION
with emphasis on village
health workers training

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ABBREVIATIONS

AFYA	Ministry of Health
AMREF	African Medical Research Foundation, Nairobi
CDR	Centre for Development Research, Copenhagen
CEDHA	Centre for Educational Development in Health at Arusha
DANIDA	Danish International Development Agency
DC	District Council
DCDO	District Community Development Officer
DHO	District Health Officer
DMO	District Medical Officer
HESAWA	Health through Sanitation and Water
IRA	Institute of Resources Assessment
IRC	International Reference Centre, the Hague
MAENDELEO	Department of Community Development
MAJI	Ministry of Water, Energy & Minerals
MOH	Ministry of Health
M & E	Monitoring and Education
O & M	Operation and Maintenance
PHC	Primary Health Care
PMO	Prime Minister's Office
RCDO	Regional Community Development Officer
RIDEP	Rural Integrated Development Project
RMO	Regional Medical Officer
RSC	Regional Steering Committee
RWE	Regional Water Engineer
RWMP	Regional Water Master Plan

ABBREVIATIONS (Cont'd...)

RWS	Rural Water Supply
VHW	Village Health Worker
WA	Water Attendant
WHO	World Health Organisation
WMPCU	Water Master Plan Coordination Unit
URT	United Republic of Tanzania

SUMMARY

The major objective of this consultancy has been to identify the immediate opportunities and needs of the HESAWA Programme with respect to the promotion and participation on health, sanitation and water improvements, and to discuss these with the newly appointed Promotion Coordinator.

Three main recommendations have been made concerning:

- . a model for integrating the HESAWA activities at the village level;
- . a strategy for gradually implementing this model for all HESAWA activities in all three Lake Regions;
- . a number of proposals for making Village Health Worker Training better focused on the needs of the HESAWA Programme.

It has also been recommended to strengthen the software part of the HESAWA Programme by recruiting one Tanzanian promotion officer for each region and one expatriate health education specialist for the three regions as a whole. Moreover, short term consultants (preferably Tanzanian) are needed to develop appropriate VHW training and supervision material and to do a short evaluation of VHW performance in two years' time.

The financial implications of the major recommendations have been estimated. They can easily be contained within the budget limits stipulated by the recently completed Review Mission. The estimates are, however, based on the assumption that major savings in the proposed VHW-training programme are possible.

At this early stage of the HESAWA Programme the major challenge is to get the participatory activities started at the village level on an intersectoral basis. As experience is gained, adjustments can be made in the Programme output, the organisational framework, the field level procedures and the training needs of field level staff. The ability of the programme to learn by doing and adjust accordingly will be crucial for its success.

1.

INTRODUCTION

This report is based on a consultancy carried out from 2nd November to 7th December, 1984. Terms of Reference are listed in Appendix 1.

Part of the consultancy period (18th November - 30th November) was spent with the joint Tanzanian/Swedish Rural Water Sector Review Mission. During this time work on the Review Mission report and Agreed Minutes was carried out. Thus, some of the findings contained in this consultancy report can also be found in the Review Mission report.

A list of people met during participation in the Review Mission can be found in its report. People met independently before and after this period are listed in Appendix 2.

Due to transport problems, travels were confined to Mwanza region.

1.1

Background to the HESAWA Programme

Concentrated SIDA support for the Lake Regions started out in 1983 as a fairly traditional water supply project based on the VIAK (1981) Implementation Plans. However, in February 1984, a new set of principles was approved by the previous Review Mission. These principles were based on an intersectoral approach to coordinating health education, sanitation and water supply at the village level on a community participation basis. They are described in a report on the HESAWA principles by IRA/WMPCU (1984). (It is, therefore) with this shift in emphasis it is understandable when recent consultants to the HESAWA Programme have noted that the new HESAWA concepts mean different things to the different parties involved. (URT/SIDA, 1984 a, App.VII; Arnzen, 1984, 3).

How to implement the HESAWA principles, therefore, remains a big challenge to all involved parties. As a step in this direction, the recently completed Review Mission has changed the previous programme objectives (Agreed Minutes of 7th March 1984) so that they more clearly reflect the HESAWA principles. The new short and long-term objectives are stated in the Agreed Minutes of December 1984. The recommendations in this report are based on these restated objectives.

1.2

Report Outline

In Chapter 2, some of the main programme activities are analysed separately and recommendations for each presented. In Chapter 3, a model for the integration of some of key activities at the village level is proposed. However, this model-outline needs to be adjusted and changed as field experiences are gained. Furthermore, the capacity to implement the integrated approach in all activities in all three regions is limited at present. Chapter 3, therefore, also outlines a strategy for developing the model; building the institutional capacity for implementing it; and eventually, using it on all HESAWA activities in the Lake Regions. Finally, Chapter 4, contains a brief summary of some of the financial implications of AFYA and MAENDELEO involvement in the HESAWA activities.

2. MAIN HESAWA ACTIVITIES

The main focus of the analyses below is on the field level activities which will be initiated through the HESAWA programme. Following the overview in Chapter 2.1 and 2.2, the subsequent sections discuss some of the main activities in which villages will participate. The starting point for these discussions is the ideas presented in the report by IRA/WMPCU (1984); the primary health care guidelines issued by the Ministry of Health (1983 a); the proposed plan for training Village Health Workers (MOH, 1984 a,b,c); and the report by the recently completed joint Tanzanian/Swedish Review Mission (URT/SIDA, 1984 c).

2.1 Interventions and their Potential Impact on Health. An Overview

Table 1 provides a summary of the potential impact of health education, sanitation and water on health status. It shows the complicated nature and the numerous interventions necessary to achieve this impact. Column C indicates some of the specific tasks to be carried out by the villages and different government agencies. These are discussed in more detail below.

2.2 Organisational Framework for Policy Making, Coordination and Implementation

2.2.1 Main Activities

- a) Policies for HESAWA are agreed upon during yearly joint Tanzanian/Swedish Review Missions.
- b) Inter-sectoral coordination is sought through Zonal and Regional Steering Committees.
- c) Implementation is presently guided by regional task forces.

Table 1. Linkages between Health, Sanitation and Water

A. Intervention ¹⁾	B. Activity	C. Carried out by Village together with:	D. Main Impact ¹⁾
Water Quality	a) Improve existing water sources; b) Build new improved sources; c) Health education on pollution of water from source to stomach.	a) VHW assisted by MAJI/MAENDELEO b) MAJI/MAENDELEO c) VHW assisted by AFYA	- Viral & Bacterial diarrhoea
Water Quantity/ Convenience	Proper location of new improved sources in relation to existing sources and settlements.	a) MAJI/MAENDELEO	- Viral & Bacterial diarrhoea; - Poliomyelitis & Hepatitis A; - Pinworm, Dwarf tapeworm; - Skin Infections; - Eye Infections.
Personal and Domestic Hygiene	Health education on importance of using more water for personal and domestic hygiene, and on environmental hygiene.	a) VHW assisted by AFYA	- As above.
Waste Water Disposal and Drainage	a) Health education; b) Construction of washing slabs and soakaways at water points.	a) VHW assisted by AFYA b) MAJI/MAENDELEO	- Ascaris; - Schistosomiasis; - Eye Infection; - Malaria.
Excreta Disposal	a) Improve latrine coverage; b) Improve latrine usage through health education and improved latrine types; c) Health education on latrine cleanliness and hand washing.	a) VHW assisted by AFYA b) VHW assisted by AFYA b) MAJI assisted by AFYA c) VHW assisted by AFYA	- All types of diarrhoea; - Poliomyelitis & Hepatitis A; - Ascaris; - Hookworm; - Pinworm; - Other tapeworms; - Schistosomiasis.

¹⁾ Adopted from WHO (1983b, Table 1).

²⁾ Modest Impact

2.2.2 Findings and Discussions

Policy Making: So far AFYA and MAENDELEO have not been directly represented in the joint Tanzanian/Swedish Review Mission. As the HESAWA Programme develops, the need for such representation grows.

Coordination: A complex organisational structure for coordination of development activities already exists right through the 7 organisational levels established in Tanzania (Nation, Region, District, Division, Ward, Village, Ten Cell).

The Steering Committees established in the three regions have a very large membership. They appear unwieldy and overlap to a considerable extent with already existing coordinating committees: The Regional Development Committee and the Regional Management Team. At the district level, coordination will take place in the re-established District Council and/or in one of the six standing committees under it - one of which is the committee for social services. As pointed out by Arnzen (1984), the Zonal set-up does not fit into the present organisational structure and may, therefore, disappear when the SIDA-supported zonal office is phased out.

As the HESAWA activities move towards the village level, it becomes crucial to establish close links with each individual village and with groups of villages when implementation takes place in neighbouring villages concurrently (See Chapter 3).

At the divisional level, no appropriate coordinating body exists. If HESAWA activities are concentrated in particular divisions, a Divisional Steering Committee should be established consisting of representatives from the division (District Councillor, the Divisional Secretary, and selected Village Chairmen) together with one key field level staff member from AFYA, MAENDELEO and MAJI, respectively. Much of the promotion and mobilisation work can be discussed and planned in this forum. Experiences from the UNICEF funded water and sanitation project in Wanging'ombe are encouraging in this respect.

It is envisaged that only infrequent Zonal and Regional Steering Committee Meetings will be needed as the programme develops.

Implementation: Regional Task Forces have recently been re-established - partly because the Regional Steering Committees have proved cumbersome. The small ad-hoc Task Force appears to be a potentially suitable forum for implementation planning. It can also include district level staff where appropriate.

In cases, where HESAWA activities are concentrated in a division, a Divisional Task Force should be formed in which key field staff members from AFYA, MAENDELEO can plan the implementation together.

At village level, a committee for Culture, Education and Social Welfare already exists under the Village Council. However, it is frequently dormant and without female representation. A special village HESAWA Committee with three female members has proved valuable in the Morogoro, Iringa, Mbeya and Ruvuma Water Projects. The tasks of this committee are discussed in IRA/CDR (1982 and 1983). They can easily be adapted to fit the HESAWA Programme needs.

2.2.3

Recommendations

- AFYA and MAENDELEO representatives should participate in future HESAWA Review Missions.
- Where possible, already existing coordinating structures at regional and district level should be used by HESAWA.
- A HESAWA Committee with female representation should be established in each village selected for implementation.
- A Divisional Task Force and Steering Committee should be established in areas where HESAWA activities are concentrated divisionally.

2.3

Promotion

MAENDELEO should be the main responsible body for this important task - assisted where appropriate by AFYA, MAJI and the Party.

2.3.1 Main Activities

- a) Collect information on villages.
- b) Explain to village, the expected benefits of HESAWA; the HESAWA inputs to the village, and the HESAWA conditions (cash contributions for development and recurrent costs; self-help, etc).
- c) Assist village in defining priorities for water, health and sanitation.
- d) Establish credible communication links between village and AFYA, MAJI and MAENDELEO.
- e) Promote village activities in health, sanitation and water (with AFYA and MAJI).
- f) Promote female participation in HESAWA.
- g) Promote productive use of water where appropriate.
- h) Assist village to mobilize for self help work.
- i) Assist village to increase self-management skills.
- j) Assist Party, AFYA and MAJI staff in using participatory methods.

2.3.2 Findings and Discussion

Four types of promotion on health, sanitation and water has been used in the Lake Regions. First, the National Campaign such as "Mtu ni Afya", and "Chakula ni Uhai". Secondly, local campaigns especially in connection with cholera outbreaks. Third, promotion on shallow wells done by Mwanza RIDEP when constructing demonstration wells with handpumps in selected villages. And, finally, by the Party on self-help projects.

Promotion by campaigns is probably appropriate for nation-wide programmes and for emergency cases. Peoples' interest can then be caught for a while to address specific issues. However, HESAWA must build on solid and sustained village commitment in order to succeed. This is a labour intensive and difficult task. The procedures used in the DANIDA funded water projects in Iringa, Mbeya and Ruvuma require one man-month per village for MAENDELEO staff during the whole project cycle (IRA/CDR, 1983, App.1). Only participation on water is presently pursued in these projects. The procedures developed by PMO/IRC (1983) require similar manpower inputs.

The need for a major promotional effort is clearly documented in the evaluation report on the water component of the Mwanza RIDEP. Lack of systematic and coordinated promotion was singled out as a main cause for the limited success of this component (PEU, 1984 a & b).

Party staff at village, ward and divisional level is often good at mobilising people for self-help projects. However, in some cases compulsion and zeal has provoked non-participation among villagers.

Involving women in HESAWA will be a major challenge. The female MAENDELEO staff that works with women's groups at the village level has mainly aimed at starting production projects for women (gardening, sewing, etc) and at child care. The female staff at village level is, however, very limited (See Appendix 4). The same goes for male MAENDELEO staff who also have only limited experience in working with villages on health, sanitation and water activities.

Promotional material and a strategy for its use has not yet been worked out. At this stage, first priority should simply be that field level staff from AFYA, MAJI and MAENDELEO involved in HESAWA in the three regions have a clear knowledge of HESAWA (especially with respect to point b) above). Well informed and motivated field level personnel is crucial for good promotion. Eventually, simple clear promotional material must be worked out and different channels of communication be explored (e.g. traditional dancing groups; the Radio Tanzania branch, Mwanza; the Rural Press, Mwanza; Adult Education Staff, etc.)

The work involved in developing and implementing just the promotional component (not to mention the other components discussed below) is, therefore, considerable - especially when only one Promotion Coordinator has been engaged on the programme. For comparison, the DANIDA funded projects in Iringa, Mbeya and Ruvuma Regions has employed one coordinator per region. They implement already existing procedures, but, only with respect to promotion on water activities. The NORAD funded water project in Rukwa has engaged three expatriate promoters to develop and implement participation.

2.3.3 Recommendations

- . For each region a suitably qualified Tanzanian promotion officer from MAENDELEO or elsewhere should be seconded to the programme to assist the Promotion Coordinator in field level activities. Everything else equal, female candidates should be preferred. Some promotion assistants may also be needed in each region - especially if programme activities are scattered.
- . Field level staff from AFYA, MAJI and MAENDELEO should be given a crash course in HESAWA (principles, benefits, programme inputs to village, village obligations, community participation methods, etc.)
- . Simple and clear promotional material should eventually be worked out. Slide projection, film vans, etc. should not be used in the foreseeable future.
- . The promotional procedures developed by PMO/IRC (1983) and by IRA/CDR (1983) should be adapted and used where possible.

2.4 Village Participation

The long term objective of the HESAWA Programme is - with a minimum of outside assistance - to enable the village to:
(i) plan, implement, build, operate and maintain its own water supply improvements; and (ii) improve sanitary and health conditions in the village (IRA/WMPCU, 1984, 8).

2.4.1 Main Activities

Villages will participate in the following activities:

- a) Accepting or rejecting to participate in the Programme;
- b) Selecting villagers for training as Village Health Workers and Water Attendants;
- c) Compensating (in cash or kind) these village employees;
- d) Deciding on location of new water points and improvements of old ones (in cooperation with MAJI);
- e) Contributing labour for construction purposes;

- f) Contributing cash for handpumps;
- g) Contributing cash/labour for operation and maintenance which is a main village responsibility;
- h) Continuously improve environmental sanitation and upkeep of water supply, assisted by VHW/WA.

2.4.2 Findings and Discussion

Village participation is essential for the HESAWA Programme. Fortunately, experiences from elsewhere suggest that the spirit of self-help is far from dead. Thus, the joint Tanzanian/Danish Review Mission on the DANIDA funded water project in Iringa, Mbeya and Ruvuma has concluded that villages are actively engaged in planning and building gravity schemes. It also appears that villagers take an active interest in operation and maintenance although it is too early to judge the extent to which this interest will last. (URT/DANIDA, 1984). Similarly, a pilot project on participation on shallow wells initiated by PMO/IRC in Morogoro Region appears to have been reasonably successful (personal communication, IRC). The achievements in Malawi in respect to participation are fairly well documented. There is, however, no experience available in Tanzania on village participation on coordinated health, sanitation and water activities. Furthermore, there appears to be no recent recorded experiences with respect to improvement of traditional water sources. In many respects the HESAWA Programme is a pioneering effort.

In the Lake Regions limited experience is recorded concerning points (e) and (f) above. RWE, Kagera, reports that there is little difficulty in motivating villagers to contribute labour on gravity schemes. RCDO, Mara, reports that MAENDELEO is constructing a few wells a year on which villagers contribute self-help labour; and MAJI, Mwanza receives regular requests for handpumps: a village pays Shs. 3000 per pump - after which MAJI constructs the well with paid labour. In general, however, community participation appears to play only a limited role in government and donor financed development activities in the Lake Regions and field level staff is normally not practising community participation methods.

No single recipe for successful village participation exists, but in a large programme of the HESAWA type, it is clear that procedures and an organisational framework for the interaction between village and government agencies must be worked out (see for instance IRA/CDR, (1983)); that especially field level staff must be trained in using these procedures;

and that this staff must be motivated to work in the villages and with the villagers. One additional requirement needs mentioning. Sometimes village participation fails because promises made by government or donor agencies are not kept. Villages should not be asked to contribute in cash or kind unless the government/donor is capable of keeping their part of the promise.

Also the economic and administrative context in which village participation is carried out, is important for its success. Thus, the reintroduction of local Governments (District Councils) is likely to effect the programme in several ways. First, head taxes ranging from Shs. 150.- to Shs. 250.- for every adult will put a heavy burden on many households. Add to this the economic requirement for participation in the full HESAWA Programme involving wells as estimated in Table 2. This financial burden can be relatively high. Second, several types of taxes which previously gave village governments some revenue, will now be collected by the District Council leaving villages with less funds than before. Third, District Councils may themselves be able to pay for handpumps and employ and pay VHWS and WAs, if they so desire. This may reduce the direct economic burden on villages, but, will also blurr the link between user payment and user benefit. A DC financed handpump for instance, may also be regarded as DC property for which the village has no O & M responsibility. On the other hand, villages are unlikely to be able to exert significant control over the DC and the DWE with respect to maintenance.

Table 2. Order of Magnitude of Direct Economic Contributions from Village that Participate in HESAWA Activities

Contribution	Magnitude depends on	Estimated	
		Minimum (shs)	Maximum (shs)
Handpumps ¹⁾	No. of pumps	3,000.-	30,000.-
Maintenance ²⁾	"	210.-/y	2,100.-/y
2 Village Health Workers	} Agreement with Village ³⁾	1,200.-/y	20,000.-/y
1 Water Attendant		600.-/y	10,000.-/y
Transport (drugs, spares)	?	?	?

1) Wells assumed. Contribution can be phased over several years.

2) 7% of investment costs per year (See Chapter 2.9)

3) Assumed compensation Shs. 50/m to Shs. 810/m.

Thus, there are still considerable uncertainties with respect to the specific role of a DC; its relation to regional and central government; its ability to generate revenue through taxes, etc. A clarification is crucial in order to work out the HESAWA procedures and policies on village contributions.

2.4.3 Recommendations

- The specific implications of the re-establishment of District Councils must be clarified especially with respect to village contributions to handpumps, domestic points on gravity schemes, VHWS and WAs. Participation procedures must be based on this clarification.
- Key MAJI and MAENDELEO field level staff must be given crash training in simple village participation techniques related to HESAWA activities (AFYA staff is trained elsewhere, see Chapter 2.5).
- The approaches developed by PMO/IRC (1983) and IRA/CDR (1983) should be adopted and used where possible.

2.5 Village Health Worker Training

Ministry of Health (MOH) has proposed, and SIDA has accepted, to train 30 Village Health Workers in each of the Lake Regions during 1985. These VHWS are key persons in the Primary Health Care Programme which the MOH is now implementing. They will also have an important role to play in the HESAWA Programme.

2.5.1 Main Activities Proposed by MOH

Training of VHWS and in-service Staff¹⁾

- a) MOH trains 3 regional trainers at CEDHA (9 in all) for 12 weeks plus 7 months of practicals (Shs. 155,000.-).
- b) MOH and AFYA - region arrange one-to-two day seminars for leaders at national, regional, district, division, ward and village level to "sensitize" them to the PHC Programme (Shs. 258,000.-).
- c) AFYA - Region/District promotes PHC-concept at village level and village selects VHWS, during a two-day seminar. A total of 90 VHWS selected (Shs. 273,000.-).
- d) AFYA trainers train 90 VHWS for 3 months (boarding, classroom) plus 3 months of practicals (Shs. 987,000.-).

¹⁾ Based on MOH (1984,c) - Costs in brackets are estimated by MOH; cover all three regions.

- e) AFYA - Region runs 7 day orientation seminar for in-service health staff on PHC (Shs. 117,000.-).
- f) AFYA - Region builds demonstration latrines and promote other environmental interventions (Shs. 102,000.-).
- g) MOH prepares and issues health education training material (Shs. 70,000.-).

VHW Job Description¹⁾

- . "To educate and guide villagers in matters of health through practical demonstrations in collaboration with village leaders."
- . "To identify and enlighten village leaders on those cultural aspects detrimental to health".
- . "To provide corrective and preventive services"
- . "Collect, analyse, utilize and report health and health related information".
- . "Home visiting".

1) Selected quotes from MOH (1983, 7) which are relevant to HESAWA.

2.5.2 Findings and Discussion

The PHC-programme in Tanzania is still in its early stage of implementation. A valuable set of guidelines has been prepared by MOH (1983, a), but, its Primary Health Care Coordinating Unit at the Ministry is severely understaffed to operationalise and supervise this large-scale effort. Presently the professional staff of the unit consists of a doctor and a health education specialist (who retires in January, 1985).

The MOH proposal for VHW training in the Lake Regions follows the general framework provided in the guidelines (see above). Using the VHWS in the HESAWA Programme is an excellent idea because they are both addressing problems of health education and improvements in water and sanitation and they are continuously present in the village. However, the PHC concept is much more comprehensive than the HESAWA concept. It is, therefore, essential to coordinate the two programmes in the areas of the Lake Regions where they are implemented together.

Furthermore, it is essential to compare the MOH-proposal for the Lake Regions with the findings of the Applied Village Health Worker Research and Education Project carried out by Heggenhougen (1982; 1984) and his colleagues (Muhondwa, Ngayomela and others). They have conducted extensive field studies of VHW performance and of villagers' attitudes and opinions about them. Also the experiences from recent VHW-training in Bagamoyo District, in Mwanza Urban District and around Sumwe designated Hospital in Kwimba District are pertinent to the HESAWA Programme.

Among the major issues that need clarification are the following:

Selection of VHWS. Experience indicates that the selection procedure is essential for subsequent VHW performance and that a screening of candidates may be needed.

Selection, according to the MOH Proposal, takes place during a two day seminar in the village. This gives little time for the village to decide (i) whether they want to participate; (ii) who are suitable candidates; (iii) how VHWS can be compensated when they start to work (and during training). Selection should be integrated in the HESAWA procedures (see Table 5) and should be made in groups of nearby villages.

Economic Compensation of VHWs. Supposedly medical services in government institutions from the dispensary level and upwards is free to the user. On the other hand, villagers must pay direct compensation to VHWs for their preventive and curative work.

Village failure to compensate VHWs is, however, one of the most frequently cited reasons for drop-out. This issue of compensation must be settled prior to the start-up of training and the role of District Councils clarified (see Chapter 2.4). During the selection procedure, villages must be informed about the economic obligations they incur while VHWs are trained and afterwards.

Place of VHW Training. Three months of boarding training is proposed by MOH. Many husbands may refuse their wives to be away from home for longer periods. VHW practicals in home village also become difficult to organise. And boarding training is expensive (see below). Day-training close to the home villages of VHWs is presently considered by MOH and this would fit well into the HESAWA Programme.

Content and Methods of VHW Training. The MOH proposal contains no information on this crucial issue and it has not been possible to locate a detailed standard curriculum, standard textbooks and a description of proposed training methods. Apparently trainers use their own notes from the CEDHA course plus various books such as: Kitabu cha Mafunzo by Mkumbwa (1983); Huduma za Afya Vijijini (Anon, 1979); Where there is no Doctor (in Kiswahili) (Werner, 1979). Trainers who have used one or more of these books did not find them appropriate for their needs. They were either too advanced; too text-oriented; and did not contain enough material on the day-to-day work of VHWs. A perusal of the books supports these observations. There is an urgent need for development of practical, simple and well illustrated training material which VHWs can also use in their work when they return from training.

Duration of VHW Training. The Tanzanian VHW-training projects referred to above (Bagamoyo, Mwanza Urban and Sumwe) all provide approximately 2 months up-front classroom training only - plus regular refresher courses thereafter. Continuous training is strongly recommended by those who have followed VHW performance (for Tanzania, see Heggenbongen, 1984). Repeated refresher courses should, therefore, be built into the training programme right from the start, and the training material should be designed with this approach in mind. The MOH (1984,c) proposal should be adjusted to a continuous training approach.

Classroom and Practical Training for VHWs. The MOH (1984 c) proposes that 3 months institutional training is followed by 3 months supervised practicals in the home villages of trainees. In line with recent considerations in the Ministry much closer links between classroom, home village and practicals should be forged by day-training close to the home villages and by interchanging classroom teaching and practicals (for instance every two weeks). The training material to be developed should preferably reflect this (e.g. classroom teaching leading up to practicals that follow immediately after).

Training of Regional Trainers at CEDHA. The proceedings from this training (MOH, 1983 b; 1984 d) clearly show that the programme is in its initial phase. However, one observer is of the opinion that the training is quite effective and that the regional trainers are able to use the training techniques taught at CEDHA in their own training of VHWs. Unfortunately, there is no recorded experience regarding the effectiveness of district trainers trained by the regional trainers.

The training of regional trainers from the Lake Regions which was scheduled for November - December 1984 has been postponed some months. This may delay the training of VHWs considerably.

Regional trainers from the Lake Regions have not yet been identified by the RMOs. If AFYA staff was allowed to apply for this new, unusual and tough job (see below), and applicants were screened as part of the selection procedure, better motivated and qualified candidates were likely to be identified. This will be essential for the success of the VHW training.

Given the crucial role of regional trainers and the strenuous job they are facing, it is advisable to train an additional three people from each region in 1985/1986. They will serve as substitutes for the first batch as need arises.

Training of District Trainers of VHWs. No proposals about this is contained in MOH-plan for the Lake Regions. The limited funds available for VHW training through SIDA (approximately Shs. 1 m/= per year per region from 1985/86 to be shared with MAENDELEO) and through Government of Tanzania (Mwanza Region has been allocated Shs. 180,000/= for 1984/85) are unlikely to increase significantly in the future.

Consequently there is no actual need to train district trainers. This means that regional trainers must be prepared to do the actual training of VHWS under village conditions. From a training point of view this is advantageous. Regional trainers are likely to be better VHW trainers than district trainers who will not have been exposed to the professional trainers at CEDHA.

The day-to-day work of VHWS. Heggen Hougen (1982; 1984) repeatedly points out how VHWS tend to do more curative and less preventive work as time goes by. Because (i) their own preference may be for curative work; (ii) their training may have that bias; (iii) villagers expect VHWS to be able to cure (they want them to have "strong" medicine including injections); (iv) village governments provide little support for preventive work of VHWS; and (v) supervision by AFYA of VHWS is weak.

In short, preventive work is difficult to sustain. The above list illustrates the range of problems that must be addressed, if the VHWS shall contribute to the preventive aspects of the HESAWA Programme.

On the other hand, curative work should not be neglected. Again the past experiences are clear. Without possibilities for curative work VHWS will not be motivated nor get the status needed for preventive work.

Supervision of VHWS. Continuous supervision and support of VHWS by AFYA staff is a key condition for a successful VHW-Programme as repeatedly pointed out by Heggen hougen (1982; 1984), and by the people in charge of such activities in Tanzania (Mwanza District, Sumwe, Bagamoyo).

MOH (1984 a,b,c) proposes a 7 day orientation course of in-service staff. The content is not given. Many more resources are likely to be needed to get AFYA staff at Health Centre and Dispensary level motivated for and capable of VHW supervision. (More training; development of procedures for supervision; etc).

Furthermore, if VHWS come from scattered villages under a number of different dispensaries/Health Centres, it becomes very difficult to introduce a supervision system. VHWS must, therefore, be drawn in groups of neighbouring villages at a time. (see also Chapter 3.1).

Drugs and Equipment for VHWs. The 45 PHC-Kits ordered for the VHWs are not appropriate. They are aimed at Health Workers at the Dispensary level, or above.

No provision for drug supplies have been made in the MOH proposal and no standard package appears to have been worked out. Yet regular supplies are essential to sustain VHW motivation and status (including their preventive work). The equipment and drugs supplied to VHWs in Bagamoyo District indicate a reasonable level of supplies (Appendix 5). But again, the drugs and equipment supplied must reflect the training given and the skills achieved.

Cost of Training. Approximately Shs. 2 million is needed to implement the MOH-proposal for the three Lake Regions. The costs can be divided into (i) expenses for training regional trainers plus costs for seminars at different levels to "sensitise" leaders to the PHC concept. These are mostly one-time expenses for starting up the programme. They amount to approximately Shs. 0.5 million; (ii) direct expenses for training VHWs and in-service staff. These are incurred for each new batch of VHWs and amount to approximately Shs. 16 to 17,000/= per trained VHW (see Chapter 2.5.1, items c, d, e, f).

Such costs appear prohibitive for any large scale replication. For instance, the direct cost of training VHWs in village in Mwanza Region would be Shs. 21 million. For Tanzania as a whole, it would be approximately Shs. 275 million. It is unlikely that Primary Health Care in general or VHW-training in particular will be able to attract interesting resources in the immediate future (Kiwara and Towle, 1984).

Early Evaluation of VHWs. The MOH has not yet made any evaluation of the VHW-programme which was initiated in 1983. Given the crucial importance of VHWs for key HESAWA activities there is a need to conduct a short formative evaluation of the training and performance of VHWs in the Lake Regions when the first batch has been working for about a year. Tanzanian professional attached to the Applied Village Health Worker Research and Evaluation Project could carry out this evaluation.

2.5.3 Recommendations

- . The MOH proposal for VHW training should be coordinated with HESAWA approach especially with respect to selection of villages (areal concentration is essential); promotion efforts; improvement of traditional water sources.
- . Tanzanian professionals with actual field experiences in VHW training - or AMREF -- should be contracted on a short-term basis to prepare appropriate material for VHW training in Kiswahili. Also material for training dispensary/health centre staff in supervision of VHWs should be prepared. The material should fit the training methods used at CEDHA; have a proper emphasis on preventive work on water, sanitation and health education; be well illustrated; and should be ready by mid-1985.
- . Day-training of VHWs should be aimed at wherever possible, to reduce cost, allow female VHWs to participate fully; and to make integration of classroom teaching and practicals easier.
- . A shorter initial training period for VHWs followed by regular refresher courses is preferable to the 3 months training plus three months practicals proposed by MOH.
- . Dispensary/Health Centre/District AFYA staff should receive intensive training in supervision and support of VHWs - considerably more than proposed by MOH. Some of this training could be integrated with VHW training.
- . The ordered PHC-kits are inappropriate for VHWs and should not be distributed to them.
- . Regular drug supply and appropriate simple equipment for VHWs must be arranged for.
- . The issue of economic compensation of VHWs must be solved in cooperation with District Councils prior to any VHW-selection.
- . There is no need to train district trainers unless funds for VHW training increase substantially. Consequently, Regional trainers should be prepared to do the actual VHW training at the field level. An additional 3 regional trainers should, therefore, be trained for each region.
- . Selection of trainers should be based on motivation and competence and candidates should be encouraged to apply for the job.

- . A Health Education specialist should be attached to the zonal HESAWA office to assist the regions in implementing the VHW-programme. (See Job Description, Appendix 7).
- . A short formative evaluation of training and performance of VHWs should be made approximately 1 year after these have started to work and the results be fed back into programme development work.

2.6 Health Education

2.6.1 Main Activities

- a) VHWs to carry out health education on issues of water, sanitation and health. (pollution from water point to stomach; hand-washing after defecation, etc.)
- b) AFYA Staff at dispensary/Health Centre level to carry out health education where VHWs do not exist.
- c) AFYA Staff (as above) to support and supervise health education carried out by VHWs.

2.6.2 Findings and Discussion

Past health campaigns and health education efforts have been successful in raising peoples' knowledge about health (IRA/CDR, 1983, Chapter 11). Today most people are likely to be fairly well oriented about water and excreta related diseases and how to prevent them. Building on this achievement, the challenge is now to promote changes in attitudes and practices. This is a much more difficult task.

VHWs are important in these activities, - provided they are trained in participatory health education method and provided they are able to demonstrate in practice what they talk about. The same applies to AFYA staff among which the Health Centre based Health Assistants are the main health educators. However, the curriculum for Health Assistants issued by MOH in 1977 only allocates 4% of the training to health education. Many health assistants may, therefore, need crash training in health education on water and excreta related diseases in areas where HESAWA is being implemented.

A good source of ideas for the kind of health education needed is "Helping Health Workers Learn" by Werner and IRC (1984).

The immediate problem for HESAWA is that the first group of VHWs will be ready by the end of 1985 -- at the earliest. The specialist health education (See Chapter 4. .3) may not arrive before that either.

2.6.3 Recommendations

- . VHW-training should emphasise participatory health education methods. VHW should be able to demonstrate in practice what they discuss with villagers.
- . Dispensary and Health Centre staff will need to undergo the same kind of training as above but for shorter periods.
- . Presently the Zonal office of HESAWA has only limited capacity to initiate field level activities in health education. However, direct use of material developed by IRC/PMO (1983) or by IRA/CDR (1983, App. II) may be used by Health Assistants as a temporary measure.

2.7 Water Improvements

Only issues of special relevance for promotion, participation and health are dealt with below.

2.7.1 Main Activities

- a) Achieving full coverage by:
 - improvement of existing sources based on survey or presently used traditional ones.
 - Location of new water sources (wells, taps).
- b) Establishing cooperation between village, MAJI, MAENDELEO and AFYA so that village become involved in planning and implementing water improvements (on O & M see Chapter 2.9)
- c) Health Education.

2.7.2 Findings and Discussions

Full coverage is a key concept in the HESAWA Programme. It is based on the real-life observation that traditional sources are still used in villages with an operating water scheme. Furthermore, when schemes break down (as they will always do) women are forced to revert to traditional sources. Traditional and new sources must, therefore, be considered together. Improvement of all sources is likely to have greater water impact than providing safe water from a few points used by only part of a village. As shown in Table 1, the quantity of water is in general at least as important for health as water quality is.

This approach is actually not new in Tanzania. Long-timers in MAJI recall that it was practiced when they started in the Department. To reintroduce it poses, however, a major challenge to all involved parties.

Traditional Sources. MAJI surveyors must learn how to include traditional sources in their work, and MAJI must devise low-cost, simple but effective methods for improvements.

MAENDELEO and AFYA must promote the idea because much of the actual work will have to be carried out by the villagers themselves. The VHW will have a key role to play here. To the extent that improvements require non-available local materials this should be supplied by MAJI. The field staff of MAJI should also be trained to assist villagers with technical advice if VHWs get stuck. In villages where substantial improvements are needed, members of MAENDELEO's rural construction teams could be called in to assist.

Wells. Two major issues are involved. Should tube-wells be preferred to ring wells, where the latter is possible? Are open ring-wells acceptable?

Although tube-wells are quick to build, the water potentially safe, and they are claimed to be cheaper than ring wells, they should not be first priority where ring-wells are possible. For tube-wells must be fitted with a handpump in order to yield water. This makes the tube-well less reliable than a ring-well, where the pump if broken can be removed and water withdrawn in buckets. Second, although ring-wells are more expensive than tube-wells (Table 3), costs can be reduced.

Table 3 Construction Costs (Shs) of Ring and Tube Wells
with Paid Unskilled Labour

	No.	Labour	Transp.	Material	Overhead	Total
Tube Wells	5	5700	3300	14,400	2300	25,700
Ring Wells	10	8000	4300	16,400	2900	31,600

Source: RWE, Mwanza; Wells built in July, August, September 1984 after improvement of supervision.

When village participation is introduced, labour costs on ring wells will decrease proportionally most. Reduction in transport costs are possible if wells are constructed in neighbouring villages at a time. This will allow site-production of rings (See Chapter 3). Village participation combined with geographical concentration of construction, is therefore, likely to reduce the present 25% cost difference. Finally, the number of tube-wells to be constructed will depend on villages' willingness and capability to make cash contribution for handpumps. It must be expected that these will not be sufficient for immediate full coverage (See Chapter 2.4). If, on the other hand, open ring wells are accepted, all the necessary ring-wells can be built, and then fitted with handpumps in accordance with village capability.

The main problem with open ring wells is the pollution risk as shown by the water quality tests in Appendix 6. VHW training must be directed towards solution of this problem. Also MAJI may develop simple devices that will reduce pollution from open wells.

A final issue concerns the location of wells in relation to settlements. MAJI, Mwanza built wells at least 100 m away from houses to avoid infiltration from latrines. This appears to be an excessive precaution for most soil conditions and restrict the accessibility of wells and thereby their use.

Participation. As pointed out in the conclusion of the water component of Mwanza, RIDEF, the almost total lack of participation (except for cash contributions) was a major problem (PEU, 1984). The procedures developed by PMO/IRC (1983) and IRA/CRD (1983) aim at involving villages in planning and constructing their own water supplies.

2.7.3 Recommendations

- . MAJI Surveyors need immediate training to enable them to include existing traditional sources in their survey and to consider these in their proposals for new sources.
- . MAJI should develop practical, low-cost methods for the improvements of existing sources.
- . MAJI's field staff must be trained to assist villages and VHWS to improve existing sources.
- . To assure better reliability of supply and an eventual full coverage, open ring-wells should be preferred to tube-wells where possible.
- . MAJI should develop simple, low-cost methods for water extraction from open wells to reduce risk of pollution.
- . Where appropriate, VHW and AFYA staff at dispensary and Health Centre level should be trained to assist villages to reduce pollution risks of open wells.
- . To increase user convenience the distance between well and settlements can, under most soil conditions, be less than the presently used 100 m..

2.8 Sanitary and Environmental Improvements

2.8.1 Main Activities

- a) Achieving full latrine coverage through:
 - Health Education;
 - Improving existing latrine types.
- b) Improving environmental hygiene, especially around taps and handpumps.

2.8.2 Findings and Discussion

Latrines: The extent of latrine coverage as indicated in the 1978 census is 85% in Kagera and Mwanza and 75% in Mara Region.

The latrines inspected in a few villages in Mwanza Region were of fairly low quality (e.g. rather shallow, rudimentary walls, frequently no roof and door). The lifetime appears to be low (half to three years). However, there are clear variations in standards depending on local availability of material (especially wood for plates), soil conditions, household status and (probably) cultural attitudes. Health officials claim some non-usage; villagers deny. Both views may be biased.

Latrine Campaigns: At outbreaks of cholera (which are not unusual) AFYA initiates latrine campaigns. According to officials the immediate response is good, while the lasting effect is doubtful. A core of non-owners of latrines remain.

IRA/CDR (1982, Chapter 11) found that non-owners are most frequent among households headed by old people or females, because they are either not physically able to dig their own latrines or are too poor to pay others to do the work, or find latrines unacceptable.

This indicates that technical solutions to non-ownership or the use of force are likely to have limited impact only. Furthermore, prevailing economic conditions restrict the possibilities for promotion of latrine types that require cash input unless significant subsidies are provided.

At present, an approach which aims at gradual improvements in accordance with village motivation and economic capability appears appropriate. A possible sequence of improvements are:

- i) full coverage through intensive promotion by VHWS aimed specifically at non-owners and at communal action to achieve this aim.
- ii) improvements of existing latrine types using locally available material. Most straightforward improvements are deeper holes; roof to protect plate from rot; hardwood for plates where available; collar of stones/bricks/plated to prevent caving of hold; lid for hole; etc. Promotion by VHW to be aimed specifically at households about to build new latrines. MAJI may build improved latrines of this kind for demonstration purposes.

- iii) introduction of VIP-type latrines using locally available material (see for instance van Norstrand et.al. (1983)). MAJI may build demonstration latrines of this type.
- iv) using cement to improve lifetime of latrines.
- v) introducing permanent latrines (compost type).

The present and foreseeable shortage of cement and the general economic capacity of villages will preclude promotion of iv) and v) for the time being.

Hygiene Around Handpumps and Taps: Three types of activities appear to be relevant. One, to construct more appropriately designed aprons and soakaways at water points. If possible, aprons should be concave instead of the presently used convex shape. Appropriate designs including washing slabs have been developed in Malawi and are available at DANIDA Water Project and through the Project Manager, Morogoro Shallow Wells Project. Two, introduction of an attendant at each water point to look after cleanliness appears to work reasonably well in projects in Malawi and in Iringa, Mbeya and Ruvuma Regions. Three, VHWS will have an important role to play by doing relevant health education. Promising material for such education exists (IRC, 1984).

Washing slabs are especially needed where contact with water is a health hazard (bilharzia). The slabs constructed by RIDEP Mwanza do not appear to be used much. The Malawi design where apron, trench, soakaway and slab are fitted together is a superior, but, also a more expensive solution.

2.8.3

Recommendations

- . One latrine for each household should be first priority in promotion, which initially should aim at non-owners.
- . As a next step, gradual improvements of existing latrine types using locally available materials should be promoted.
- . Promotion of more permanent latrines should be done as and when economic conditions allow.

- For demonstration purposes improved latrines that are likely to be affordable for most households should be built.
- Malawi type aprons, soakaways and washing slabs could be adopted for use.

2.9 Operation and Maintenance of Water Supplies

This crucial activity is here discussed with respect to promotion and village participation only.

2.9.1 Main Activities

- a) Explain the responsibilities and implications for the village with respect to Operation and Maintenance.
- b) Assist village to be able to carry out Operation and Maintenance responsibilities.

2.9.2 Findings and Discussion

Operation and Maintenance has been discussed in two previous reports on HESAWA (Book, 1984; Van der Poel, 1984). However, final decisions on an O & M framework have apparently not yet been made. When this is done it is important also to consider O & M from the village point of view. Three issues are especially important in this respect:

- Extent of economic and technical responsibilities of village on different types of technologies.
- Extent of programme support to enable village to carry these responsibilities (spares, training, supervision, MAJI Maintenance, etc).
- Organisational set-up for O & M within village and between it and MAJI.

Table 4 illustrates the order of magnitude of O & M costs based on estimates from schemes operated and maintained without village involvement. The extent to which villages will be asked to absorb such costs should be made clear by the promoters of the programme. The same goes for the two other issues mentioned above. Promotion and participation which is not based on a clear presentation of facts and the mutual commitments needed between village and authorities is unlikely to succeed in the long-run.

Table 4 O & M Costs. Order of Magnitudes

Scheme Type	Cost per person served (shs/y) ¹⁾ (1981 prices)	Cost Composition (%) ²⁾			
		Fuel	Spares	MAJI Staff & Transp.	Attendant
Gravity	14	0	39	36	26
Borehole, Pumped	34	50	28	9	13
Shallow Well, Handpump	18 ³⁾	0	47	31	22

- 1) CCKK (1982, Vol. 4B, Table 9.27). The served population on a scheme grows every year.
- 2) Rough estimates based on WHO (1977, App.9, Table 5)
- 3) DHV (1980) estimates O & M cost to be 7% of investments costs per person.

However, the issues involved in (gradually) making villages responsible for O & M are complex and are not included in the Terms of Reference for this consultancy. At this stage it would be worthwhile to study the experiences from other water projects which attempt to involve villages in Operation and Maintenance.

2.9.3 Recommendations

- Operation & Maintenance (O & M) from the village point of view has tended to be ignored in recent HESAWA reports. The extent of village commitment (economic, technical) must, however, be clarified before promotion and village participation efforts can take off.
- Recent experience on village participation on Operation and Maintenance from Morogoro (Shallow Wells) and Iringa, Mbeya and Ruvuma Regions (gravity schemes) may be used to speed up the design and implementation of the O & M system.

2.10 Monitoring and Evaluation

Only issues related to promotion, participation, health education and sanitation are discussed.

2.10.1 Main Activities

As proposed in the report on M & E (Samset and Stokkeland, 1984) the relevant activities are:

- a) Continuous monitoring of the above activities with respect to inputs, activities and outputs.
- b) Periodic evaluations of the impacts of these activities.

2.10.2 Findings and Discussion

General: Programme activities on promotion, participation, health education, sanitation have not yet been initiated at the village level. When these take off, there is an obvious need to follow closely what happens; to learn from mistakes; and to adjust accordingly.

Perhaps the benefits of comprehensive formal quantitative reporting on these activities at this formative stage of programme development are, therefore, limited. Instead qualitative information based on observations and informal interviews at the field level is likely to be very valuable for the initial adjustment and development of the "software" components of the programme.

The procedures for M & E also needs further discussion. The proposed M & E system is designed to provide information to the top of the organisational pyramid (e.g. Regional Internal Review Meeting, Regional Steering Committee meeting, Zonal Coordination Meeting). The information needs at the field level and the identification of field level information collectors, and their data collection capacity also need to be considered.

Finally, there is a need to adjust the proposals so that they better reflect the HESAWA concepts. For instance, water and sanitation improvements are not adequately covered in the proposals (See Stokkeland and Samset, 1984, Annex 4). Neither is the involvement of MAENDELEO and AFYA in key activities. For instance, the proposed forms (1A to 4B) envisage that RWE/DWE is the collector of information on participation, sanitation and health education.

In short, the M & E needs in a participatory rural development project are different from the needs of a non-participatory infrastructure project.

Promotion and Participation: The Promotion Coordinator is preparing step-by-step procedures for these two activities. Each step constitutes a finite sub-activity. Monitoring by simply recording the step reached in each particular village may suffice at this stage. The field Promoter (MAENDELEO) is to be responsible.

Objective evaluation of promotion and participation is difficult. The ultimate indicator of success is to which extent villages carry out their part of operation and maintenance. (perhaps measured by types of village responsibilities not done).

Sanitation: Monitoring of the number of non-owners of latrines is the simplest indicator. It could be collected by VHWS during home visits and used by him/her to plan future visits. Monitoring of different latrine types can be introduced when promotion becomes geared to latrine improvements (see Chapter 2.8). Simple methods of monitoring the use of latrines exist (probe latrine content with stick for instance) and may be carried out by VHWS or Health Assistants provided they get adequate training in this socially delicate task.

Health Education: VHWS will become the key health educators at the village level. To provide them with immediate feedback in their work, they (or their supervisors) may monitor simple, observable changes in health relevant behaviour. As suggested by WHO (1983 a) these could for instance be: water storage habits; handwashing after defecation (water container in latrine?); upkeep of water point surroundings; etc.

Evaluation of Health Impact: Stokkeland and Samset (1984, 40) proposes that a study similar to that carried out by IRA/CDR (1983, Chapter 11) be made in selected villages once every third year. This study was carried out for research purposes to address the question "What is the impact of improved water supply on specific diseases?" From this research perspective, the study was useful. But it cannot provide the kind of information most needed to improve the health impact of the programme in the future (e.g. what complementary activities need to be initiated or improved for benefits to materialise or increase?; what specific modifications are needed for the water, health and sanitation components respectively?, etc.) Such crucial and relevant questions need to be answered and this can be done without health impact studies following the minimum evaluation procedure developed by WHO (1983 a).

2.10.3

Recommendations

- . Quantitative monitoring of promotion, participation, sanitation and health education should be introduced gradually, and not before standardised procedures for these activities have been developed.
- . The feedback needs of field level staff should be incorporated in the monitoring system which, as presently designed, cater for zonal, regional and district management needs only.
- . Health impact studies are not appropriate to the present and foreseeable needs of the programme. Instead, the Minimum Evaluation Procedures proposed by WHO (1983) should be used.

2.11 Other Issues

2.11.1 Training Institutions in Missungwe and Ngudu

These two institutions train people who are potentially valuable in the context of HESAWA. The Missungwe school trains technicians for MAENDELEO's rural construction teams. Well construction is on the curriculum but there is no instructor at present. The Ngudu school trains Health Assistants for AFYA. The curriculum stresses the practical aspects of preventive work.

The strong impression from two visits to each institution is, however, that they have very little if any continuous activities going on in surrounding villages. They appear inward looking and classroom oriented by choice. The HESAWA programme may offer ad-hoc limited support to village activities if such activities are proposed by the schools.

2.11.2 Water for Productive Purposes

Gravity Schemes: If a source is used for irrigation prior to the construction of a gravity intake, conflicts between water users for agriculture and domestic use are likely. More frequently than not, irrigation will dominate, especially if cash crops are involved.

It is therefore important to investigate the situation and to discuss the problem with villagers before a final choice of intake location is made.

Normally, it is not advisable to promote irrigation around water taps on a gravity scheme. If the scheme capacity is not designed for it, water scarcity is likely to occur. On the other hand it is quite costly to design a gravity scheme to cater for irrigation needs.

Shallow Wells: Irrigation around wells is far less problematic. Often there is no need for encouragement. People soon see the opportunity and make the necessary arrangements.

2.11.3 UNICEF Support to Kagera Region

UNICEF is planning substantial PHC-support for Kagera Region. It has not been possible to get more detailed information on this support, but, coordination with HESAWA is clearly needed.

MODEL AND STRATEGY FOR INTEGRATING HESAWA ACTIVITIES IN SHALLOW WELL VILLAGES

In chapter 2 some of the main HESAWA activities were discussed separately. Based on six key HESAWA principles (Chapter 3., an outline of a model for the integration of health education, sanitation and water supply activities at the village level is presented in Chapter 3.2.

However, it should be clear from Chapter 2 that there is still considerable work to do to get integrated HESAWA activities off the ground. Furthermore, the HESAWA Programme is being implemented in an economy in crisis (Chapter 3.3). The presented model-outline can, therefore, not be implemented at once in all three regions. It must be carefully developed and operationalised at field level in one area before it can be replicated on a larger scale. A strategy for this model development is presented in Chapter 3.4.

3.1 The Basic Principles

The model presented is only applicable for areas where water improvements through construction of shallow wells can be carried out. Adjustments must be made for piped schemes and their rehabilitation and extension. However, the basic links between health, sanitation and water remain the same as do the principles of HESAWA regardless of the water improvement technology used.

The proposed model builds on six key principles. First, it is based on the right of villages to say no to participate in HESAWA activities. With the re-introduction of District Councils and head taxes, the economic burden of HESAWA activities (cash payment of handpumps and operation and maintenance, Village Health Workers; and Scheme Attendants) may prove excessive for several villages. Some villages may also have other felt needs than those addressed by the HESAWA Programme.

Second, the prime role of AFYA, MAENDELEO and MAJI in the HESAWA Programme is to support and back-stop villages' own effort at improving health, sanitation and water supply. This is a change from the traditional role of government as a provider of services for villages. The new role is, however, in full line with Tanzanian policies. Third, the model assigns fairly specific tasks to the involved government agencies. AFYA is mainly responsible for the training,

Table 5 - Model Outline for the Integration of HESAWA Activities at Village Level

Step	Objectives/Reasons	Responsible Agency	Comments
1. Select one division for implementation	One division (app. 15 villages 8 wells in each)	Regional Authorities	Concentrating activities in one area at the time is essential to integration, supervision and reduction of transport costs. (See Chapter 2.5 and 2.7)
2. Inform briefly, Village, Ward and divisional leaders about HESAWA	Inform leaders on the procedure about to start	MAENDELEO	No promises made at this stage. Information a prelude to the survey.
3. Make survey of villages. Investigate existing water sources and ground water potential.	Information needed to plan MAJI work and to prepare for village self-help work.	MAENDELEO, MAJI, AFYA.	Socio-economic survey on: settlement pattern; size and organisation of village labour force; village administration; key village leaders; village economy; availability of local materials for latrine construction, latrine conditions; conditions of traditional sources (See Chapter 2.7)
4. Inform each village about HESAWA	Get leaders motivated. Explain their specific roles in HESAWA.	MAENDELEO, (MAJI,AFYA)	Special emphasis on HESAWA conditions (extent of self-help; extent of cash contributions; work of VHWS; village responsibilities on O & M); and on HESAWA inputs with respect to improvement of water and sanitation and training of VHWS (See Chapter 2.4)

supervision and support of Village Health Workers who are the key health educators on promotion of latrines and water improvement. MAENDELEO is mainly responsible for promotion activities and for assisting villages to participate in the HESAWA Programme. MAJI is responsible for all materials supplies to the village (improvements and construction of new sources; construction of demonstration latrines). It also provides technical assistance to villages in all water construction activities (improvements and construction of new sources). Fourth, the model assumes areal concentration of programme activities. Without this, integration is impossible. Scattering, on the other hand, causes logistical problems, makes supervision difficult and escalates transport costs. Fifth, full coverage of a village with improved water sources and with latrines is aimed at. This may imply that a range of water source technologies are used (from improved traditional sources over open wells to wells with handpumps). Similarly, both traditional latrines and improved versions of traditional latrines are acceptable. Finally, the programme will provide no subsidies for latrines for private households.

3.2

The Proposed Model

The key features of the proposed model are presented in Table 5 below. Only the main steps are indicated. A more detailed specification of some steps dealing with village participation in wells construction only can be found in IRA/CDR (1983, App.1). These can easily be adopted to fit the presented model.

In general the steps in the model are sequential, but, several of them can be implemented concurrently.

Table 5 - (Continued...)

Step	Objectives/Reasons	Responsible Agency	Comments
5. Demand cash for handpump. Sign contract with each village capable and willing to participate in HESAWA.	Provides opportunity for village to decline to participate.	MAENDELEO	Contract must clearly specify village obligations and HESAWA inputs. (See Chapter 2.4)
6. Establish HESAWA committee in each village.	Committee is the formal link between Programme and village.	MAENDELEO	Members: Village Chairmen; Chairman of committee for education, culture and social welfare; one member from construction committee; Three women selected by village council (See Chapter 2.2)
7. Establish Divisional Task Force	Forum for information exchange between key HESAWA staff and local leaders.	MAENDELEO, MAJI, AFYA	Members: District Councillor; Divisional and Ward Secretaries; Some village chairmen; one key field staff member from AFYA, MAENDELEO and MAJI (See Chapter 2.2)
8. Establish HESAWA Camp in division	Provides store and accommodation for staff; Allow production of rings; cuts transport costs.	MAJI (for constructing camp)	Good living conditions during field work is essential for staff motivation. Reduce escape of staff from project area. (See Chapter 3.3)
9. Select VHW candidates	Identify best suitable and acceptable male and female candidates.	AFYA	Village Assembly/HESAWA Committee should select several candidates to be screened by AFYA through simple tests and interviews (See Chapter 2.5).

Table 5 - (Continued ...)

Step	Objectives/Reasons	Responsible Agency	Comments
10. Carry out training of VHWS at Health Centre/ Dispensary level	VHW-training to follow PHC-guidelines with special emphasis on HESAWA relevant activities.	VHW-trainers from AFYA (assisted by local AFYA staff , MAJI, MAENDELEO on specific subjects)	Boarding training should be avoided, wherever possible. Practicals in home village and class-room instructions should interchange. (See Chapter 2.5)
11. Train Health Staff in division on support and supervision of VHWS	Establish system for continuous support and supervision of VHWS.	AFYA	AFYA Staff from district and regions should be included where appropriate (See Chapter 2.5).
12. Initiate, as part of VHW training, improvement of existing water sources and latrine types.	Makes VHW-training action-oriented; show HESAWA willingness and ability to match local initiative; encourage VHWS to do preventive work.	VHWS assisted by MAENDELEO, MAJI, AFYA when necessary.	MAJI supplies building materials as needed. Improvement of traditional sources to be based on village decisions and MAJI survey. (See Chapters 2.5, 2.6, 2.7 and 2.8)
13. Finalise VHW training.	Test Trainees; celebrate successful candidates together with village.	AFYA	Important that village now regularly compensates VHWS; and that VHWS receive regular supplies of drugs/ equipment. (See Chapter 2.5).
14. Continue improvements of existing traditional water sources & latrines Continue health education.	Involve VHW and village in water improvements; aim at full latrine coverage. Focus initial health education on links between water, sanitation & health.	VHWS	MAJI supports VHW and village with technical assistance and materials for water improvements. AFYA supports VHW and village with technical advice on latrines. (See Chapters 2.7 and 2.8).

Table 5 - (Continued ...)

Step	Objectives/Reasons	Responsible Agency	Comments
15. Make rehabilitation of existing water schemes in division.	Highest priority to existing schemes (except when diesel pumps).	MAJI, MAENDELEO	Villages should participate in rehabilitation to the extent possible. MAENDELEO should assist in promotion.
16. Make well digging.	Fuel coverage with ring-wells where possible and where improvements/rehabilitation not sufficient.	MAJI, MAENDELEO	MAENDELEO does major promotion and assists village to organise self-help labour. MAJI assists village to dig wells MAJI staff must practice participation methods. (See Chapter 2.7).
17. Make Tube-wells/ Medium Deep Wells	These technologies appropriate where ring-wells not possible.	MAJI, MAENDELEO	As above.
18. Fit Handpumps	Aim at maximum number of handpumps depending on economic capability of village.	MAJI	Open wells acceptable. Health education to aim specifically at pollution risks involved. (See Chapter 2.6)
19. Establish village level O & M	Village to be able to carry out most repairs.	MAENDELEO, MAJI	Decisions on: Training of water Attendant. Decision on role of D.C., DWE, Cost of spares, etc. (See Chapter 2.9).
20. Continue follow-up, including periodic refresher courses for VHW.	MAJI to establish regular inspection of water schemes. AFYA to establish regular supervision of VHW including refresher courses.	MAJI, AFYA,	Follow-up is probably the key to sustained activities. (See Chapter 2.5)

3.3 The Main Implementation Constraints

The HESAWA Programme will be implemented within an economy in crisis, for which there are few signs of significant improvements in the foreseeable future. Directly or indirectly this will affect implementation activities.

First, the willingness and capability of target groups to participate in the HESAWA Programme will vary widely from place to place and over time, especially if there is a shortage of food as is the case in certain parts of Mwanza Region at present (Daily News, 1984). Second, the economic capability of different government levels to sustain basic services is stressed to the limit. The prevailing shortages of recurrent funds, spares, transport, etc. are likely to prevail. Third, the institutional capacity of government agencies to implement integrated programmes like HESAWA is limited by a number of factors such as: limited personnel at field level (especially Health Assistants and MAENDELEO staff, See Appendix 4); limited past experience with integrated, participatory projects; and lack of motivation and incentives for this type of project (see also Arnzen, 1984, 8). And finally the capacity of the Programme Coordinator's office for supporting AFYA and MAENDELEO is limited. Even with the recommended assignment of promotion and health education personnel (See Chapter 2.3 and 2.5), staffing is still limited compared to similar but less ambitious donor financed projects in Iringa, Mbeya, Ruvuma and Rukwa Regions (See Chapter 2.3.2).

To this should be added that there is a need to gain field experiences on implementation of the proposed model in a limited area in order to (i) develop an appropriate organisational framework for cooperation and coordination of the work of AFYA, MAENDELEO and MAJI, and between these agencies and the villages; (ii) develop procedures for integrating the activities mentioned above; (iii) identify the training needs for government staff and key villagers involved in the HESAWA activities, and (iv) adjust the HESAWA principles and the proposed model in light of the experiences gained.

3.4 The Proposed Implementation Strategy

The model proposed in Chapter 3.2 cannot, therefore, be implemented at once in all three regions. Consequently, it is recommended that the following strategy is pursued:

- 1) A zonal project on full integration is carried out in Mwanza Region in one division suitable for shallow wells. The model outlined in Chapter 3.2 provides a starting point for this activity.
- 2) Key AFYA, MAENDELEO and MAJI staff from all three regions should be seconded to this zonal project in order to learn from and contribute to the field experiences.
- 3) As experiences are gained the model should be modified and the replicate in the two other regions by the key regional staff involved in the zonal activity.
- 4) While the integrated model is being developed, regional activities in participation, health, sanitation and water will continue in all three regions. To the extent possible these activities should adhere to the basic HESAWA principles especially with respect to participation, full coverage and agreed concentration.
- 5) When an efficient model has been developed it should be adopted for use on all HESAWA activities related to gravity schemes, rehabilitation, extensions, etc.

4. SOME FINANCIAL IMPLICATIONS OF AFYA AND MAENDELEO INVOLVEMENT IN THE HESAWA ACTIVITIES

The recently completed joint Tanzanian-Swedish Review Mission has stipulated budget ceilings for HESAWA Promotion for 1985/86 on Shs. 1 million for zonal projects and Shs. 3.2 million for regional projects. This level of funding is assumed to continue in the foreseeable future.

Major financial implications of the recommendations put forward in this report are outlined below. However, they require less funds than the stipulated budget, thereby making it possible for each region and the zone to plan for additional activities according to local circumstances and needs. This is based on the assumption, however, that the cost of VHW training can be reduced considerably by avoiding boarding training.

4.1 Zonal HESAWA Promotion

Table 6 indicates the main budget items resulting from the recommendations made.

Table 6 Zonal HESAWA Promotion: Main Budget Items Resulting from Recommendations (x 1000 T.Shs)

Item	84/85	85/86	86/87	87/88
1. Dev of material for VHW training and supervision (incl. printing)	250	50	50	50
2. Health Education Specialist (HES)	-	-	-	-
3. Four-wheel drive for HES including running costs	-	300	100	100
4. Camp Equipment	50	-	-	-
5. Short evaluation of VHW training	-	-	100	-
Total	300	350	250	150

- Item 1: (See Chapter 2.5) Material to be developed as soon as possible by short term consultants. Budget estimate assumes that suitable qualified Tanzanian consultants can be found. Expenses for 84/85 to be taken from funds already allocated to AFYA, but, not being used in 84/85.
- Item 2: (See Chapter 2.5) Recruitment of junior expert to be funded outside HESAWA budget is assumed.
- Item 3: Transport cost assumed to be funded by HESAWA budget.
- Item 4: Selected items from list provided by van der Poel (1984, App. 5) should be purchased.
- Item 5: (See Chapter 2.5) Assumed carried out by Tanzanian participants in the Applied Health Worker Research and Evaluation Project, if available at the time.

4.2

Regional HESAWA Promotion

Table 7 indicates the main budget items resulting from the recommendations made. The assumed transport need for AFYA and MAENDELEO is based on the conclusion reached in Appendix 8.

Table 7 Regional HESAWA Promotion: Main Budget
Items Resulting from Recommendations
(x 1000 T.Shs.)

Item	84/85	85/86	86/87	87/88
<u>MAENDELEO</u>				
6. Allowance for three seconded MAENDELEO officers	50	110	110	110
7. Running three four wheel drive	150	300	300	300
8. Six motor bikes plus running costs	-	240	120	120
9. Camp Equipment	50	-	-	-
<u>AFYA</u>				
10. Training of Additional VHW trainers	-	200	-	200
11. Allowances for 4 VHW trainers	-	150	150	150
12. Running three 4-wheel drives	150	300	300	300
13. Running 12 bikes	-	240	240	240
14. Camp Equipment	50	-	-	-
15. Training of 90 VHWs	-	450	450	450
16. In-service training of AFYA staff	-	200	200	200
<u>MAENDELEO, MAJI</u>				
17. Crash training for field level staff in HESAWA	-	200	200	200
Total	450	2390	2070	2270

- Item 6: (See Chapter 2.3) SIDA assumed to pay night allowances: 20 days per month at 150 Shs/day.
- Item 7: (See Appendix 8) Shs. 5/= per km; 20,000 km per year. Vehicles already ordered.
- Item 8: (See Chapter 2.3) To be used by promotion assistants; Shs 20,000 per bike; Shs. 2/= per km; 10,000 km per year.
- Item 9: As Item No. 4
- Item 10: (See Chapter 2.5) Cost based on MOH (1984, c) estimates plus 30%
- Item 11: 4 trainers out of 6 in the field at the time. See Item 6 for rates.
- Item 12: See Item 7.
- Item 13: See Item 8 for running costs; 15 bikes already ordered; 3 bikes back-up.
- Item 14: As Item 4.
- Item 15: (See Chapter 2.5) Cost to be reduced by switching to day-training wherever possible. Assumed maximum cost per trained VHW: Shs. 5000/=. Item assumed to include pt b, c, d in Chapter 2.5.1.
- Item 16: (See Chapter 2.5.3 and 2.6.3) MOH estimate plus 70%. Actual cost depends on place of training. If trained by VHW trainers on duty station, significant cost reductions are possible.
- Item 17: (See Chapter 2.3.3, 2.4.3 and 2.7.3) The funds allocated sufficient for 100 participants' weeks of boarding training. Actual cost depends on place of training in relation to duty stations of participants.

4.3

Joint Planning from 85/86 Onwards

At this year's meetings with the representatives from each region, the Review Mission was presented with independently prepared requests for support from AFYA, MAENDELEO and MAJI respectively. Now that budget ceilings have been made, a realistic joint planning of activities can start. The Zonal HESAWA office should well in advance of this exercise inform the regions about next year's (i) budget ceiling; (ii) already committed funds; and (iii) the remaining funds for which new activities can be planned. Joint planning is likely to contribute significantly to a better integration of activities.

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APPENDIX 1 - TERMS OF REFERENCE FOR A HEALTH EDUCATION/WATER/
SANITATION CONSULTANT TO THE HESAWA PROGRAMME IN
THE LAKE REGIONS 5/11 - 5/12 1984

Objective

In order to follow-up on the support so far and to improve performance in the future with regard to health education, sanitation and water integration in the Lake Regions, SIDA's Health Division is hiring a consultant in Health Education/Sanitation to take part in SIDA's and Tanzania's Joint Water Sector Review, 12 November - 5 December 1984. The consultant shall visit the Lake Regions before the Review starts in order to familiarize with the local situation so the contract period will be from 5 November to 5 December 1984.

Tasks

The consultant shall:

- 1) during the week preceeding the Sector Review familiarise himself with the overall situation in the Lake Regions relevant to the HESAWA Programme both through visits to Ministries in Dar es Salaam i.e. Ministry of Health and Water and possibly Prime Minister's Office and to the SIDA-DCO as well as visits to the relevant authorities in the Lake Regions and the HESAWA Programme personnel in Mwanza, especially the Promotion Coordinator, Mr. J. Kirknes.
- 2) assess the support given so far from SIDA's health sector to Health Education/Sanitation activities in the Lake Regions through HIFAB and give views on the relevancy of the equipment and possible use within the framework of the HESAWA Programme so far and in the future, as well as give recommendations on any changes in the composition of support.
- 3) give views on the preparatory and planning stages of the integration of health education/sanitation activities with the water/handpump delivery plans in order to improve integration and performance in terms of the overall objective better health through real community participation.
- 4) study existing organisations dealing with health education/sanitation and existing proposals i.e. the task force and recommend possible changes that might improve performance as regards intersectoral action within health, water and sanitation.

- 5) define various authorities' areas of responsibility and based on that recommend feasible methods for realistic community participation.
- 6) assess existing regional institutions with health and sanitation education and their capacity/quality in health education/sanitation and recommend actions to be taken and possible support to be given as relates to the HESAWA Programme.
- 7) give views on regional experience on past latrine campaigns.
- 8) give views on experience from community participation as regards:
 - a. water schemes based on piped water distribution;
 - b. pumps, shallow wells, handpumps;
 - c. improvement of traditional water sources.
- 9) study existing local latrine types and recommend realistic level of technology as far as any standard latrine type to be proposed in the future.
- 10) recommend improvements regarding environmental hygiene around e.g. water taps and handpumps.
- 11) give views on water use for productive purposes e.g. excess water for household, irrigation and/or domestic husbandry.
- 12) study present plans and propose actions for monitoring/evaluation activities in the field on health education/sanitation as related to the HESAWA Programme.
- 13) discuss and propose a financing plan as regards health education/sanitation activities including personnel within the framework of the HESAWA programme in the future i.e. from July 1985 and onwards.
- 14) give views on any further studies/consultancies needed in relation to health education/sanitation.

Time

The consultant shall carry out the task between November 5 - December 5 part of which is a joint consultancy with the Water Sector Review planned to take place between November 12 - December 5. The Terms of Reference of the Water Sector Review will refer to and include the Terms of Reference of the Health Education/Sanitation consultant.

Reporting

The consultant's views and written comments and recommendations shall during the course of the Water Sector Review be given to the Team Leader and incorporated in the Water Sector Review's findings and Agreed Minutes as deemed appropriate as well as in the final Water Sector Review Report. In addition the consultant shall present his findings in a separate report to be ready by December 5 1984.

APPENDIX 2 - PEOPLE MET

Only persons met independently before and after participation in the Review Mission are listed below.

Adult Education Centre

Miss R. Meena	Resident Tutor, Mwanza
Miss C. Bishota	Training Department, Headquarters, Dar es Salaam

AFYA, Mwanza Region

Dr. E.K. Masali	Regional Medical Officer
Mr. E.V. Mapunda	Regional Health Officer
Dr. N.A.S. Hamudu	Medical Office, Mwanza District
Mr. O. Mejjah	Zonal Supervisor, Essential Drugs Programme
Dr. P.J. Igulu	Assistant Medical Officer
Ms. A. Lumanyika	Rural Medical Aid
Mr. S. Ngomala	Rural Dispensing Aid
Mr. C. Mwanamarie	Rural Medical Aid
Ms. M. Boneventura	Maternity and Child Health-Aid

Faculty of Medicine, Muhimbili

Dr. F. Mtango	Senior Lecturer
Mr. Y. Koshuma	Chief VHW trainer

MAENDELEO, Mwanza Region

Mr. E.E. Mahawi	Regional Community Development Officer
Mr. R. Mdalami	District Community Development Officer, Kwimba
Mr. A.J. Buluba	Community Development Assistant, Kwimba

APPENDIX 2

PEOPLE MET (Cont'd...)

MAJI, Mwanza Region

Mr. D.A. Lumelezi	Regional Water Engineer
Mr. D. Nkinda	Planning Section
Mr. S. Ishengoma	Shallow Wells Section

Ministry of Health

Dr. Mgeni	Director, Preventive Health
Dr. Magari	National Primary Health Care Coordinator
Mr. I.V. Mbaga	Deputy National Primary Health Care Coordinator
Mr. G. Sedin	Planning Unit
Dr. Dyauli	Senior Medical Officer
Dr. Hingora	Training Division
Dr. Malika	Principal Health Officer

Ministry of Water

Mr. I. Shirima	WMPCU, Socio Economist
Mr. C.E. Westberg	WMPCU, Coordinator

Missungwe Community Development
Civil Technicians Training Institute

Mr. P. Maganga	Principal
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Ngudu Health Assistant School

Mr. P.M. Kumaliya	Principal
Mr. V. Barosi	Tutor

APPENDIX 2

PEOPLE MET (Cont'd...)

Promotion of PHC- Bagamoyo District

Dr. D. Neuvians

Sunwe Designated Hospital

Doctor in charge

UNICEF

Dr. V. Johnson

Representative

Mr. J. Wilson

Monitoring and Evaluation, Essential
Drugs Programme

Mr. R. Anderson

Programme Officer, Water

USAID

Mr. J. Jacob

Health Officer

APPENDIX 3 - SELECTED STATISTICS ON MWANZA REGION

	Region	Mwanza	Sengerema	Magu	Geita	Ukerewe	Kwimba
Population (x 1000)	1800	62	223	240	310	134	330
Families (x 1000)	225	18	36	47	48	21	57
Livestock Units (x 1000)	1186	36	181	277	250	33	409
Registered Villages	645	17	115	115	154	68	176
Wards	156	17	25	26	27	16	45
Divisions	33	2	5	6	7	4	9
Primary Schools	744	15	123	138	185	81	202
Dispensaries	211	41	20	43	24	24	59
Health Centres	23	1	4	4	5	3	6

APPENDIX 4 - SELECTED STAFF: AFYA, MAENDELEO, 1984

	Total	Region	Mwanza	Sengerema	Magu	Geita	Ukerewe	Kwimba
<u>AFYA</u>								
Health Officers		NA	9	2	2	1	1	1
Health Assistants ¹⁾		NA	12	12	10	12	9	19
Medical Officers		NA	3	1	2	3	3	1
Medical Assistants		NA	3	15	15	16	10	12
Nurse/Midwife		NA	32	9	14	25	12	9
Rural Medical Aids		NA	17	35	37	36	23	48
MCH - aids		NA	11	16	22	27	22	31
<u>MAENDELEO</u> ²⁾								
Community Dev. Officers	10	3	1	1	2	1	1	1
Community Dev. Assistants	75 ³⁾	1	17	8	13	14	11	11
Technician, IV	10	0	2	1	2	2	1	2

1) Number of HA at divisional level or below not known to regional authorities.

2) A rural construction team on 4 to 6 members in each district not included in table.

3) of which 67 placed at divisional level or below in March 1984; by November 1984 this number reduced to 57. Less than half of the CDAs are female..

APPENDIX 5 - CONTENT OF VHW-KIT; BAGAMOYO DISTRICT

VHW are equipped with a kit containing the following items:

1 thermometer;
1 minute glass;
1 penlight torch;
1 arm band tape;
1 tongue depressor;
Bandage, gauze and plaster;
Aspirin/Paracetamol;
Choloroquine;
Mebendazole;
Chloramphenicol eye drops;
Cough/sedative mixture;
(Oral rehydration powder);
Tincture Iodine/Gentianviolet;
Ointment (wounds);
Penicillin or Cotrimoxazol tabl.;
Medical soap;
Benzil benzoate.

Additionally VHWs are supplied with material for census taking and record keeping.

APPENDIX 6 - POLLUTION IN DIFFERENT TYPES OF WATER SOURCES

Source Type	% sources with given no./100 m ¹)					No. Sources	No. Samples
	<1	1-10	11-100	101-1000	>1000		
Borehole	62	20	14	4	-	53	99
Well-protected	30	33	26	11	-	67	133
Well-open ring	0	9	19	32	40	44	58
Spring-protected	16	38	36	10	-	29	42
Spring-open	15	22	39	24	-	42	46
Stream-piped	7	22	37	32	2	55	75
Stream-unpiped	5	6	25	42	21	64	110
Impoundment-piped	17	30	37	16	-	30	95
Impoundment-unpiped	4	19	47	28	2	79	122
Pit	-	11	23	40	26	37	73
Treated Water	30	24	40	3	3	28	33
Rainwater	25	38	37	-	-	8	8
TOTAL						536	894

1) Occurrence of Faecal Coliforms
Source: Broconsult (1980), Table 2.7

APPENDIX 7 PROPOSED JOB DESCRIPTION FOR HEALTH EDUCATION SPECIALIST

The expert should be attached to the Zonal Office and should:

- . assist AFYA - regions to plan and implement the VHW training programme and the corresponding in-service AFYA staff training.
- . assist AFYA - regions in establishing a supervision system for VHWs.
- . assess, with AFYA, the effectiveness of VHW training and performance and of AFYA supervision on a continuous basis.
- . propose improvements in content, materials and methods of VHW and in-service staff training.
- . cooperate with Promotion Coordinator to improve integration of water, health and sanitation activities.

Qualifications: Background in Adult Education, public health education, nurse training, etc. Experience from work with primary health care in a developing country.

APPENDIX 8 AFYA AND MAENDELEO TRANSPORT

The level of AFYA and MAENDELEO activities to be funded by SIDA through HESAWA will remain stable in the foreseeable future. (URT/SIDA, 1984 c). In light of this budget ceiling, the transport equipment ordered by SIDA for AFYA¹⁾ is unlikely to be fully utilised by AFYA on the HESAWA Programme for some years to come when only around 30 VHWS will be trained per year (assuming same level of output as in 1985). On the other hand MAENDELEO has an urgent transport need if it is to contribute significantly to the HESAWA Programme. Thus, one four wheel drive is needed per region for promotion activities. In addition it is foreseen that a number of motorbikes are needed in the near future because of the geographical spread of HESAWA activities within each region.

It is, therefore, suggested that the already ordered transport equipment is shared between AFYA and MAENDELEO for the time being and that allocation is based on specific transport needs. These needs should be reassessed regularly and new equipment ordered accordingly.

At this stage it is suggested that AFYA gets the following per region²⁾:

- . One Four Wheel Drive for field level activities on VHW training and supervision.
- . Four motorbikes for VHW trainers
- . One motorbike in divisions where substantial number of VHWS need to be supervised (Say 15 - 20 villages)
- . One bicycle for supervision for each dispensary/health centre under which VHWS are being trained.
- . One bicycle for each VHW coming from remote villages (say more than approximately 8 km. from dispensary).

It is suggested that MAENDELEO gets the following per region:

- . One four-wheel drive for field level promotion work.
- . Two motorbikes for promotion assistants in areas where HESAWA activities are concentrated.

¹⁾ 2 Four-wheel drives; 5 motorbikes and 30 bicycles per region.

²⁾ MOH (1984b) has proposed one FWD for regional and district level respectively. And motorbikes for each division with VHWS. As HESAWA activities may occur in several locations in a region, the transport implications are substantial. No transport for VHW-trainers is suggested. Bicycles to be distributed to each VHW.

These suggestions imply that an additional six motorbikes should be ordered now. The exact need for bicycles cannot be estimated. It depends on the specific circumstances. A system by which the user of the bicycle also eventually becomes the owner of it, should be introduced using existing government regulation to administer the system. Otherwise the bicycles won't last for long. In a year's time the transport need should be reassessed in light of experiences gained.