NATIONAL WORKSHOP

ON

VILLAGE LEVEL OPERATION AND MAINTENANCE OF HANDPUMPS.

21st TO 25th FEBRUARY, 1994

WORKSHOP REPORT

VILLAGE LEVEL OPERATION AND MAINTENANCE PROJECT

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1. ACKNOWLEDGEMENTS

The organisers of the VLOM Workshop would like to thank the following organisations for their help and support in making this Project and Workshop a success:

Ministry of Agriculture, Forestry and Fisheries.
State Secretariat for Rural Development

The VLOM project would also like to thank Mr. Jeffrey Himel of CIDSE, and Ms. Hoy Naroat of UNICEF for managing the front desk during the Workshop. Finally, the workshop would not have been possible without support from the following organizations:

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DEVELOPMENT PROGRAMME

2. AGREED RECOMMENDATIONS AND STATEMENT

The Plenary sessions made the following recommendations in connection with the introduction of the VLOM concept:

1. VLOM is feasible and appropriate for implementation in Cambodia, and should be adopted as a national policy for community water supply.

2. Provincial level should be the focus for VLOM.

3. A VLOM support unit should be established to facilitate and stimulate VLOM.

4. Coordination and planning committees should be set up under the authority of the Governor in each Province, in collaboration with the relevant provincial offices and external support agencies.

5. Monitoring and evaluation is regarded as an important activity in providing necessary performance information to responsible authorities and should always be a part of water supply activities.

6. To make monitoring and evaluation effective, there must be close cooperation between villagers, local authorities and related organisations. When going directly to villages, villagers should be encouraged to provide information to the monitoring and evaluation unit.

7. Monitoring and evaluation must be carried out by specialized staff.

8. Monitoring and evaluation must be used to indicate follow-up requirements and needs for modification of ongoing activities.

9. Effective coordination is a precondition for a successful implementation of VLOM and should be given high priority.

10. A single agency to be responsible for training coordination and implementation of campaigns.

11. The Water and Sanitation Sectoral Group should arrange a national water awareness day.

Based on these recommendations and the outcome of the discussion groups and plenary sessions, participants agreed on the following statement.

STATEMENT OF SUPPORT FOR THE CAMBODIAN FRAMEWORK FOR THE VILLAGE LEVEL OPERATION AND MAINTENANCE OF HANDPUMPS

The National Workshop on Village Level Operation and Maintenance of Handpumps unanimously recommends that VLOM should be adopted as national policy for community water supplies.

Seventeen activities to achieve Village Level Operation and Maintenance have been defined, and are attached to this statement. Key elements of this VLOM Framework include:

1. The ultimate ownership of community water supplies rests with the water users;
2. Community organization, and water use education are essential throughout project planning, implementation and follow up, and should explicitly include women;
3. Water users need to be trained in handpump management and maintenance;
4. Cooperation and collaboration between water users, national, provincial and district government departments, external support agencies and private sector is required; and
5. Monitoring and evaluation criteria and systems need to be set up.

Recommendations to facilitate the implementation of the Village Level Operation and Maintenance framework are:

1. The provincial level should be the focus for VLOM;
2. A VLOM support unit should be established to facilitate and stimulate VLOM; and
3. Coordination and planning committees should be set up under the authority of the Governor in each Province in collaboration with the relevant provincial offices and external support agencies.

We, the undersigned agree to endeavour to implement the Village Level Operation and Maintenance concept, as specified by the framework, in our rural water supply projects.

February 25, 1994.

The above statement was signed by the director of the Department of Hydrology, the Director General for Community Development of the State Secretariat for Rural Development, and representatives of nineteen external support agencies during the closing session.

Attached list of activities:

A CAMBODIAN FRAMEWORK FOR THE VILLAGE LEVEL OPERATION AND MAINTENANCE OF HANDPUMPS

No.	VLOM-ACTIVITIES
1.	TRAINING AND WATER USE EDUCATION
2.	COMMUNITY ORGANIZATION
3.	SELECTION OF TECHNOLOGY
4.	REACH COMMUNITY AGREEMENT; CONTRIBUTION PROVIDED
5.	ALLOCATION OF HANDPUMPS TO USER COMMUNITIES
6.	CONSTRUCTION OF WATER POINT
7.	QUALITY CONTROL
8.	HANDING OVER OWNERSHIP OF HANDPUMP TO USERS
9.	TRAINING OF USERS IN HANDPUMP MAINTENANCE
10.	CAMPAIGNS FOR CORRECT USE OF WATER
11.	MONITORING OF COMMUNITY ORGANIZATION AND HANDPUMP PERFORMANCE
12.	MANUFACTURE OF PUMPS AND SPARES
13.	MARKETING OF SPARE PARTS
14.	FOLLOW UP
15.	RUNNING COST CONTRIBUTION BY USERS
16.	SUPPORT TO PUMP CARETAKERS
17.	COORDINATION

The Recommendations and Statement session agreed on the following annotation to the list of 17 activities:

1. **Training and water use education.**
   * Involvement of all people, including women, is essential
   * Water use education is essential before, during and after construction.
   * A support unit for water use education should be established at central level.

2. **Community organization.**
   * Where appropriate, use of existing organizations within communities is recommended.
   * User community must be organized for handpump maintenance.
   * Communities should be involved in the monitoring process.
   * Leaders should be chosen by the villagers.

3. **Selection of technology.**
   * Appropriate technologies should be explained to the community before final selection e.g. handpump tubewells, open wells and rain water catchment.
   * Selection of technology must be agreed upon by both the community and the technicians.

4. **Reach community agreement; Contribution provided.**
   * Participation should include the contribution of money, local materials and labour.
   * Sufficient time needs to be allowed for discussion with the community to reach agreement.

5. **Allocation of handpumps to user communities.**
   * Allocation of pumps should be based on the community meeting specific criteria.

6. **Construction of water point.**
   * Monitoring needs to take place after construction.

7. **Quality control.**
   * Quality control needs to be established, with close cooperation between government and community.
   * User communities should be involved in quality control of construction.

8. **Handing over ownership of handpumps to users.**
   * There should be a formal handover contract.

9. **Training of users in handpump maintenance.**
   * Training materials for the training of caretakers need to be developed.

10. **Campaigns for the correct use of water.**
   * Effective coordination of campaigns and training efforts should be the responsibility of one organization.

11. **Monitoring of community organization and handpump performance.**
    * Monitoring and evaluation are an essential process to establish the information necessary for VLOM.
    * Monitoring and evaluation of social aspects is as important as technical handpump monitoring and evaluation.
    * Specialized staff is needed for carrying out monitoring and evaluation, and training is needed.

12. **Manufacture of pumps and spares.**
    * Encouragement of the private sector is necessary through financial support.
    * Local production should be encouraged through lower taxation.
    * Handpumps and spare parts for the three standard pumps should be manufactured in Cambodia.

13. **Marketing of spare parts.**
    * It is essential to work together with the private sector.
    * Spares need to be imported through the private sector where local production is not possible.

14. **Follow up.**
    * There should be planned follow up, and follow-up activities in response to monitoring and evaluation.

15. **Running cost contribution by users.**
    * Water user groups should pay for running costs.

16. **Support to pump caretakers.**
    * Maintenance and repair manuals should be one form of support provided to caretakers.

17. **Coordination.**
    * Coordination is essential for VLOM to work.
    * Coordination and planning committees should be set up at provincial level, under the authority of the governor.

3. INTRODUCTION

This document will present the outcome of

THE NATIONAL WORKSHOP ON

VILLAGE LEVEL OPERATION AND MAINTENANCE OF HANDPUMPS

and it will include:

- a summary of the speeches given by H.E. Chhea Song, Under Secretary of State, Ministry of Agriculture, Forestry and Fisheries, and Mr. André Klap, Deputy Resident Representative, UNDP during the opening session,
- the agreed recommendations and statement,
- a summary of the presentations of the present rural water supply situation in Cambodia,
- a summary of the discussions as they took place in the discussion groups, and at plenary sessions,
- a summary of the speeches given by Mr. Martin Collacott, Ambassador, Canada and Mr. André Klap, Deputy Resident Representative, UNDP, during the closing session,
- copies of the discussion papers as they were circulated to workshop participants, and
- a list of participants, workshop schedule and agenda etc.

3.1 WORKSHOP BACKGROUND

With the support of the State Secretariat for Rural Development (SRD), and the Department of Hydrology (DoH) of the Ministry of Agriculture, Forestry and Fisheries, the Water and Sanitation Sectoral Group initiated the VLOM project. The aim of this project is to formulate a strategy and a to set up guidelines for the introduction of a village level based operation and maintenance/management system for public water supply installations using handpumps. The culmination of this project is the VLOM Workshop. This Workshop should also be seen as a logical follow-up of the Handpump Standardization Workshop that was held in Phnom Penh in February of 1993.

The outcome of the workshop is a major step towards the introduction of a village level operation and maintenance/management concept. This concept is recognized globally as being necessary to achieve sustainability.

The practical result will be recommendations, guidelines and strategies which should enable the authorities to be more effective in fulfilling their responsibilities for rural water supply. Endorsement of the agreed recommendations by relevant ministries is anticipated and is regarded as a precondition for a coordinated implementation of the VLOM concept.

3.2. PREPARATION OF THE WORKSHOP

The project proposal for the VLOM project suggested that responsibility for the practical implementation of the project be handed over to a steering committee. Members of the Steering Committee represented the following organisations: AICF, DoH, GRET, LWS, OXFAM, SRD, and UNICEF. Furthermore the project proposal includes a budget, stipulating the cost of implementing the project. Those organizations that financially supported the VLOM project are mentioned in chapter two.

To assist with the implementation of the VLOM project a consultant was hired for a period of three months. The Terms of Reference for the consultant were defined as follows:

a. Prepare and conduct a national workshop (in Khmer and English), aiming at achieving the following:
   - a1. document the existing roles of government and ESAs in Operation and Maintenance of handpumps;
   - a2. list problems and shortcomings encountered;
   - a3. define how the concept can be applied in Cambodia;
   - a4. recommend the adoption of VLOM as national policy;
   - a5. define the future roles and responsibilities of the various organisations and ministries involved in rural water supply for the introduction and development of VLOM in Cambodia;
   - a6. design monitoring and evaluation criteria and systems;
   - a7. develop systems for local manufacture and distribution of pumps and parts in Cambodia;

b. Document the results of the workshop in Khmer and English, and submit them to relevant government ministries for endorsement and subsequent distribution to government departments and ESAs active in rural water supply; and

c. Assist the government in using the results of the workshop as part of its efforts to establish a set of coherent national water supply policies.

The first phase of the VLOM project aimed at the preparation of the Workshop. This preparation included drawing up a picture of the current rural water supply situation in Cambodia. Special attention was given to ongoing activities aiming at user group involvement in rural water supply. In other words, those activities which will become part of a VLOM concept. The circulated discussion papers include the result of this activity.

The second phase of the VLOM project consisted of the actual implementation of the Workshop, and the third phase was the reporting and dissemination phase.

Invitations to the Workshop were extended to:

- the State Secretariat for Rural Development, focused on the Central Water Base;
- the Central Department of Hydrology of the Ministry of Agriculture, Forestry and Fisheries;

- selected provinces (16), with a request to the respective governors to nominate three candidates each; and

- external support agencies (NGOs, UN-organisations, bilateral and multilateral donor agencies), and other sector relevant individuals

The Steering Committee chose the Russian Cultural Centre (former UNTAC Human Rights Building) as the venue for the Workshop, mainly because it includes a appropriate meeting hall and the necessary discussion group facilities.

3.3. OBJECTIVES OF THE WORKSHOP

The Workshop had five main objectives, as follows:

a) to build up knowledge, and establish a uniform platform for further discussion, through the introduction of the VLOM concept, a short presentation of the current rural water supply situation in Cambodia and presentation of field experience;

b) to consider specific topics in discussion groups, for the purpose of highlighting problems encountered in the field, and determining where special attention is needed. Furthermore, to prepare recommendations and guidelines for presentation at the following plenary session;

c) to formulate and present a general framework for VLOM in Cambodia based on the presented VLOM concept, the outcome of the discussions on specific topics, and the plenary sessions;

d) to prepare a proposal for a strategy for the introduction of VLOM in Cambodia, also as a discussion group and plenary exercise; and finally

e) to agree on a set of recommendations and a statement of support for the Cambodian framework for Village Level Operation and Maintenance of Handpumps.

In addition, the Workshop discussed the current status of the introduction of new handpump technology.

4. OPENING SESSION

The opening session was chaired by Mr. André Klap, the Deputy Resident Representative of the UNDP. Main points from his introductory speech follow below.

Mr. André Klap

In his welcoming address André Klap pointed out the importance of solving problems related to payment for operation and maintenance (O&M) of handpumps. The Government can not be expected to bear the costs of O&M. Previous capital investments will be wasted, if not supported by an appropriate O&M structure. Such a structure will not be limited to financial inputs only. Technical and social aspects will have the same importance.

The Workshop held last year on handpump standardization looked at technical aspects. Three types of handpumps were selected. The selection process offered the chance of introducing the latest developments in handpump technology to Cambodia. These handpumps are all of a design making local handpump production possible and maybe also feasible.

This Workshop is to be seen as the next step towards improving the rural water supply situation, and it will have 3 main priorities:

- Provision of clean water to the rural population;
- Community participation; and
- Low cost and sustainability.

In conclusion, Mr. André Klap mentioned it was good to see so many people representing so many organisations. The central, provincial and district levels of government, external support agencies -first and foremost represented by NGOs- and other aid organisations were all represented.

The Workshop will be seen as a mechanism of bringing experiences together for planning future moves towards implementation. It will recognise the need for sustainability as well as coordination. Finally Mr. André Klap wished the Workshop the greatest success, and he introduced His Excellency Chhea Song.

H.E. Chhea Song

H.E. Chhea Song, Under Secretary of State of the Ministry of Agriculture, Forestry and Fisheries inaugurated the Workshop. In his inauguration speech, H.E. Chhea Song expressed thanks to the organizers of this Workshop, and welcomed colleagues from the provinces. He pointed out that this Workshop is to be seen as a follow up of the Handpump Standardization Workshop held last year.

H.E. Chhea Song emphasised that water is a top priority for the Government, and also that Cambodia is mainly a country of farmers living in rural areas. Today they are facing difficulties in obtaining water for domestic use and cultivation. In general, Cambodia has sufficient water for six months every year, followed by six months with water difficulties. But the water

availability is not equally distributed. In some regions some people have no access to drinking water, let alone water for cultivation. If water could be provided to people in these unfortunate regions, the standard of living could be greatly improved. Furthermore he pointed out, through the Department of Hydrology more than 40 agencies are working together towards improving rural water supplies. They are assisting The Ministry of Agriculture in carrying out its responsibility of providing water to the rural population. His Royal Highness King Norodom Sihanouk has mentioned that many things can wait, but not water for cultivation and communities.

H.E. Chhea Song asked his colleagues to participate in the coming days' discussions and agree on steps to be taken towards the implementation of successful and sustainable programmes. Both recipients and donors have to discuss the technical and social aspects of management, e.g. user groups will have to understand that maintenance and management responsibilities will rest with them. They should not wait for the government to take action. It was also made clear that some development programmes will not achieve their targets, because they carry on doing what they did in the past. Through participation the expected result will be achieved for the benefit of the whole country.

Hereafter H.E. Chhea Song declared the National Workshop on Village Level Operation and Maintenance of Handpumps officially open.

5. BACKGROUND PRESENTATIONS

5.1 PRESENTATION OF THE VLOM CONCEPT

Mr. Bent Kjellerup gave a presentation of the history of modern rural water supplies. It all started when rural water supply became accepted as a sector with its own technical and institutional requirements. From a relatively hardware oriented approach, a stage has been reached where community involvement is regarded as absolutely essential. This new approach is expressed through the latest addition to the developing VLOM concept.

The presentation more or less followed the distributed discussion paper (annex 1). In addition, the following was mentioned:

The VLOM concept did not reach its present shape in one big step -on the contrary. The current outline of the VLOM concept developed through three stages.

Initially the VLOM concept focused mainly on the development of handpump technology. The aim was to install handpumps able to meet the following criteria:

- Easily maintained by a village caretaker, minimum skills and few tools required;
- manufactured in-country, primarily to ensure the availability of spare parts;
- robust and reliable under field conditions; and
- cost effective solutions.

Handpumps meeting the above criteria were anticipated to be able to solve the experienced performance problems. The expected and necessary impact did emerge only partly, therefore the VLOM concept was reconsidered. These considerations aimed at more involvement of user groups, and less government responsibility for maintenance. Various components aimed at user communities were added to the original VLOM concept:

- Community choice of when to service pumps;
- Community choice of who will service pumps; and
- Direct payment to repairers by community is necessary

This important addition is related to the responsibility and payment for O&M. Ensuring acceptable handpump performance would no longer be the sole responsibility of the installing authority. User groups should take over the responsibility of the upkeep of installed handpumps, supported by relevant authorities. The observed positive result of this addition was linked together with a high degree of user acceptance of the handpump. Where pumps had been installed with limited involvement of user groups, the user group involvement in O&M was likewise limited. In such cases efforts aimed at encouraging

communities to take responsibility for handpump repairs and maintenance were not successful.

Again the VLOM approach was reconsidered, and the current VLOM concept appeared. This concept aims at VLOM for community involvement. Right from the initiation of a water point the community should be involved in the decision making process. This is specified in the following tasks:

- User group organization
- Site selection
- Selection of technology
- Contribution
- Quality control
- Responsibility for O&M.

VLOM is not to be regarded as a magic cure, which will solve all problems. It is a concept that can be of benefit to Cambodia, if:

- modified and adjusted to local traditions and needs,
- introduced carefully with required resources allocated, and
- monitored and evaluated and accordingly modified if needed.

5.2. PRESENTATION OF THE CURRENT SITUATION - O&M IN CAMBODIA

The aim of this session was to present ongoing activities directly or indirectly related to operation and maintenance (O&M) of handpumps. The indirectly related activities had been selected mainly because of their relevance in connection with the introduction of VLOM.

In summary the following were presented:

5.2.1 Presentation by Mr. Kol Ratanak; SRD/UNICEF

Subject: Operation and maintenance of handpumps within UNICEF/SRD.

Since the beginning of the 1980s, UNICEF has been involved in providing water to the rural population of Cambodia. Its programme started up as a emergency programme, but now a more development oriented approach is being introduced.

The execution of the UNICEF involvement in water has always taken place in close collaboration with the current government of Cambodia. Over time the counterpart ministry has shifted, according to government decisions of where to put the mandate of executing rural water supply. Since the formation of the new government in Cambodia, UNICEF is working together with the State Secretariat for Rural Development.

To date, approximately 6000 water points were installed in 14 provinces.

Most installations are constructed as tube wells with handpumps. Two types of handpumps are used, the Vietnam No. 6 cast iron suction pump, and the deep

lift pumps India Mark II and India Mark III.

Soon after the introduction of the more complicated deep well handpumps maintenance problems became apparent. Initially maintenance problems were handled in a very centralized way. The teams which were responsible for handpump installation and platform construction were requested to carry out handpump repairs as well. Requests for repair services would reach the centre through long ways of communication. From the user group, the request for repairs went to the village chief, to the district health clinic, to the provincial office of health, before it reached the repair team which could then take action. Mainly because repair work was not given sufficient priority and because the installation teams were busy installing handpumps and constructing platforms, requests were not attended to immediately. This had severe impact on the water use practises. Users simply could not rely on handpumps as a permanent source, and they went back to traditional sources. It was therefore decided to establish a number of area mechanics attached to the district health clinics. These mechanics were equipped with the necessary tools and spare parts. If assisted by villagers they were able to carry out any repair on the India Mark II handpump. Where this set-up was introduced and it received support from the villagers, it has improved the performance of especially the deep well handpumps.

UNICEF is in the process of introducing the standardized handpumps. It expects to have the first batch of pumps available for installation soon. Simultaneously the Village Level Operation and Maintenance concept will be adopted.

5.2.2 Presentation by Mr. Jeremy Ockelford, OXFAM

Subject: The OXFAM Water Supply Programme 1980 - 1994

OXFAM's drinking Water Programme in the 1980s

Since the 1980s, OXFAM has been involved in providing drinking water to the rural population of Cambodia. Initially the approach was very much emergency oriented. Water points were installed with little consultation of users. Often an obvious problematic water supply situation was seen as problematic by outsiders only, not by the villagers themselves. Only if collection of water involved walking long distances, could villagers see a clear advantage in having a nearby source installed. Hardly any understanding of the concept of 'safe' water was observed, and no water use education was provided. Under these conditions user groups did not pay much attention to maintenance of installed facilities.

The results of this approach were:

- users did not feel "ownership" of their water point;
- the community did not use the water for drinking if the water had a slightly unusual taste. The different taste was not accepted in exchange for possible health benefits. In most cases the latter was not known;
- broken handpumps forced beneficiaries back to traditional water sources; and

- generally, the provision of a water point did not receive much appreciation from rural people, let alone that any health impact was achieved.

Rehabilitation often became the answer to the maintenance problem.

Rural Drinking Water Programme since 1990

By 1990 the approach was changed to assist the Central Department of Hydrology. Together with the Provincial Offices of Hydrology projects were started in Prey Veng, Svay Rieng, Battambang and Banteay Meanchey.
In the provinces of Prey Veng and Svay Rieng, the projects were technically based with some community contribution in the form of sand, gravel and labour. Real participation was not considered.

In the provinces of Battambang and Banteay Meanchey, the approach was slightly different. Because of many internally displaced people, projects started up as emergency activities with some community contribution. New waterpoints were installed in response to requirements formulated by district and provincial authorities. These requirements were most probably not based on a genuine need for drinking water as seen by the villagers.

The mentioned participation or community involvement was limited to:
- some say in site location;
- paying money for sand and gravel; and
- providing labour for construction.

However, beneficiaries were not involved in any planning.

Maintenance and Repair Systems

Definitions:

Maintenance - routine replacement of simple parts when needed
Repair - bringing a malfunctioning handpump back to working condition

As soon as installation of handpumps starts, requirements for maintenance and repairs emerge. As a response to these requirements, centralized maintenance units were established. In Prey Veng and Svay Rieng a 4WD vehicle was provided to each province. In addition, approximately 60 old handpumps were rehabilitated every year. Because the maintenance unit had other duties, like the mentioned rehabilitation programme, it was difficult for the unit to respond to unplanned requests for pump repair. No time was available for routine maintenance.

In Banteay Meanchey and Battambang no formal maintenance teams were established. The existing installation teams were requested to respond to requests for repairs as well.

The two mentioned maintenance systems proved not to be able to meet expectations, leaving many handpumps broken down for long periods of time.

Maintenance Costs for Centralised Systems

If a maintenance system would have access to unlimited funding, it would probably also be able to meet expectations. However, the reality in Cambodia -as in many other countries- is different. Neither government nor supporting agencies can spend unlimited funds on the maintenance of handpumps.

Estimated annual costs of running a centralised maintenance system including spare parts are around US$ 38.50 per pump. The question is, can villagers afford this cost? Assuming for the moment that 6000 India Mark II and Mark III pumps are to be maintained in Cambodia, the operation of the system would cost US$ 641,000 per year (for more details, see annex no. 6).

In conclusion we can say that all else aside, funding considerations alone determine that a centralized maintenance system is not a feasible option for Cambodia.

Development of a Community Organisation and Education Concept

Past experience from Cambodia and other countries led to some changes in the approach to drinking water supply. In 1991/92 water use education was proposed, and was introduced with community organisation in 1993/94. The aim of the new approach is to involve villagers and potential user groups right from the time when a water point is considered.

Steps taken to increased involvement are:
- improved discussions with user communities;
- improved location of water points through village mapping;
- gathering back-ground information; and
- establishing user committees to be responsible for water points

To facilitate involvement of potential user groups, Oxfam established a team which includes advisors and a trainer to develop Community Organisation and Education. It is expected this approach will result in water supplies sustained by the people within the project area.

5.2.3 Presentation by Mr. Reynaldo Coloma, OXFAM

Subject: Community organization:

The OXFAM water programme has recognized the need for increased participation of beneficiaries in water and sanitation programmes, and the need for increasing the understanding of safe water aspects. To satisfy these needs a Community Organisation and Education unit (CO/E) was attached to the ongoing water programme. The current programme works with the Provincial Offices of Hydrology (POH) in Battambang, Banteay Meanchey, Prey Veng and Svay Rieng. In each province, two community organizer/educators (CO/Es) -one from the

Provincial Office of Hydrology and one from the Department of Health- implement the programme.

Initially CO/Es were trained in conducting social preparation like village mapping, preparation of timelines, etc.

The CO/E concept as implemented in Babaung Village, Babaung Commune, Peamro District, Prey Veng Province, were presented.

The process includes the following steps:

* Courtesy calls and meetings with commune and village officials
* Village mapping and preparation of timelines
* Formation of the Village Water Committees
* Waterpoint meetings
* The formation of Water Committees, including water-user groups attached to the three existing IM II pumps will result in replacement of these pumps by the TARA pump.

The CO/E initiative is relatively new and the impact this effort will have is still to be seen.

5.2.4 Presentation by Mr. Chak Chanta, CIDSE

Subject: Community organisation and management

Introduction

In the Bak Kheng commune of Muk Kampul district in Kandal province, CIDSE is implementing a project which aims at improving health standards among a target population of 4000.

The background for the project is a collaboration between Ministry of Health, the Provincial Health Office and CIDSE.

The practical outcome of the project is:
- Renovation of the District Hospital
- Construction of 2 infirmaries (commune)
- Water and sanitation activities.

In 1991 the project initiated a Primary Health Care (PHC) project for the mentioned district. This project included a preparatory stage, during which a district PHC committee was formed with multisectoral cooperation (Health, Education, Women, Agriculture and Youth). At the commune level similar committees were established, but here the village leader became a member of the committee as well.

With the formal structure in place the project initiated participatory

baseline surveys, resulting in the following problem identification and prioritization:

A. Lack of clean drinking water
B. High morbidity and mortality rate
C. Low yield of available water sources
D. Low income/lack of financial capacity
E. Weak leadership

To be able to solve some of the listed problems the following activities were listed for implementation in prioritized order:

A. Water and Sanitation
B. Health services
C. Financial support
D. Training
E. Agriculture capacity
F. Leadership development

CIDSEs Water Supply Programme

Specifically for the implementation of the water supply facilities, the formation and training of district drilling and well digging teams became a part of the CIDSE project.

Implementation of water and sanitation facilities was initiated by the formation of water and sanitation groups. Five groups were formed in five villages, aiming at constructing 5 wells. The water and sanitation subcommittee -mainly the village chief- was the driving force in this process. Simultaneously, health education was provided and planning of drilling and handpump installation were done by the Community Organizer together with the water and sanitation groups.

When the project was ready to implement wells, only two user groups came forward with requests. From a project point of view, the result -construction of 2 wells only- was not satisfactory.

The lessons learned:

1. Problems were prioritized and plans formulated by the District and Commune level (health personnel + education people) which turned out to be different from the priorities of the villagers themselves. This made it difficult for the programme to generate sufficient interest among the villagers to participate in various activities (construction, utilization and maintenance). The above problems are all a result of lack of beneficiary participation since the beginning of the process.
2. Inappropriate area selection for the programme, with lack of awareness raising among beneficiaries.

New Approach

In December of 1992 an evaluation of the project recommended changing the programme from being health focused to following a more integrated approach with involvement of the community.

Question: Did CIDSE stop their water programme after the disappointing result?

Answer: We stopped the well construction programme, but the health education programme continued. We are now observing an increased interest for drinking water.

5.2.5 Presentation by Mr. Brom Sambo, Food for the Hungry International (FHI)

Subject: Water Use Education:

The FHI programme also includes water and sanitation activities. To enhance the health impact of this activity water use education has been attached to the well construction programme.

One of the main reasons for FHI to provide water use education is based on observations made in the field. Water from already constructed wells was appreciated by user groups, mainly because it has reduced the walking distance for getting access to water. Although considerations of safe water were not linked to the provided water point, FHI found that unless water and hygiene practises were changed, the expected health improvements would not be achieved.
Reasons for the villagers not to follow expected water use practise were:

- lack of understand of the safe water messages;
- water is not always enough; and
- water taste not acceptable.

Based on these observations a water use training programme was conducted. This programme emphasises having "good" water users explain to the "less good" water users the benefits of proper use of well water.

To enhance the water use education, pamphlets and posters were developed for distribution among the villagers, explaining "what water will kill us and what water will make us safe"

After the introduction of water use education the project observed improvements in water use practises and hygienic standards.

5.2.6 Presentation by Mr. Jean Francois Vidal, AICF

Subject: The use of Interactive Video.

For more than three years AICF has been involved in water supply in Takeo Province in close collaboration with the Department of Hydrology and the Provincial Office of Hydrology.

From the very beginning the programme concentrated on building awareness of the importance of safe water, involvement in handpump maintenance, and user contributions to water point construction.

To build up the expected awareness, AICF is using video as the communication media. The intention is to have the villagers themselves explaining to themselves safe water messages.

Interactive video is used to promote water messages to user groups taking water from AICF wells.

At each video presentation usually 200 to 300 people take part.
Generally a video presentation is divided into three phases

- sanitation/hygienic practise - good and bad use of water;
- the usage and the maintenance of a handpump; and
- how to carry out repairs of the handpump.

After seeing the video villagers are expected to be able to maintain the pump themselves. They will also become aware of the importance of getting organized.
Following the video production and presentation, formation of user group committees is expected to take place and also the tasks of the committee are laid down. Obviously, one of its main tasks will be to collect money for the purchase of spare parts. AICF have experienced committees able to collect as much as US$ 30.- per well for the maintenance of the handpump.

The committees will usually have monks, priests, the village chief, and women's chief as members.

The committee will be given a book about the maintenance of their handpump and a price list of spare parts.

In case of new construction, a committee has to be formed before any drilling takes place. This committee will have to accept responsibility for the up-keep of the handpump.

AICF mentioned that 98% of all installed pumps will at any given time be in working order. This is seen as the result of a successful approach.

6. DISCUSSION GROUP SESSIONS

The Workshop conducted three discussion group sessions. They gave participants the opportunity to exchange views and experiences and to establish a uniform understanding on specific topics, in smaller groups.

For each discussion group session general guidelines were prepared, together with individual guidelines for the specific topic under discussion. All three discussion sessions were followed by plenary sessions where presentation of the outcome of the individual discussions took place.

6.1 DISCUSSION GROUP SESSION - SPECIFIC TOPICS

This session was chaired by Mr. Jan-Willem Rosenboom.

The second day of the Workshop was used for group discussions of specific topics and plenary presentation of the outcome. The following topics were discussed:

- Community Organization and Management;
- Monitoring & evaluation, and communication;
- Private sector involvement;
- Existing situation - O&M now and in the future;
- Roles and responsibilities;
- Training, education and campaigns.

All participants were requested to indicate their preferred topic. Discussion groups were then formed accordingly.

To facilitate the discussions, a possible framework for VLOM was presented.

The following are brief summaries of the outcome of the individual discussion groups as presented in the minutes of the discussion and at the plenary session:

6.1.1. COMMUNITY ORGANIZATION AND MANAGEMENT:

Moderator: Mr. Chak Chanta, CIDSE

Summary of Discussion Group Guideline:

> Discuss the current community structure and organisation; knowledge, attitudes and practices at community level related to water supply; economical capacity and other relevant aspects.

At the plenary session the group pointed out:

Usually at commune level there will be a health committee as a permanent body,

but also other committees can exist such as a irrigation water committee.

In most cases where a new water point is to be constructed a water committee will be established. Among villagers in general such a committee is regarded as having responsibilities in connection with the construction of the water point only. After completion of construction it will cease functioning, leaving the water point without any formal village level structure to take responsibility for or being involved in its maintenance.

The group highlighted that in case of water points installed at public places or in field areas with no near-by users, nobody will report break downs. Also, if a mechanic shows up to do repairs, nobody will provide the mechanic with the necessary incentives in form of food. These observations underscore the need for communities to be involved in site selection. Community agreement on site selection could eliminate the often seen practice of having pumps installed on the property of rich or influential families. Technical considerations should also be emphasized during site selection to avoid installation at none appropriate sites e.g. too close to a latrine.

The group supported the idea of having the community contribute to the upkeep of their handpump. Guidelines for collection of contributions are to be worked out. They should include options for all user families to be registered as water users, and payment will be collected accordingly. Two more factors need to be in place before the user groups can repair their own handpump. That is a spare part distribution system and provision of necessary training and distribution of tools.

The group pointed out that handpump caretakers should be selected among women users, because they have the responsibility of collecting water and therefore also the interest in keeping the pump in good condition.

Finally it was highlighted that the taste problem should not be neglected. Many installations were used for all purposes except drinking, because of the taste of water.

Question: What should be the appropriate number of people to each pump and the walking distance between the most faraway located household and the handpump?

Answer: The group had not discussed this subject and could give no specific answer.

6.1.2. Monitoring & Evaluation, and Communication:

Moderator: Mr. Bent Kjellerup

Summary of Discussion Group Guideline:

Evaluate the importance of getting feedback from the field, existing monitoring systems, what kind of information is available etc. Furthermore the group should look at areas to be monitored and distribution of monitoring data and evaluation results.

The Group agreed on the following broad definitions of the two key words:

Monitoring: to collect data,
Evaluation: to analyze collected data.

More elaborate, monitoring and evaluation (M&E) should be looked at as a tool, used by management and decision makers, which will provide feedback from the field. M&E will be able to report on performance of selected subjects. The subjects do not necessarily need to be limited to technical items, but could for instance include the performance of any level of the O&M organisation.

Hereafter followed an exchange of experiences with M&E. In conclusion M&E is not used much as a feedback tool. If considered, it is mostly limited to monitoring - in other words the collection of data without subsequent analysis.

The main reason for introducing M&E is:

- it will provide performance information to managers and decision makers, in most cases this means the governor and his staff.

The following subjects may be considered relevant as M&E subjects:

- performance of installed equipment (handpumps, open wells, rain water catchment systems etc.);
- The ability of communities to sustain the collection of contributions, repair handpumps, and appoint new committee members whenever necessary;
- The ability of training activities to meet objectives. M&E will tell providers of training whether conducted training has had the expected impact;
- performance of the back-up system;
- performance and quality level of water point construction teams; and
- the ability of the private sector to respond to user groups service requirements.

The VLOM concept will consist of a number of activities. The M&E system should be able to provide information regarding the functioning of these activities. Modification of any of these activities must be based of experiences from the field, as communicated through the M&E system to the relevant bodies.

The group discussed the subject of communication only very briefly. It could support the idea of combining monitors' village visits with the possibility of having them discuss problems and observed shortcomings with relevant villagers.

The group submitted four recommendations for consideration by the plenary session. They were all accepted (see chapter 2.).

6.1.3. PRIVATE SECTOR INVOLVEMENT:

Moderator: Mr. Jerôme Rihouey, GRET

Summary of Discussion Group Guideline:

> Discuss existing systems of subsidizing the supply of spare parts and maintenance, where is the private sector already involved in rural water supply, list areas where the private sector can get involved.

The group prepared the table shown below to illustrate involvement of various sectors.

PRIVATE SECTOR INVOLVEMENT			
-PRIVATE SECTOR	GOVERNMENT	EXTERNAL SUPPORT AGENCIES	USER GROUPS
-FACTORY/IMPORT	-TAX POLICY -STANDARD-SPECIFICATION CONTROL -TRAINING -FINANCING	-TRAINING -FINANCING	-EXPRESSION OF NEEDS
-DISTRIBUTION/ INSTALLATION	-AGREEMENT -FINANCING OF INSTALLATION -QUALITY CONTROL OF SPARE PARTS	-AGREEMENT -FINANCING OF INSTALLATION	-PARTICIPATION IN FINANCING
-DRILLING & DIGGING	-ORDER -PLANNING -RECEPTION -GIVING STANDARD SPECIFICATIONS -FINANCING OF BUILDING UP CAPACITY	-ORDER -FINANCING OF BUILDING UP CAPACITY	-PARTICIPATION/ CONTRIBUTION OF MATERIALS AND/OR FINANCE
-MAINTENANCE & REPAIRS	-TRAINING		-LABOUR -PAYMENT OF REPAIRS

The presentation also mentioned that the supply of spare parts and the lack of trained mechanics is one of the main reasons for handpumps not been repaired when they break down.

Question: Will the private sector have the capacity and capability to establish production of spare parts and maybe also handpumps, if supported by NGOs?

Answer: The group is of the opinion that both capacity and capability is available. Local production could also be supported by introduction of some restriction on handpump spare part import.

6.1.4. EXISTING INSTALLATIONS

Moderator: Mr. Veng Sakhon, DoH.

Summary of Discussion Group Guideline:

> The group was asked to look at the current situation, by indicating the present ownership pattern, list observed problems related to handpump maintenance and suggest future ownership structure.

In its presentation group No. 4 mentioned, that before 1993 approximately 80% of all pumps belonged to the government or other agencies. 20% belonged to the communities. Since 1993 when all handpumps were handed over to the respective communities the ownership is with these communities.

The group also discussed the performance of handpumps and the reason why so many pumps were found out of order. The main problem is related to the none availability of spare parts. The distribution of spare parts from the central government store to the provinces and further out to the districts, is simply too complicated and is not able to provide a timely supply. Furthermore at village level knowledge and necessary tools are not available for the repair of the more complicated pumps like India Mark II.

Another problem is related to the taste of handpump water. With the slightest deviation in taste, the provided water is rejected. Effective water use education should convey the message that by accepting the different taste, water users will benefit in the form of better health.

In the past site selection for handpumps was done with little involvement of communities, with the result that many pumps are installed at locations not appreciated by the community. Such pumps will generally be neglected.

The group also pointed out that inadequate infrastructure makes it difficult - particularly during the rainy season- to reach handpumps in need of repairs.

The group found that many of the mentioned problems could be overcome if the community also had handpump ownership, and if the community was involved in the decision making process right from the initiation of the water point.

As an immediate solution to O&M problems until a VLOM system is in place, the group suggested to make spare parts available through the private sector at local level. It also recommended that non-standard handpumps should be replaced if they could not be repaired.

6.1.5. ROLES AND RESPONSIBILITIES

Moderator: Mr. Jeremy Ockelford, OXFAM

Summary of Discussion Group Guideline:

> Based on the discussion document "Possible framework for VLOM in Cambodia" discuss roles and responsibilities of various groups involved in water supplies. Identify possible problems or constraints.

With the list of 16 activities as background, all member of the group were asked to make their own table illustrating the roles and responsibilities of relevant government organisations. Following this exercise, the consolidated table shown below was produced. The relevant government organisations included are: State Secretariat for Rural Development (SRD), Secretariat of Women's Affairs (SWA), Department of Hydrology (DoH), and Ministry of Health/Department of Health (MoH). The activities for which this organisation could have roles and responsibilities had been taken from the listed activities mentioned in the document " Possible framework for VLOM in Cambodia".

The mentioned organisations operate through the following structures:

SWA: Central Level: Central Department of Women in Development
Provincial Level: Central Women's Association
District Level: Central Women's Association

DoH: Central level: Central Water Management Office
Provincial Level: Provincial Agriculture Office (Hydrology Office)
District Level: District Agriculture Office (Agriculture Office)

MoH: Central Level: CNHÉ station
Provincial Level: CNHÉ station
District Level: District Prevention Office
Commune Clinic.

SRD: Central Level: Department of Water Supply
At the moment SRD is in the process of establishing an organisation which will cover all levels. As part of this process, the Central Water Base has been taken over from CNHÉ.

Whether in the future the responsibility for rural water supply will rest with one or two organisations is not clear.

The assistance presently provided by NGOs, will not last forever. NGOs should request Government to make counterpart staff available. This will enhance transfer of leadership from NGOs to the government staff.

The group put forward the recommendation that improved coordination at all levels and among all involved parties is a necessary prerequisite for a successful introduction of VLOM, and that it should be added to the proposed list of VLOM activities.

EXISTING ROLES AND RESPONSIBILITIES					
NO	ACTIVITY	GOVERNMENT AGENCY INVOLVEMENT			
		Secretariat of Women's Affairs	Department of Hydrology	Secretariat for Rural Development	Department of Health
1	Training and water use educ.	N,P,D	N,P,D	N,P?,D	N,P,D,C
2	Community organization	D	P	P?	
3	Selection of technology		N,P	N	
4	Estab. of commitment				
5	Installation Allocation		C,P	C,P	
6	Construction of handpump				
7	Quality Control			C,P	
8	Handpump Handover				
9	Community Training		C,P	C,P	
10	Campaign - Correct water use		N,P	C	
11	Monitoring Community + technical performance			N,P	
12	Manufacture of pumps and spares				
13	Marketing of Spares				
14	Other follow-up				
15	Running cost contrib.				
16	Tech. back-up/ Well Maintenance			N	
17	Overall Coordination				
N=NATIONAL; P=PROVINCIAL; D=DISTRICT; C=COMMUNITY					

6.1.6. TRAINING, EDUCATION AND CAMPAIGNS

Moderator: Mr. Krishna K.C., OXFAM

Summary of Discussion Group Guideline:

> The guidelines asked the group to discuss ongoing training and existing training materials available for the installation and maintenance of handpumps. Furthermore the group should discuss problems related to training and education at village level.

Training -relevant to water- is conducted by the following organisations: ARC, UNDP, Oxfam, Concern, Partage, Care, UNICEF, AICF and GRET. They have developed individual training programmes of varying duration and contents. Developed training material and training aids include: Video, posters, flip-charts cloth, flannel board, and mobile library.

Field experience has given the members of the group a good picture of the problems related to providing training. The following problems were mentioned as being common: lack of trainers, budget, coordination, training policy, monitoring and follow up, and policy makers who are not aware of training aspects.

The group presented the following recommendations:

1. allocate resources for training
2. public awareness and understanding
3. long term education process
4. willingness of field staff in helping the end users out
5. appropriate training and technical skills need to be given to field staff.

The group formulated training objectives, training and training material for each of the following levels: villagers, field staff and central staff. In general the group highlighted training requirements on a number of subjects including the building up of skills and attitude changing.

It also saw the need for coordination of training provided by different organisations. It suggested the appointment of one agency to coordinate campaigns.

6.2 DISCUSSION GROUP SESSION - ESTABLISHM. OF A GENERAL FRAMEWORK FOR VLOM

Based on the field experience presented on Monday and the outcome of the discussion groups on Tuesday, an editorial group prepared a draft general framework for VLOM in Cambodia. It was presented on Wednesday morning, as an introduction to the subject -Establishment of a General Framework for VLOM. It included 17 activities that need to be implemented to achieve VLOM.

Following this presentation, 5 discussion groups were formed and asked to decide whether the VLOM concept is appropriate for Cambodia at all. In addition the groups were asked to give comments to the 17 listed activities.

Each of the five groups had representatives from each of the five groups that discussed specific topics on Tuesday.

Moderators: Mr. Bent Kjellerup, VLOM Project
Mr. Ngy Chanphal, SRD
Mr. Rey Coloma, OXFAM
Mr. John Damerell, LWS
Mr. Bob Thelen, IRC

All five groups were given the same guidelines for discussion. In brief the groups were asked to assess whether the VLOM concept is feasible for Cambodia and whether it should be adopted as a national policy. If they could answer these two questions positively they were asked to formulate a framework for VLOM. The discussion should incorporate the outcome of the discussions on Tuesday and should also use the circulated discussion papers.

In summary the outcome of the discussions and the presentation at the plenary session is as follows:

- All groups found the VLOM concept feasible for Cambodia, and recommended its adoptions as a national policy. Preconditions mentioned for a successful introduction of VLOM were:
  - adequate training of villagers should be provided;
  - introduction will take long time;
  - considerable coordination between government and external support agencies is necessary; and
  - the workshop should formulate a policy to support the introduction of the VLOM framework.

Furthermore the presentation included:

- The provincial level will be the focal point for the introduction of the VLOM framework.

- Water use education is essential before, during and after construction of any water point, it should be provided to all sections of the village, particularly women. One group saw no reasons for emphasising training to be provided to women specifically.

- Selection of technology will require a dialogue between the community and technical staff. The preferred technical solution may not be technically feasible. Mapping of the ground water table would support establishing a general overview of technical solutions possible. Involvement of the community in technology selection is regarded as a major step towards overall community involvement.

- The community could also be involved in quality control during construction of the water point.

- Taste of water appears to have a high priority among users. It should be ensured that the technical solution chosen will not have a negative influence on the water taste; e.g. corrosive water together with galvanized iron pipes will result in an iron taste.

- Import of spare parts should take place only if local production is not possible.

The comments brought forward will be used for preparation of an annotated list of 17 activities.

6.3 DISCUSSION GROUP SESSION - STRATEGY FOR INTRODUCT. OF VLOM IN CAMBODIA

At this stage of the Workshop -the final stage in the process of setting up VLOM for Cambodia- a strategy for the introduction of VLOM was drawn up. The aim of this session was to discuss action needed to make this process happen.

The same group allocation as for the morning session were used.

Moderator: Mr. Bent Kjellerup, VLOM Project
Mr. Ngy Chanphal, SRD
Mr. Rey Coloma, OXFAM
Mr. Jeremy Ockelford, OXFAM
Mr. Bob Thelen, IRC

Moderator of the plenary session: Mr. Veng Sakhon, DoH and Mr. Ngy Chanphal, SRD.

According to circulated discussion group guidelines, individual groups were asked to look at a specific number of activities and suggest necessary actions to be taken for the implementation of these activities (see Annex No. 3).

In summary the individual groups presented at the plenary session the following actions that should be taken to ensure a successful implementation of individual activities:

1. **Training and water use education.**
(Group No.: 1 and 2)

- Central Level: The relevant ministry will set up guidelines for training programmes.
Provincial Level: Training unit to be established with trainers and training material. The provincial level will implement training.
District level: Will point out the location where training has to take place, and this level will also be responsible for practical arrangements.
External Support Agencies: Initial support in organisation and funding and also in development of training material.

2. **Community organization.**
(Group No.: 1 and 2)

- The necessary community organization will only be achieved if this process is supported by training and facilitation. Community development is a necessary activity within VLOM.
- To the extent possible relevant existing organisations should be utilized.

3. **Selection of technology.**
(Group No.: 1 and 2)

- Technicians with appropriate knowledge will inform potential communities about possible options for the area in question. The final selection of technology will emerge as a result of a dialogue between the community and the technician.

4. **Reach community agreement; Contribution provided.**
(Group No.: 1 and 2)

No comments.

5. **Allocation of handpumps to user communities.**
(Group No.: 1 and 2)

- Signing of a contract between the provincial government and the community needs to be organized. Legal issues to be investigated and formulation of a standard contract to be worked out.

6. **Construction of handpump.**
(Group No.: 1 and 2)

- Construction of a water point with handpump will require a major input of professional staff and equipment under the responsibility of government and/or the private sector. Construction will be carried out in close collaboration with the receiving community.

7. **Quality control.**
(Group No.: 1 and 2)

- Quality control will cover two aspects a) quality of construction work (drilling, handpump installation, and platform construction) and b) quality of supplied water.
- Technical monitoring to be carried out by technical staff together with the community.
- Necessary water quality testing facilities to be established at appropriate level.

8. **Handing over ownership of handpumps to users.**
(Group No.: 3 and 5)

After completion the handpump installation will be handed over to the user group. Transfer of ownership is a matter between the government organisation in charge of rural water supply and the community receiving the facility.

9. **Training of users in handpump maintenance.**
(Group No.: 3 and 5)

Training of caretakers may take place during the installation of the handpump. Training programmes and training materials to be developed for all types of handpumps used. Training impact assessment and retraining needs will be supported by the outcome of the monitoring and evaluation activity.

10. **Campaigns for the correct use of water.**
(Group No.: 3 and 5)

Campaigns for the correct use of safe water should include national TV and radio broadcasts, bill boards, posters, leaflets, video shows, and education talks. Health messages should be included in the water use campaigns. Given the very low level of knowledge, the process is to be planned for a long duration of time. Campaigns should be arranged at central level. A national water awareness day should be considered.

11. **Monitoring of community organization and handpump performance.**
(Group No.: 3 and 4)

Specialized staff needs to be made available and trained for the execution of monitoring and evaluation activities.

12. **Manufacture of pumps and spares.**
(Group No.: 4 and 5)

Handpumps and handpump spare parts to be produced locally to the extent possible and feasible. ESA support to facilitate local production may be necessary.

13. **Marketing of spare parts.**
(Group No.: 4 and 5)

Monopoly is a risk, when introducing distribution of spare parts through the private sector. Government price control to be considered.

14. **Follow up.**
(Group No.: 3 and 4)

Follow-up activities need to be carefully planned and coordinated. The monitoring and evaluation activity will highlight problems and shortcomings.

15. **Running cost contribution by users.**
(Group No.: 3 and 4)

Money to be raised by arranging ceremonies. User payment may be arranged on monthly or yearly basis. The selected caretaker to arrange collection.

16. **Support to pump caretakers.**
(Group No.: 3 and 4)

Caretakers should be given sufficient training, a tool kit and repair manuals. Support facilities to be established at provincial level.

17. **Coordination.**
(Group No.: 4 and 5)

Given the complexity and importance of this activity, Group No. 4 spent most of the available time on activity no. 17. They presented ideas of how to coordinate between provincial government and ESA.

The group suggested the establishment of two committees at provincial level:

a) A committee for Planning and Coordination. The members of this committee should be drawn from:
The Provincial Governor
The Vice-Governor
Department of Health
Department of Hydrology
Department of Construction

b) A committee for technical development and research issues, with members for the following organisations:
Planning department
Department of Health
Provincial Office of Hydrology
Department of Education
Construction Department
Secretariat of Rural Development
UN - agencies e.g. UNICEF and
NGOs e.g. OXFAM and others in the field.

c) There will be another committee to coordinate the work of these two committees, and also to participate in regional coordination meetings at monthly or bimonthly intervals

Mr. Tes Heanh, the Assistant Provincial Governor from Battambang, was requested to present the recently introduced coordination and planning organisation in Battambang. In summary his presentation included: In the past coordination between NGOs and provincial governments was not satisfactory. Some NGOs introduced themselves to central government offices and thereafter proceeded directly to the village level. No contact was made with provincial authorities. This has made

coordination difficult. It left the provincial authorities in a situation where doubts could be raised about who is in charge. The provincial governor was brought in a situation similar to a head of a family who doesn't know the needs of his family. When he went to the market to shop for the household he just bought something - maybe spending all the money on cloth for one child only, not buying for all the other children, because he did not know the needs of the other children.

To discuss coordination shortcomings in Battambang, four meetings were held in the past with all NGOs in the province. The aim was to formulate ways of how coordination and exchange of views and ideas, could be improved.

As a result of these meetings the committees mentioned above have been established in Battambang Province.

The particular aims of these committees are:

The Planning and Coordination Committee will plan and coordinate activities to avoid overlap and also to avoid duplication of mistakes. For instance, if health messages are disseminated to a population in general, these messages should be coordinated with the ongoing campaigns at school levels.
We should prevent NGOs working in isolation from the rest of the sector. In future all NGOs with programmes in the Battambang province will have to participate in, and report activities to, the planning and coordination meeting.

The Technical Development and Research Committee will coordinate technical aspects, but also training programmes, health activities etc. will be covered. The aim is to have maximum uniformity. For example, if an organisation is drilling down to 100 meters and is not getting water, it may decide to dig a pond. If no standard design for ponds is available the committee will discuss the issue and come up with guidelines for ponds and fencing around ponds.

The increased number of NGOs involved in many activities in Cambodia has increased the demand for coordination significantly. We should all work with the same set of objectives in mind. NGOs who are helping to solve the problems of Cambodia must also understand the needs for coordination and exchange of experience. Participation in the mentioned committee meetings should be mandatory, and likewise the decisions made at these meetings should be followed by all NGOs.

When NGOs arrive in Cambodia it is understandable and acceptable that they make contact with the ministry most relevant to their speciality. But the objectives for their practical work should be those given by the provincial committees.

In administrative matters the involvement of NGOs is quite limited, because this could effect policies of the government.

NGOs should concentrate on the needs of the people of Cambodia.

The mentioned structure with these three committees is now working successfully in Battambang, and the VLOM framework will also be integrated into it.

The national coordination structure -if existing at all- has Phnom Penh as its focus, but people in need of water or a latrine don't go there, they go to the district or commune level.
Because the organisation of water supply and sanitation is not clear, awkward situations occur now and then, like the current situation where UNICEF is keeping most of its equipment under lock and key, because it is not clear who is ultimately responsible.

Finally Mr. Tes Heanh emphasised that only through improved coordination will effective utilization of the resources provided through ESAs be achieved.

During the plenary session the following questions were brought forward:

Question to Group No. 1:

The group mentioned establishing supporting activities at central level, did you consider more specifically how this could be organized?

Answer:
The current situation can give rise to some confusion. That is why we use the term 'relevant ministry', because we do not know which ministry will finally be in charge of rural water supplies.

Question to Group No. 2:

The presentation mentioned a contract between the community and the government. What kind of contract do you have in mind?

Answer:
This was not clear to the group, we had only experience from a AICF project where a contract is established between the NGO and the community, with no government involvement.

Summary of the Plenary Session

The Moderator, Veng Sakhon, summarised the feedback from the groups and the plenary discussions as follows:

- provincial level is the appropriate level for VLOM;
- all provinces should concentrate on VLOM;
- a VLOM support unit should be established;
- Coordination is essential.

At present we cannot say if only one department can be appointed as responsible for VLOM. We need to set up a group to discuss which department is to be

responsible. This should be discussed after the workshop.

We have discussed a lot about manufacture of parts and pumps in Cambodia. If we want producers to make pumps we must have a clear pricing policy. Before a factory manager agrees to produce any material he must be able to see the advantage for the future. In accordance with what we discuss we must have a clear water & sanitation policy. If we have a clear coordination project to facilitate VLOM we can let the private sector make parts. So far we have discussed Activities 1-16 as necessary to carry out the project. These activities will strengthen the association with the private sector and the field. If the community believes the pump belongs to them, they will have an interest to keep it working and will create a demand for the distribution of parts. Even if the private sector does not manufacture yet, we can import parts and sell them to the community.

Coordination

In my discussion group we mainly discussed coordination, hence the statement which has been proposed. This is the main point to define our way forward. We cannot set up coordination committees from central level, so we should look for the level at which we can start.

We cannot say the work we have done so far is bad because it had to be done urgently.

The government is not stable yet and we do not have political stability. Therefore, based on the current situation we have to set up from the situation at provincial level. If we have a strong provincial level, the project will be carried out with collaboration from agencies - NGOs, UN and others. I think if the provincial level is able to set up proper coordination these organisations will come to us.

I agree that the coordination committees should be set up in the provinces, but I would like to suggest that any recommendations from government departments is given to the committee.

After the workshop we will have recommendations which will be sent to relevant ministries for agreement. Those recommendations will be sent to all provinces. We are not yet able to issue a decree to the provinces, since for such a decree agreement is needed from very senior people. For a decree to be issued, all ministries need to agree with each other. Therefore at this stage we can only submit suggestions. So far it is over a year that ministries have not been able to define tasks. Therefore the situation is very unclear.

7. PREPARATION OF RECOMMENDATIONS AND STATEMENT

This session was chaired by Mr. Jeremy Ockelford, OXFAM

The aim of this session was to reach agreement on a Statement of Support for the introduction of the VLOM framework. A draft statement was circulated to all participants on Thursday evening. The Statement is anticipated to be signed by Representatives from ESA's after this session.

The circulated statement was presented by Mr. Jan-Willem Rosenboom.

The Chairman asked participants to come forward if they wanted to change anything in the statement.

Leo Goulet, UNDP/OPS/CARERE:

- Suggestion: "rural public water supply" to be replaced by "community water supply", whereby the statement will also cover community water supplies in urban areas.

- Suggestion: "Water users need to be trained in handpump maintenance" suggest the following addition: "and management;"

- Suggestion: "Coordination committees..." suggest the committees should have a planning task as well, changing the text as follows "Coordination and planning committees...."

  The meeting agreed to these suggestions.

Jerôme Rihouey, GRET:

- Suggestion: Paragraph 1 should not be limited to Handpumps, but could also include open wells, rain water catchment, etc.

Jan-Willem Rosenboom, OXFAM:

As pointed out several times during the Workshop, for logistic reasons the Steering Committee decided to limit the discussion to handpumps only. Transformation of the framework for VLOM also to cover other issues should not be difficult.

Nick Mandeville, ODA:

- 1st and 3rd recommendation at the bottom of the page is supporting the idea of working at the provincial level, given the current difficulties of working at central level, therefore it can be difficult to see the reasons for setting up a VLOM unit at central level.

- Suggestion: 2-3 provinces could be selected as pilot provinces, before full scale implementation is initiated.

- Suggestion: VLOM support units to be set up in each of the selected pilot provinces in addition to the central VLOM support unit.

- Suggestion: the central VLOM support unit is placed outside Phnom Penh.

Jeremy Ockelford, OXFAM

The three recommendations were discussed yesterday and adopted, it is not recommended to open up the discussion again. However, the presented recommendations as they were agreed yesterday, were to be regarded as a broad outline of the establishment of a VLOM support unit. When details will be drawn up the suggestions from Nick Mandeville will be considered.

Nick Mandeville, ODA:

- The chairman had asked for comments, and as a response to that he had forwarded the above comments.

- Suggestion: deletion of the specific reference to the VLOM support units as Central unit. Making it possible to set up the unit in any province.

The meeting agreed to this suggestion.

Pierre Thévenot, GRET:

Expressed surprise to see VLOM to be adopted as a national policy for handpumps only. Only during the workshop dit it become a VLOM Workshop for handpump maintenance!

Jan-Willem Rosenboom, OXFAM:

During the preparation of the Workshop and also in the opening session it was highlighted, that the workshop would concentrate on handpumps. As already pointed out this was done to limit the number of issues to be addressed in a limited amount of time.

VLOM is a *concept* that can be applied to many different technology options -even though the original concept was developed around handpumps, which is the technology experiencing most problems with maintenance. It is felt that the adaptation of the existing framework to cover other facilities such as open wells or rainwater tanks can be done fairly simply now that the groundwork has been laid.

Jeremy Ockelford, OXFAM

Village level operation and maintenance has been introduced by this workshop. Changing the title now will be rather confusing to the participants.

Leo Goulet, UNDP/OPS/CARERE:

> The Statement mentions transfer of ownership. The legal implication needs to be investigated.

Jan-Willem Rosenboom, OXFAM:

> It is actually common practice that ownership of NGO sponsored water points is transferred to user communities, in some cases it is done as an arrangement between the providing NGO and the user group itself, in other cases the ownership is transferred via the respective government counterpart organisation. The legality of the ownership transfer will have to be investigated.

Pierre Thévenot, GRET:

> Para 3, point 3, Is it acceptable to decide that coordination and planning committees should be set up under the authority of the governor. Anyhow it will be up to the government to decide an appropriate procedure.

Jeremy Ockelford, OXFAM:

> In the presentation yesterday at plenary there was a clear feeling coordination should be under the governor, as presented by Mr. Tes Heanh, Battambang.

Hereby the discussion of the Statement of Support came to an end. The agreed amendments will be incorporated and the statement will be made ready for signing.

Based on the outcome of the past 3 days discussions the listed 17 activities were revised, and annotation added based on the outcome of the discussion groups and the plenary sessions. Mr. Jeremy Ockelford, OXFAM presented the annotated 17 activities and asked for comments:

1. **Training and water use education.**
   * Involvement of all people, including women, is essential
   * Water use education is essential before, during and after construction.
   * A support unit for water use education should be established at central level.

   No comments.

2. **Community organization.**
   * Where appropriate, use of existing organizations within communities is recommended.
   * User community must be organized for handpump maintenance.
   * Communities should be involved in the monitoring process.
   * Leaders should be chosen by the villagers.

   No comments.

3. **Selection of technology.**
   * Appropriate technologies should be explained to the community before final selection.
   * Selection of technology must be agreed upon by both the community and the technicians.

   Jerôme Rihouey, GRET: Suggested para 2 should include "e.g. handpump tube wells, open wells etc."

   The suggestion was accepted.

4. **Reach community agreement;**
   Contribution provided.
   * Participation should include the contribution of money, local materials and labour.
   * Sufficient time needs to be allowed for discussion with the community to reach agreement.

   No comments.

5. **Allocation of handpumps to user communities.**
   * Allocation of pumps should be based on the community meeting specific criteria.

   Pierre Thévenot, GRET: Suggested "handpump(s)" being substituted by "water point(s)".

   Jeremy Ockelford, OXFAM, the workshop was organized as a handpump workshop, which is reflected in all documents; it will cause too much

confusion to change towards a more general approach by now.

6. **Construction of handpump.**
   * Monitoring needs to take place after construction.

   No comments.

7. **Quality control.**
   * Quality control needs to be established, with close cooperation between government and community.
   * User communities should be involved in quality control of construction.

   No comments.

8. **Handing over ownership of handpumps to users.**
   * There should be a formal handover contract.

   No comments.

9. **Training of users in handpump maintenance.**
   * Training materials for the training of caretakers need to be developed.

   No comments.

10. **Campaigns for the correct use of water.**
    * Effective coordination of campaigns and training efforts should be the responsibility of one organization.

    No comments.

11. **Monitoring of community organization and handpump performance.**
    * Monitoring and evaluation are an essential process to establish the information necessary for VLOM.
    * Monitoring and evaluation of social aspects is as important as technical handpump monitoring and evaluation.
    * Specialized staff is needed for carrying out monitoring and evaluation, and training is needed.

    No comments.

12. **Manufacture of pumps and spares.**
    * Encouragement of the private sector is necessary through financial support.
    * Local production should be encouraged through lower taxation.

    * Handpumps and spare parts for the three standard pumps should be manufactured in Cambodia.

    No comments.

13. **Marketing of spare parts.**
    * It is essential to work together with the private sector.
    * Spares need to be imported through the private sector where local production is not possible.

    No comments.

14. **Follow up.**
    * There should be planned follow up, and follow-up activities in response to monitoring and evaluation.

    No comments.

15. **Running cost contribution by users.**
    * Water user groups should pay for running costs.

    No comments.

16. **Support to pump caretakers.**
    * Maintenance and repair manuals should be one form of support provided to caretakers.

    No comments.

17. **Coordination.**
    * Coordination is essential for VLOM to work.
    * Coordination and planning committees should be set up at provincial level, under the authority of the government.

    Pierre Thévenot, GRET: Suggest in para 2 "government" to substituted by "governor"

    The suggestion was accepted.

The revised version of the of the annotated list of 17 activities is presented in chapter 3. "Agreed recommendations and statement"

8. CLOSING SESSION

The closing session was chaired by Mr. André Klap, Deputy Resident Representative of the UNDP, who expressed his pleasure in assisting the workshop. He also mentioned that more people had been expected at the high table, but the government on that day had higher priorities. The Chairman introduced Mr. Martin Collacott, Ambassador for Canada.

Mr. Martin Collacott

Mr. Martin Collacott in his speech expressed his thanks for the invitation, and highlighted that Canada has provided support in a number of areas in Cambodia within rehabilitation and development, particularly in rural development and demining. However he saw the development of the agricultural sector as most important. Cambodia consists essentially of rural communities, and only with sufficient focus on rural areas will it be possible for Cambodia to recover. Therefore, Canada is happy to support this workshop. Thank you for this arrangement.

Furthermore Mr. Collacott expressed that this Workshop is a good example and chance for the participants to be involved in formulating the future of Cambodia. Guidelines and recommendations etc. produced by the participants over the past five days should be seen as the work of the participants.

Another aspects of the Workshop is that many different departments and ministries have worked closely together. That is known not always to be easy, but it is an important activity and this Workshop has been a good example of joint efforts and collaboration.

What has been recommended is only the beginning, hard work is needed in the future to get these excellent ideas of the workshop to the villages, and this is a major challenge. The first step was taken, and Mr. Collacott, closed by expressing "I know you will succeed".

Mr. André Klap

In his closing speech Mr. André Klap summarized the workshop by pointing out that it was organized by a steering committee on behalf of the Water and Sanitation Sector Group, which represents various levels of government as well as major donors and NGOs. The Workshop would not have been possible if funds from the EEC, Canada Fund, CARE, LWS, ODA, OXFAM and UNDP had not been made available. The organizers wish to thank these organisations for their support.

This Workshop of approximately 100 participants has recommended VLOM to be adopted as a national policy for Cambodia, which is to be seen as quite an achievement. Seventeen activities have been agreed to, to make the Village Level Operation and Maintenance of handpumps a functioning concept in the country. The key issues are:

- ownership should be with beneficiaries
- the importance of community organization and participation

- training in water use education and maintenance of handpumps
- collaboration between water user and water provider at all levels
- an appropriate monitoring system should also be put in place.

Furthermore Mr. Klap highlighted the way he sees VLOM, as being part of both planning and implementation. It is also concerned with social organization and technology, it is a coming together of people and technology. During the Workshop some guidelines were expressed like:

- time will be needed for the implementation of VLOM
- training is a key issue
- focus of training should be at the provincial level

Finally Mr. Klap expressed: "It was nice to be with you and I declare this successful workshop closed".

During the Thursday plenary session Mr. Ngy Chanphal, Director General of Community Development, SRD, addressed the meeting on behalf of SRD, because neither himself nor the Secretary of State of the State Secretariat for Rural Development would be able to join the next day closing session.

Mr. Ngy Chanphal

In his speech Mr. Chanphal mentioned that the State Secretariat for Rural Development would like to express its thanks for the organization of the workshop. Thanks should also go to all the guests coming from far away to show their interest in the subject under discussion. The objective of this Workshop is the formulation of a framework for VLOM. VLOM is also one of the government projects assigned to SRD, to be carried out as an effective, solution to the problems encountered by the people of rural communities. VLOM is for the whole community.

The assistance from ESAs and especially NGOs will not last for ever, and when it comes to an end, communities must be able to take responsibility for their water supplies themselves.

Furthermore Mr. Ngy Chanphal mentioned he was happy to see so many participants come to share their opinions.

Another thing mentioned was concern regarding who is responsible for water supplies. SRD is involved in projects where also many ministries are represented, such as the Ministry of Agriculture, the Ministry of Health, the State Secretariat for Women's affairs etc. As far as current projects for rural water supply go, they are the responsibility of SRD. This does not mean that SRD is digging big reservoirs, channels, ditches etc., as DoH is doing it. The aim of SRD is to provide water directly to the people. Cooperation with the DoH is encouraged, so that lessons can be drawn from their experience. This experience can then be shared with others.

Concerning the structure of the organisation, SRD has completed the central

structure and will now start looking at the provincial and district levels.

In all projects of the government there must be a high degree of cooperation between ministries, provinces and ESAs. What we are trying to do is to have all resources handed over to the rural population -recall that 80% of the total population of Cambodia lives in rural areas.

As far as this big VLOM project is concerned it is not just SRD alone, but all involved who must cooperate with us to cover this task.

Finally Mr. Ngy Chanphal expressed "I would like to wish you success in your work, and happiness".

9. STATUS OF INTRODUCTION OF NEW HANDPUMP TECHNOLOGY

As part of the Terms of Reference for the VLOM consultant he was asked to look at the status of the introduction of new handpump technology.

After a brief introduction of the ideas behind, and the outcome of, the Handpump Standardization Workshop, Bent Kjellerup gave the following presentation of the status of introduction of the standardized handpumps. The three handpumps to be introduced are:

Suction Lift:	No. 6 Suction handpump
Medium Lift:	TARA handpump
Deep Lift:	Afridev handpump

Status by type of pump:

No. 6 Suction Handpump:

This type of handpump is readily available, well known and much used in Cambodia. Spare parts are available through projects installing this type of handpump, but also through the private sector.

During field visits it was observed that often the No. 6 is installed on top of a open well cover. This is an installation method which requires special care to be taken when sealing the gap between the cover and the suction pipe. The risk exist that excess (polluted) water will find its way down the open well, and pollute the well water.

Redesign should be considered. Several known options are possible, like installing the pump next to the open well.

The TARA Handpump:

The TARA handpump is new to Cambodia. UNICEF and Oxfam have placed orders in Bangladesh for these pumps. Consignments are still to be received.

The Oxfam order was split into two parts; one to be imported from Bangladesh and one for local purchase. Unfortunately during the split of the order some parts were left out which has caused some delay in the availability of the TARA handpump.

Before large scale installation is started, the following is needed:

1. Presentation of the new pumps at provincial level, aiming at making them known to relevant persons;
2. Installation manuals to be developed and installation teams to be trained;
3. Development of appropriate platform design;
4. Development of caretakers manual;
5. Setting up a maintenance support system; and
6. Detailed plans for large scale introduction of the TARA handpumps. (it is advisable not to spread out the pumps too much initially)

The TARA pump is usually installed directly in the ground or in a tube well designed for supporting the TARA pump at the bottom of the pump. The TARA handpump is not a hanging pump. If it is used in a different way special designs needs to be developed.

The Afridev Handpump:

Afridev pumps were ordered in India by Oxfam and UNICEF, consignment is expected any time.

Also in case of the Afridev pump, careful introduction is needed. The points mentioned under the TARA pump should also be considered in this case.

In general, it is essential that the introduction of the new handpumps is monitored very closely. This will ensure that any problem coming up can be attended to immediately.

It is the view of the VLOM consultant that the resources and the effort devoted to this part of the introduction of the VLOM concept has so far not been enough.

It must never be forgotten that the introduction of the concept of VLOM requires hard work, and discipline.

ANNEXES

1. Discussion papers
   - 1.1 Presentation of the VLOM Concept
   - 1.2 Possible Framework for VLOM in Cambodia
   - 1.3 Presentation of Current Situation - O&M in Cambodia

2. Workshop Agenda and Schedule

3. Discussion Group Guidelines
   Discussion Group Members

4. List of Workshop Participants

5. Signature List - Statement of Support

6. Maintenance Costs for Centralised System

PRESENTATION OF THE VLOM CONCEPT:

1. History:

Large scale community water supply based on handpumps is a relatively new concept. It started taking shape in the early 1970's. During a severe drought in India, it became apparent that public rural water supply had to be regarded as an individual sector with its own identity. As a logic consequence of this, development of rural water technologies and organisation structures etc. became necessary. One of the very first results of these development activities is the INDIA Mark II pump. In 1979 the UN General Assembly declared the ten year period 1980 to 1990 the International Drinking Water Supply and Sanitation Decade (IDWSSD). In support of the IDWSSD and the target set by it, a number of research and development activities were initiated, such as: The Global Handpump Development and Test Project, The Low Cost Sanitation Project, and The International Training Network just to mention some of more than ten projects.

The sector has developed tremendously, since its new era started a little more than thirty years ago. However there is still much to be done, before a comprehensive package of tested and proven general concepts will be available to the sector. For many rural water supply organisations it is still a problem to keep the installed equipment in running condition.

For logical reasons the technology development has moved faster than the organizational and social development. Nowadays handpumps are available which will be able to provide an appreciated and acceptable service if installed and operated properly. Furthermore, the development of drilling rig equipment, open well construction concepts etc. have had a positive impact on the sector.

The availability of technically sound handpumps only eliminated the problems the sector was and still is facing to a certain extent. The organisation of operation and maintenance is a task which the sector is only beginning to come to grips with. It is regarded to be as important as the more technical aspects which to a certain extent have found solutions. Social organization for maintenance is not simply a technological issue. It is a coming together of technology, institutions and individuals, and therefore it is much more difficult to find solutions to.

Initially, all development efforts were devoted to the development of new technology, little thought was given to operation and maintenance. The first step towards organization of handpump O & M, is the so called three tier maintenance system, introduced in India to support installed India Mark II pumps. It is mainly based on a top down approach, where the only influence the handpump users have on the pump is tightening bolts and nuts, if they get loose, and to report to the next level if anything needs to be repaired. This next level consists of a locally based mechanic with a basic set of tools and some spare parts. He can only do repair of the above ground components. If any repair of the more vital parts below ground need repair, an expensive to operate mobile (small truck or a pick up) unit needs to be called upon.

Although this system should be able to cope with the repair problems on paper, just its running cost makes it a system with only a limited chance to become

effective. According to the UNICEF/OXFAM evaluation of rural water projects, annual maintenance costs could be as high as US$ 42.- per India Mark II pump, including transport. Countries with large scale rural water supply activities based on handpumps will not be able to cover the cost of running such an expensive system.

Surveys have shown that achieving satisfactory long-term performance depends on giving careful attention to the organisation and management of maintenance. In fact, maintenance is more an organizational than a technical problem.

After reliable community handpumps became available, the organization and management of maintenance are now the focal points for improving projects in the sector.

Some of the more general problems the sector is experiencing are:

- Maintenance is often viewed as a system for repairing pumps after they break down, rather than preventing breakdown;

- Costs of despatching mobile maintenance teams from a central depot to a distant pump for routine maintenance such as seal replacement soon become unsupportable;

- Reduced performance is not used as an indicator of need of maintenance, only when no water comes out of the spout is any action taken;

- Lines of communication are often too long;

- Communities often develop an attitude of not reporting pump performance problems, based on their generally bad experience with a centralized maintenance system, "why report, nothing will happen".

It was realized at a certain stage in the development phase, that a community based handpump water supply, covered by a centrally based maintenance system, would not do the job. As this set-up proved not to be able to keep installed handpumps in working condition, a shift has taken place over the last decade from central to decentralized village level based maintenance.

The lesson learned during the first phase of modern public rural water supply is:

- technology should be appropriate, possible for the villagers to maintain and repair themselves;
- The involvement of user communities is necessary; and
- decentralized maintenance and management is a must.

2. Approach to community maintenance:

In most cases where handpumps are installed, they mean a change in the user groups' traditional way of collecting water. The acceptance and use of handpumps therefore means a deviation from a practice followed for generations. Although handpumps can provide many improvements, from a

villagers' point of view, its use will probably also mean sacrificing some appreciated features linked to the traditional source. Therefore it is important that the new installation provides an appreciated and continuous service which can compete with traditional sources. In this connection one important aspect is the continuous availability of the handpump. If a pump is out of order too often - not available - the community will simply go back to its traditional sources.

The driving force which will motivate a community to accept ownership of a handpump - and even before that to take the initiative to get organized and make commitments to participate in the implementation of the water point - will be a clear expectation of handpumps providing some clear advantages. These advantages need not be having safe drinking water as a first priority.

No handpump will last for ever, even the best pump will need replacement of wearing parts after some time. Its availability will therefore depend very much on how quickly it can be repaired. If its upkeep is centred around the village itself, and necessary parts are available locally, any required repair can be attended to by the local mechanic/caretaker immediately, and a high degree of availability will be ensured.

3. A Community based Maintenance Concept:

Based on the lessons learned in the past, the focus of maintenance has now shifted from centralized systems to systems operating at village level. The abbreviation VLOM which stands for Village Level Operation and Maintenance, became the synonym for a operation and maintenance concept which focuses on:

- utilizing local skills, for executing repairs etc.,
- having communication lines between the beneficiaries and the back up facilities (mechanics, spare part supply etc.) that are as short as possible,
- having government play a role which is limited to initial installation funding, training and motivation, monitoring and evaluation and finally necessary technical support.
- involvement of the community to a maximum extent.

Ultimately the development of this concept could end with a setup where user groups manage and finance the upkeep of their handpumps themselves, and where the private sector supplies necessary spare parts and other services needed. The government organisation responsible for rural water supply will in such a system generally function in a supportive role, with monitoring and evaluation functions.

If community involvement is taken to this level it will not be correct just to call it operation and maintenance of a water supply installation; it will be more correct to add the word management and call the concept Village Level Operation and Management/Maintenance.

The above is referring to the notion community, please refer to paragraph 6; Definition.

In the following the significance of the VLOM concept is listed:

- Ultimately, VLOM is a shift of responsibility from government organisations to the community.
- Government will be playing a more supportive role.
- Supply of spare parts will take place through the private sector.
- Installed handpumps are of a design which makes it possible for the community to easily carry out repairs themselves.
- Government organisations will provide training and other support in how to deal with the handpump as a technical issue.
- Support will also be provided in assisting the community in getting organized.

The sequence of actions in establishing a handpump installation under the VLOM concept could be as follows:

- A group of people finds they would like to improve their water supply situation, and contacts an organisation supporting installation of water supply facilities.
- Together the potential user group and the support organisation outline how the community should contribute and be organized to fulfil criteria for allocation of a water supply facility.
- Based on the reached agreement installation will take place.
- The installation will be covered by the supporting organisation.
- Training and organization of village mechanics will take place.

It is essential that the listed sequence is maintained. The often observed situation where it is actually the construction/drilling rig capacity which sets the speed for implementation will endanger the whole idea of VLOM.

The task of the user community will be:

- to express the desire of getting a handpump installed in their community;
- to participate in and contribute to the installation of the water supply facility;
- to accept the subsequent responsibility of keeping the installation in working condition, in the form of:
  - executing necessary repairs and maintenance, except well maintenance;
  - purchasing of spare parts;
  - participating in necessary training; and
  - providing information to the monitoring and evaluation activity.

4. Discussion of VLOM:

VLOM should not be regarded as a magic word which will solve all problems. It should be regarded as a set of ideas, which have been tried out on different locations and with different degrees of success, however in most cases with a clear indication of being on the right track.

The VLOM concept should be regarded as a concept which needs to be adjusted to national and provincial conditions in the country where it is going to be introduced.

A VLOM concept should be looked at as a living mechanism, which will change shape according to the changes of user groups' perception of safe water. Expected changes in the perception of safe drinking water will also have influence on the requirements for VLOM training, motivation and other back up. A better understanding of the benefits of safe water will mean more willingness to contribute to its availability and consequently less requirements for outside support.

It is important to approach the introduction of VLOM with an open mind, incorporate flexibility, monitor performance of implemented proposals, and be ready to modify the introduction process if found necessary.

5. Key Assumptions:

A successful introduction and upkeep of VLOM will depend on certain assumptions being met. Some main assumptions are listed below:

No community will be willing to invest in a handpump water supply point, if they do not feel they will get some benefit from such an investment. It is assumed:

- that the installation allocated will be able to meet expectations in the form of water quantity, quality and taste, pump availability, convenience and similar factors.
- that the expressed willingness to contribute to the establishment of a water point and its up keep, is not based on pressure from any NGO or similar organization, but is based on a free and fair decision taken by the community.
- that the installed handpump can be maintained and repaired by the community in the vast majority of cases, and that running costs will be at an acceptable level.
- that the required social organisation around the pump is established and will be maintained also after the first one or two years of operation where the running costs can be expected to be very low.

6. Definitions of Key Words:

The above presentation is based on a specific definition of certain key words. In the preparation of this document the following definitions were used:

Community - a key word for VLOM. It can be defined as a body of people living together in one place or district or country; a group of people having religion, race, profession etc. in common. In connection with this presentation it is defined as a group of people living relatively close to

each other and having a common interest in improving and sustaining water supply facilities. The word user group or beneficiaries could also have been used.

Responsibility for the up keep of installation: After the installation has taken place, all purchases of spare parts and carrying out all repairs will be the responsibility of the community, only well maintenance will be done by the government or an ESA.

Community Water Supply: Generally speaking, this refers to water supply facilities to which the whole community will have access.

POSSIBLE FRAMEWORK FOR VLOM IN CAMBODIA:

INTRODUCTION:

The Government of Cambodia attaches a high priority to the provision of water supply and sanitation in rural areas, to improve health and hygiene conditions, and to make life more convenient for those family members responsible for collecting domestic water.

Over the last 5 to 10 years, most rural water supply programmes for public water supply in Cambodia were executed as emergency activities, with little emphasis on community involvement in operation and maintenance. Until recently, maintenance, if considered, has concentrated on expensive centralized repair systems. The result is that a growing number of installed handpumps are going out of operation and falling into disuse. So far it has been possible to maintain sustainability to a limited extent only.

One way of ensuring a sustained water supply is through decentralization and the involvement of user communities in the up-keep of their water supply facilities.

The Village Level Operation and Maintenance concept - described in the following - is a possible way towards sustainability. It is based on internationally recognized theories, and experiences from a number of countries with conditions similar to Cambodia.

The VLOM concept is an integration of many activities, of which some already exist in Cambodia. When the activities of this concept are integrated with the already existing activities, they will form a strong answer to the handpump maintenance problem.

The VLOM concept is built up around three main ideas, which are

- UNDERSTANDING -

of the health benefits related to handpump water, together with a knowledge of other advantages, such as convenience, and the necessity of being involved in the establishment and sustainability of the handpump, which should lead to

- WILLINGNESS -

to be involved in the establishment of the handpump, and after installation, in its up-keep. The result of this will be

- AVAILABILITY -

of safe water, in the form of a handpump installed with maintenance based on the fact that the community understands the importance of safe water and is willing to contribute to its availability. The

availability of safe water is to be understood as the period where the community has access to safe water e.g. from a handpump.

AIM:

The aim of introducing the VLOM concept in Cambodia is:

- To ensure improved health conditions among the rural population of Cambodia through the provision of access to sustained safe drinking water - making safe water available.

OBJECTIVES:

The objectives which will lead to a fulfilment of the above aim are:

- To motivate communities to participate actively in the up-keep of their handpump, by creating an understanding of, and a willingness to contribute to, the availability of safe water.
- To encourage necessary attitude and practice changes within communities, through effective training activities and campaigns.
- To emphasize at all levels of Government implementation agencies and among NGOs, bilateral and multilateral organizations the need for the involvement of the community for the effective use and sustainability of facilities.
- To let handpump maintenance based on the VLOM concept become one segment in a process of which the aim is to enable communities to take responsibility for changing their own situation.
- To involve the community, and especially the women, to the maximum extent possible, starting from the time when the improvement of the water supply situation is considered among the potential users.
- To motivate the private sector to respond to demands from water communities.

VLOM - ACTIVITIES:

To make the VLOM concept active in the field, it will be necessary to formulate and implement a set of activities which will fulfil the stated objectives.

Given the fact that community involvement needs to start right at the inception of a water point, these activities will actually describe a complete process cycle, the elements of which will include:

- awareness building within the community,(understanding and willingness)
- installation of a water point, (availability)
- the community takes over responsibility for the facility, and
- the back-up system starts functioning.

The following will outline one way the aim and objectives may be met, but probably there are many other ways of reaching the same goal, which could be considered.

The following table outlines all the necessary activities, followed by individual comments on each activity. The VLOM concept should aim at providing some flexibility when detailing each activity, thereby making it possible for individual projects to give each activity its final shape as appropriate to their community situation. Included in the comments on each activity is therefore an indication of the degree of flexibility within which that activity can be formulated. Furthermore, questions of special interest for individual activities have been raised. These questions will be addressed during the group discussions.

VLOM - ACTIVITIES:

	VLOM - ACTIVITIES:	INVOLVED:	RESPONSIBLE:
1.	Training and Information: Water usage, water point establishment	Community Government ESA	Government
2.	Community getting organized	Community Government ESA	Community
3.	Selection of technology	Community Technical staff	Community
4.	Establishment of commitment, commitment available.	Community	Community
5.	Installation allocation	Government ESA	Government
6.	Installation of Handpump	Government ESA Private sector	Government ESA Private sector
7.	Quality control	Community Monitoring unit	Monitoring unit
8.	Handing over of Handpump Installation	Government Community ESA	Government
9.	Training of community in handpump maintenance	Government Installation team Community	Government
10.	Campaign for correct use of water	National programmes	National Government
11.	Monitoring of community & technical performance	Monitoring Unit	Monitoring Unit
12.	Marketing of spare parts	National Government Private sector	National Government
13.	Other Follow-up activities	All involved.	
14.	Running cost contribution	Community	
15.	Technical Back-up/Well maintenance.	Government.	Government

COMMENTS TO THE ACTIVITIES:

1. Training and Information:

Training and information are key elements in the VLOM concept. As already indicated, the sustainability of a handpump is linked closely with the understanding and appreciation of a safe water supply. Furthermore, individual households will have to accept the fact that only through cooperation will they be able to establish a safe water point.

The main task of the training component will be to establish this understanding and cooperation. In addition, it will also provide information on how to satisfy conditions for being allocated a handpump.

During the preparation of this training activity, it is essential to outline each training module, based on the level of knowledge of the main issues within the communities and the overall motivation and willingness of the communities to be involved in such water related activities. All training activities should maintain close links with the monitoring activity, to get feedback on training impact.

This activity will require a high degree of flexibility.

2. Community Organization:

The above provided training and information will result in an expected understanding of the need to form a water user group. Only a united group can be expected to have a handpump allocated.

Although a community may have understood the message regarding the formation of a water user group, it is likely that some support - facilitation, the task of this activity - will be necessary to make it actually happen. However, no groups should be forced to make user groups, as they will most probably not last long. A certain time period should be allowed for the process to mature.

Whenever possible, already existing community structures should be utilized, provided they are representative of and open to all potential water users. Where no such structure exists, it will be necessary to form a water group.

This activity will require a high degree of flexibility.

3. Selection of technology:

The selection of technology is an activity which will require investigation of what is at all possible in the particular case, after which discussions with the community can start. The aim of this activity is to draw up all technical possibilities and through a dialogue with the community reach a conclusion. All possible options should be available to the community. Therefore it is essential that ESA's active in water supply implementation have access to all potential well construction methods. However, issued standards should always be followed, like the standards for handpumps.

This activity will have a low degree of flexibility.

4. Establishment and availability of contribution:

Before a handpump is allocated, the community must clearly indicate acceptance of the terms based upon which the allocation is being provided. Before the installation starts, the contribution mentioned in these terms must be available or have been carried out. The community contribution could be of the form:

- preparing the potential site for the handpump installation,
- collecting material for casting the platform, and/or
- establishment of a maintenance fund.

The task of this activity is to make the community contribution available as a clear indication of the community's willingness to follow the terms based upon which the pump is allocated.

This activity will have a low degree of flexibility at provincial level, if not at national level. The provincial conditions for obtaining a water point should be identical, irrespective of district.

5. Allocation of a Handpump.

Based on a community request, allocation of a water point can be considered. Any allocation should be part of a larger provincial programme.

It is essential that all applications are treated equally and allocation of the handpump is based on equal terms.

6. Construction and installation of Handpump.

After allocation of a handpump installation, the actual installation work will begin. If any contribution from the community is needed during this phase, the timing of the installation work will have to be discussed between the installation team and the community. Discussion of platform design with the community is also a part of this activity.

Some flexibility should be allowed in connection with the construction of the platform. For example, if a community suggests to reshape the proposed platform design, and effective sanitary sealing is still maintained, it could be accepted. In this case, however, any extra cost will be borne by the community.

The foundation of the handpump and the sanitary sealing will give room for limited flexibility, whereas shaping of the platform will leave some room for flexibility.

7. Quality Control:

Because the community will have maximum interest in ensuring that a high level of quality is reached, they should also be trained in executing simple quality control measures. The involvement of the community in quality control will be in addition to the standard quality control responsibilities of the implementing agency. The standard quality control activity needs to be modified, so that action can be taken if complaints from the community are brought forward.

There is no room for flexibility in this activity.

8. Handing over of installation:

After the installation is completed and all involved parties have inspected the installation, handing over will take place.

At least at provincial level, the procedure for handing over a handpump to the community provides no room for flexibility.

9. Training of Community in Handpump Maintenance etc:

A number of caretakers will be appointed to each installation. They will be given or they will buy a tool set. Together with the training package provided, they will be in a position to carry out nearly all possible repairs.

If caretaker training is considered to take place at provincial level, it will leave little room for flexibility. (Refer also to follow-up training).

10. Water use Campaigns:

Promoting proper use of water is the same as promoting changes in traditional behaviour. It will require continuous campaigning over a long period. Even if the target population for such campaigns knows about and understands the message communicated, this does not necessarily mean they will also follow the message.

Campaigns should be arranged as ongoing activities. The current water use campaign on television can be regarded as a part of such a campaign.

11. Monitoring of Community and Technical Performance:

The implementation of the VLOM activities is naturally expected to have the impact outlined in the objectives. However, this can only be known if achievements are monitored. To measure whether all activities and aspects of the VLOM concept have the expected impact, extensive monitoring and evaluation activities will have to be a part of the concept.

The monitoring activity should also be seen as a linkage between the community and the government back-up system. During periodical monitoring visits, the community and the monitors can discuss problems encountered. If the monitor observes some shortcomings, she/he can suggest solutions and motivate the community to take necessary action. In that way, the monitoring activity will play a dual role - communication may be included.

The VLOM concept should be introduced with sufficient flexibility to be able to make modifications at a later stage, based on the finding of the monitoring activity.

12. Marketing of Spare Parts:

Experience from a number of projects where the VLOM concept has been introduced shows that distribution of necessary spare parts through the private sector is the only feasible way.

Initially, the demand for spare parts will be at a non-profitable level. Some incentives may be needed to initiate the process, together with some activities which can facilitate the process of getting a supply network established.

Shopkeepers who are marketing the spare parts should be offered training in handpump repair, so that they can also function as advisors.

13. Other follow up activities:

Based on the monitoring and evaluation reports, it is possible to outline necessary action to be taken to overcome any shortcomings.

14. Running Cost contribution:

The running cost of a handpump will vary depending on the way it is being handled, the number of users, the quality of water etc.. However, whether the running costs are low or high, under all circumstances funds will have to be collected for the purchase of spare parts.

Some of the possible ways of collecting necessary funds are:

- each family contributes to the up-keep of the pump with the payment of a certain amount of money every month;
- money is collected every time it is necessary to purchase spare parts;
- necessary funds for the up-keep of the pump are collected at the same time commune taxes are collected, if commune tax is collected at all. Otherwise at the same time as the collection of other contributions which the community has agreed to provide as a whole, e.g. for street/road repair, village hall construction etc.
- a nominated caretaker will be in charge of the pump and will collect money each time someone takes water from the pump. She/he will have the right to lock the pump when she/he is not present and during night

time.

It should be noted that the water user group will most probably not be a static body. Families will move in and out of the community. New water user groups will be formed and install their own handpump. If that happens nearby an existing water user group, it may have the effect that some members will leave the old group and join the new group.

15. Technical Back-up/Well Maintenance:

It is expected that the community will be able to carry out nearly all handpump repairs. Assistance from the back-up component - whenever requested - should be in the form of re-training or further advice. In the case of more serious problems, like rising mains or tools dropped into the well, retrieval of these parts will require direct assistance. Furthermore, it is not expected that the community will carry out maintenance of the well itself. This will remain beyond the capacity of the community, and will be the responsibility of the authorities. For such activities at provincial level, technicians need to be available.

PRESENTATION OF CURRENT SITUATION - O&M IN CAMBODIA.

Introduction:

This presentation will describe the current handpump operation and maintenance (O&M) situation in Cambodia. It will also describe some ongoing activities indirectly related to O&M and the sector.

One of the most common reasons why rural water supply schemes, equipped with handpumps, are not performing according to expectations is the lack of effective maintenance systems. Globally, the most common solution to O&M problems is the establishment of a centralized maintenance system. However, over the past 5 to 10 years it has become an accepted fact that such systems will not ensure sustainability. Mainly, because they are very costly to operate. Most governments will not be able to allocate the necessary funds to make centralized systems effective. In addition, communication between the centre and villagers will be complicated because of long distances and lines of communication. It is very likely that a message from a village will not reach the maintenance unit.

Maintenance of Handpumps in Cambodia:

At the present time no uniform nationwide operation and maintenance system for handpumps exists in Cambodia. Nevertheless, some O&M is actually taking place. Both CNHÉ with its partner UNICEF, and the Department of Hydrology together with OXFAM have established individual systems. Systems which by and large are based on a centralized concept, with the provincial level as the base.

Each organization is looking after pumps installed by themselves only. Pumps installed by other organizations like UNDP, UNHCR, and NGOs, are in many cases not covered by a maintenance system.

The O&M organisation adopted by CNHÉ/UNICEF and DoH/OXFAM consists mainly of a mobile maintenance unit, equipped with necessary staff, spares and repair tools. By tradition such a unit is called a maintenance unit, although usually it will function as a repair unit - called upon when the handpump has stopped to provide water completely. Maintenance is very seldom carried out. In some province - under the CNHE/UNICEF system - a number of district mechanics are engaged. They will address above ground problems only, but if equipped with the necessary tools and assisted by villagers they may also carry out repairs of down the hole components. The repair unit is also functioning as an installation and platform construction unit.

When a DoH installed pump breaks down, the problem will come to the attention of the DoH repair unit by the following route: from the chief of the village, to the district authorities, to the provincial agriculture office, to the provincial Hydrology Office, which will finally issue the necessary instructions to the repair unit. The CNHE/UNICEF system has established a slightly less complicated communication set-up. Regardless, the two systems responding to a handpump breakdown can take some time. During that period the user group in question will most probably have to go back to traditional sources.

Spare parts will be received by the repair unit from the provincial store, which is getting them from a central store in Phnom Penh, also following long lines of communication.

Over the past ten years the two most commonly installed handpump types have been the No. 6 and the India Mark II. The No. 6 pump can claim VLOM status, which means villagers will be able to carry out necessary repairs themselves. The India Mark II is a much more difficult pump to handle. Assistance from a mobile repair unit will be required whenever the below-ground components develop problems.

The roles and responsibilities at each level - central, provincial, district, commune and village - are not well defined if they are defined at all. However, in certain provinces where O&M is working acceptably this is mainly because of efforts of individual persons in key positions.

Systematic recording of conditions and performance of installed handpumps does not take place. The knowledge about the actual situation is therefore very limited. Recently, OXFAM assisted by LWS initiated a survey of the condition of some 400 DoH/OXFAM handpumps installed over a period of 4 - 6 years. The result of this survey is not yet ready, but preliminary analysis indicates that 50% of the mentioned 400 pumps are in a condition where they can provide some water. The remaining 50% are broken down and will require a major overhaul before they can start producing water again.

Introduction of VLOM:

It has been recognized by all parties involved that the existing O&M system leaves much room for improvement. Furthermore, it is now accepted that water users themselves must be more involved in rural water supply, and handpumps must be of a design easy to maintain.

Some steps have already been taken towards meeting the requirement of a decentralized O&M concept. They are:

- standardization of handpumps,
- local production of handpumps,
- community development and
- water use education.

Standard Handpumps:

Having handpump user groups take responsibility for their own water supply situation will require the use of a technology which they will be able to handle and manage by themselves.

The Handpump Option Report (UNDP/WORLD BANK) suggests that easy maintenance of handpumps is one aspect towards establishing VLOM, but also says:

> "Two of the greatest difficulties that developing countries face in keeping their rural water supply systems in working order are a

scarcity of skilled mechanics and a lack of readily available correct spare parts. The problem is exacerbated in the rural water supply sector by the variety of skills needed to cope with all the different pump types, often supplied by donor agencies. It can be much improved by standardizing on only one or a limited number of pump types, depending the physical focus."

In Cambodia, it was decided that in the future all pumps installed for public water supplies should be of a design making village level maintenance and repair possible. A workshop was conducted in February of 1993, to discuss which types of handpumps met this criterium, and should consequently be established as standard handpumps for public water supplies.

This workshop recommended three handpumps to be used only. The recommendations were later endorsed by the Department of Hydrology and the CNHÉ. Endorsement by relevant ministries in the newly formed government is still pending but is expected in the near future.

The three recommended handpumps are:

For suction lift range:	The No. 6 handpump
For medium lift range:	The TARA handpump and
For deep lift range:	The AFRIDEV handpump.

Whereas the No. 6 pump is already available in Cambodia, the AFRIDEV and the TARA are in the process of being introduced.

Local production of Handpumps:

Decentralization is one of the major considerations of village level operation and maintenance. This consideration should also cover handpump production.

Local production of handpumps will have a positive impact on the sector in the form of:

- Easy access to spare parts, no foreign currency is needed for purchase; and
- Communication between end user and producer is a possibility.

Recently, the production of cast iron handpumps has again become a possibility. Currently one government-owned and two privately-owned units are producing handpumps. Two types of handpumps are being produced; the No. 6 pump and a copy of the japanese Dragon pump. Whereas the No. 6 pump is a standardized pump and designed for public use, the Dragon is more appropriate for family use.

The project is not aware of any considerations of the production of medium lift and deep lift pumps.

Utilization of handpumped water:

Provision of water in any form will only be beneficial if the water point is being used according to expectations. The Joint UNICEF/OXFAM 1992 evaluation gives examples of how this is not always the case:

> "In a village in Takeo province, the pump was located in the middle of the village and about 50 families were using the water. The distance to the furthest house was less than 100 meter. However, for drinking water they walked about 150 meters to a traditional well, which consisted of a sump in which two rings had been put to keep the water in. The water was very muddy. The women that were interviewed said they only used pump water for drinking if they were too lazy to go to the well."

Examples like this have caused a number of NGOs to include water use education in their programmes. This is based on the understanding that the aims of the programme may only be achieved if the water from a safe source is used correctly. Currently more than 7 NGOs are conducting water use education campaigns.

Enhanced understanding of the safe water message is expected to have an impact on the willingness among handpump users to be involved in its upkeep. Therefore, water use education is part of a concept leading towards sustainability.

Community development:

The involvement of communities has been widely accepted as a prerequisite whenever water supply services are made available to rural communities. As the Handpump Technical Paper from IRC points out:

> "The case for involving community members in the provision of their own water supply systems has been made many times over many years, and few contest the principle. The fact that inadequate community involvement can still be identified as a prime cause of broken down or badly functioning systems shows that recognition of the need is not enough. The extent to which community involvement is accompanied by community rights and responsibilities, the degree to which planning and design take account of community needs, preference and capabilities, and the commitment of government agencies to provide continuing advice and support, all contribute to the success or failure of complete systems."

In Cambodia, the involvement of user groups and communities is also seen as a way towards better utilization of installed facilities, and sustainability. At the same time it is recognized that formation of water user groups in a Cambodian context will need facilitation. Many NGOs have Community Development programmes, aiming to enable the community to take the necessary steps towards improving their own situation.

An organized community will also be able to organize maintenance of a handpump if such a handpump is installed according to the water user groups requirement.

WORKSHOP SCHEDULE AND AGENDA.

Monday, 21st February, 1994

08.00 - 08.30	Registration of participants.
08.30 - 10.00	Opening ceremony.
10.00 - 10.30	Tea Break.
10.30 - 10.45	Introduction of the Workshop.
10.45 - 12.00	Presentation of the VLOM concept.
14.00 - 15.00	Presentation of current situation - O&M in Cambodia.
15.00 - 15.30	Tea Break.
15.30 - 18.00	Presentation of practical experiences from the field.

Tuesday, 22nd February, 1994

08.00 - 08.30	Presentation of a possible framework for VLOM.
08.30 - 15.00	Discussion Groups - Specific Topics: -Community Organisation and management. -Monitoring and evaluation, and communication. -Private sector involvement. -Existing installations - O&M now and in future. -Roles and responsibilities. -Training, education and campaigns.
15.00 - 17.00	Plenary session.

Wednesday, 23rd February, 1994

08.00 - 09.00	Presentation of a VLOM proposal, based on the outcome of the group discussions.
09.00 - 10.00	Discussion Groups.
10.00 - 10.30	Tea Break.
10.30 - 12.00	Discussion groups/plenary session.
14.00 - 15.00	Strategy for introduction of VLOM.
15.00 - 15.30	Tea Break.
15.30 - 18.00	Discussion groups.

Thursday, 24th February, 1994

08.00 - 09.00	Discussion groups
09.00 - 10.00	Plenary Discussion
10.00 - 10.30	Tea Break.
10.30 - 12.00	Plenary Discussion
14.00 - 15.00	Plenary Discussion
15.00 - 15.30	Tea Break
15.30 - 16.30	Availability of standard handpumps, current status of introduction of new HP technology.
16.30 - 17.00	Workshop evaluation.

Friday, 25th February, 1994

08.00 - 09.30	Preparation of recommendations and the Cambodian VLOM statement.
09.30 - 10.00	Signing of the Cambodian VLOM Statement.
10.00 - 11.00	Closing ceremony.
11.00 - 11.30	Lunch

DISCUSSION GROUP GENERAL GUIDELINES:

Discussion Group: Tuesday 22.02.94

Guidelines for the discussion:

See circulated individual guidelines for each discussion group.

Your group is welcome to suggest recommendations during its presentation at the plenary session.

Reporting back at the plenary session:

Your group should select one person to take minutes of the discussion. These minutes will be used for the reporting back at the plenary session and also for the final workshop report. Furthermore, one person should be selected to make a presentation of the group's discussions and recommendations to the plenary session.

Total time allowed for each group at the plenary session - 20 minutes.

Especially if you have recommendations to be presented, allow sufficient time for their presentation and subsequent questions.

When writing down your results on large paper, please use BIG letters and write clearly.

When using an overhead sheet, write in clear block letters.

Reporting for the Workshop Report:

Your group will prepare a report of the discussions, which should include:

- name and organization of all group members
- name of facilitator, and rapporteur
- summary of the discussions including key questions raised
- recommendations brought to the plenary session

This report should be returned to the VLOM project not later than March 2.

Volume of the report: between one and three pages.

DISCUSSION GROUP GUIDELINES

GROUP NUMBER: I

SUBJECT: Community Organization and Management

MODERATOR: Mr. Chak Chanta

TIME AVAILABLE: 8.30 am - 3.00 pm

TASKS:

Discuss the following points:

a. existing community structures and organization
b. Knowledge, Attitudes and Practices of communities related to public water supply
c. economical capacity of communities (constraints, seasonal influences etc.) how can users afford the time and/or money to operate and maintain handpumps?
d. any other points which the group members consider relevant to the issue.

As output for your group, concentrate on the following:

- Define the key issues for community organisation and management of public water supply including:
  - public ownership
  - access
  - affordability/contribution
  - site location
  - village attitudes
  - organisation: user groups/committees
  - other issues
- Prepare methods for how these issues can be addressed
- Propose/outline resources required
- Assign roles and responsibilities for each of the above
- Propose how roles and responsibilities for these issues could be defined at different levels (National, Provincial, District, Commune, Village, Government, Private sector, International agency)
- Propose how problems you identified during your discussions may be overcome in practice

DISCUSSION GROUP GUIDELINES

GROUP NUMBER: II

SUBJECT: Monitoring, Evaluation and Communication

MODERATOR: Mr. Bent Kjellerup

TIME AVAILABLE: 8.30 am - 3.00 pm

TASKS:

Please discuss in your group the following:

a. The reasons and importance of getting feedback from the field
b. What pump monitoring and evaluation (E&M) systems do currently exist
c. What kind of information is available through these systems, and where
d. What problems exist in the current system
e. Any other points which the group members consider relevant to the issue.

As output for your group, concentrate on the following:

- What data should be collected through a monitoring system; list sectors and organisations that should be provided with this information
- Discuss and suggest whether a monitoring unit should also be responsible for communication/education
- If monitors should also communicate messages, what could be communication tasks for the monitors
- Suggest what monitoring indicators could be used
- Resources and commitments needed for performing effective E&M.
- What are roles and responsibilities of a E&M unit, and who should be responsible (national, provincial or district level, government or international agency, etc.).
- Propose solutions for any problems that you identified in your discussion

DISCUSSION GROUP GUIDELINES

GROUP NUMBER: III

SUBJECT: Private Sector Involvement

MODERATOR: Mr. Jerôme Rihouey

TIME AVAILABLE: 8.30 am - 3.00 pm

TASKS:

Involvement of the private sector mainly relates to the availability of spare parts in the market place, and possibly to the availability of pumps as well.

Please discuss in your group the following:

a. The existing system of subsidizing the supply of spare parts and maintenance.
b. Where is the private sector already involved in rural water supply in Cambodia
c. What are some of the problems/issues that you can foresee with private sector involvement
d. any other points which the group members consider relevant to the issue.

For the output of your working group, please concentrate on the following:

- Is private sector involvement in rural water supply feasible?
- How could the private sector assist or otherwise be involved in rural water supply activities; e.g.
  drilling, pump installation, the supply & distribution of spare parts, training, manufacturing, maintenance.
- What would be needed to involve the private sector, and how can this be organized. Issues include:
  spare parts provision on commission basis, revolving funds, technical support, making production tools available, training in handpump production, training of shopkeepers, etc.
- How to change from a system of subsidised spare parts to a system where users have to pay for parts.
- Address the issue: The danger of monopolies.
- What would be the roles and responsibilities of the various parties involved (user groups, government, private sector, international support agencies)
- Propose how it can be ensured that spare parts will meet specifications
- Propose solutions for any issues you identified in your discussions

DISCUSSION GROUP GUIDELINES

GROUP NUMBER: IV

SUBJECT: Existing Installations

MODERATOR: Mr. Veng Sakhon

TIME AVAILABLE: 8.30 am - 3.00 pm

TASKS:

Please discuss in your group the following subjects:

a. At present, who is the owner of existing handpumps: the users, the village chief, the government, or international agencies
b. What are problems in the current organisation of pump operation and maintenance
c. any other points which the group members consider relevant to the issue.

When producing output from your group, concentrate on the following:

- Propose who should own the pumps that have been installed
- Propose procedures that can be implemented to bridge the gap between the current O&M situation, and an effective VLOM system
- Propose in what way institutional pumps can be maintained
- Propose what should be done with existing non-VLOM pumps that may be hard to repair and maintain in working order (e.g. replacement of pump, maintenance of existing pump or abandonment of existing installation)
- What should be the roles and responsibilities of the different groups involved in Operation and Maintenance of handpumps
- Propose solutions for any problems you have identified in your discussion

DISCUSSION GROUP GUIDELINES

GROUP NUMBER: V

SUBJECT: Roles and Responsibilities

MODERATOR: Mr. Jeremy Ockelford

TIME AVAILABLE: 8.30 am - 3.00 pm

TASKS:

In your group, please read and discuss the paper "Possible framework for VLOM in Cambodia". Focus the discussion on the roles and responsibilities of various groups involved (Government, user communities, international agencies, private sector) for each activity that is mentioned. Identify possible problems or constraints. Any other points which the group members consider relevant to the issue can be discussed.

When producing output for your group, focus on the following:

- Identify possible roles and responsibilities for each activity
- Specify at which level (village, district, province or national) and by whom (users, government, support agencies, private sector) these responsibilities should be carried out
- How can the various activities be coordinated with each other, and how can that be made to work
- How can the input of ESAs at different levels be organized and coordinated
- How to ensure that guidelines and standards are followed by ESAs.
- Propose solutions for any problems you identified in your discussion

DISCUSSION GROUP GUIDELINES

GROUP NUMBER: VI

SUBJECT: Training, Education and Campaigns

MODERATOR: Mr. Krishna K.C.

TIME AVAILABLE: 8.30 am - 3.00 pm

TASKS:

In your group, please discuss in general the following issues:

a. At present, what kind of training and training materials on handpump installation and maintenance exist
b. What issues or problems are related to training and education at village level?
c. any other points which the group members consider relevant to the issue.

When producing output for your group, please focus on the following:

- What are the training and campaign objectives and needs at each level
- What kind of training and materials are needed when we talk of pump maintenance
- How can effective coordination of campaigns and training efforts at various levels be achieved
- How can the results of training be monitored and evaluated to show that the objectives have been met? Is there a role for an E&M unit?
- What are the roles and responsibilities you can identify for different groups (users, government, international agencies), and at what level are they carried out (village, district, provincial, national)
- Should standard training packages and materials be developed, or is this something that should be left to individual agencies
- Propose solutions for any problems you identified in the discussion

DISCUSSION GROUP GENERAL GUIDELINES:

Date: Wednesday 23.02.94

Sub.: Framework for VLOM in Cambodia

Guidelines for your discussion:

Based on the presentations of experiences from the field - Monday - and the group discussions - Tuesday -, please decide: whether VLOM is feasible for Cambodia.

If YES:

Based on the attached list of VLOM activities and statements from the discussion groups please discuss and decide whether your group can accept this as a framework for VLOM in Cambodia. If your group is suggesting modification of the framework, please present your proposal at plenary. If you have no comments to the VLOM framework, reporting of the discussion will be done directly in the Workshop report.

Your group should select one person to take minutes of the discussion. These minutes will be used for the reporting back at the plenary session if applicable and also for the final workshop report.

Any presentation at plenary should be kept short.

Reporting for the Workshop Report:

Your group will prepare a report of the discussions, which should include:

- name and organization of all group members
- name of facilitator, and rapporteur
- summary of the discussions including key questions raised
- recommendations brought to the plenary session

This report should be returned to the VLOM project not later than March 2.

DISCUSSION GROUP GUIDELINES

Date: Wednesday 23.02 - Thursday 24/2

Sub.: Strategy for Introduction of VLOM in Cambodia

Guidelines for your discussion:

In your group, make a list of who is present, and choose someone to take notes during the discussion.

TASKS

- Take the Cambodian VLOM Framework (list of 17 activities)
  Groups 1 and 2 concentrate on activities 1 - 7
  Group 3 concentrate on activities 8 - 11, and 14, 15 and 16
  Group 4 concentrate on activities 11 - 17
  Group 5 concentrate on activities 8 - 10 and 12, 13, and 17

  If you have an important contribution to an activity that is not listed under your group, that is not a problem. But the main emphasis should be on your assigned activities.

- Produce a list of specific actions that need to be taken to implement the activity. This will answer the question HOW this activity can be done.

  It is very easy to list actions that you think should be taken by other people. For instance, you can say: "We think that Oxfam should implement a water project in Mondulkiri." This is not what we want. Concentrate on actions that can be taken by members of your group, or by the institution they represent. For instance, you can say: "Members on our group from the Provincial Office of Hydrology in Mondulkiri will write a proposal and submit it to Oxfam in three months time."

  Make sure your actions are specific, and not vague.

- On Thursday morning, prepare a report from your group on big sheets of paper or on overhead sheets. In your report, split the actions in the following way:
  a. Those that are done at Central Government level
  b. Those that are done at Provincial Government level
  c. Those that are done at District Government level
  d. Those that are done by external agencies

  Choose someone to give a report at the plenary session on Thursday.

  Hand in your notes and attendance sheet to Jeffrey or Bent.

DISCUSSION GROUP – PARTICIPANTS – TUESDAY				
Sl. No.	Name	Province	Organisation	Discussion Group Tuesday
4	Sao Kim Lang	Bantey Meanchey	POH/COERR	1
12	Tes Heanh	Battambang	POH	1
13	So Sovath	Battambang	POH/OXFAM	1
19	Bun Sophat	Kampot	FFH	1
20	Chak Chantha	Kandal	CIDSE	1
21	Tou Tai Theng	Kandal	UNICEF	1
23	By Naro	Kg. Chhnang	HEKS	1
45	Som Yen	PNP	GRET	1
64	Ngy Chanphal	PNP	SRD	1
67	Dip Dinner	PNP	SWA	1
78	Ey Pom	Prey Veng	POH/OXFAM	1
80	Meas Chamroeun	Pursat	AFSC	1
87	Met Moeum	Pursat	POH	1
89	Nuon Nall	Siem Reap	POH	1
91	Rey Coloma	Svay Rieng	Oxfam	1
95	Chan Sim	Takeo	InterAid	1
99	Sath Sam El	Takeo	POH	1
11	Chim Lao Srun	Battambang	POH	2
28	Tinn Sok Sara	Kompong Speu	UNICEF	2
35	Sar Mealeak	Kratie	CARE	2
36	Seng Len	Kratie	CARE	2
50	Hussein Amirie	PNP	LWS	2
54	Ung Leang	PNP	MOI	2
55	Chrean Seng Kong	PNP	MOI	2
61	Ly Savuth	PNP	SRD	2
75	Bent Kjellerup	PNP	VLOM Project	2
83	Sam Serey Vathana	Pursat	CARE	2
90	Mao Sambo	Siem Reap	UNICEF	2
92	Mey Chanda Mony	Svay Rieng	POH/oxfam	2
2	Lay Sothy	Bantey Meanchey	POH	3
6	Savuth Chin	Bantey Meanchey	UNDP/OPS/CARERE	3
8	Tout Lom	Bantey Meanchey	UNICEF	3
43	Bernard Gay	PNP	GRET	3
44	Jerome Rihouey	PNP	GRET	3
48	Chea Chhanravuth	PNP	LWS	3
56	Nick Mandeville	PNP	ODA	3
66	Peou Yada	PNP	SRD	3
94	Seng Chan	Takeo	InterAid	3
96	Mean Rykann	Takeo	POH	3

Sl. No.	Name	Province	Organisation	Discussion Group Tuesday
3	Phaoeng Chan Sophal	Bantey Meanchey	POH	4
5	Heng Siv	Bantey Meanchey	POH/OXFAM	4
14	Soth Ratana	Battambang	POH/OXFAM	4
18	Ay Kim Chheng	Battambang	UNICEF	4
25	Bob Thelen	Kg. Chhnang	IRC	4
26	Vijay Gaikwad	Kompong Speu	LWS	4
27	Chhim Mony	Kompong Speu	UNICEF	4
34	Johann Siffointe	Kratie	CARE	4
41	Veng Sakhon	PNP	DAHH	4
65	Ouk Rim	PNP	SRD	4
69	Kol Ratanak	PNP	UNICEF	4
70	Hem Duck	PNP	UNICEF	4
71	Nhea Kim Pon	PNP	UNICEF	4
77	Hem Setha	Prey Veng	HEKS	4
84	Yam Savung	Pursat	Concern	4
93	Frederic Nicoleau	Takeo	AICF	4
15	Cheap Sam An	Battambang	UNDP/OPS/CARERE	5
33	Pong Choun	Kratie	AICF/USA	5
37	Bin Chheng Hong	Kratie	MOH	5
38	Som Thavy	Kratie	UNICEF	5
40	Te Auv Kim	PNP	DAHH	5
46	Alice Levisay	PNP	IRC	5
57	Jeremy Ockelford	PNP	Oxfam	5
68	Khim Chamroeun	PNP	SWA	5
72	Kim Hor	PNP	UNICEF	5
88	Nil Buntha	Pursat	UNDP/OPS/CARERE	5
97	Chau So Phong	Takeo	POH	5
101	Te Thong Sin	Takeo	POH/OXFAM	5
1	Moung Sopha	Bantey Meanchey	CARE	6
9	Suos Sary	Battambang	Partage	6
10	Sun Savath	Battambang	Partage	6
16	Murray Wilson	Battambang	UNDP/OPS/CARERE	6
22	Keo Phoeun	Kg. Chhnang	HEKS	6
24	Cathy O'Brian	Kg. Chhnang	IRC	6
29	Lim Kim Phal	Kompong Thom	MOH	6
31	Plong Puth Kora	Kompong Thom	POH	6
32	Mao Long	Kompong Thom.	UNICEF	6
47	Hen Visal	PNP	LWS	6
58	Krishna K.C.	PNP	Oxfam	6
63	Dock San	PNP	SRD	6
81	Sok Sokhom	Pursat	AFSC	6
82	Lay Hour	Pursat	ARC	6
86	Mey Youk Chheang	Pursat	Concern	6

DISCUSSION GROUP – PARTICIPANTS – WEDNESDAY				
Sl. No.	Name	Province	Organisation	Discussion Group Wednesday
1	Moung Sopha	Bantey Meanchey	CARE	1
3	Phaoeng Chan Sophal	Bantey Meanchey	POH	1
6	Savuth Chin	Bantey Meanchey	UNDP/OPS/CARERE	1
11	Chim Lao Srun	Battambang	POH	1
12	Tes Heanh	Battambang	POH	1
14	Soth Ratana	Battambang	POH/OXFAM	1
22	Keo Phoeun	Kg. Chhnang	HEKS	1
27	Chhim Mony	Kompong Speu	UNICEF	1
33	Pong Choun	Kratie	AICF/USA	1
37	Bin Chheng Hong	Kratie	MOH	1
38	Som Thavy	Kratie	UNICEF	1
50	Hussein Amirie	PNP	LWS	1
61	Ly Savuth	PNP	SRD	1
67	Dip Dinner	PNP	SWA	1
75	Bent Kjellerup	PNP	VLOM Project	1
89	Nuon Nall	Siem Reap	POH	1
95	Chan Sim	Takeo	InterAid	1
2	Lay Sothy	Bantey Meanchey	POH	2
8	Tout Lom	Bantey Meanchey	UNICEF	2
10	Sun Savath	Battambang	Partage	2
13	So Sovath	Battambang	POH/OXFAM	2
19	Bun Sophat	Kampot	FFH	2
24	Cathy O'Brian	Kg. Chhnang	IRC	2
34	Johann Siffointe	Kratie	CARE	2
35	Sar Mealeak	Kratie	CARE	2
47	Hen Visal	PNP	LWS	2
51	Chroeung Kim Srun	PNP	MOH	2
55	Chrean Seng Kong	PNP	MOI	2
63	Dock San	PNP	SRD	2
64	Ngy Chanphal	PNP	SRD	2
78	Ey Porn	Prey Veng	POH/OXFAM	2
96	Mean Rykann	Takeo	POH	2
4	Sao Kim Lang	Bantey Meanchey	POH/COERR	3
15	Cheap Sam An	Battambang	UNDP/OPS/CARERE	3
18	Ay Kim Chheng	Battambang	UNICEF	3
32	Mao Long	Kompong Thom	UNICEF	3
48	Chea Chhanravuth	PNP	LWS	3
54	Ung Leang	PNP	MOI	3
62	Mao Saray	PNP	SRD	3
82	Lay Hour	Pursat	ARC	3
83	Sam Serey Vathana	Pursat	CARE	3
84	Yam Savung	Pursat	Concern	3
87	Met Moeum	Pursat	POH	3
92	Mey Chanda Mony	Svay Rieng	POH/oxfam	3
94	Seng Chan	Takeo	InterAid	3

Sl. No.	Name	Province	Organisation	Discussion Group Wednesday
5	Heng Siv	Bantey Meanchey	POH/OXFAM	4
7	Roath Phirun	Bantey Meanchey	UNDP/OPS/CARERE	4
17	Leo Goulet	Battambang	UNDP/OPS/CARERE	4
23	By Naro	Kg. Chhnang	HEKS	4
29	Lim Kim Phal	Kompong Thom	MOH	4
36	Seng Len	Kratie	CARE	4
40	Te Auv Kim	PNP	DAHH	4
41	Veng Sakhon	PNP	DAHH	4
52	Sor Tiem	PNP	MOH	4
56	Nick Mandeville	PNP	ODA	4
57	Jeremy Ockelford	PNP	Oxfam	4
60	Nuon Pick Nimith	PNP	SRD	4
69	Kol Ratanak	PNP	UNICEF	4
71	Nhea Kim Pon	PNP	UNICEF	4
81	Sok Sokhom	Pursat	AFSC	4
86	Mey Youk Chheang	Pursat	Concern	4
99	Sath Sam El	Takeo	POH	4
9	Suos Sary	Battambang	Partage	5
21	Tou Tai Theng	Kandal	UNICEF	5
25	Bob Thelen	Kg. Chhnang	IRC	5
26	Vijay Gaikwad	Kompong Speu	LWS	5
28	Tinn Sok Sara	Kompong Speu	UNICEF	5
31	Plong Puth Kora	Kompong Thom	POH	5
44	Jerome Rihouey	PNP	GRET	5
45	Som Yen	PNP	GRET	5
68	Khim Chamroeun	PNP	SWA	5
70	Hem Duck	PNP	UNICEF	5
72	Kim Hor	PNP	UNICEF	5
77	Hem Setha	Prey Veng	HEKS	5
80	Meas Chamroeun	Pursat	AFSC	5
85	Nop Mony	Pursat	Concern	5
88	Nil Buntha	Pursat	UNDP/OPS/CARERE	5
90	Mao Sambo	Siem Reap	UNICEF	5
97	Chau So Phong	Takeo	POH	5
101	Te Thong Sin	Takeo	POH/OXFAM	5

WORKSHOP – PARTICIPANTS			
Sl. No.	Name	Province	Organisation
1	Moung Sopha	Bantey Meanchey	CARE
2	Lay Sothy	Bantey Meanchey	POH
3	Phaoeng Chan Sophal	Bantey Meanchey	POH
4	Sao Kim Lang	Bantey Meanchey	POH/COERR
5	Heng Siv	Bantey Meanchey	POH/OXFAM
6	Savuth Chin	Bantey Meanchey	UNDP/OPS/CARERE
7	Roath Phirun	Bantey Meanchey	UNDP/OPS/CARERE
8	Tout Lorn	Bantey Meanchey	UNICEF
9	Suos Sary	Battambang	Partage
10	Sun Savath	Battambang	Partage
11	Chim Lao Srun	Battambang	POH
12	Tes Heanh	Battambang	POH
13	So Sovath	Battambang	POH/OXFAM
14	Soth Ratana	Battambang	POH/OXFAM
15	Cheap Sam An	Battambang	UNDP/OPS/CARERE
16	Murray Wilson	Battambang	UNDP/OPS/CARERE
17	Leo Goulet	Battambang	UNDP/OPS/CARERE
18	Ay Kim Chheng	Battambang	UNICEF
19	Bun Sophat	Kampot	FFH
20	Chak Chantha	Kandal	CIDSE
21	Tou Tai Theng	Kandal	UNICEF
22	Keo Phoeun	Kg. Chhnang	HEKS
23	By Naro	Kg. Chhnang	HEKS
24	Cathy O'Brian	Kg. Chhnang	IRC
25	Bob Thelen	Kg. Chhnang	IRC
26	Vijay Gaikwad	Kompong Speu	LWS
27	Chhim Mony	Kompong Speu	UNICEF
28	Tinn Sok Sara	Kompong Speu	UNICEF
29	Lim Kim Phal	Kompong Thom	MOH
30	Ean Nay	Kompong Thom	MOH
31	Plong Puth Kora	Kompong Thom	POH
32	Mao Long	Kompong Thom	UNICEF
33	Pong Choun	Kratie	AICF/USA
34	Johann Siffointe	Kratie	CARE
35	Sar Mealeak	Kratie	CARE
36	Seng Len	Kratie	CARE
37	Bin Chheng Hong	Kratie	MOH
38	Som Thavy	Kratie	UNICEF
39	Louis O'Brien	PNP	AICF/USA
40	Te Auv Kim	PNP	DAHH
41	Veng Sakhon	PNP	DAHH
42	Lim Kean Hor	PNP	DAHH
43	Bernard Gay	PNP	GRET
44	Jerome Rihouey	PNP	GRET
45	Som Yen	PNP	GRET
46	Alice Levisay	PNP	IRC
47	Hen Visal	PNP	LWS
48	Chea Chhanravuth	PNP	LWS
49	John Damerell	PNP	LWS
50	Hussein Amirie	PNP	LWS
51	Chroeung Kim Srun	PNP	MOH

Sl. No.	Name	Province	Organisation
52	Sor Tiem	PNP	MOH
53	Ly Rotha	PNP	MOI
54	Ung Leang	PNP	MOI
55	Chrean Seng Kong	PNP	MOI
56	Nick Mandeville	PNP	ODA
57	Jeremy Ockelford	PNP	Oxfam
58	Krishna K.C.	PNP	Oxfam
59	Jan-Willem Rosenboom	PNP	Oxfam
60	Nuon Pick Nimith	PNP	SRD
61	Ly Savuth	PNP	SRD
62	Mao Saray	PNP	SRD
63	Dock San	PNP	SRD
64	Ngy Chanphal	PNP	SRD
65	Ouk Rim	PNP	SRD
66	Peou Yada	PNP	SRD
67	Dip Dinner	PNP	SWA
68	Khim Chamroeun	PNP	SWA
69	Kol Ratanak	PNP	UNICEF
70	Hem Duck	PNP	UNICEF
71	Nhea Kim Pon	PNP	UNICEF
72	Kim Hor	PNP	UNICEF
73	Bhai Raja Sakya	PNP	UNICEF
74	Naroat Hoy	PNP	UNICEF
75	Bent Kjellerup	PNP	VLOM Project
76	Simon Batchelor	Prey Veng	COR
77	Hem Setha	Prey Veng	HEKS
78	Ey Pom	Prey Veng	POH/OXFAM
79	Ney Khon	Prey Veng	SRD
80	Meas Chamroeun	Pursat	AFSC
81	Sok Sokhom	Pursat	AFSC
82	Lay Hour	Pursat	ARC
83	Sam Serey Vathana	Pursat	CARE
84	Yam Savung	Pursat	Concern
85	Nop Mony	Pursat	Concern
86	Mey Youk Chheang	Pursat	Concern
87	Met Moeurn	Pursat	POH
88	Nil Buntha	Pursat	UNDP/OPS/CARERE
89	Nuon Nail	Siem Reap	POH
90	Mao Sambo	Siem Reap	UNICEF
91	Rey Coloma	Svay Rieng	Oxfam
92	Mey Chanda Mony	Svay Rieng	POH/oxfam
93	Frederic Nicoleau	Takeo	AICF
94	Seng Chan	Takeo	InterAid
95	Chan Sim	Takeo	InterAid
96	Mean Rykann	Takeo	POH
97	Chau So Phong	Takeo	POH
98	Srey Horn	Takeo	POH
99	Sath Sam El	Takeo	POH
100	Ek Sithon	Takeo	POH
101	Te Thong Sin	Takeo	POH/OXFAM

ABBREVIATION	
AFSC	American Friends Service Committee
AICF	Action Internationale Contre la Faim
AICF/USA	Action Internationale Contre la Faim/USA
ARC	American Refugee Committee
CARE	Co-operative for American Relief Everywhere
CIDSE	Coorperation Internationale pour le Developpement et la Solidarite
CONCERN	Concern
COR	Christian Outreach
DAHH	Department of Agricultral Hydraulic and Hydro - Meteorology
DoH	Department of Hydrology (now named DAHH, see above)
FHI	Food for the Hungry International
GRET	Groupe de Recherche et d'Echange Technologiques
HEKS	Swiss Interchurch Aid
InterAid	InterAid International
IRC	International Rescue Committee
LWS	Lutheran World Service
MOH	Ministry of Health
MOI	Ministry of Industry
ODA	Overseas Development Administration (United Kingdom)
OXFAM	OXFAM UK/I
PARTAGE	Avec les Enfants du Tiers-Monde
POH	Provincial Office of Hydrology
SRD	State Secretariat for Rural Development
SWA	State Secretariat for Women's Affairs
UNDP/OPS/CARERE	United Nations Development Programme/ Office for Project Services/ Cambodian Resettlement and Reintegration Programme
UNICEF	United Nations Children's Fund
VLOM-Project	Village Level Operation and Maintenance Project

STATEMENT OF SUPPORT FOR THE CAMBODIAN FRAMEWORK FOR VILLAGE LEVEL OPERATION AND MAINTENANCE OF HANDPUMPS.

SIGNATURE LIST

NAME	POSITION	ORGANIZATION	SIGNATURE
A.N. Mackenzie	HYDROLOGY PROGRAMME ADVISOR	UK OVERSEAS DEVELOPMENT ADMINISTRATION	A.N. Mackenzie.
MICHAEL ADAM	PROGRAMME MANAGER	UNDP/CAMBODIA	
Johann SIFFOINTE	WATER PROJECTS MANAGER	CARE INTERNATIONAL IN CAMBODIA	
Jean-François VIDAL	Coordinateur Pays Cambodge	AICF	
JOHN FARNOLDEN	PROGRAMME OFFICER	UNHCR	
ALAN HASLETT	COUNTRY DIRECTOR	FOOD FOR THE HUNGRY	R.G. Haslett
JEREMY OCKELFORD	WATER RESOURCES COORDINATOR / DEPUTY COUNTRY REPRESENTATIVE	OXFAM	
Simon BATCHELOR	DIRECTOR	CHRISTIAN OUTREACH	
YAM SAVEUNG	Water project manager	CONCERN PURSAT	
JESILA LEDESMA	PROGRAM MANAGER	INTERAID	
Sam. Serey Vathana	water project - manager	ASSI CARB Pursat	
JEFFREY HIMEL (FOR MATHEW VARGHESE)	FOR COUNTRY REPRESENTATIVE	CIDSE	
LAY - HUOR	RNG. Assistant W/S	A.R.C PURSAT	

STATEMENT OF SUPPORT FOR THE CAMBODIAN FRAMEWORK FOR VILLAGE LEVEL OPERATION AND MAINTENANCE OF HANDPUMPS.

SIGNATURE LIST

NAME	POSITION	ORGANIZATION	SIGNATURE
Mr. Suos Sary	Assist. Proj. Coordinator	Partage	
Mr BY. NARO	HEKS Representative	HEKS	
PHONG CHOON	Administrator	AICF/USA	
MICHAEL A CALABRIA	ACTING DIRECTOR	IRC	
LOUIS P. O'BRIEN	DIRECTOR	AICF/USA	
JOHN DAMERELL	PROGRAM COORDINATOR DEPUTY COUNTRY REPRESENTATIVE	LWS	
LIM KEAN HOR	DIRECTOR	Department of A.H.H.M	
NGY CHANPHAL	DIRECTOR GENERAL COMMUNITY DEVELOPMENT SRD	SRD	

Maintenance Costs for Centralised System

1 mobile maintenance team		US$
Staff costs	@ US$200/month * 12 months	2,400
4WD vehicle		
– running costs	annual maintenance	1,000
– fuel		1,000
– depreciation	US$ 10,000 over 4 years	2,500
Supervision and Office overheads		500
	Annual Total	7,400

Assume 1 team can maintain 2 pumps/working day

5 days/week = 10 pumps/week

Working season (excluding rainy season) + 40 weeks

Therefore i team can maintain 400 pumps/year

Therefore the annual service cost for each pump is

	$7,400/400 =	18.50
Cost of wearing spare parts per pump		2.00
Annual cost of maintenance of standard pump		20.50
Cost of rehabilitation of India Mk II/III (pump rods, riser pipes) averaged over 6 years		18.00
Annual cost of maintenance of India Mk II/III pumps		38.50

National costs

At present there are about 6,000 India Mk II and III pumps in Cambodia

	US$
Therefore the total annual maintenance cost is	
6,000 * $38.50	231,000

One projection for the number of standard pumps to be installed in Cambodia is 20,000

Therefore the total annual maintenance cost is	
20,000 * 20.50	410,000
Total nation cost of centralised maintenance system US$	641,000

NOTE: This is based on a calculation assuming 4WD vehicles. There are cheaper ways by using motorbikes etc., but transport of heavy lifting tools for some pumps is necessary.