

**REVIEW OF "RURAL WATER AND SANITATION
PROJECT"
EVALUATIONS IN LATIN AMERICA**

August 1995

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ABBREVIATIONS AND ACRONYMS

RW&S	Rural Water and Sanitation
PHC	Primary Health Care
KAP	Knowledge, Attitudes and Practices
WCs	Water Committees
CDN\$	Canadian Dollar
SSC	State Sugar Council
CIDA	Canadian International Development Agency
DR	Dominican Republic
ADD	Acute Diarrheal Disease
ARI	Acute Respiratory Infection
ETAPA	Municipal Telephone, Water and Drainage Company
FOMO	National Service for Labor Formation
FY	Fiscal Year
GOH	Government of Honduras
IEOS	Ecuadorian Sanitary Works Institute
INAA	Nicaraguan Institute for Aqueducts and Drainage Systems
INAPA	National Water and Drainage System
RPWAB	Rural Potable Water Administrative Board
LA	Latin America
MOH	Ministry of Health
WHO	World Health Organization
O&M	Operation and Maintenance
NGO	Non-Governmental Organization
PN	Project Number
RTA	Regional Technical Advisor
SANAA	Honduran Water and Drainage Service
ORS	Oral Rehydration Salts
SSA	Environmental Sanitation Sub-Secretariat
TA	Technical Assistance
TL	Team Leader
TOR	Terms of Reference
ORT	Oral Rehydration Therapy
UNEPAR	Guatemalan Rural Water Program Unit
UNICEF	United Nations Children's Education Fund
USAID	United States Agency for International Development
VIP	Improved ventilated pit latrine
WASH	Water and Sanitation for Health Project

EXECUTIVE SUMMARY

This report presents the principal findings and lessons learned based on a systematic documentation of 31 internal and external evaluations of 22 Rural Water and Sanitation projects in eight countries of Latin America and the Caribbean from 1989 to the present. This review was carried out as part of the effort that CARE is making to improve the programming of projects in the water and sanitation sub-sector by means of the documentation, dissemination and incorporation of lessons learned into on-going and new projects.

Fourteen key components were chosen for the review and are discussed in the following pages. Due to a lack of uniformity in the design of the evaluations and in the content of their reports, the reviewer encounter major gaps in the evaluation findings and analyses. The establishment of guidelines and standardization of formats for evaluation data collection and analysis and for dissemination of the relevant information would permit lessons learned to be identified and transferred in order to improve programming of new and on-going water and sanitation projects.

CARE projects, in general, have been successful in reaching needy, minimally literate populations with successful campaigns to increase their awareness of the health dangers associated with consumption of contaminated water and to improve their health and hygiene behaviors in order to improve the quality of life in these communities. The projects have been very effective in reinforcing community organizations and in mobilizing and motivating participant families in terms of the quality of the water and sanitation systems constructed as well as in increasing their knowledge of personal and domestic hygiene.

CARE promotes a strategy of sustainability based on community participation and self management. While development of strong community organization is key for effective and sustainable implementation, even strong communities still need help with technical or organizational problems which are beyond their ability to solve. In this area CARE has been less successful in developing a sustainability strategy which will ensure effective links between the communities and the local and national public institutions to ensure effective follow-up for system operation and maintenance, for monitoring of water quality and for feedback

to promoters, operators and for administration of the systems by the water committees.

Finally, for the majority of projects no baseline data is available. This data would provide projects with a means for making necessary adjustments to the objectives and indicators established in the original project design as the project is implemented. The lack of baseline data also makes it difficult to measure the effectiveness of different interventions. It would also be advisable to establish an accounting system for project costs which would clearly identify expenses and inputs for each component of a project from donor funds, CARE, counterparts and the communities. This information would facilitate determination of the cost-effectiveness of each intervention.

I. INTRODUCTION

This report is a synthesis of the review of 31 evaluations of Rural Water and Sanitation Projects (RW&S) in the Latin America and Caribbean Region, from 1989 to date and covers eight countries and 22 projects. The purpose of this review is to document and disseminate lessons learned from what CARE has done well, what needs improvement and findings related to key aspects (ie., community participation and management, sustainability, relations with counterparts, etc.). The product of this review will include an internal programming document which will help CARE missions to develop relevant strategies and to improve project design in order to achieve greater impact and sustainable benefits.

The experience of CARE and of other organizations in the water and sanitation sector have demonstrated that the benefits of RW&S projects are immediate and easily visible. When access to potable water for drinking and cooking is improved, it increases water availability for washing and personal hygiene, saves time and energy previously required for its transportation (especially for women and children), fosters better hygiene in the home and contributes significantly to better quality of life. It should also be made clear that an isolated RW&S project intervention is probably not sufficient to produce the expected improvements in health and quality of life by itself, but it is undeniably an essential part of any health program.

II. GENERAL PROJECT DATA

A total of 31 evaluations from 22 of CARE's Rural Water and Sanitation Projects in eight countries of Latin America and the Caribbean were reviewed. The distribution of the evaluations per country is as follows: Bolivia (10), Ecuador (6), Guatemala (5), Peru (3), Honduras (3), Nicaragua (2), Dominican Republic (1) and Haiti (1). Table No. 0 presents a summary of the different projects, type and date of evaluation, target population and country. Of the 22 projects, two have been evaluated three separate times, four, two times and the rest have only had one evaluation. There are also three evaluations which include the study of communities from two or more projects not all of which were being implemented at the time of the evaluation. Three of the evaluations were internal, the rest were external or done by a mixed group of internal and external evaluators. These can be classified as follows: formative or process oriented (6), mid-term (8), final (11), post-project (2), and review or technical assistance (4).

The majority, or 14 of the projects were RW&S; four integrated RW&S with Primary Health Care (PHC); two were Rural Water only and one was only Rural Sanitation. Normally RW&S projects include components for construction of water systems, construction of latrines, sanitary/health education and strengthening of community organization. A few projects exist, however, which extend their interventions to include family gardens or protection and improvement of watershed areas.

Due to a lack of information in some evaluations it was not possible to establish a distribution of projects and funding sources. Nevertheless, the majority of funds came from the Agency for International Development of the United States (USAID) and the Canadian International Development Agency (CIDA). Some financial support came from CARE, government counterparts in the different countries and from in-kind donations (labor and local materials, generally) from the participating communities.

1 FINDINGS OF THE EVALUATIONS

The findings included here are the result of the review of 31 evaluations and they summarize the conclusions and recommendations provided by the evaluators in order to focus on the most significant strengths and weaknesses to be taken into account for programming of rural water and sanitation projects. This section discusses 14 key project aspects. Although they cannot be generalized for all projects given that the evaluations had no standard guide or format they present important lessons learned to be considered in relation to Rural Water and Sanitation Projects.

1COMMUNITY PARTICIPATION AND MANAGEMENT

In general all the projects have some form of community participation and community strengthening component. Six of the evaluations (19.4%) do not include any analysis of this component, 21 (67.7%) present a superficial analysis and only four (12.9%) include an in-depth analysis.

Community participation takes place at different levels from the supplying of labor for construction of project infrastructure, to in-kind contributions (local materials, warehouse space, etc.), to operation and management of the systems and as directors of the different community organizations (water committee, health committee, mothers' club, etc.).

One of the most significant lessons learned found in the evaluations is that the water and sanitation projects are very efficient for organizing, motivating and achieving community participation in the building of infrastructure. Nearly 90% of all families participate in this activity. Before the initiation and during the construction of the systems the committees are trained and organized to perform their different jobs in the execution, operation and maintenance of the systems once they have been completed. Water committees are extremely effective with regard to construction and mobilizing resources; their weak point lies in the administration of the system itself. Administration implies the collection of user fees, financial management of the funds collected, inventory control for materials and tools, and purchase of supplies such as chlorine.

In the few evaluations where the degrees of community participation in the different stages of a project were studied

in depth, there is agreement regarding the need for more involvement of the community in all aspects of the process: feasibility analysis; topographical study; definition of the type of system to be built; planning; execution; operation and maintenance of the system; planning, management and use of fees; monitoring and evaluation of activities. This is necessary in order to truly strengthen community organizations by involving them in the decision making process and increasing their sense of ownership of the project.

At the same time, the evaluations which were able to include communities which had had functioning water and sanitation systems for at least two years found that the water committees were still active, collecting user fees and carrying out operations and maintenance tasks such as repairs and/or the inclusion of new users into the system.

1ROLE AND EFFECTIVENESS OF THE COMMUNITY PROMOTORS AND OPERATORS

Twenty four of the 31 evaluations reviewed (77.4%) mention aspects of the health promoters' role and effectiveness. Eight evaluations (25.8%) detail the activities which they carry out, 16 (51.6%) only mention the existence of promoters at the time of the evaluation and seven (22.6%) did not mention anything about them.

During this review it was found that community promoters were generally aware of the fact that they needed to assume responsibility for the educational activities upon finalization of the project. Nevertheless, their permanence as well as a sufficient number of trained promoters needs to be ensured along with an adequate follow-up plan. Many times, in spite of the fact that the project trains more than one promotor per community (generally two), there is only one who is actively working in the communities visited. For this reason it is recommended that more promoters be trained in order to ensure the existence of at least two active promoters per community. The PN-28 evaluation in Guatemala recommended that projects should adapt the number of promoters to the size of the target population considering that a promotor can attend two groups of 15, covering a total of 30 women.

In order to ensure that promoters continue functioning on a long term basis, it is fundamental that they be recognized by and associated with the health services and other NGOs. The Promotor Association in Peru is responsible for training and follow-up of promoters. This has been a positive experience in terms of sustainability and renewal of promoters as well as the interrelationship of communities and the MOH. Unfortunately there is no in depth evaluation of the effectiveness of this new initiative.

In one of the evaluations reviewed, the project used community promoters for the health education component with close follow-up by CARE extensionists. It was noted that in order to guarantee the quality and sustainability of the service, the following aspects are necessary: (1) train and involve promoters in the processing and analysis of monitoring information, and (2) seek incentives to increase their prestige and credibility (PN-45, Guatemala).

In 16 evaluations (51.6%) aspects related to system operators are mentioned and of these, four (12.9%) carefully analyze their effectiveness, 12 (38.7%) only mention their existence or the activism of the operator covering O&M functions at the time of the evaluation. In the remaining 15 (48.4%) evaluations operators are not mentioned.

Men tend to migrate more frequently than women due to economic and labor factors. This provides an opportunity as well as a justification for the training of women as systems operators but in general this activity is delegated to men. A strategy that could be used in order to minimize possible traditional resistance to the participation of women in O&M functions would be to train husband and wife teams to carry out these activities.

Systems operators receive training on O&M of the systems and generally understand and carry out adequate maintenance. Many times where treatment systems exist, especially in the use of slow sand filtration, the operators do not have a clear understanding of their function and the design and construction do not facilitate O&M actions.

1SENSITIVITY TO ETHNIC AND GENDER CONSIDERATIONS

In only two of the evaluations (6.5%) were cultural or ethnic considerations mentioned and neither conducted an in-depth analysis or noted the effect on the project of these factors. In order for the RW&S projects to increase their success, greater knowledge of the culture and traditions of the target population are necessary. The promotion of desirable behavior in terms of personal and domestic hygiene and the adequate use and maintenance of water and sanitation systems requires an incorporation and adaptation of the intervention to the belief system and traditional practices of the population. A lack of knowledge of the target population culture forces the people to adapt to the technology instead of the technology being adapted to their needs and beliefs.

Differences exist among communities due to ethnic-cultural reasons (Eg. Spanish vs. local language; whites vs. mestizos; mountain vs. coastal customs; different world view) and the socio-economic order (levels of market association; land ownership; degree of wage earning of the economically active population; migrations). This results in different degrees of resistance and acceptance of changes in hygiene and health behaviors and various attitudes and socio-organizational responses.

None of the evaluations carried out any in depth analysis in relation to gender. In 24 evaluations (77.4%) aspects of the role or participation of women in community organizations or as health promoters or system operators is mentioned. Some projects stipulated that water committees must include at least one woman among the directors. This rule has not been effective and the hoped for results have not been achieved. The reason for promoting female participation within the community organization is to elevate the woman's position and role within the community thus increasing the effectiveness and continuity of the services provided. For this to happen it is necessary that women in these positions have the capability and the power to carry out this role. If these two conditions do not exist, women's participation becomes very frustrating and causes more harm than good.

Effective integration of women into development projects requires the sharing of roles with men, especially in the community decision making organizations. They should not be relegated to peripheral "women's" organizations. Men also need to participate in activities traditionally assigned to women such as health and family gardens.

1 INSTITUTIONAL STRENGTHENING

All the projects covered by the evaluations have a national counterpart which is normally the Ministry of Health (MOH) or a sub-division of this Ministry. The counterpart is usually construction of rural water and sanitation system (eg. UNEPAR in Guatemala, IEOS in Ecuador and INAA in Nicaragua). In some countries coordination is also maintained with the regional or local governments such as the Provincial Councils in Ecuador and the Development Corporations in Bolivia. Occasionally, CARE coordinates with local NGOs for specific projects or communities in the implementation of certain project components (eg., educational component or construction of latrines).

In general the evaluations are not very clear about the division of responsibilities between CARE and its national or local counterpart, limiting themselves to evaluate the quality and effectiveness of the component with no in-depth study of responsibilities or roles and the strengths and weaknesses encountered. CARE's counterpart generally is responsible for carrying out or approving the technical designs, supervision of the job and in some cases the implementation of the educational component. Once the construction of the system is completed, it is expected that the counterpart will be responsible for follow-up of operations and maintenance of the systems.

Only two of the evaluations reviewed (6.5%) carried out any significant analyses, 14 (45.2%) mentioned some aspects related to technical assistance for national counterparts, especially in areas where the institution has no experience or needs strengthening, i.e., community organization and participation, health and hygiene education and sometimes in engineering aspects.

When project sustainability aspects are dealt with a more detailed discussion of the need for establishing solid connections between the communities and the health services/units (in the case of the health component) and between the communities and the institutions responsible for provision of water and sanitation services (in the case of systems operation and maintenance) will be presented. Institutional development is not included as a project objective.

The institutional limitations of the counterparts will in some way block the short term effectiveness of the project and long term sustainability requires permanent national institutions which are willing to provide continuous support to the activities at the community level after the project intervention has been concluded.

The development of strong community organization is key for effective and sustainable implementation but even the strongest communities may need assistance for technical or organizational problems which are beyond their capabilities.

This highlights the need for a review of present policies and strategies for institutional strengthening, especially with regard to establishing and reinforcing the lines of communication and coordination between the national institutions and the communities in order to establish a solid and lasting relationship. Institutional development is not one of the principal objectives of the projects, however, and thus specific financial resources are inadequate or unavailable to meet this challenge. If this component were to be established within projects, objectives would need to be clearly defined along with specific indicators and financial support would need to be assigned.

1 COUNTERPART RELATIONS

In 26 evaluations (83.9%) counterpart relations are mentioned. Of these, only four (12.9%) make any sort of analysis of the effectiveness of this relationship and 22 (71%) are limited to describing roles and responsibilities or just the level of relationship with the institutions involved. In the remaining five (16.1%) there is no mention of the level or effectiveness of the relationship with the counterpart/s.

Normally the counterpart has resources with technical training and experience in the sanitary engineering aspects of water projects

which enables them to design high quality projects. They do, however, lack experience in utilizing community participation in the construction of water systems and thus these institutions provide little or no support in strengthening community organization or in the health education component. These institutions are also subject to political changes, they experience frequent personnel rotation and suffer from serious financial problems. While these situations explain the weaknesses or limitations of resources at the institutional level they result in problems for ensuring the continuity of the results achieved in inter-institutional relations and hinder their follow-up with O&M for the systems.

Almost none of the evaluations mention the existence of a detailed plan for transferral of skills and responsibilities to the national counterparts. They only mention the need for strengthening institutions for subsequent transferral of responsibilities. It would be advisable to establish a detailed implementation plan from the beginning of the project which would clearly delineate and set up time frames with the responsibilities of each of the institutions involved, and at the same time spell out a training plan for the areas which will be strengthened. The specific dates for transferral of responsibilities should also be determined both during and at the conclusion of the project in order to have a clear understanding of the division of responsibilities upon termination of the project.

With regard to this topic, the PN-20 evaluation in Bolivia mentions the need for initiating a long term planning process with the Health Units that show interest in jointly defining impact and sustainability goals, in identifying the most appropriate role for CARE and other NGOs, agreeing on the most appropriate strategies for achieving these ends and determining the financial and material support needs for this.

1EFFECTIVENESS OF WATER AND SANITATION SYSTEMS

Of the 31 evaluations reviewed, 21 (67.7%) analyze, to some degree, the quantity, quality and accessibility of the water and sanitation systems. Seven (22.6%) conducted in-depth analyses and the other 14 (45.2%) only provided very general, superficial

conclusions such as: "the technical designs are good in general, following engineering norms", "the quality of the water systems constructed is optimal", "it was reasonably good in the construction of water and sanitation systems". The remaining ten evaluations (32.3%) did not include any type of analysis of the effectiveness of the potable water systems given that this component was not included in the evaluation objectives.

In general it could be observed that there were no standard evaluation methodology guidelines for the Sanitary Engineering aspects of the projects and the procedures and methodologies to be used were left to the criteria of the evaluating team. Furthermore, in at least 18 of the evaluations there was no one with technical engineering expertise included in the evaluation team which resulted in the formulation of conjectural or unsubstantiated.

Of the communities included in the evaluations, very few were chlorinating their water in spite of the fact that the operators received training in this area and the need for chlorination had been established. This situation is even more critical in the communities where the water was already found to be contaminated resulting in the obvious negative impact this would have on health. Another practice that was neglected was the cleaning and disinfection of the storage tank which should be done with a chlorine solution every three months.

The principal reasons found for not chlorinating the water were the high cost of chlorine and difficulties in obtaining it. One alternative for facilitating chlorine availability in the communities would be that the national institution responsible for water quality and for O&M control and monitoring for the systems buy chlorine wholesale and set up appropriate distribution points where it could be sold to the communities at cost.

In the communities that were chlorinating their water, dosage problems were observed. Taking this into account and knowing that residual chlorine must be measured and an adequate level obtained at different points in the system, especially in the exit from the houses in order to minimize inadequate internal management, it is recommended that the training of the system operators be reinforced and that they be provided with residual chlorine

measuring devices which would guarantee adequate monitoring and follow up once the system is in place and functioning.

The installation of water meters is probably not justified for the typical home water system where consumption is not excessive and the supply is adequate. Meters are necessary where the water source is limited and a mechanism is needed to force consumers to use only the amount of water allocated for them. The only evaluation which considered the use of meters mentioned that the communities do not effectively control the reading of the water meters and that the figures reported do not represent real consumption levels due to damaged or poorly adjusted meters. The recording of the meter readings was also a weak point for the committees. Furthermore, in some communities consumers restricted their water use excessively for fear of going over their assigned ration; this of course has repercussions in hygiene given that they do not use the latrines or they consume water from alternative sources such as irrigation canals.

An analysis of the sanitation systems component and especially latrines, was included in 20 (64.5%) of the evaluations. Eight of these (25.8%) made a significant analysis of the coverage and quality of latrines and the other 12 (38.7%) only mentioned the quality of the construction of the latrines or the construction strategy used by the project.

Water seal or flush toilets should be located as close as possible to dwellings and even inside if possible. The dry latrine should be located at an appropriate distance from the house in order to ensure its use. If a shower or laundry area exist the water from these should not drain into the latrine tank to avoid rapid filling of the tank and to facilitate better conditions for the breakdown of organic waste.

In some projects the use of the latrine by children was investigated and it was found that in some communities and when the latrine is the dry pit type, mothers will not allow their children to use it for fear that they will fall through the large seat into the pit.

In the evaluation of PN-17 in Bolivia, it was mentioned that the project offered five different types of latrines, each having a

different level of service. The basic latrine was the ventilated dry pit and then there were four varieties of water seal models with several options available such as wash basin and shower. These proved to be very functional and popular except that some of the designs required more than 15 liters of water for flushing. This represents significant water waste especially in communities with limited supplies. Designs for water seal latrines do exist which require only one to five liters to flush. Finally, the evaluators mention that this type of latrine with all the options included (toilet, washbasin and shower) is relatively expensive and leads to unequal distribution of project funds given that the project covers one third of the latrine's cost irregardless of the type of latrine chosen by the individual. When projects offer a choice of latrine type, a figure should be established for the project's contribution to avoid these inequities.

1DESIGN AND CONSTRUCTION NORMS

In almost half of the evaluations, 15 of the 31 reviewed (48.4%), there was no analysis of the quality and norms utilized for the design and construction of the water and sanitation systems. Only five (16.1%) were found to have a well done, technical analysis of the engineering aspects. The remaining 11 evaluations (35.5%) only carried out a very superficial analysis which tended to be a simple observation of the functioning of the system during the site visit.

From the evaluations which did look in more depth at the technical aspects, there are, however, important lessons learned which can be applied to the rest of the projects:

- Provision of large quantities of water results in significantly higher service levels and improves hygiene (personal and domestic), in some cases permitting micro-irrigation for family gardens, but it also raises the cost of the water system significantly.
- The only way to significantly reduce costs is by reducing the level of service i.e., providing public faucets or manual pumps instead of large quantities of water and home connections. Service reduction, however, also reduces the

health benefits of the system given that access to water is much less convenient causing people to use less with the resulting negative effects on hygiene. A reduction in the level of service could mean a reduction in the impact that a new water system provides in relation to community motivation for participating in the construction of latrines and in the project's health component.

- The normal practice in water supply engineering is to use nominal diameters for hydraulic calculations. This practice probably was developed for urban areas where the normal diameters are larger than those used in the rural areas. Where diameters are small, the relation between the real and nominal area is quite large. With diameters smaller than 1.25" the ratio is greater than 1.5 which means that the real flow capacity is 1.5 times greater than if the nominal figures had been used. The use of real diameter in hydraulic calculations results in the use of smaller pipes producing substantial savings in the overall cost of the system.
- Those evaluations that measured water pressure or observed how the system functioned recognized that design problems exist in relation to system efficiency. Low pressure was detected in the high points of the distribution network and/or higher than permissible levels in the low parts of the community. Many times these deficiencies are caused by design problems and others by the elimination of one or more of pressure control mechanisms (eg. pressure relief boxes) from the system when it was constructed. The latter situation normally occurs when the person who constructs the system is not the same technician who made the hydraulic calculations and design, and thus is not aware of the criteria and parameters used.
- Other technical aspects considered in the evaluations which were constructive and which can affect adequate O&M of the systems are: lack of access stairs for inspection of the regulating tanks or storage tanks; also the covers are too heavy for easy movement by adults which limits access for cleaning and verification of chlorine levels; community storage tanks with no exit meter which is advisable for measuring the amount of water supplied and for determining if

water is being used excessively (eg. for watering crops and gardens); boxes or valve chambers without enough space for taking apart the valves and without drains; lack of flush valves in the low points of the systems; distribution tanks without easy access to the top slab; and communities without a set of tools for system maintenance.

- The projects which provide a set of tools to the communities for O&M of the system have found that this practice is useful and appropriate as a means of support.
- When projects are designed, future population size is calculated using a rate that is higher than the national or regional rate. This tends to increase the number of future inhabitants which distorts the determination of necessary elements for the system and its cost.

1EFFECTIVENESS OF THE INFORMATION, EDUCATION AND COMMUNICATION (IEC) METHODOLOGIES

In twenty evaluations (64.5%) the educational component is mentioned and in 15 of these (48.4% of the total) its effectiveness and the methodologies used are analyzed. The five remaining evaluations only mention the training contents.

In general, RW&S projects concentrate their efforts on education in relation to hygiene habits, use and maintenance of the latrine, hand washing, management of diarrhea and the use of oral rehydration treatment (ORT). The integrated RW&S and PHC projects broaden the educational component to include immunizations, growth monitoring, prenatal care, and management of acute respiratory illness (ARI).

Generally the hygiene and sanitation education component in RW&S projects centers its efforts on the communication and promotion of six basic messages: a) water and household food preparation; b) hand washing before eating; c) hand washing after defecating; d) hand washing before cooking; e) use of the latrine; and f) keeping the latrine clean. Some projects also include other health messages in their educational component. These include: a) keeping animals out of the kitchen and house; b) keeping the home

faucet area dry and clean; c) regular bathing; and d) use of ORT and ORS during diarrhea episodes.

The methodology normally used for the communication of these messages to project participants is a combination of lectures and discussions with women composing the primary target group for the transmission of messages as they have been identified by the projects as those who are most involved in water use and food management. Men are also invited to receive the talks and the women try to encourage their husbands to participate. Men are found to have knowledge of the educational messages in the evaluations but they are discussed more broadly and with more authority by the women.

With regard to hand washing with soap, projects that promote the construction of some infrastructure for hand washing have more impact on this behavior. Nevertheless, in spite of the fact that projects are effective in promoting hand washing before preparing food, after using the latrine and the washing of children's hands, it is generally done without soap only using water.

With regard to latrine use it was found that these are normally used by adults and older children but not by young children for fear that they will fall into the pit. The factor which had most impact on latrine use was its location in relation to the house. Another factor to consider is that in rural agricultural communities, the population spends much of their time in their fields or where their livestock is and in these places they do not use latrines. Latrine maintenance was generally found to be adequate. The limiting factor or reason for lack of maintenance was the availability of water. In cases where the water systems quit functioning for long periods, the families quit using the latrine and go back to using the fields instead.

In projects which promote the use of ORT and ORS it was found that mothers usually have assimilated the knowledge but in practice some contradictions can be observed: not washing hands before preparing the ORS or inadequate management of water in the home. Some evaluations also mentioned the impact on the reduction of prevalence of diarrhea but due to the fact that this can vary seasonally and often the evaluations are carried out at times of the year when prevalence is higher or lower than the norm, it is

difficult to attribute this change to the educational component. In order to balance out these possible variations, a periodic monitoring system should be established to detect the effectiveness of protection against diarrhea in the times when prevalence is greatest.

Within the conclusions and recommendations which are most often repeated in the evaluations are those related to knowledge and management of training methodologies by the community promoters and the training of the water committees. The evaluation of PN-28 in Guatemala mentions that the methodology used questions and answers, talks and somewhat extensive demonstrations. It was recommended that health promoters be trained in other educational methodologies (role playing, socio-dramas, problem solving, puppet shows, etc.).

The only evaluation that did a gender analysis of the educational component was that of PN-55 of CARE Nicaragua. It recommended that the project revise its training materials, brochures and flip charts in order to include a gender focus not reinforcing the domestic role of women but rather emphasizing their productive and community roles together with men. Men and women should be represented in their private lives carrying out activities which are not out of context of the sector and local idiosyncrasies. The materials should be elaborated with a great deal of sensitivity so that both men and women see them as natural.

Some projects which expanded their program to include training of school age students have achieved positive results in the behavior and knowledge of these children. These results suggest that health education should be included (with emphasis on hygiene and sanitation) in the local schools. This could be one of the most efficient means of instilling good habits for the adequate use and maintenance of latrines. Furthermore, these school children will serve as agents of change at the household level. For this to be effective it would be important to emphasize the design, construction, use and adequate maintenance of latrines in the schools.

1IMPACT ON MORBIDITY AND MORTALITY

Ten of the 31 evaluations (32.3%) in some way mention impact on morbidity and mortality as a consequence of the RW&S or RW&S/PHC projects. Only one of these (3.2%) carried out measurements which established project achievements with regard to health and commented:

"The global objective of the project for reduction of morbi-mortality from diarrhea by 80%, was not accomplished completely, only achieving 58% y 50%, respectively" (PN-33, Ecuador).

Three of the ten evaluations (9.7% of the total) which mention impact on morbidity and mortality only carried out indirect measurements or made conjectures based on achievements and advances in other project activities.

"The project has had an indirect impact on morbidity and mortality with an 85% coverage of immunizations, breastfeeding, use of ORT and improvement of hygiene practices as well as the provision of latrines and acceptable quality and quantities of potable water" (PN-17, Bolivia).

"This was not measured in the evaluation but it was mentioned that the project reached 71% of its goal for improving the level of health and sanitation in the communities which leads us to assume that there was some impact on morbidity and mortality" (PN-19, Bolivia).

In six evaluations (19.4% of the total) impact could not be measured due to the lack of baseline data, because of the short time of project operation, or because of time limitations for the evaluation itself. In order to be able to adequately measure health impacts in terms of mortality and morbidity, a complete study design would be necessary and tends to be very complex and costly. The CARE Primary Health Care Sector (CARE/PHC), has a policy of indirect impact measurement for mortality and morbidity by means of the measurement of effectiveness in terms of changes in knowledge, practices and coverages. Specific indicators must be determined for a baseline study, for monitoring of interventions and for evaluation of the changes achieved.

1SUSTAINABILITY OF BENEFITS

Twenty five evaluations (80.6%) mention aspects related to intervention sustainability. Thirteen of these (41.9) carried out a significant and integrated analysis of the different components and 12 (38.7%) only carried out isolated or superficial analyses of one or two interventions. It is important to mention that of the six evaluations (19.4%) which did not include or mention sustainability aspects, two (6.5%) could not evaluate this element because some project activities had not been operational for very long.

The post-project evaluation of PN-17 of CARE Bolivia, established the following definition of sustainability:

"It is the capacity for permanency of the benefits achieved by a project after the implementation period is completed. This presupposes the existence of a support system (or a set of strategies and activities) which fosters the continuity of the achievements obtained."

This definition is useful in order to see that in order to achieve sustainability of RW&S projects it is necessary to establish well defined strategies for the interrelation of a series of activities which synergistically foster the continuity of benefits and not to expect that isolated actions will lead to the expected sustainability.

The original focus of this project (PN-17, Bolivia) looked at community participation as a means and not an end. Project priorities included the construction of the water system, child survival interventions and participation as a means for achieving this was incidental. In the third year of the project sustainability was given greater emphasis and a new strategy was implemented for formation of "Authority Councils" which joined promoters and operators with the directors of the water committees and mothers' clubs and other community leaders in support of project activities. This strategy has increased project sustainability.

The final target for the majority of RW&S projects is the improvement of health conditions in the participating communities. To achieve this the mere provision of water and latrines is not sufficient. An understanding of the use and maintenance of these systems is key for the project's success. Only when communities continue appropriate use and maintenance of the water systems will the expected health impact be achieved.

The sustainability or continuation of health services and their benefits for the population will depend in part on demand from the communities themselves and also on maintenance of the promoters via incentives, logistical support systems, supervision and continuing education once the project withdraws. It is also important that the projects develop clear objectives or an integrated strategy with local MOH counterparts which will lead to the transferral of functions and the strengthening of local health systems. Experience has shown that the degree of community motivation decreases substantially once the water system has been completed and maintenance of hygiene and other educational activities becomes very difficult. This means that the success of health activities depends not only on the institutional strengthening of counterparts but also on the project's support and strengthening of the water committees.

As has been mentioned before, institutional development of national or local counterparts has not been one of the principal project objectives in spite of the obvious fact that these institutions are poorly prepared to supply rural water services, much less to maintain or replace systems when these have reached the saturation point. These institutions also have little capacity for providing the follow-up support needed to guarantee long term sustainability of the systems. Thus the RW&S projects have used the strategy of providing support for strengthening of community organizations so that they can assume these responsibilities. They are trained in organization, sanitary and health education, operation and maintenance of the systems, protection of watersheds, etc. However, without adequate financial management of the funds generated from user fees, the water system will not be sustainable in spite of the community's ability to operate and maintain it or its recognition of the importance of doing so.

PN-29 of Honduras received technical assistance to identify means of ensuring adequate financial and managerial administration of the water system for long term sustainability. The following needs were identified: (1) development of an understandable and standardized system for financial management and training methodologies prior to the initiation of the construction of a water system; and (2) provision of training in financial management and technical assistance for follow-up during the post construction phase (for more details see Annex B).

One of the weakness found in the RW&S projects by the evaluators was the quality control of the water and the accomplishment of some O&M activities once the communities no longer receive direct support from the project. This highlights the need for establishing a routine system for monitoring this aspect which should include water quality analysis: water availability, water quality (including residual chlorine), the water committee, the operators, feed, physical conditions of the system and management of the watershed including protection of the water source. The construction and use of latrines should also be monitored. This system should be implemented in conjunction with the counterparts to facilitate subsequent transferral of responsibilities.

The economic context of rural communities in Latin America also has a negative influence on sustainability with no relief in sight. An income generation component could help to counteract the depressed economic conditions and the migration to urban areas. This situation negatively impacts the collection of user fees for the water systems. Communities often do not have sufficient funds for adequate operation of the system especially for the purchase of chlorine or for payment of an operator to carry out O&M activities.

1PROJECT DESIGN

Twenty of the 31 evaluations (64.5%) analyzed the effect of the original project design on the results and effectiveness of the strategies and interventions. Of these, five (16.1%) carried out an in-depth analysis and 15 (48.4%) only mentioned some minor changes which were made during project implementation. The

remaining 11 evaluations (35.5%) did not mention any analysis or consideration of this aspect.

National counterparts often play an important role in training and in carrying out the hygiene education component but they have little or no participation in the determination of objectives, planning and evaluation or contribution to the criteria for site selection. Because of this the participation of the counterpart and the effectiveness of the project often suffer. Project length and planning for this should be determined in collaboration with the donor agency, the agency which will implement the project and counterpart institutions. Any problems in the start up of a project will affect the timeline and this is especially critical for relatively short projects causing them to experience extreme pressure during the implementation phase so that the last stages are rushed and no time is left for adequate follow-up or phase out. Many times the final systems are being rushed to completion in the last months of the project leaving no time for corrective actions or for coordination of the health education activities with the new water and sanitation system.

The criteria used for selecting communities for water and sanitation projects (usually technical feasibility) are not the same as those used by the health services to prioritize the communities which they can reach with their limited resources in order to maintain an acceptable level of mother-child care.

These differences mean that strategies for simultaneously integrating water and sanitation projects with primary health care and mother-child health programs should be evaluated very carefully. When these interventions are carried out at the same time it is difficult for the target population to give time and attention to both. Furthermore, water projects need a solid community organization while mother-child health projects need this strengthening to occur at the health services level. A sequential strategy where the maternal child health projects come after the water project could be more efficient and more sustainable.

Integrated development projects should include clear objectives and strategies for impact as well as for sustainability; they should also provide direct integration strategies between

components in order to achieve the expected results. In this type of project anything less than four years is too short for achieving deep and lasting social change especially in integrated development projects. The implementation of an integrated project is more effective and efficient when the geographical area is consolidated rather than disperse and when all components are not forced on all communities.

1BASELINE STUDIES AND IMPLEMENTATION PLAN

Nine evaluations (29%) mention the existence of a baseline. Of these only five (16.1%) mention that this information was used to record and observe epidemiological effects or changes in knowledge and practices in the communities where the project was implemented. The other four (12.9%) evaluations in which some aspect of the baseline is mentioned it is limited to noting the absence of a baseline and the need for it. What is important to note is that in 22 evaluations (71%) the baseline was not considered or its importance and usefulness were not taken into account. A baseline is, in fact, extremely important for measurement of the effectiveness of interventions and the changes obtained during project implementation.

Some of the evaluations that mention the use and effectiveness of the baseline data collected state that: (1) baseline data exists but a standardized system for its collection and monitoring is lacking especially for recording and tracking the epidemiological effects of the project (PN-33, Ecuador); (2) a KAP survey was carried out before the project was begun and this was used to compare the findings of the evaluation and to measure change. The data and indicators used in the KAP survey were never shared with the extensionists much less used for monitoring the project (PN-28, Guatemala).

Other evaluations mention the need for establishing and carrying out baseline studies in the projects in order to measure the effectiveness of the interventions: (1) unfortunately, due to the scarcity of baseline data related to present hygiene practices, the degree of change cannot be measured (Haiti, PN-21); (2) a needs assessment (KAP) is necessary in order to have clearly defined targets and adequate materials and resources in order to

produce results in the health of the population (Dominican Rep. PN-27).

Only one evaluation (3.2%), that of PN-19 in Bolivia, mentions that the results of the baseline study were used to redesign the project before the implementation phase. During the project design phase, data from secondary sources or generalized information from the zone or region is used. This is often very different from the specific reality of the communities where the project will be carried out. A baseline study provides more realistic and more specific data for these populations. Very significant differences are discovered when compared to the assumptions made during the design stage and adjustment of the objectives is necessary. This adjustment and redesign of the project can be done by means of a Detailed Implementation Plan which should be negotiated and preferably drawn up in collaboration with the donor agency and with counterparts.

Of the remaining 30 evaluations only one (3.2%) mentioned making adjustments to the number of beneficiaries and the number of projects to be carried out due to the reality found during the community census. In the remaining 29 evaluations (93.6%) there was no evidence that the project was redesigned before the project was implemented based on baseline studies.

1COST ANALYSIS

In general, the budgets and investment costs of the RW&S project are composed of contributions from donor agencies or governments, CARE's contribution and that of the national counterpart and the contribution in cash or in-kind of the participating communities.

In the present review there were 17 evaluations (54.8%) which carried out cost analyses of the investment per system or per beneficiary. Of these evaluations only ten (32.3%) quantified the communities' contribution and in 13 (41.9%) the local government or counterpart's contribution is mentioned. In six evaluations (19.4%) only the donor agency's contribution was mentioned. Thus funding amounts were mentioned to some degree in 20 evaluations (64.5%).

None of the evaluations identified the way in which the community's contribution is quantified or monitored. Usually the community contribution is estimated based on the experience of project personnel and fluctuates between 15% and 30% of the total cost of the project. Accounts for the cost of materials and transportation are not kept in a way that facilitates easy identification of the direct costs of each system as well as the costs related to their design, supervision and the costs of the educational component.

The weakness that exists in accounting for the costs of each project forces the evaluator who wants to carry out a cost analysis per project or per beneficiary to use global expense reports or the estimated project budgets thus limiting the degree of accuracy in the determination of project cost-effectiveness. The evaluation of PN-26 for CARE Ecuador states:

"The accounting system is not the most adequate given that it does not provide the cost of each water system based on an accumulation of actual expenditures, rather these costs are estimated at the end of the project."

The cost of a water system constructed by CARE varies from country to country ranging from US\$ 28 to US\$ 112, with an average cost of \$ 85 per individual beneficiary. The exception was in Nicaragua where the average cost reached US\$ 185, due to the high inflation rates during the years in which the project was being carried out and due to the cost of institutional strengthening of the national counterpart (warehouses, vehicles, etc.). Latrine costs also vary ranging from US\$ 16 to US\$ 136, with an average of US\$ 60. This variation is generally due to the type of latrine used and/or the community's contribution. Other factors which affect these variations are: diversity and non-uniformity of components from country to country and within the projects themselves (Eg. sanitation education-primary health care); the technology used (pumps-gravity, sand filters-chlorination, individual home connections-public faucets, etc.); the way in which costs per project are integrated (Eg. expenses carried by CARE-total of expenses including counterpart and community contributions); the size of the community or population served.

A recommendation which was seen in almost all the evaluations which did any cost analysis at all was that it is more effective to work with communities with relatively high populations (more than 400 or 500 people), given that the administrative and supervisory costs of a water and sanitation system are similar for a large or small community and thus the cost per beneficiary is less when the population is larger.

The evaluation of PN-45 of CARE Guatemala, did not carry out any cost analysis but did look at cost recovery and made the following recommendations:

- The majority of the money should be collected before the project is finalized (eg. 40% in advance, 30% during construction and 30% when the construction is completed).
- Communities tend to emphasize collection of funds for cost recovery and neglect the collection of funds for system O&M. These funds should be collected from the time work on the system begins.

1PROJECT MANAGEMENT

In 12 evaluations (38.4%) the effectiveness of project management is dealt with but none make any in-depth analysis of the implications for the project when management is good or when it is ineffective. General comments include phrases such as: "The lack of capable managerial staff and the constant changes in personnel have resulted in inadequate project management and planning" (PN-19, Bolivia). In three evaluations (9.7%) it was mentioned that the project had serious problems at the beginning either due to a lack of management skills or to changes in project management during the first year. During this same period staff turnover was quite high.

Nine of the evaluations (29.0%) referred to problems in project implementation caused by the limited number of staff and by the structure established for compliance with the objectives in a determined time period. Changes and adjustments were necessary in order to improve efficiency. Unfortunately, changes were generally carried out when the project was in advanced stages of

implementation and there was already a large gap between what was planned and what had been accomplished. This necessitated an increase in the pace of the work while risking quality and follow-up for other project components. At the same time it is important to remember that the majority of CARE projects work in coordination with and receive funding from government counterparts who usually work with severe limitations. This relationship tends to cause problems in keeping to project implementation schedules and this reflects back on their management. This situation was clearly exemplified and mentioned in the evaluation of a project in Honduras which reported:

"SANAA budget cuts caused serious repercussions in the project, such as little topographical or engineering assistance which caused serious delays in the project. Water quality control and analysis was not done. Studies and technical designs were not always carried out by the counterpart so that CARE had to do them in order to continue with the project. It is recommended that CARE form its own technical design unit. In general, project management has been strengthened and is good." (PN-29, Honduras).

In the majority of the evaluations where project management is covered the mistakes or difficulties encountered, usually at the beginning of the project, are mentioned and then the evaluators conclude by saying that the management, technical and administrative staff is a professional, experienced, motivated, high quality team in technical and human terms. Paradoxically, the PN-43 evaluation in Ecuador noted that there is no systematic staff training process.

10THER FINDINGS

Some of the projects such as PN-20 in CARE Bolivia included an agricultural component (gardens) as a complementary activity. This component was included in order to achieve a nutritional objective but received minimal attention with little or no participation from the counterpart. Due to the fact that community selection was done based on technical feasibility for the water system, many communities were not appropriate for

agricultural production. The evaluation recommended that a trial be carried out with community gardens which could be used to demonstrate production and preparation of balanced foods for children.

In PN-17 of CARE Bolivia, a family garden, nutrition, and micro-irrigation component was partially designed and partially implemented and then eliminated from the project. The reason for the short life-span of this component was that micro-irrigation was not included in its design and this was critical in order to determine where and what type of plants could be cultivated. Furthermore, the water systems were not designed to provide enough water for irrigation.

In Honduras and Guatemala, projects exist which include a component for management and protection of the watershed area. Essential activities for this component include: obtaining rights to the watershed, protection of the watershed and the water source, community education and minimal reforestation activities.

With regard to management of the micro-watershed, the principal recommendations found for this component were (PN-29, Honduras):

- This should be a separate objective with specific, measurable indicators.
- Environmental protection and improvement should be included in all aspects of the project from construction to health education.
- This activity should be monitored systematically.

When private property, municipal lands or land belonging to other communities exist in the micro-watershed area, the process is more complicated and the following measures should be considered (PN-45, Guatemala): Disqualify communities which are not interested in protecting the micro-watershed; motivate or require that the communities buy the area or key parts of it which need to be protected; promote innovative solutions to this problem like offering wood to the landowner in exchange for allowing the community to own it for reforestation purposes; promote laws which protect areas necessary for supplying water for human consumption; apply pressure at the organizational level for the passing of laws which protect municipal woodlands.

In terms of results of the micro-watershed management and protection component, the evaluators of the project in Honduras concluded that the community education and protection of the watershed had been effective; the population is aware of the importance of the watershed to ensure water quality and quantity.

Another finding from the evaluations was related to the fact that if CARE should consider follow-up of the projects which were carried out in the past this should include protection of water sources, repair of the different elements of the systems, retraining of operators, review of user fees, provision of latrines, connections for houses without service, protection of the hydrological micro-watershed, training and strengthening of the national counterpart who would be in charge of the supervision and follow-up of the O&M and monitoring of water quality in the community systems.

Finally, the evaluation of PN-19 in Bolivia mentions that the combined effects of extreme poverty and high levels of migration (internal and international) put rural communities at high risk of STDs including AIDS. This condition highlights the need for a reproductive health (including family planning) component. None of the 21 projects evaluated has a family planning component or activity in spite of the fact that in many areas high population growth rates have a negative effect on the longevity and capacity of the water supply systems and the ability to protect the watershed.

IV. EVALUATION METHODOLOGIES

A typical profile of the composition of the evaluation could not be established in terms of technical knowledge, country of origin, or gender given that in many of the evaluation documents there was no mention made of the academic level or experience of the team nor their sex. It is necessary, however, that the team be balanced with regard to experience and technical knowledge and knowledge of the local culture. A balance of men and women should also be maintained.

The majority of the evaluations mentioned the following limiting factors for the evaluation process: time constraints, logistical

difficulties, and lack of a baseline document. Since water and sanitation projects are generally based in the rural area, access is difficult and the communities are spread out making the logistics of the evaluation difficult. Many times the teams have to limit themselves to visiting the communities in the morning before mid-day (from 9:30 a.m. to 12:30 p.m) or in the afternoon (from 14:00 to 17:30 hours). Ideally visits should begin early in the morning (7:00 a.m.) when mothers can be found at home.

This is even more difficult when random samples are used given that the representivity of the sample will be affected if the majority of the mothers are not at home. Many times the sample has to be changed or excessive time is taken in searching for mothers to interview. The Post-Project evaluation of PN-17 in Bolivia mentioned "The logistical difficulties (disperse communities, absence of mothers and leaders in the study communities), hindered our ability to have a statistically representative sample so the results reflect tendencies and the conclusions are not statistically valid".

In 27 of the 31 evaluations (87.1%) the counterparts and communities had no participation in the design, execution and analysis of the evaluation results. In the remaining four (12.9%), only the counterpart or the donor agency was involved and this was limited to discussion of the terms of reference and/or final results.

CARE's participation is generally provided in the elaboration of the terms of reference by providing relevant project documentation, accounting and project cost information, logistical support, conducting survey and participating in the discussion and final analysis of the evaluation results. The discussion of conclusions and recommendations is normally carried out with CARE project personnel using a preliminary draft of the conclusions and recommendations prior to presentation of the final report to CARE or the donor agency. This allows CARE a chance to confirm the data that has been collected and to share their point of view with the evaluators regarding the findings. With regard to participation of the community in the evaluation process, they are usually only considered as informants and only one evaluation mentions that the results were shared with the communities.

One aspect that could not be evaluated in the Post-evaluation was the issue of sustainability of latrine use since this evaluation was carried out three years after the project and found that some families had used the latrine during this period but that the latrine needed replacement and because of the type of latrine used technical assistance would be needed.

In the few projects that had more than one evaluation, usually mid-term and final, there was no evidence of the existence of a mechanism for follow-up and verification of whether the recommendations from the evaluations were, in fact, implemented. It is recommended that an action plan and a timeline for implementation be drawn up with involvement of the different project counterparts, communities and donor agencies.

Finally, 14 key project components were selected for this review.

Due to the lack of uniformity in the design of the evaluations and the content of the reports, there are obvious gaps in the findings and analysis. Within the different evaluations analyzed there are some components which appear more frequently and which are analyzed more profoundly than others (See annex A). These included the following in descending order of frequency: 1) cost analysis per project or per beneficiary; 2) effectiveness of the information, education and communication (IEC) methodologies; and 3) sustainability of benefits.

Other components are mentioned in some way in the majority of evaluations but are not analyzed in any depth. The three most representative of this type of component are (in ascending order of frequency): 1) effectiveness of counterpart relations; 2) community management and participation; 3) effectiveness of health promoters.

Finally, it is important to mention the components that appear less frequently in the evaluations or which were analyzed more superficially than others. These are listed in order of least frequency: 1) baseline studies and implementation plans; 2) ethnic and gender considerations; 3) impact on morbidity and mortality; 4) effectiveness of management; 5) institutional strengthening; and 6) norms for design and construction.

The results that have been discussed previously demonstrate the lack of standardized evaluation and reporting guidelines with the criteria for the study and reports being decided upon by the project or the evaluators themselves. If CARE wants to establish a mechanism for identifying and transferring lessons learned from each project in order to improve water and sanitation programming it will be important to establish guidelines and standardized reporting guides for collection, analysis and dissemination of relevant information.

V. CONCLUSIONS AND RECOMMENDATIONS

The strengths which exist in the RW&S systems together with problems and limitations such as:

- the growing deterioration of watersheds and the resulting impact on water supplies;
- deficiencies in the design, operation and maintenance of systems;
- inefficient water use;
- poor acceptance and use of latrines;
- inadequate disposal of liquid and solid wastes; and
- the lack of a methodology for follow-up and evaluation of the systems,

demonstrate that along with the development of new projects there is a parallel need for introduction of methodologies and technologies which allow communities, in conjunction with institutions, to learn how to guarantee long term sustainability.

While recognizing the limitations of time, logistics and participation in the distinct stages of an evaluation, it is important that realistic criteria be established and agreed upon by all the partners in the project, even the communities themselves. These criteria should be used for an internal evaluation before any external evaluators arrive. The external evaluation team should not carry out a large scale evaluation but rather visit a limited number of randomly selected communities (perhaps 5% of the total) in order to verify the veracity of the internal evaluation. The external evaluation should also validate and complement the results of the internal evaluation.

2The lack of standardized guidelines and standardized formats for evaluations makes it impossible to retrieve experiences which might be of special interest to CARE, for example, the role and effectiveness of promoters and operators, sustainability of benefits, etc. given that the procedures to be used, the definition of key questions and the methodology to be used are left to the evaluators to decide. (See Annex A: ELEMENTS CONSIDERED IN THE EVALUATIONS)

3Within the evaluation team it is important that there be a balance between experience and technical knowledge and knowledge of the local culture. A gender balance should also be considered.

4Each rural community has its own personality due to ethno-cultural and socio-economical factors. This means then, that there will be differing degrees of resistance or acceptance of change in hygiene and health habits and diverse attitudes and socio-organizational responses. In order for RW&S project to increase their rate of success it is important that they become much more aware of the culture and of the traditions of the target culture.

5Effective integration of women into projects requires the sharing of roles with men particularly in community decision making organizations. They should not just be relegated to peripheral "women's" organizations. Men also need to participate in activities which are traditionally assigned to women such as hygiene education and use of ORT.

6O&M tasks for the systems have traditionally been delegated to men, but due to economic and labor factors they tend to migrate more frequently than women. In order to ensure the existence of individuals who are trained to carry out O&M activities it is recommended that women also be trained as systems operators. An activity which could serve to break down possible traditional resistance to the participation of women in O&M activities would be the training of husband and wife teams.

7Institutional development of national counterparts, especially and the establishment of support systems between

the community and these institutions is not included as a goal in the projects. Furthermore, given that existing institutional limitations hinder the short term effectiveness of the project, it is to be expected that in order for long term sustainability to be achieved the permanent national institutions will need to provide continuing support for the activities at the community level after the external intervention phase of the project ends. It is important that the present strategies be discussed with national counterparts.

SRW&S projects hope to improve accessibility, quantity and quality of water for human consumption with special emphasis being placed on water quality in order to reduce the incidence of many waterborne diseases. It was found, however, that in many communities the water sources are contaminated or are at risk of contamination for lack of protection. Disinfection of that water with chlorine is then obligatory. In this review it was found that the communities had been trained in this regard and recognized the need for disinfection but for economic reasons or because chlorine was not available locally, they are not complying with this requirement either by omission or by incorrect dosages. If immediate measures are not taken to correct this, there will be a significant negative impact on health.

Given the above and knowing that adequate residual chlorine levels must be obtained at different points in the systems, especially at the exit from houses in order to minimize the risks of inadequate internal management, it is recommended that the operators' training be reinforced and that they be given residual chlorine measuring devices. In addition to this, adequate monitoring and follow-up should be guaranteed once the system is functioning. This should be complemented with improved access as well as economic means for acquiring the chlorine.

As was mentioned previously, one of the weaknesses found in the RW&S projects by the evaluators was the water quality control and the completion of some O&M activities once the communities no longer receive direct support from the project. This highlights the need for establishing a routine

monitoring system which should include water quality analysis: water availability, water quality, the water committee, the operators, fees, physical condition of the system and management of the micro-watershed, including protection of the water source. The construction and use of latrines should also be monitored. This system should be implemented in conjunction with the communities and the counterpart in order to subsequently transfer responsibility to them.

2Many times national counterparts play an important part in training and execution of the health component but have little or no participation in definition of objectives, planning and evaluation or definition of criteria for site selection. This can lead to a situation where the participation of the counterpart and the effectiveness of the project suffer. The length of the project and planning should be determined in collaboration with the donor agency, the executing organization and counterpart institutions.

3Provision of large quantities of water results in high service levels and improves hygiene (personal and domestic), sometimes even allowing for micro-irrigation of family gardens. This also significantly raises the cost of the water system. If the service level is reduced, the health benefits of the system would also be reduced given that when access to water is less convenient, people tend to use less and improvements in hygiene could be minimized. A reduction in the level of service could also reduce the impact that a new system would have for the motivation of communities to participate in the construction of latrines and in the health component.

4The methodology used for education is generally based on questions and answers, talks and somewhat extensive demonstrations. It is recommended that health promoters be trained in other education methodologies (role playing, socio-dramas, problem solving and puppet shows).

5For those projects which have not considered gender issues in the preparation of their educational material it is recommended that they review their materials including

strategies, brochures and flip charts in order to include a gender focus which does not reinforce the domestic role of women but rather emphasizes their productive and community roles together with men.

6Projects which have extended their educational component to school age children have achieved positive results in the behavior and knowledge of these children by including health education (with emphasis on hygiene and sanitation) in the local schools. This could be one of the most efficient means of instilling good habits for the adequate use and maintenance of latrines. Furthermore, these school children will serve as agents of change at the household level.

7The majority of evaluations which tried to measure the health impact of RW&S project interventions concluded that this was impossible to establish due to a lack of specific indicators, lack of baseline data, the short implementation time of the project or limited time for the evaluation. In order to measure health impact in terms of mortality and morbidity a complete study design would be needed and is very complex and costly. CARE's primary health sector (CARE/PHC) has established the policy of indirect measurement of the impact on mortality and morbidity by means of the measurement of effectiveness in terms of changes in knowledge, practices and coverages. Specific indicators should be defined for the baseline survey and subsequent monitoring of the interventions and evaluation of the changes which occur.

8The sustainability or continuation of health services and their benefit to the population will depend in part on the demand for them from the communities themselves and on the ability to maintain the promoters' work with incentives and logistical support, supervision and continuing education once the project ends. The projects have not, however, developed clear objectives or an integrated strategy for this with the local MOH counterparts who will direct the transfer of functions and the strengthening of the local health systems. It has also been shown that the level of community motivation decreases substantially once the water system has been completed. Maintenance of hygiene and other educational activities becomes extremely difficult which means that along

with institutional strengthening of counterparts it is important that the project committees receive support and reinforcement in order to ensure the success of health activities.

9As has been mentioned before the institutional development of the national or local counterpart has been one of the principal targets of the project in spite of the fact that these institutions have little capacity for providing rural water services and much less for maintaining or replacing the systems when they are no longer functional. These institutions also have little capacity for providing follow-up support to guarantee the long term sustainability of the systems. For this reason the RW&S projects have tried the strategy of providing support to strengthen the community organization structure so that they can take on this responsibility. They are trained in organization, sanitary and health education, system operation and maintenance, protection of watersheds, etc. Without adequate financial management of the funds generated by user fees, however, the water systems will not be sustainable in spite of the communities' abilities to operate and maintain them and their recognition of the need to do so.

10The strategy for simultaneous integration of water and sanitation projects with primary health care or mother child health projects should be evaluated very carefully. It is difficult to get the population's attention and use of their time when the two interventions are happening at the same time. Furthermore, while the water projects require solid strengthening of the community organization, the maternal child health projects need this strengthening to happen at the health services level. A sequential strategy in which the maternal child health project is carried out after the water project could be more efficient and sustainable.

11Integrated development projects should include clear goals and strategies both in terms of impact as well as sustainability. Direct mechanisms for integration of the different components is also needed to achieve the expected results. In this type of project a period of less than four years is very short in order to achieve profound and lasting

social change, especially in integrated development projects.

The implementation of an integrated development project is more effective and efficient when the geographic area is consolidated rather than disperse and not all components are required in each community.

12None of the evaluations identified the way in which the community's contribution is quantified or monitored given that community contributions are usually estimated based on the experience of project personnel and range from 15% to 30% of the total cost of the project. Furthermore, the costs of materials and transportation are not recorded in a way that will facilitate identification of the direct costs of each water system built. The same is true for costs related to project design, supervision and the education component.

13An accounting system should be established for each project in order to identify and monitor the costs of construction materials, transportation, training, operational and administrative costs as well as the cash and in-kind contributions from counterparts and the community.

14When project management is dealt with in the evaluations the evaluators tend to refer to the difficulties or problems encountered especially at the beginning of the project, and then conclude that the management, technical and administrative staff as a human resource is: professional, experienced, motivated, technically qualified and personable.

Paradoxically one evaluation noted that the project had no systematic training process for its personnel.

15The criteria used to select communities for implementation of water and sanitation projects (generally technical feasibility), are not the same as those used for prioritization of communities for health interventions where limited resources will allow them to reach and maintain acceptable coverages of maternal child care. Projects which have family garden components where the communities were chosen based on water system technical criteria often do not have the conditions necessary for agricultural production.

16 Usually both internal and external evaluations are organized and coordinated by CARE with very little participation from national counterparts and communities. The latter is normally only tapped as a source of information and rarely receives any form of feedback. At the same time no evidence was found for the existence of a mechanism for follow-up and verification of whether or not the recommendations from the evaluations were implemented. It is recommended that within a specified time subsequent to an evaluation, an action plan and timeline for implementation be drawn up in conjunction with project counterparts, communities and donor organizations.

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VII. ANNEXES

Annex A: Elements Included in the Evaluations

Annex B: Technical Assistance to PN-29, Honduras

Table No. 0 : Summary of Projects under Review

Table No. 1 : Bolivia (PN-17, 17 and 19)

Table No. 2 : Bolivia (PN-20, 17 and 09)

Table No. 3 : Bolivia (PN-20, 19 and 09)

Table No. 4 : Guatemala (PN-28, 28 and 45)

Table No. 5 : Guatemala (PN-41, 28/41), Dominican Rep. (PN-27)

Table No. 6 : Ecuador (PN-26, 09/26 and 43)

Table No. 7 : Ecuador (PN-33, 33 and 09/26/33/43)

Table No. 8 : Peru (PN-03, 30 and 23)

Table No. 9 : Nicaragua (PN-43, 55), Haiti (PN-21)

Table No. 10: Honduras (PN-29, 29 and 29)

Table No. 11: Bolivia (PN-18)

ELEMENTS INCLUDED IN THE EVALUATIONS

ANNEX A	SUBSTANTIAL		SUPERFICIAL		NONE		TOTAL	
	No.	%	No.	%	No.	%	No.	%
COMMUNITY MANAGEMENT AND PARTICIPATION	4	12.9	21	67.7	6	19.4	31	100
EFFECTIVENESS OF: PROMOTORS	8	25.8	16	51.6	7	22.6	31	100
OPERATORS	4	12.9	12	38.7	15	48.4	31	100
ETHNIC CONSIDERATIONS	2	6.5	0	0.0	29	93.6	31	100
GENDER CONSIDERATIONS	1	3.2	22	71.0	8	25.8	31	100
INSTITUTIONAL STRENGTHENING	2	6.5	14	45.2	15	48.4	31	100
COUNTERPART RELATIONS	4	12.9	22	71.0	5	16.1	31	100
EFFECTIVENESS OF: WATER SYSTEMS	7	22.6	14	45.2	10	32.3	31	100
SANITATION	8	25.8	12	38.7	11	35.5	31	100
DESIGN AND CONSTRUCTION NORMS	5	16.1	11	35.5	15	48.4	31	100
EDUCATIONAL EFFECTIVENESS (IEC)	15	48.4	5	16.1	11	35.5	31	100
IMPACT ON MORBIDITY AND MORTALITY	1	3.2	9	29.0	21	67.7	31	100
SUSTAINABILITY OF BENEFITS	13	41.9	12	38.7	6	19.4	31	100
APPROPRIATE PROJECT DESIGN	5	16.1	15	48.4	11	35.5	31	100
BASELINE STUDY	5	16.1	4	12.9	22	71.0	31	100
IMPLEMENTATION PLAN	1	3.2	1	3.2	29	93.6	31	100
COST ANALYSIS	17	54.8	2	6.5	12	38.7	31	100
PROJECT MANAGEMENT	3	9.7	9	29.0	19	61.3	31	100

TECHNICAL ASSISTANCE TO PN-29, HONDURAS

The technical assistance received by PN-29 of Honduras, which consisted of identifying how to ensure the adequate administration (administrative and financial management) necessary for long term sustainability of a water system, determined that:

"In any RW&S project anywhere, significant human as well as financial resources are necessary for:

- 1) *development of a standardized, comprehensive system of financial management and of training methodologies prior to the initiation of water system construction;*
- 2) *the provision of up-dated training in financial management and technical assistance for follow-up during the post-construction phase of the project. Effective administrative and financial management of a water system should include systematization of:*
 - *Estimation, generation and accounting of the capital and in-kind contributions for the construction of the system;*
 - *Estimates of recurring costs for system operation and maintenance;*
 - *Establishment of an adequate program (chronogram) for user fees based on an estimate of the initial investment and of recurring costs;*
 - *Collection of and accounting for all the user fees collected for the operation and management of the system;*
 - *Receipt and accounting for all income, in cash and in-kind, related to the system;*
 - *Payments and accounting for all the expenses, in cash and in-kind, related to the system;*
 - *Recording of all repairs, amplifications and additional investments made to the system;*

- *Solid management and accounting of the capital generated in excess of what is required for daily operation and maintenance of the system."*

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1992

LESSONS LEARNED in the COMMUNITY PARTICIPATION PROGRAMME of the CIREBON URBAN DEVELOPMENT PROJECT

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THE CIREBON URBAN DEVELOPMENT PROJECT (CUDP)

Beginning in 1974, the Governments of Indonesia and Switzerland have jointly undertaken infrastructure development projects (CUDP I, II, Bridging Phase and CUDP III) in Cirebon. New infrastructure and rehabilitation of existing facilities in the four infrastructure sectors of water supply, drainage, solid waste and sewerage has been implemented :

- improved water supply has been provided to all 22 Kelurahan of the City of Cirebon covering 85 % of households
- a new solid waste disposal system covers 90 % of the total area of the City, only the outlying rural areas of 3 Kelurahan are not served by the collection system.
- new primary drains serve the secondary and tertiary drainage systems in 8 Kelurahan
- rehabilitation of old Dutch sewers in 4 Kelurahan of the City Centre, cleaning of the sewers in the 2 Housing Estates, and construction of new sewer lines and treatment facilities in 3 Kelurahan has improved and expanded sewerage to the City of Cirebon.

The third phase of CUDP - CUDP III - has been primarily focussed on Institutional Strengthening, Sectoral Planning and the Community Participation Programme as well as the completion of infrastructure activity.

Introduction

In the final 6 months of CUDP II (1990-91) a Demonstration Community Development and Community Education in Environmental Sanitation Programme was introduced.

While the initial request made in 1989 was for a "Public Campaign" to ensure the proper use and maintenance of the new and rehabilitated infrastructure, especially the solid waste management system, there was a ready acceptance by the City of Cirebon authorities that a more comprehensive approach was required to ensure the active participation of the community.

When the results of the Community Participation process were demonstrated the Community Participation Programme was continued in the Bridging Phase (1991-1992) and for the 4.5 years of CUDP III (1992-1998).

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Factors which influenced acceptance of the Community Participation process.

The city of Cirebon authorities were wanting to introduce changes to the way householders managed their solid waste for collection, cartage to containers and continuing access for scavengers. It was acknowledged by some agencies such as Bappeda, Bangdes and the City Health Department that this was a complex matter involving behaviour change. Moreover the goal of cleaning up the city involved other issues such as drainage and sanitation as well as solid waste management.

The need for a problem solving approach where community groups would plan and carry out their own environmental health activity in their neighbourhoods was accepted and endorsed by the agencies mentioned above.

The main objectives of the Community Participation Programme in CUDP:

The overall objectives from the commencement were stated as :

- "The voluntary participation of the people of Cirebon in maintaining an environment that is clean, well ordered, healthy and secure in response to the Municipality's investment." Specific objectives relating to the four sectors of water supply, drainage, solid waste management and sewerage were elaborated.
- "The Community Programme shall progressively expand to cover all 22 Kelurahan of the City of Cirebon and ~~shall develop the capacity of the community to work together to plan, set priorities and solve problems in order to deal with development, maintenance, management and sustainability of the micro infrastructures connecting to the macro systems provide under CUDP to the extent that can be reasonably expected of the members living in those communities.~~" Specific objectives were included ~~to improve and develop the liaison and communication between the community and the Government and Municipal authorities through the Unit Persiapan~~ (Transitional Unit for Urban Infrastructure Programme - UP3KT). This was to ensure problems are solved, common goals are achieved and the needs of the community are known and understood by authorities. In addition to set up liaison bodies and mechanisms to assist local authorities through the Unit Persiapan, in formulating plans for the community infrastructure development.

The experience of the first 18 months of the Community Programme raised four important issues which were not regarded as being directly relevant to the four infrastructure sectors:

- the need for economic improvement activities for vulnerable groups
- the need to improve environmental sanitation conditions not included in the four sectors
- the need to be able to respond promptly to community based initiatives requiring funding assistance
- the need to build the long term capacity for community development in Cirebon.

Per. de. Cudp

At the commencement of CUDP III the CUDP Community Participation Programme worked within the objectives relating to the four infrastructure sectors with an additional Complementary Programme funded directly by Swiss Development Cooperation established to meet the four issues identified above.

With the integration of these two Community Participation Programmes in the final 2 years of CUDP III the following objectives were added to the CUDP Community Participation Programme.

- to provide opportunities and benefits for some vulnerable groups in the community of Cirebon including economic improvement through small business and income generating activities
- to improve the environmental sanitation conditions which relate to the infrastructure of the living environment usually referred to as Kampung Improvement (KIP)
- to respond promptly to community based initiatives requiring funding assistance through the development of the Credit Programme and the use of revolving funds.

The approach introduced by the Community Participation Programme

The Community Participation Programme has introduced two major approaches in CUDP III with

- activities to develop the capacity of the community to take initiatives which will ensure a healthy living environment and
- guidance and support in developing the liaison and communication between the community, government agencies and local government.

The basis of this approach is a model of partnership between the community and the agencies of government and local government which asserts that

- the community can take a major role in building and maintaining a healthy environment in its own immediate neighbourhood when it has the resources of information, technical assistance and funding as well as the capacity to organise itself in active community groups.
- the role of the community is strengthened with effective communication and coordination with local government
- the agencies of government can support this community role through the provision of accurate information, technical assistance and funding.

The major features of the Community Participation approach

The key feature of the Community Participation approach in CUDP is the engagement of a Community Development Organisation (Lembaga Pengembangan Swadaya Masyarakat) as the facilitator of the community participation process. The criteria for the selection of the Community Development Organisation included :

- the stated philosophy concerning community participation in Indonesia
- the approach to community participation demonstrated in previous projects
- the demonstrated capacity to work in partnership with government
- the skills in developing community participation and establishing and strengthening community institutions for sustainability
- the skills in training and strengthening a team of community workers
- the capacity to support and supervise a community participation programme.

This engagement of a Community Development Organisation is preferred to the employment of individual community consultants who have knowledge and skills in community development but do not have the same opportunity for linking into the environment of community development organisations in Indonesia.

The Community Development Organisation selected was LP3ES (Lembaga Penelitian, Pendidikan dan Penerangan Ekonomi dan Sosial) based in Jakarta.

The specific features of the community participation programme include :

- **Community Organisers** trained and employed by the Community Development Organisation. The first four Community Organisers employed for the first two years were already trained and experienced having worked on other PL3ES projects. In the final four years 10 Cirebon people were selected and trained as the Community Organisers for all aspects of the community participation programme. The tasks of the Community Organisers are to make the initial introductions of the community participation programme and its approach in the Kelurahan, to select suitable people to be trained as Motivators, to participate in their training and provide ongoing guidance to the Motivators in both environmental health and small business activities and in the strengthening of community institutions.
- All 22 Kelurahan of the City of Cirebon were covered by a planned and systematic entry into four or five Kelurahan in each of five years during the Bridging Phase and CUDP III. The criteria for selection of the Kelurahan included the plan of technical activity in the four sectors of CUDP, the geographic and socio-economic situation of the Kelurahan and the Kecamatan to which they belonged. In the City of Cirebon there were four types of Kelurahan - coastal, commercial, residential and rural - in 5 Kecamatan.
- **Motivators** were selected in each Kelurahan to be trained and to work in each of the 5 or 6 Rukun Warga (RW) selected as the focus of the community participation programme. The selection of Motivators was made by Community Organisers in consultation with Kelurahan leaders and community members over a two month period. This was to provide opportunity for first hand knowledge and observation of the candidates to ensure a strong commitment to the lower socio-economic groups, and to ensure that the candidates live in the area and have an existing source of income. 128 people have been trained as Motivators. Motivators were supported with small monthly travel allowances for 2 years and were then encouraged to maintain their community activity with guidance from the Community Participation Programme and the opportunity for income generating activity through the Cooperative which was established in January 1996.

- **Community groups or committees** are the basis for developing community participation, for strengthening community capacity to plan improvement in the community and take necessary action. The first type of community group is a development committee which plans, implements and manages environmental improvements in the local community. These committees are informal and do not necessarily continue after the activity is completed. The second type of group is formed to carry out an environmental health project such as household toilets or set up a small business which requires loans provided from the Community Development Fund. This has now developed into the Cooperative which provides loans to groups and individuals for environmental health facilities and small business. The groups are established and members work together to demonstrate their capacity to manage and build group funds prior to receiving a loan.
- **The Community Development Fund** which was managed through the Community Participation Programme and able to respond quickly to community group proposals for loans based on established criteria. This credit programme was the basis of the Cooperative now established as an ongoing community institution.
- **The use of media** as a tool of community development has been a creative initiative of the Community Participation Programme. The basic concept has been that media is produced by a process within the community and not as a tool developed externally and used for education in the community. The development of Panels of Photos in each Kelurahan is a dramatic example of the power of media when used by the community. Motivators worked with community groups to describe their environmental health situation in photos with plans for improvement. These Panels of Photos were presented to Planning Workshops attended by many agencies of government and local government gaining moral and financial support for their community projects.

The School Children's Programme was carried out in four primary schools with teachers trained as facilitators of the children's ideas and media production. Following visits to key places of the sewerage, solid waste disposal and sanitation facilities and interviews with technical personnel of the project the primary school children wrote stories, songs, poems and comic books, managed a seminar and produced a socio-drama which demonstrated the capacity of primary school children to understand the concepts of environmental health in their community.

The media produced by the School Children's Programme and the Panels of Photos became a major exhibit at the annual Exhibition in the City attracting the attention of many people including the Mayor and other City leaders.

- Enhancing the role of women in the Community Participation Programme was emphasised with the selection of women as Community Organisers and Motivators. The Community Self Survey and Monitoring process called "Mawas Diri" has enabled many women to participate because it is based in the neighbourhood (RW). More than 50 % of those participating in the small business groups and trained as group organisers and now members of the Cooperative are women because of their involvement in small business activity.

- Communication and coordination with government agencies and local government has been given constant attention as the strengthening of a partnership between the community and government agencies and local government is a key to the sustainability of community participation. The concept of partnership requires that support and respect be shown to the efforts of the community to participate actively in development. This support is provided through accurate information, technical assistance and funding assistance. Efforts to build this partnership have been effective in a number of agencies and especially in local government.

* **The role of the community**

Two types of projects have affected the role of the community :

- community projects
- government projects

Within the CUDP Community Participation Programme community projects have predominated.

With the development of infrastructure in the solid waste disposal and drainage sectors CUDP has introduced the macro infrastructure with the construction of the land fill site and solid waste collection and disposal system with containers placed at central locations in each Kelurahan, and in drainage the construction of primary and secondary drains. The role of the community has been to develop the micro infrastructure to link with the macro by introducing garbage bins, handcarts, improved roads and cleaning, repairing and constructing tertiary (micro) drains, and constructing household toilets. When necessary the community seeks technical assistance from the technical consultants and CUDP. It should be noted that some community projects, such as pathway improvement and household toilets, are defined as Kampung Improvement but are essentially linked to the two sectors of solid waste disposal and drainage at the residential level.

There are three groups in the coastal area of Panjunan formed to build household toilets :

- "Fishers Group" with 25 households
- "Harapan Keluarga" with 24 households
- "Forum of Cirebon Motivators" with 60 households

These household toilets include a squat plate with septic tank and soak pit and are funded through loans to the householders. For these 109 household toilets Rp.19.025.00.- has been provided in loans from the Cooperative of the Community Participation Programme Rp.9.025.000.- and a loan from the PDAM Cooperative - Rp.10.000.000.- These loans of approximately Rp.175.000.- each are repaid through the group over 12 - 18 months.

All this development has been in the form of community projects where the focus is on the community as the subject who will plan and take the action which they identify to improve environmental sanitation and to make use of the infrastructure provided. It is important to

note that the community are the initiators of their own activity and are not merely doing what agencies are requiring of them. The development committee, usually in a Rukun Warga, identifies the key issues and sets priorities, prepares specific plans for their solution, seeks the necessary resources of technical expertise or funding from within the community or, if necessary from outside, and carries out the project and plans for ongoing use, maintenance and management.

Asphalting of a neighbourhood road in Kelurahan Kecapi

While most of Kelurahan Kecapi is a Housing Estate there is a neighbourhood of 200 households who have lived there for many years in a traditional village style. This area (RW 02) has not benefitted from the environmental sanitation infrastructure constructed by the developer of the Housing Estate.

The community of RW 02, with its Motivator of the Community Participation Programme, held a community meeting in November 1994 and decided to asphalt the 200 metres of the internal neighbourhood roads with a width of 2.5 metres. The estimated cost of Rp.6.000.000.- was to be met by the community itself.

With Rp.3.400.000.- gathered the community requested and received a loan of Rp.2.400.000.- from the Community Development Fund to be repaid over a year.

The asphalting of the road has been completed, Rp.1.604.500.- has been repaid and Rp.797.500.- is outstanding.

The identification of problems and priorities has been very specific with the introduction of the Community Self Survey and Monitoring methodology known as Mawas Diri. This methodology is carried out at the neighbourhood level providing excellent opportunities for the active participation of women.

The facilities which were implemented as community projects in the 6 years of the Community Participation Programme are shown with the total cost and sources of payment shown as self reliance, loan and grant. These facilities included microdrains, roads and paths, bridge and culvert repair, household garbage cans, neighbourhood handcarts, household toilets and the rehabilitation of slum houses.

Type of Facility	Quantity	Cost Rp.000	Source of Payment		
			Self Reliance	Loa n	Gr a n t
Microdrain - Repair + New	14,041 meters	100.248.5	73.104.5	4.800.0	23.343.5
Repair Road/Path	28,830 meters	128.270.8	85.793.8	5.403.0	37.077.0
Bridge Repair	138 meters	21.002.2	13.802.2		7.200.0
Culvert Repair	26 meters	850.0	850.0		
Garbage Cans	1,156	4.397.0	4.097.0		300.0
Handcarts	14	6.817.0	4.917.0	1.650.0	250.0
Household Toilet	328	75.868.0	37.461.3	35.662.0	2.744.7
Rehabilitate Slum Houses	31	16.845.0	14.265.0		2.580.0

Some of the grants were provided to the community projects by government agencies and local government indicating the extent of their support.

- Bangdes Rp.22.600.000.-
- Lurah/Camat Rp.15.000.000.-
- Public Works Rp.11.000.000.-
- UP3KT (Unit Persiapan) Rp. 6.395.000.-

The Mawas Diri process of community planning has been accepted in the Kelurahan by the Lurah and LKMD as part of Kelurahan planning. This has led to the establishing of the Forum Mawas Diri in several Kelurahan in which community plans at RT/RW level are coordinate into the Kelurahan planning processes through the Kelurahan Coordination Meeting. In some cases the Forum Mawas Diri has become an official entity through a Surat Keputusan thus strengthening community institutions in the Kelurahan.

One function of the Forum Mawas Diri is to solve the problems of accessing funding for community projects which cannot be met by self reliance.

In the Kelurahan Sukapura

- A microdrain was constructed by the community with materials bought with a grant of Rp.3.000.000.- from Bangdes and a loan of Rp.3.000.000.- from the Cooperative of the Community Participation Programme
- Household connections to the water supply network were made to seven houses with credit of Rp.2.625.000.- provided by PDAM
- Construction of household toilets and purchase of garbage cans by the residents in a low income area were assisted by the Family Planning Association and LKMD which provided funds which are managed as loans to the residents.

In Kelurahan Larangan a suction pump was needed to pump sewage from the drains.

- A pump has been bought by the Kelurahan with a loan of Rp.500.000.- from the Cooperative of the Community Participation Programme and community contributions of Rp.2.500.000.-

In Kelurahan Kejaksan household toilets are being constructed with credit from the Cooperative of the Community Participation Programme and assistance from the City Health Department is being negotiated by the Forum Mawas Diri.

The water supply and sewerage sectors are government projects in which the community can use and pay for the services made available under clear conditions.

In water supply 316 household connections have been obtained through the existing channels with credit of Rp.37.224.000.- provided by the Water Supply Authority (PDAM) and Rp.4.919.500.- as self reliance. The role of the community was to organise a community group to apply for a number of house connections as an extension to the water supply network.

In sewerage construction with house connections the role of the community will be to apply for house connections and pay the associated charges yet to be finalised by the PDAM following a Decree by the City Mayor and an Order from the City Government. The Community Participation Programme has worked to build coordination with the technical component made up of CUDP and the technical consultant and the PDAM who will manage the sewerage system.

The role of the Community Participation Programme has been to identify the existing situation of householders in each location and the expressed need or interest in having a house connection. The willingness to apply for house connections depends on a reliable policy and clear information on the financial aspects of house connections concerning construction costs and subsequent tariffs as well as the advantages resulting to the householder and the community. As this information is not yet available the Community Participation Programme takes the role of Advocacy in this situation explaining the need for accurate and reliable information before community members can make their decisions.

Another important aspect of the role of the community is the responsibility for the maintenance of infrastructure. The community regards itself as responsible for the micro infrastructure implemented through the community projects. The maintenance and cleaning of primary and secondary drains is the responsibility of the government agencies. There has been a tendency for government to expect the community to carry out some of these tasks, especially cleaning, through "gotong royong" which is the local government programme of voluntary community work on government programmes. The interface between the community and government for this responsibility has been the focus of

discussion to ensure that the position of the community is respected and that they are not held responsible for issues which are in fact the responsibility of government.

Community Participation in the maintenance of two primary canals
The Cipadu Canal and Silayar River are two major canals flowing through the city and important for flood control. The maintenance and cleaning of these canals is the responsibility of the Public Works Department but maintenance funds are lacking. The community in the vicinity of the Cipadu Canal regularly joins voluntarily in the cleaning out of mud and garbage at the request of local government. The labour provided by the community for cleaning the 1,900 meters of the Canal could be valued at Rp.700.000.-

The sides of the Silayar River required strengthening to combat erosion 450 meters of the river bank was strengthened by community voluntary labour valued at Rp.2.539.000.- with Public Works contributing Rp.6.395.000.- worth of materials for the work.

The Community Development Fund was introduced to facilitate the role of the community. It was made available through the Community Participation Programme to provide rapid access to loans for environmental health improvement, especially household toilets, and the small business enterprise of groups and individuals. This credit programme has led to the establishment of the Community Cooperative with legal status. Eighty seven (87) groups and individuals have taken loans from the Cooperative and with credit repayments the available funds can revolve to new groups.

A Savings and Loans Small Business Group named "Trubus"
"Trubus" is a group of people carrying out their own small business enterprises, most commonly as small traders, in the neighbourhood of Kelurahan Pekalipan which was set up in May 1995 with 10 members - 8 women and 2 men. The primary activity of "Trubus" is savings and loans where the membership fee is Rp.2.500.- to join and a monthly contribution of Rp.500.- is paid into funds. After 12 months the group has grown to 25 members - 19 women and 6 men, with financial resources of Rp.4.223.850.- made up of membership fees of Rp.67.000.- monthly contributions of Rp.946.975.- voluntary contributions of Rp.120.750.- special savings of Rp.9.850.- credit from the Cooperative of Rp.2.700.000.- and profit of Rp.379.275.- The members use the savings and loan funds to buy produce for their small trading enterprises and so avoid the money lender.

Organisation and Management of the Community Participation Programme

The Community Participation Programme was introduced at the end of CUDP II with the appointment of a Community Development Specialist, who was responsible for the design of the Community Participation Programme, to the Consultant Team and the Community Development Organisation, LP3ES, as the facilitator of the programme and a Community Participation Programme activity budget. The contract for LP3ES was with the major consulting company, Alpinconsult.

LP3ES was contracted to provide the personnel services planned for the community participation programme including the Community Programme Coordinator, Training Specialist and Community Institutions Specialist, Women in Development Officer, Media Specialist and Community Organisers with one providing technical expertise. LP3ES was responsible to supervise the management of this team so that objectives and anticipated results were achieved.

The Community Development Specialist had oversight of the Community Participation Programme and its activity budget and the interfacing of the community programme with the technical and institutional components of the project.

The Community Programme Coordinator has responsibility for the development of the community participation process, the guidance of Community Organisers and Motivators and development of the environmental health and small business programmes as well as coordination with government agencies and local government. Considerable attention has been given to this aspect in order to build cooperation and support between government agencies, local government and community to ensure the understanding required for partnership and the support needed for strong community participation.

The Community Participation Programme has a separate office easily accessible to the community for consultation on the environmental health community projects and the small business activities with the development of the Cooperative. The Community Development Team, Motivators and community members have developed this office as a Community Centre.

The budget for the activities of the community participation programme is managed in Cirebon by the Community Programme Coordinator in consultation with the Community Development Specialist and the Team Leader and covers support to Motivators, training of Community Organisers, Motivators, group organisers, staff development, media development, small business development and Community development Fund. The Community Development Fund when fully expended became the credit managed as revolving funds in the small business and environmental health programmes and now the capital of the Cooperative.

The Financing of the Community Participation Programme

The Community Participation Programme has been financed in three ways :

- The donor, Swiss Development Cooperation, has provided the funds required for personnel and activity budgets.
- The community has been a major contributor to their own projects. During the 6 years of the Community Participation Programme the community has contributed Rp.272.990.700.- in direct self-reliance and Rp.70.298.200.- through the loans which they eventually repay.
- Grants by various government and private agencies have amounted to Rp.76.786.700.-

Steps taken towards sustainability of the Community Participation Process

Several significant steps have been taken to ensure sustainability

- The flexibility and support for the development of community institutions and associations was available within the Community Participation Programme which provided the specialists and budget required as community institutions developed
- The establishment of a community organisation was planned from the commencement of CUDP III. The initial concept which was to establish a Community development organisation with Cirebon Community Organisers trained under the Community Participation Programme was an interest of the Swiss Development Cooperation from experience in other projects. This was altered following a feasibility study to a **Community Cooperative as a community institution** to manage the credit programme and provide a channel through which the Community Organisers could continue their work in Community Development by seeking funded projects. The flexibility to make these alterations to the plan according to experience gained is an important aspect of achieving sustainability.
- An **Association of Motivators** was planned from the beginning of CUDP III in the attempt to support Motivators to form their own self reliant groups and enable them to continue their community activity. Each of the five groups of Motivators preferred to establish their own groups. Some groups are continuing their activity in the community supported by their own small business activity with loans from the Cooperative. The first group (Forum Motivator Cirebon) has had contracts for specific work such as a Household toilet programme. The second group of Motivators was strong setting up its own income generating projects, but has now disbanded as all the Motivators have gained employment outside the area, partly as a result of the training and experience in the Community Participation Programme.
- The **Community Development Fund** was set up in a manner which would provide rapid access by the community to loans to assist with their plans for environmental health improvement and small business. As mentioned above the Community development Fund has been completely expended and become the capital of the credit programme now the basis of the Community Cooperative.
- The **Forum Matwas Diri** in several Kelurahan provides the basis for strengthening coordination between the community with the Lurah and LKMD in the Kelurahan. Community plans are presented at the Kelurahan Coordination meetings and become part of the Kelurahan planning process, especially accessing funds from government programmes.
- The increased capacity in the community to identify needs, set priorities, plan solutions, seek resources and implement those plans has increased the confidence of the community to take their part in environmental health improvement.
- The fostering of communication and coordination with local government and government agencies so that the government response to community plans and requests for resources of information, technical assistance and funding will be available to support ongoing community activity.

Major achievements of the Community Participation Programme

The achievements of the Community Participation Programme have already been mentioned in this paper and will be listed again briefly

- The Community Cooperative is a legal institution owned by the community with an active and growing membership and a viable business development plan
- The Forum Mawas Diri is another community institution, in some cases legal, providing a channel for community plans to be handled in the Kelurahan and giving opportunity for the new capacity of the community to do their own planning and action in their neighbourhood.
- The ten (10) Community Organisers and 125 Motivators from all the Kelurahan provide a resource for future development in the City of Cirebon. Some Community Organisers and Motivators have moved into new employment, but a nucleus remains.
- The School Children's Programme demonstrated a way of working with school children to produce a major impact on them and those around them. The approach was repeated in 10 primary schools under the coordination of the City local government and education authorities with the assistance of the Swiss Development Cooperation providing for technical assistance and Community Participation Programme providing an activity budget. Further application will be the responsibility of local agencies.
- The physical achievement of community projects is extensive and listed above
- The self reliance valued in monetary terms of Rp.272.990.700.- and community loans of Rp.70.298.200.- indicates the extent of community activity resulting from the community participation process.
- The increased understanding and willingness to support community initiatives has been demonstrated by the grants provided by agencies and local government.
- The communication and coordination developed between the community and local government and some government agencies has been demonstrated by the establishment of the Forum Mawas Diri and the grants mentioned above.

The approach and achievements of the Community Participation Programme have contributed to the City of Cirebon being awarded the prize for the best organised and cleanest medium sized city in Indonesia for the past six consecutive years.

The main limitations experienced by the Community Participation Programme

Three limitations only need to be mentioned

- The communication and coordination between the community, Community Participation Programme and the Unit Persiapan (UP3KT) was not strengthened as anticipated due primarily to the lack of personnel with authority to provide reliable information, technical assistance or funding requested by the community. This meant

that the community sought this assistance elsewhere and the role of UP3KT was not strengthened.

- **The lack of a reliable policy and clear information** in the sewerage sector has to date created a situation where the community cannot yet make decision about household connections. The role of the Community Participation Programme is Advocacy for the community.
- **The channels for locating new projects** which provide support for the livelihood of Community Workers are quite difficult to identify resulting in some Community Organisers and Motivators seeking employment elsewhere.

Lessons Learned from the Community Participation Programme of CUDP

There are nine major lessons learned from the implementation of the Community Participation Programme in the Cirebon Urban Development Project during the past 6 years.

1. Community participation is indispensable to ensure sustainable use of infrastructure provided by Government. The experience of the Community Participation Programme has demonstrated the extensive community projects undertaken in neighbourhoods to develop the micro infrastructure which links into that provided by government.
2. Where the objectives of a Community Participation Programme require building the capacity of the community to carry out its own community projects with problem identification, planning, implementation of community projects with ongoing use and maintenance, a facilitator is required on a long term basis to develop the understanding of community participation in the community and in government agencies, strengthen the capacity of the community and build community institutions for sustainability of the process.
3. The most effective facilitator of a Community Participation Programme is a Community Development Organisation with a clear philosophy of community development in Indonesia which includes the concept of developing partnership with government and available skills and human resources for training and supervision to achieve the objectives of the project.
4. Community Projects are those carried out by the community groups which have done their own planning and implementation. To achieve this the community requires the skills of organising these activities with guidance from community workers as well as the understanding and support of government agencies and local government expressed through providing accurate information, technical assistance and funding where possible and as requested. The type of project planned by the community to meet objectives are often broader than the definition of the four sectors such as paths for handcarts for garbage collection.
5. In Government projects such as water supply and sewerage the community is expected to participate by using the network constructed and paying the set tariffs. However, the services provided are for the benefit of the community and its environmental health. The community remains the subject of the service and not the

object of the service. The approach to the community requires a planned approach to explain the service to be provided with accurate information about the costs of installation or connection and ongoing tariffs and benefits to the householder and community, to assess community interest and need, and provide channels of communication for the community as issues arise during construction usually by a contractor. Moreover when the network is operating reports of breakdown or complaints must be dealt with promptly to strengthen and maintain the confidence of the community in the service provided.

6. **Maintenance of community projects are regarded as the responsibility of the community and managed by them.** However, the maintenance, especially cleaning, of infrastructure which is the responsibility of government agencies is sometimes expected of the community even when people do not reside in the immediate area. Negotiation of specific responsibilities can be carried out to clarify responsibility so that a satisfactory result can be achieved.
7. **Partnership between the community and the Community Participation Programme and government agencies and local government is essential in strengthening community participation.** Communication and coordination between all parties is the channel for this partnership. The community requires understanding and the support of government agencies and local government through reliable information especially, and when necessary technical assistance and funding.
8. **Suitable community institutions or organisations are required for sustainability of the community participation process.** Resources of personnel and funds are required, especially for training as these institutions/organisations are established. The precise nature of those institutions/organisations should be allowed to emerge during the course of the project with input from the community workers and community rather than determining from outside during the design stage.
9. The ongoing activity of Community Organisers and Motivators, the community workers trained in a Community Participation Programme when a project is completed requires that they have a reliable source of livelihood, either through income generating activity of small business which is appropriate for Motivators or further projects with funding for facilitators. To the present time the employment of facilitators as a team from a Community Development Organisation is only possible in a project with a donor, but not yet from government. With current trends of reduced projects from foreign donors the issue of project funding including Community Development Organisations with trained community workers as facilitators for Community Participation Components in projects is important to be addressed.