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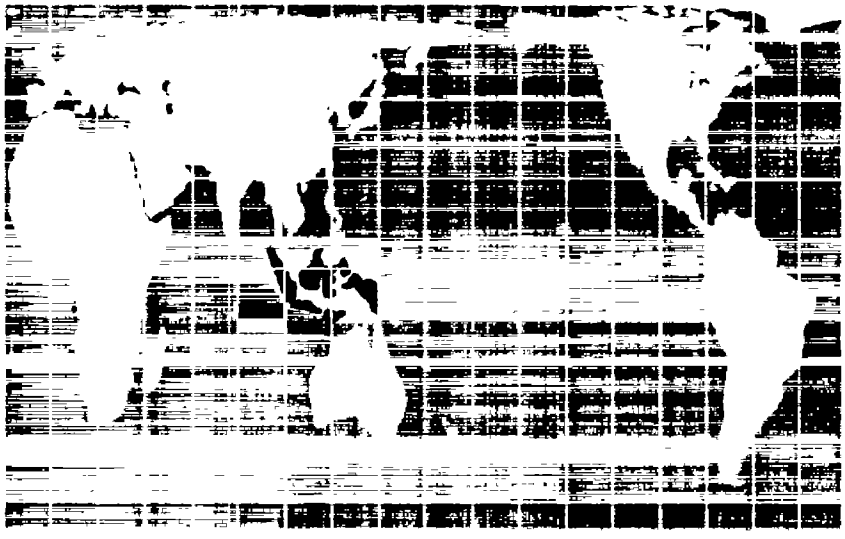

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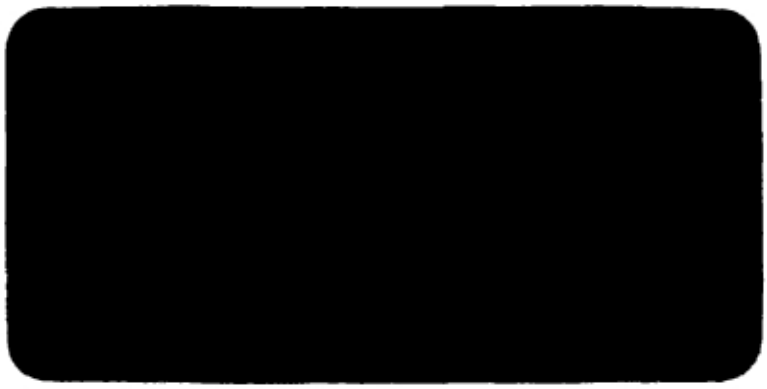

COMMUNITY SELF-FINANCING OF

WATER AND SANITATION SYSTEMS PROJECT

MIDTERM EVALUATION REPORT

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Submitted To: CARE/Indonesia and the U.S. Agency for International Development
Jakarta, Indonesia

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PREFACE

This report describes the results of the midterm evaluation of CARE/Indonesia's Community Self-Financing of Water and Sanitation Systems Project (CSFW). The project was designed to encourage community self-financing of rural water supply and sanitation systems in the three provinces of West Java, East Java, and West Nusa Tenggara in Indonesia. It was funded by the monetization of wheat under the Title II PL-480 program, under the auspices of USAID/Jakarta.

The core evaluation team consisted of Rick McGowan of Associates in Rural Development (ARD) Inc. (Team Leader and Technical Specialist), Nick Ritchie of CARE's Regional Technical Advisory (RTA) Group in Bangladesh (Credit Specialist), and consultant Dawam Rahardjo (Community Management Specialist). The core team was supported throughout the evaluation by Government of Indonesia (GOI) and CARE/Indonesia staff, including H. S. Nasution of the Government of Indonesia's Ministry of Home Affairs, CSFW Project Coordinator Dan O'Brien, CARE/Indonesia Evaluation Officer Glenn Gibney, and CSFW Assistant Project Coordinators Budi Rahardjo and Catharina Haryono. The initial planning for the evaluation took place in late January. The team planning meeting for the evaluation and the field visits themselves were to have taken place in February and March, but were not actually carried out until May and June of 1991, due to the events in the Persian Gulf.

The evaluation team would like to thank the staff of the three CARE Provincial Field Offices in Bandung, Pacitan, and Mataram visited during this evaluation for their able assistance in providing us with the information and necessary logistical support which was so critical to the success of this evaluation exercise. Especially, we would like to thank the GOI officials we met with during our provincial visits for their assistance and hospitality, and the people of rural Indonesia whom we met and interviewed during our site visits, many of whom were direct beneficiaries of CARE/Indonesia's water and sanitation development efforts in this and related projects. We hope that this report will be of use to project planners and implementers in further expanding the provision of safe, reliable water and sanitation services in Indonesia.

ACRONYMS AND DEFINITIONS

ADB	Asian Development Bank
AIDAB	Australian International Development Assistance Bureau
ARD	Associates in Rural Development, Inc.
BKKBN	National Family Planning Coordinating Agency
BPSAB	Water management committee (post-construction)
BPD	Bank Pembangunan Daerah
BPT	Break pressure tank
BRI	Bank Rakyat Indonesia
BULOG	National Logistic Affairs Agency
CAWS	CARE-Assisted Water (Project) Survey
CIDA	Canadian International Development Agency
CIHQ	CARE/Indonesia Headquarters in Jakarta
Cipta Karya	Directorate General of Human Settlements, MPW division responsible for small RWS systems
CSF	Community self-financing (approach)
CSFW	Community Self-financing of Water and Sanitation Systems Project (funded by USAID/Indonesia)
CSFW/MST	CSFW Management and Support Team (in CIHQ)
Desa	Village (1st level of local government below Kecamatan)
Dusun	Hamlet (villages are often composed of several)
FO	Field Officer
GFPS	Gravity-flow, piped (water) system
GOI	Government of Indonesia
HH	Helping Hands (an expatriate PVO)
HIPPAM	Village water management committee (instead of PPSAB/BPSAB terminology in EJ and NTB)
IG	Intermediate Goal
IKK	Literally, capital of a district, but in most cases refers to subdistrict town water supply system
IPVO	Indigenous private voluntary organization
KAP	Knowledge, attitudes and practices
Kabupaten	District
Kapala Desa	Village Chief
Kecamatan	Subdistrict
KUD	Village cooperative organization
LKMD	Village Development Committee
LMD	Village Legislative Forum
Lurah	Elected village leader
MC	Water distribution point, with taps and usually storage
MCK	Water distribution point, with taps, storage, latrines
MOHA	Ministry of Home Affairs
MPW	Ministry of Public Works
MOH	Ministry of Health
NGO	Non-Governmental Organization
NTB	Nusa Tengarra Barat (West) Province
O&M	Operation and Maintenance
P2K	Family Income Generating Project
PAT	Project Activity Target
PDAM	District or City Government's Water Enterprise
PIE	Project Implementation and Evaluation (Report)

PIE	Project Implementation and Evaluation (Report)
PIR	Project Implementation Report (new version of PIE)
PKK	Women's Organization (multi-leveled)
PL-480	Public Law 480 program (U.S. food aid legislation)
PLAN	Plan International (formerly Foster Parents' Plan), a PVO
Posyandu	Community-managed health post (typically there are several in each village)
PPSAB	Village water development committee (construction phase)
Puskesmas	Subdistrict Health Center
PVO	Private voluntary organization
PW	Common reference to MPW (Cipta Karya)
QARQ	(water) quantity, accessibility, reliability, and quality
RWSG	Regional Water and Sanitation Group (World Bank)
RWSS	Rural Water Supply and Sanitation
SLA	Savings and Loan Association
SRCD	Sulawesi Rural Community Development Project (CARE/Indonesia)
TA	Technical assistance
TOMA	Community leaders (both formal and informal)
TOT	Training of Trainers
TPM	Team Planning Meeting (from the WASH Project Model)
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
VRF	Village ranking form (for site selection process)
WASH	Water and Sanitation for Health Project (USAID)
WASHES	Water and Sanitation for Healthier Environmental Settings Project (funded by CARE/USA & USAID)
WS&S	Water Supply and Sanitation
YP	Yayasan Pagelaran (WJ IPVO)
YSM	Yayasan Swadaya Muda (WJ IPVO)

EXECUTIVE SUMMARY

Purpose of the Evaluation

This evaluation is a mid-term or formative evaluation of the Community Self-Financing of Water and Sanitation Systems Project (CSFW) implemented by CARE/Indonesia, and funded by USAID/Indonesia.

Project Background and Summary

CARE/Indonesia has been working in the water resources development sector in Indonesia for over fourteen years. During that time, CARE implemented a series of water development projects beginning with the Rural Water Supply and Sanitation Project, which evolved into the Water and Sanitation for Healthier Environmental Settings (WASHES) Project in 1985, and the Sulawesi Rural Community Development (SRCD) Project, which is the largest of CARE's water development efforts. CSFW is currently operating in the three provinces of West Java (WJ), East Java (EJ), and Nusa Tenggara Barat (NTB).

The overall CSFW goal is to increase rural communities' access to reliable and safe water supply and sanitation (WS&S) facilities through their effective participation in the independent financing and maintenance of these facilities. The CSFW intermediate goals focus heavily upon community self-financing (CSF) objectives related to demonstrated community interest in the CSF approach, the willingness and ability to obtain credit for financing system construction, the willingness of banks and other lending institutions to provide credit, and the upgrading of community technical and management skills related to organization, resource mobilization, system design, construction, operation and maintenance, loan repayment, and the replication of the CSF approach to other WS&S development projects throughout Indonesia.

The project focuses on four major activities. The first is community preparation and training on working together to design, construct, and maintain village water and sanitation systems (including developing a village water committee). Second, CARE provides training on the design and construction of those systems. Third, CARE Field Officers (FOs) work with the community to help them identify and mobilize resources to finance the project, manage the water system and associated support activities, and collect periodic user fees. Fourth, CARE provides training in constructing sanitation facilities, and in health and hygiene education. The most unique aspect of CSFW which sets it apart from other WS&S activities in rural Indonesia is that to participate in CSFW and receive CARE technical assistance, communities are required to pay 100% of system costs for skilled and unskilled labor, local and imported materials, and equipment.

CARE contributions only include technical assistance and logistical support. Water systems built under CSFW were commonly gravity-flow, piped water systems, with some handpumps, hydraulic rams, and rainwater catchment tanks (under WASHES). Sanitation systems installed by CSFW were mainly water sealed pit latrines (some with septic tanks and leach fields) and ventilated pit latrines.

Major Findings and Recommendations

Major findings, recommendations, conclusions, and lessons learned can be categorized into the four areas of water engineering and sanitation, community participation and management, resource mobilization, and other areas. For water engineering and sanitation, communities have shown themselves capable of constructing their own water supply (and to a lesser extent sanitation) systems when properly supervised by CARE field staff. CARE system designs met or exceeded accepted standards, but systems as constructed sometimes did not meet quality control standards, usually due to communities' desires to minimize construction costs (since they are directly responsible for paying for their systems), coupled with insufficient supervision by often over-committed FOs. This is not a major problem, but rather one which can be addressed by a three-pronged effort to better train communities in the need for better construction planning, for building to design specifications, more regular supervision and inspection during critical phases of construction, and limiting responsibilities of FOs to more manageable proportions.

Operation and maintenance needs more attention at some sites. Some communities do not yet understand that proper and timely maintenance can help minimize repair costs over the long run. There are limits to communities' ability to undertake construction and O&M of water and sanitation systems on their own. CARE should insure that proper and sufficient technical assistance is given to communities so that their efforts are adequately rewarded and any misguided attempts to undertake tasks beyond their capabilities are avoided.

CSFW can be seen as a two phase activity, initially focused on establishing the viability of the CSFW approach to community WS&S development. CARE achieved some success in proving the concept but more work remains to be done. The second phase (now beginning) will focus on refining the concept, and directing more attention on ancillary (but important) activities such as insuring quality control in construction, improving financial planning, and incorporating sanitation and health and hygiene education (HHE) more fully into project activities. HHE was initially not a major focus of CSFW and it has been implemented more successfully in WJ and EJ than in NTB. The project needs to achieve a better balance between the hitherto heavy emphasis on

resource mobilization and the need to insure long-term sustainability and replicability of the systems by better quality control and increased emphasis on sanitation and HHE.

Community participation and management is the foundation upon which the CSF approach rests. Without it, planning, construction, resource mobilization, and successful O&M would not be possible. Through CARE's community technical and management training efforts, many communities have managed to organize themselves to work with CARE FOs to establish water committees, design and build their systems, mobilize resources to pay for them, and take some initial steps to develop operation and maintenance mechanisms. Community motivation is a function of water scarcity, accessibility, and to a much lesser extent water quality. With some exceptions, communities have shown little desire to pay for improved water quality.

A key factor in project success is the identification of influential and trusted community leaders who are willing and able to motivate other members of the community. While CSFW establishes an independent village water committee in each community where it operates, attempts are made to integrate this committee into the complex hierarchy of existing government, community, and local religious institutions. There is room for improving project linkages with other institutions in the WS&S sector. The role of women in water development and management in Indonesia is typically limited, even though they are the major users of water. CSFW needs to do more to integrate women into water management institutions, such as mandating their active participation (along with representatives from poorer families in the beneficiary community) on village water committees.

Communities have approached resource mobilization in a wide variety of ways, and with considerably varying degrees of success. Contributions are in the form of cash, in-kind (materials, equipment, labor), and grants from a variety of sources. Contributions vary between wealthier and poorer families. Since communities typically do not have adequate resources to pay or systems directly, formal loans from several kinds of lending institutions (commercial and government banks, equipment and material suppliers) are important components of payment plans at many CSFW sites. Banks have shown a willingness to provide credit to communities at commercial rates and with proper collateral (usually private land certificates). CARE needs to work with commercial and government banks to help establish formal procedures for providing WS&S system loans. Banks are interested in developing stronger relationships with CSFW, as evidenced by their active participation in formal debriefings at the conclusion of this evaluation.

Better community-level financial planning would increase the sustainability of project activities. Communities need to better understand total system costs, the need to set and collect user

fees to support O&M, and the need to develop realistic repayment plans which take into account existing debt burdens. The development of comprehensive resource mobilization training package would help streamline CARE community training efforts in this area. CARE should work with banks and other lenders to resolve repayment problems and establish acceptable procedures for future loans. CARE should establish better linkages with the donor community to promote the CSF concept, especially with multilateral lending agencies such as the World Bank and the Asian Development Bank (AD), which may well be sources of concessionary loans for future WS&S development using the CSFW model.

In terms of quantitative achievements, 50 communities have agreed to undertake CSFW WS&S system development, 23 water committees have been established and are now operating, 16 sites have completed their systems, and another 18 are in progress. A total of 53 water distribution points (MC and MCK) have been constructed so far, along with 16 spring catchments, and 40 km of pipeline. While a number of mid-course corrections need to be made to improve the project's implementation approach, the level of interest and active community participation in the project is encouraging. Both the Government of Indonesia and the donor community have demonstrated considerable interest in the CSFW approach, components of which are being included in current project design and implementation efforts. CARE should increase its efforts in coordinating its activities with other major players in the WS&S development sector (e.g., AIDAB, UNICEF, GTZ, Indonesia and international NGOs) by joint review of project planning documents, periodic interest group meetings, and sponsoring a conference on WS&S development (for both rural and peri-urban areas) in Indonesia. Most importantly, CARE needs to identify the public or private agency(ies) most capable of integrating the CSF concept into their water development efforts. Incorporation of the concept into such an agency is a necessary (but not a sufficient) condition for truly influencing Indonesian WS&S development over the long term.

CARE staff are generally well trained and competent to carry out their responsibilities, however current staffing levels may not be adequate to successfully implement the project's ambitious long term plans. CARE should conduct a careful review of staffing levels incorporating both recent strategic planning as well as the findings and recommendations of this evaluation. The CSFW staffing structure is appropriate to achieve project goals. Suggestions for additional staff training are given in this report.

Sites need to be monitored regularly, both during and after construction, to insure proper control of construction quality, proper operation and maintenance, and that the repayment of loans and financial management of user fees is properly handled. The site selection process has been somewhat haphazard, and should more closely follow formal selection criteria as embodied in the NEEDS process and the draft Site Selection Study.

PART ONE - BACKGROUND OF THE PROJECT

This section of the evaluation report gives a brief summary of CARE/Indonesia's experience in the provision of rural water supply and sanitation (RWSS) services, explains the community self-financing approach, gives an overview of the RWSS sector in Indonesia, and summarizes project implementation activities as given in the periodic project reports[1].

1.0 CARE/INDONESIA RURAL WATER AND SANITATION ACTIVITIES

Donor-funded community development activities in Indonesia have long focused part of their efforts in water supply and sanitation (WS&S). CARE/Indonesia has been actively involved in the WS&S sector since about 1977. A series of CARE WS&S projects preceded the Community Self-Financed Water Supply and Sanitation Systems (CSFW) Project, most notably the Water and Sanitation for a Healthier Environmental Setting (WASHES) and the Sulawesi Rural Community Development (SRCD) Project. WASHES activities concentrated on the design and construction of WS&S systems in rural and some peri-urban settings. Also, they included a strong community training component to develop indigenous skills in areas such as community management and WS&S systems construction. The CIDA-funded SRCD project focuses on developing village water and sanitation systems, installing an average of 38 gravity-fed, piped water systems annually. In addition, SRCD assists communities in building sanitation facilities, establishing primary health care programs, and developing income-generation activities.

WASHES was a two phase project, the first phase of which was undertaken from 1983-1986. The second (and current) phase was a direct extension of the first, beginning in 1986 and to be completed in June 1991. WASHES activities were based in the three provinces of WJ (based out of CARE's Bandung office), EJ (based out of Pacitan), and Nusa Tenggara Barat (based out of Mataram). WASHES constructs over 30 gravity-fed, piped rural water supplies every year, with secondary efforts devoted to working with communities to build rainwater catchment tanks and install handpumps on boreholes.

The final phase of the WASHES project draws to a close in June, 1991, and CSFW will continue through 1993. SRCD will continue through 1994. The CSFW Project proposal[2] was submitted

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1 CSFW Project Implementation Reports, (PIRs, formerly called PIEs, now produced every semester).

2 Food for Self-Sufficiency: Community Self-Financing of Water and Sanitation Systems, CARE/Indonesia, as revised, J. Jackson and M. Judd, March 1988.

comments in July of that year. The project design drew heavily upon CARE's previous experience in the WS&S sector in Indonesia, primarily through the implementation of the WASHES and SRCD projects. The CSFW project design and approach was motivated primarily by three circumstances:

- o the GOI and the international donor community are simply unable to marshal and commit sufficient resources (personnel, financial, and material) to meet the needs of rural Indonesians for access to adequate and reliable quantities of water of acceptable quality to support basic health and hygiene requirements;

- o even if such resources were made available to provide massive development support in the RWSS subsector, the traditional approach to developing RWSS facilities (centralized, top-down, and without adequate provision for long term operation and maintenance) has been unsuccessful in terms of its long (or even medium) term sustainability; and

- o experience in many countries around the world in rural development in general, and RWSS in particular, has shown that communities are much more likely to financially and managerially support their water systems over the long term if they have a significant stake in them, i.e., when they have made significant contributions to their planning, design, and direct funding (through both cash and in-kind contributions).

Given these circumstances, CARE felt that the best way to promote sustainability in RWSS systems was to develop an approach whereby users would assume greater (if not complete) responsibility for planning, management, financing, installation, operation, maintenance, and repair of their own systems. Traditionally, government agencies had taken responsibility for developing rural water supplies. Both Cipta Karya (the department in the Ministry of Public Works responsible for rural water supply) and the Ministry of Health had responsibility for various aspects of RWSS over the years. However, increasingly apparent manpower and financial resource constraints have slowed the achievement of GOI development goals in this sector.

Awareness of these constraints led CARE to formulate the CSFW approach, whereby communities take both financial and management responsibilities for developing their own systems. The goal of the CSFW project is to improve the health standards and increase empowerment of communities and individuals through the accelerated access to sustained community-managed, safe water supply and sanitation facilities. The strategy used is the independent community self-financing of the systems.

2.0 THE COMMUNITY SELF-FINANCING APPROACH

CARE's approach to community self-financing (CSF) has evolved from over 10 years work on RWSS systems in Indonesia. During this period, the amount of both in-kind and cash contributions required from communities for construction and maintenance has been steadily increasing, and consequently inputs from CARE and the GOI decreasing, as can been seen in Figure One.

There have been three key lessons pushing CARE to take the concept of community self-financing ever further over the years:

- Nearly two thirds of all rural communities in Indonesia are without clean water supply and sanitation systems. The GOI has had ambitious targets to rectify the situation in the present Repelita, and in past ones, and has made significant progress. But the fact is, the resources of the GOI are simply inadequate to satisfy the need. Many communities made their application to GOI 10 years ago and are still waiting;

- Experience in CARE's projects clearly indicates that rather than wait for years some communities are willing to pay for water. The early projects paid for all the construction costs; by the end of WASHES, communities were demonstrating their willingness to pay 50% or more of these costs; and

- Like other agencies working in community development, CARE learned early on: what people do not value they will not maintain. Thus, simply depositing working systems in communities is no guarantee they will continue operating much past the first break-down. So a vital piece of learning is that people will only pay for something they really want, and by paying for it they are more likely to be motivated to sustain it long into the future.

This project has taken the premise, that people are willing and able to pay to build and maintain their own system, to its logical conclusion. All payments by CARE or GOI of the direct construction costs and operations and maintenance have been eliminated. The other CARE projects only reached to a 50% community contribution - so CSFW is a large leap forward. Technical assistance is not charged for, but this still separates the project from the approaches used by the whole gamut of other agencies.

The project can be viewed as the proving ground for the limits of community self-financing at this stage of the development of the concept. If it can be proved that a significant number of communities are able and willing to go this far, then the next step could be to start charging for technical assistance. Because no other agency has tried to go this far before, at least not in Indonesia, the project is finding out what interventions are required from a technical assistance agency for the approach to be successful; and also what access to external resources, especially financing is needed. The amount of risk is very high, but the potential reward is equally great because it offers the possibility of creating a model for others interested in the full potential of community self-financing.

3.0 OVERVIEW OF RWSS DEVELOPMENT ACTIVITIES

This chapter briefly discusses the extent of water and sanitation coverage in areas addressed by CSFW, the national planning process which provides for water resources development, the institutional context of CARE interventions in the RWSS subsector, and mentions the other major on-going or currently planned RWSS development projects in Indonesia.

3.1 RWSS Subsector Development Planning

Water resources development has been specifically included in the principal GOI planning mechanism, the Repelita (or Five Year Development Plan), ever since the initial preparation of Repelita I in 1969. While the initial emphasis in the water sector was solely in the area of urban water supply, rural water supply programs were included in Repelita II. Repelita V, which began in 1989, is currently underway. At the conclusion of Repelita IV, GOI estimates concluded that water supply service coverage in rural areas had reached 31% (compared to 65% in urban areas), up from only 18% at the conclusion of Repelita II. Total funding support for RWSS in Repelita V is about one third of that for urban WS&S. Similarly, 25% of the rural population had access to basic sanitation services (as compared to 31% in urban areas). These figures are considerably below GOI planning targets for Repelita IV, reflecting not unexpected financial and human resource

constraints. Also, they do not necessarily reflect the actual use of the available services, nor whether they are currently fully operational[3].

In recognition of the limitations of centrally funded and controlled water resources development, the GOI Integrated Rural Infrastructure Planning approach first developed during Repelita IV explicitly supported an expanded focus on:

- o decentralization of planning and responsibility for RWSS development activities, including the determination and inclusion of community priorities in program and project planning and implementation;
- o the development of operations and maintenance (O&M) programs which help to insure the long term sustainability of projects; and
- o increasing the use of local government and community resources in project implementation, and greater consideration of cost recovery goals in project planning.

Repelita V planning for RWSS recognizes that the increased involvement of local government, community-based O&M programs, and a greater community awareness of the importance of safe, reliable water supplies on community health are all necessary to increase the sustainability of RWSS programs. Communities only devote their limited resources to local development programs when the benefits of those programs clearly justify their opportunity costs, compared to other options for investment or consumption of those resources.

The experience of a variety of GOI, NGO and other donor-funded groups working in the WS&S sector in Indonesia suggests that enhancing community participation in all activities related to RWSS programs will enhance the sustainability of those programs. In particular, villagers' assumption of responsibilities for system management and proper operation and maintenance of externally-funded systems appears to be directly related to their feeling of "ownership" for those systems. Systems installed without explicit involvement of villagers in system design, construction, and at least partial funding have tended to have short useful lifetimes. CARE's CSF approach clearly fits into the government's evolving water sector development policy.

3.2 Institutional Context of the CSFW Project

The complex and evolving nature of institutional responsibilities for RWSS programs in Indonesia makes the institutional context of the CSFW project not a simple one to

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[3] Water Supply and Sanitation Sector Study of Indonesia, the Asian Development Bank, Manila, May 1990.

initially understand. Rural water supply and sanitation services are provided or supported through a number of different GOI agencies, international donors and PVOs, and Indonesian PVOs. CARE's direct GOI counterpart at the national level is the Ministry of Home Affairs (MOHA), which is responsible for all local government agencies, including the regional water enterprises (PDAM). MOHA's involvement in the rural water sector is primarily through its Directorate General of Rural Development (BANGDA), which is responsible for supporting and encouraging integrated rural development by coordinating inter-sectoral development projects. At the provincial level, CARE's principal counterpart is the Regional Development Planning Board (BAPPEDA in NTB and EJ, and the Bureau of Social Welfare in WJ), responsible for coordinating the development activities of all GOI, donor, NGO rural development project. In addition, CARE makes an effort to coordinate with the District-level BAPPEDA, traditionally CARE's closet operational link with the GOI. Finally, funds for RWSS development in various GOI agency budgets are provided through the Ministry of Finance's Directorate General of Budgets.

The GOI agency formally responsible for the technical implementation of rural water supply projects is the Ministry of Public Works (MPW), through its Directorate General of Human Settlements (Cipta Karya). Cipta Karya is responsible for rural water supply subsector planning, site selection, engineering, construction supervision (actual construction itself is typically contracted out to the private sector), technical assistance to BPAMs (regional water enterprises), and operation and maintenance of rural water supplies.

A variety of donor agencies and PVOs are also active in the RWSS subsector. Many of the subdistrict principal cities or towns (referred to as IKK, many of which are small enough to be considered rural), which tend to be the larger rural communities in the area, have benefitted from a series of water projects funded through Asian Development Bank (ADB) loans. Also, the ADB funded the Water Supply and Sanitation Sector Study quoted previously. The Australian Government's AIDAB is very active in the water and sanitation area, funding a variety of projects, including the Eastern Indonesian IKK Water Supply Project, and the Lombok Rural Water Supply and Sanitation Project. CIDA is funding the Sulawesi Rural Community Development Project (and its water resources development component) through CARE. The Dutch Government supports over thirty development activities in the water supply and sanitation area, many of which involve support for RWSS development. The EEC is involved in rural water supply as part of its Lower Citaduay Irrigation Project. UNDP, in conjunction with the World Health Organization (WHO), supports four RWSS projects in East Timor, Benkulu, Lampung, and human resources development at

the national level. UNICEF has a water and HHE support project also in a number of provinces (CARE coordinates its CSFW work in Lombok with UNICEF, among others). UNICEF often provides direct grants for materials (often pipes) to Cipta Karya for the construction of rural water supplies. Finally, the Government of Japan is involved in the provision of various technical assistance in the subsector.

The Ministry of Health (MOH) has formal responsibility for information dissemination, health and hygiene education, water quality monitoring, and community latrine building programs in rural areas. Up until 1984, MOH was formally responsible for implementing both rural village water supply and sanitation activities. After that time, the responsibility for rural water supply was re-assigned to Cipta Karya. While CARE does not formally coordinate its activities with Cipta Karya or MOH, ad hoc meetings do occur to discuss CARE's plans for developing village water supplies with Cipta Karya representatives in some CARE Field Offices. In the sanitation area, MOH provides support through the Subdistrict Community Health Centers (or Puskesmas, which always has one doctor on the staff) and the Posyandu (village level health post, composed of village volunteers). While GOI support through the Puskesmas and Posyandu provide some modicum of sanitation and HHE support, in fact villagers are primarily responsible for building their own sanitation facilities. In some provinces (especially EJ), CARE has invited the local MOH representatives to assist in the presentation of CARE community training in health and hygiene. This should be encouraged and replicated in other provinces where CSFW is being implemented.

3.3 Major Planned RWSS Activities

There are a variety of upcoming RWSS activities in which the CSFW approach can likely be applied, including:

- o the Indonesia Water Supply and Sanitation Project for Poor Communities, funded by the World Bank;
- o the NTB Rural Water Supply and Sanitation Project, funded by AIDAB;
- o the PLAN rural water supply project in NTB;
- o the IFAD rural water supply component in EJ;
- o continuing UNICEF-supported RWSS activities; and
- o USAID-funded activities promoting peri-urban water supply, and the PVO Umbrella Project in NTT.

These are the only RWSS activities the evaluation team is aware of over the short term. There are no doubt a number of RWSS

projects in the pipeline supported by Dutch government and other donor funding as well. CARE has been involved directly in the planning of several of these projects, and their CSFW experience has certainly influenced others. For example, CARE participated in the project design work for the AIDAB project, and is also a bidder (along with Connell-Wagner Engineering of Australia) on the project's implementation. Also, CARE participated in the informal review of the PLAN project proposal, as part of its on-going coordination function with UNICEF, AIDAB, Cipta Karya, and BAPPEDA in RWSS activities in NTB. CARE provided information also to the World Bank mission developing their RWSS project. CARE has been consulted on the design of the IFAD RWSS project. All of these activities have adopted (to varying degrees) the basic community management, self-financing approach used in CSFW.

4.0 PROJECT IMPLEMENTATION

This section contains a brief summary of quantifiable information about CSFW, including inputs provided by CARE and USAID, a description of major project implementation activities, and a list of major quantifiable outputs.

4.1 Inputs

Inputs are categorized into the three major areas of financial, materials and equipment (M&E), and personnel. The project is funded by the monetization of 14,000 metric tons of wheat granted by USAID/Washington in June 1988, under Title II PL 480. Under an agreement between USAID, CARE, and the Ministry of Home Affairs, the wheat was sold to BULOG, a GOI agency which deals with grain purchases, and payment of $2.375 million was placed in an interest bearing U.S. dollar account.

Material and equipment purchases for construction of water and sanitation systems were not planned, in accordance with the CSFW approach, whereby communities pay for these inputs themselves. The only M&E inputs were funds for vehicles, motorbikes, computer systems, video equipment, and other related extension materials.

The major expenditure category in the budget is for personnel. Implementation takes place in three provinces: West and EJ and NTB (initially, Bali was selected but it was dropped for being too easy a location to properly test the CSFW approach and CARE did not have an established field presence). CARE has an office in each province managing one or more projects, headed by a Chief Representative. The offices provide project administrative support and are responsible for relations with GOI. The CR reports to the Country Director in Jakarta. CSFW pays 37% of the cost of the CARE headquarters (CIHQ) in Jakarta, and a variable proportion of each of the Field Office costs (between 40-65%), dependent upon the other projects being implemented through each office and the associated personnel allocations.

The project head is an expatriate Project Coordinator (PC), reporting to the Country Director. The first PC departed in October 1990, and was replaced by a former CARE Regional Technical Advisor for Primary Health CARE in Latin America and Asia. Reporting to him (and based in Jakarta) are three Assistant Project Coordinators (APC), each of whom is responsible for a technical sub-unit in water and sanitation technologies, hygiene education, or resource mobilization. The WS&S technologies APC position remains unfilled. Other CARE Indonesia HQ staff, shared and partially paid for by the project, are an expatriate Monitoring and Evaluation Officer and his assistant, a Training Officer, a driver, the Country Director, and general administrative staff.

Project staff in each Field Office are headed by a Project Manager (PM), one or more Project Officers (PO), and 3 to 4 Field Officers (FO) per Project Officer. Currently, the total of CSFW field staff is 26 persons, including 20 FOs, 5 POs, and 1 PM. Two PM positions were vacant at the time of the evaluation. Most project staff are male, but recently 3 females were promoted to PO positions, and one APC is a female. To improve the gender balance, a decision has been made that newly-hired FOs must be female. Project staff and Field Office administrative staff for the most part have backgrounds in engineering and construction, as well as many years of experience with CARE, and water and sanitation systems. Senior staff have access to 2 four-wheel drive vehicles in each office (the cost of which is shared by the other projects), and the FOs use motorbikes.

4.2 Summary of Major Implementation Activities

The four major project activities are:

- o community preparation and training on working together to design, organize, build, and maintain village water and sanitation systems (including developing a village water committee);
- o providing technical assistance on the design and construction of those systems;
- o community training on resource mobilization (including developing a plan for identifying and mobilizing resources, administrative management of systems, and collecting water user fees); and
- o health and hygiene education (which has been a minor focus of the project thus far).

Coming after ten years of work in community water and sanitation systems, CSFW inherited considerable experience and ideas. But because CSFW requires communities to pay 100 % of construction costs (for materials, equipment, and labor), a greater effort is required in marketing the concept to communities, and mobilizing resources for construction and later operation and maintenance.

Site selection starts with negotiations with the Provincial and District Government. CARE's main concern is to work in Districts where there is little or no other activity by GOI line Ministries or other agencies. Then a general list of sites is developed; the project contacts these communities, markets the concepts and surveys the village. Later a short list of interested villages is created; the final selection is based on a combination of factors about the community and project resources.

From the moment of entry the project's activities are guided by an exhaustive flow chart detailing the stages of implementation. Tasks, responsibilities, and training or other activities are sequenced. As with the survey instruments, this too has been pared down over time. A summary sheet showing the 14 stages of implementation is contained in Appendix Five.

In general, after the initial community preparation stage wherein the community is made familiar with the objectives and overall process of the project, the next project activity is the engineering survey and preparation of the budget for the system. This is discussed and negotiated with the community based on the technical options and the number of potential users. Community training starts to take place in a range of subjects from committee formation to project planning and resource mobilization, and operations and maintenance. Training is channeled through the committee responsible for the system. Guiding the training are over 86 training modules developed by the project (See Appendix Eleven).

Resources are mobilized from within communities and, if necessary, supplemented by loans from banks and/or raw material suppliers. CSFW plays a vital role in getting banks in particular to "buy-in" to the CSF approach. Systems are built as funds are collected or a loan received. Systems are either gravity flow, rainwater catchment, handpumps (or some combination thereof under WASHES), and usually include public facilities. Usually, users supply labor and raw materials, and often construct the system largely themselves. Some systems are built by local contractors. Project staff act as supervisors and advisors to the construction process.

Monitoring is carried out by field staff up through the chain of command. Jakarta-based CSFW staff visit Field Offices on an average of 10 days per month. The main reports are a monthly

activity report produced by FOs and a Project Implementation Report (PIR) produced by each Field Office each semester and summarized by the PC and his staff. Financial reporting follows policy and procedures laid down by CARE in the USA and Canada.

4.3 Outputs

To quote a project document on the subject of outputs:

> "CSF is a pilot project directed towards maximizing community participation...in the construction of water and sanitation systems. As such, the project is focusing less on physical targets and more on developing an approach to community development."[4]

The project document does not list output targets, although indicators of achievement of project goals are often quantified. However, much of the project's activities consist of interacting with communities and providing technical assistance, as can be seen in the summary above. Nevertheless, there are identifiable outputs at this stage of the project, given in the five subgroups below:

- Community Involvement
  - 50 sites, accepting in principle to pay for their own water supply and (in some cases) sanitation systems;
  - 23 water committees established and operating;
  - numerous (60+) training sessions conducted for water committees in various components of water system planning, construction and management;
  - 13 cross visits by communities to other CSFW sites.

- Community-Mobilized Resources (see Appendix Six)
  - $102,776 in cash/in-kind contributions mobilized from their own resources by 21 communities;
  - $8,255 in grants obtained from non-CARE or GOI sources by communities.

- Loans Accessed by Communities
  - 3 different banks offering credit to communities;
  - 6 loans from banks valued at Rp. 25,650,000;
  - 5 loans from suppliers valued at Rp. 38,900,000 from four different raw material suppliers offering credit to communities.

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[4] CARE/Indonesia FY 89 Third Trimester Report.

- o Water and Sanitation Systems
  - 16 sites completed and 18 in process;
  - 13,300 users benefitting from project activities;
  - Average system cost per user of U.S. $9 (in NTB), $11 (WJ), and $7 (EJ), exclusive of CARE technical assistance and logistical support costs.

- o Other Outputs
  - 86 Training Modules developed;
  - Site selection methodology developed;
  - Information on CSFW distributed to 43 institutions including GOI, NGOs, and donor agencies;
  - CFS Support Group established in WJ, and another informal group (including UNICEF, AIDAB, BAPPEDA, and MOH) in NTB;
  - Formal agreement in EJ for GOI to utilize key elements of CSF approach in villages not assisted by CSFW.
  - A number of workshops and seminars conducted on the CSFW approach, HHE, and other topics for CARE, GOI, IPVO, and other donor agency staff.

PART TWO - DESCRIPTION OF THE EVALUATION

This is a midterm evaluation of the CSFW project, as required by the project proposal[5]. Terms of Reference for the evaluation were jointly developed by the CSFW Management and Support Team, in conjunction with the Mission Evaluation Officer.

1.0 TERMS OF REFERENCE

This midterm evaluation is a standard component of the overall project cycle for CARE. Its general purpose is to review the project's progress thus far, and to recommend appropriate mid-course corrections which will enhance the achievement of project goals and objectives. The evaluation team is required to:

- o assess project planning and implementation thus far;
- o examine project goals to determine appropriateness;
- o review completion of project objectives in support of achieving those goals; and
- o based on evaluation findings, develop recommendations for modifying goals, objectives, and tasks undertaken to achieve objectives over remainder of the project.

Terms of Reference with evaluation questions are in Appendix Nine.

2.0 THE EVALUATION TEAM

The core team consisted of three people. Rick McGowan, Team Leader and Technical Specialist for rural water supply and sanitation systems, is Senior Engineer and Senior Associate at Associates in Rural Development, Inc. (ARD). He has worked on water and energy projects in Africa, the Middle East, and Asia for over eight years. Mohd Dawam Rahardjo, Community Management Specialist, is a Development Economist with much experience in community development and fostering Indonesian PVOs. Formerly Director of the Institute for Social and Economic Research, Education and Information, he has participated in developing several Repelitas. Nick Ritchie, Community Resource Mobilization Specialist, is CARE's Regional Technical Advisor (RTA) for Small Economic Activity Development. He has worked in small enterprise development in Europe, Africa, and Asia for over fifteen years.

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[5] Food for Self-Sufficiency: Community Self Financing of Water and Sanitation Systems, J. Jackson and M. Judd, CARE/Indonesia, revised July 1988.

The core evaluation team was accompanied in their field visits and supported by CARE/Indonesia headquarters (CIHQ) CSFW project staff, including Project Coordinator (PC) Dan O'Brien, Assistant Project Coordinators (APC) Catherine Haryono and Budi Rahardjo, and by CIHQ Evaluation Officer Glenn Gibney. At CARE's Field Offices in WJ, EJ, and NTB, we were assisted by both CSFW/WASHES project staff and Senior Staff (CR and ACR) whose experience in RWSS project implementation expedited the evaluation team's understanding of CARE's work in the sector.

3.0 DESCRIPTION OF EVALUATION METHODOLOGY

This evaluation was structured on the standardized CARE project evaluation procedures as contained in standard CARE evaluation procedures[6], and reflecting an evaluation methodology more specifically related to WS&S projects, the recently published WASH evaluation guidelines[7]. Most, but not all project sites were visited, certainly enough to view a representative sample of CSFW work thus far. Sites on Sumbawa Island were not visited due to time limitations. The evaluation methodology consisted of:

- o a pre-planning phase in January, during which the Team Leader met with CIHQ CSFW staff and the Evaluation Officer to lay groundwork for the evaluation. This was followed by a Team Planning Meeting (TPM) using the WASH model (see Appendix Eight for the TPM schedule);

- o review of all relevant project documentation, including the project proposal, periodic reports, technical manuals (e.g., the BOOM[8] engineering design manual, blueprints), reports from other CARE/Indonesia water projects (such as WASHES and SRCD), extension and dissemination reports (e.g., publicity pamphlets on the CSF approach), and WASH reports on Indonesian WS&S projects. A list of project documentation reviewed is given in Appendix One. A list of supporting documents used (and proposed references for Field Office use) is given in Appendix Eight;

- o review of general data (e.g., social, economic and technical surveys undertaken early in the project) and financial/economic data (e.g., cost analyses for water systems, data on loans and water user fees, and commercial loan practices);

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6 CARE Program Manual: Chapter Five - Monitoring and Evaluation.

7 Evaluation Guidelines for Community Based Water and Sanitation Projects, Phil Roark, WASH Technical Report No. 64, the Wash Project, Washington, DC, May 1990.

8 A Guide for Community Built, Owned Operated and Maintained (BOOM) Water and Sanitation Systems, Gary Filippi, CARE/Indonesia, 1990.

- review of GOI water sector development plans (e.g., Repelita V), and sector-specific studies (e.g., the ADB Water Sector Overview) related to water resources and sanitation development in Indonesia;

- interviews with project personnel (PC and APCs, provincial PMs, POs, and FOS who are responsible for overseeing construction and dealing with village water committees), CR and ACRs at each Field Office, and the original project designer (a complete list of persons interviewed is given in Appendix Two);

- site visits in three provinces (EJ, WJ, and NTB), interviews with project field staff, regional GOI officials, and project beneficiaries (individually, and with village water committees); and

- meetings with donor (e.g., AIDAB, UNICEF) and other PVO/NGO personnel working in the WS&S sector to review experiences and identify reasons for successes and failures in project planning and implementation.

PART THREE - FINDINGS

Part Three groups the evaluation team's findings into seven chapters: Water Engineering and Sanitation; Community Management; Resource Mobilization; Human Resource and Institutional Development; Institutional Linkages and Policy Implications; Progress Towards Project Goals; and Project Management and Implementation Approach.

1.0 WATER ENGINEERING AND SANITATION

This chapter focuses on the technical issues of water system engineering design, construction, operation and maintenance, and sanitation systems and practices observed during the evaluation. Since the evaluation team viewed the CSFW project more as the latest step in CARE/Indonesia's evolving water resource development efforts rather than as a completely separate project, considerable time was spent visiting WASHES, as well as CSFW sites. Differences between sites from each of the two projects, as well as regional differences, which influenced system design, construction, and maintenance were noted. In general, designs for WASHES and CSFW systems were identical. The major differences were in how those designs were financed and constructed (and by whom).

CARE's system design and construction practices were, on the whole, appropriate for project sites. They reflected conditions encountered in the three provinces, and made use of local materials wherever possible. However, difficulty insuring proper quality control during construction at some project sites was a major area of concern identified during the evaluation team's site visits. Many of the comments in this section, particularly those comparing alternative tank designs, draw heavily upon the considerable expertise demonstrated by CSFW technical staff during visits to the three Field Offices in EJ, WJ, and NTB.

1.1 Water System and Component Design

The great majority of the water and sanitation systems installed during CSFW (and WASHES as well) are gravity-fed, piped water supplies. Their sources included primarily spring catchments, but also occasionally rivers or small creeks. They usually consisted of the following components:

- o intake works (commonly called a "capturing");
- o a collection tank near the intake works (sometimes doubling as a sedimentation or desilting tank);
- o a main pipeline (typically 1-6 km in length);
- o break-pressure tank(s) where required;

- secondary pipelines leading to reservoir tanks; and

- water points. There were four main types (listed in order, most common first):
  - an MC (a masonry washing and bathing place with sides for men and women, with multiple taps)
  - an MCK (an MC, but with toilet facilities)
  - house connections
  - simple standpipes.

Typically, systems are designed assuming a demand of 60-80 liters per capita per day (LPCD), with an assumed demand growth rate of 2.5% per year over 15 years. The GOI designs its systems at 60 LPCD for house connections, and 30 LPCD for public standpipes (MC or MCK). In some areas, the MCs and MCKs were built with integral storage tanks. In others, ferrocement, bamboo cement, or brick central reservoirs, located some distance away from the MC/MCKs, were used. Some sites (particularly where rivers were used as sources) had slow-sand filters. At some villages, handpumps had been installed, usually on boreholes (drilled and cased wells). Seven hydraulic rams ("hydrams") were installed in WJ and NTB. Rain water catchment tanks were also installed in some areas (through the WASHES project), but their use is of course restricted somewhat by variable rainfall patterns in different areas (e.g., Pacitan).

Design blueprints were reviewed and physical infrastructure was inspected at all three CSFW province sites. Compared to commonly accepted design standards [9], CARE system and component designs reviewed by the consultant appeared more than adequate for the job at hand. In fact, some components appeared to be somewhat over-designed. For example, the thickness of sidewalls in some of the capturings, collection, and break pressure tanks was some 25% more than the design standards they were compared with. At first glance, this might suggest that opportunities for cost savings by reducing design specifications may exist. After considering actual construction practices, this apparent over-design may in fact reflect an understanding that villagers may cut corners constructing systems by using smaller dimensions than design specifications, or by using less cement than required often in an attempt to minimize system cost. Considered in this light, the apparent over-design may reflect what is called an engineering safety factor in other countries, and is completely appropriate under the circumstances. Potential cost savings derived from eliminating this implicit safety factor is likely to have minimal impact on overall project costs, but should be investigated further.

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[9] A Handbook for Gravity Flow Water Systems, T.D.Jordan, Intermediate Technology Publications, London, 1984

System designs vary somewhat from province to province, partly reflecting the fact that standard designs were different in some field offices. In EJ and WJ, the designs are essentially the same, since there is considerable cross-visiting between the two offices. Also, the current WJ ACR spent 3 months on TDY to EJ, to assist in the development of plans with FOs there. Designs in NTB were apparently developed relatively independently of the other two offices. Designs and construction practices in each office are influenced no doubt by the experience of technical staff working out of each office over the years. Variations reflect the local availability of certain materials also (e.g., the right kind of bamboo for making bamboo cement tanks) in some areas and not others. The most obvious regional differences in design involved the types of storage tanks used, and whether systems used centrally-located storage tanks with distributed water points (MCs or MCKs), or incorporated storage tanks in MC/MCKs. Also, some Field Offices used a wider range of technologies (hydraulic rams, handpumps, rainwater catchment) than others in their projects.

System layouts differ also in the way water storage is handled. To some extent, this reflects system designers' preference, but there are usually practical reasons for this as well. For example, an MC with a built-in tank is generally less expensive than a stand-alone tank with a separate MC, simply because of the shared wall. In crowded areas such as densely populated peri-urban villages (e.g., Klayu in NTB), combination MCs with tanks use less valuable space, making it easier for a land owner to locate the water point on his land and allow public access. Because MCs with tanks insure local access to stored water (not just a water point connected to a distant, hence less controllable reservoir), it is often easier to coordinate neighborhoods to build combined units. Finally, distributed rather than centralized storage reduces the probability of subsystem-wide outages, for example, if you have a subsystem of five MCs with integral tanks, and a tank fails, you can always walk down the street to get water from one of the other nearby MCs. If you have a central storage reservoir in your area with five distributed MCs without tanks, if your (only) central reservoir fails, you may have quite a walk to get water.

Often, building large (from 6 m^3 up to 57 m^3 in this case) separate reservoir tanks (such as the bamboo cement tanks in Cibodas, in WJ) requires the organization of a much larger group of people (especially when weaving a bamboo mat for a large storage tank), and an associated large amount of materials (cement, wire, rebar, matting, stone, sand, piping), which is logistically more difficult to organize. However, the advantage to centralized storage is that when individual households are more widely distributed (such as in Cibodas) and there is no particular constraint on land, it is easier and cheaper to have only one central storage tank servicing 5-10 distributed MCs.

Also, it guarantees that if anyone on the subsystem has water, everyone will. On the contrary, for distributed tanks on one system, if inconsiderate users at lower level MCs leave their taps open and waste water indiscriminately, MC/tanks at higher elevations may not receive any water at all (e.g., at Punikan in NTB).

Under WASHES, CARE generally did not include direct house connections in its systems. Logistically, there were several reasons for this. House connections increase demand on the water source and system (per capita consumption more than doubles typically when the switch is made from public taps to household connections), makes it difficult to bill users for greatly increased personal consumption unless water meters are used (an additional expense), and increases overall system costs (more secondary pipes, and larger more costly mainlines because of greater flow requirements). However, under CSFW (and in some WASHES projects) where source yields were sufficient, house connections were permitted as long as communities and individuals paid the increased costs themselves. In practice, at many sites unauthorized house connections proliferated, with families stringing hoses of all colors and sizes from storage tanks or impromptu distribution boxes to their kitchens or backyards. The objection to such a practice is that it tends to increase demand far beyond what systems are designed for, and may lead to conflict between competing user groups on different subsystems, as increased demand tends to overtax or imbalance overall system supply.

1.2 Construction Quality and Management

Construction quality was good at most sites visited, especially those constructed under the WASHES project before 1988. However, construction quality and management practices were problematic at other sites, especially systems constructed under WASHES after 1988 and CSFW. Problems noted at some (by no means all) CSFW (and some WASHES sites where users paid some system costs) included:

- o lack of proper construction planning and monitoring. Inadequate construction monitoring by FOs is largely due to conflicting time demands from responsibility to monitor construction activities at multiple sites;

- o a piecemeal approach to construction, in most cases dictated by inadequate or untimely resource mobilization and subsequent procurement problems;

- o lack of proper construction inspections, before proceeding to the next phase;

- o short-cutting system and component designs provided by CARE, in an effort by villagers (and in some cases local contractors) to save money;

- o a lack of understanding of proper construction practices and responsibilities on the part of some communities when dealing with local contractors or constructing systems themselves; and

- o FOs noted difficulty retaining construction quality control when villagers cover material and labor costs. Often, FOs have little control over CSFW construction.

Construction problems led to a variety of problems at some sites, including leaky tanks, poorly built floor pads in MC/MCKs (both insufficient thickness and insufficient cement in masonry led floors to disintegrate prematurely), poor or nonexistent drainage, inadequate tap design or installation (bottle tops as faucets instead of pipes), unfinished tanks (no caps or locks), improperly tilted floors which did not allow for proper drainage, missing float valves, inadequately washed sand resulting in weakened concrete, and a variety of other minor problems, most if not all of which could have been avoided had villagers been properly supervised during construction. Given that major components (e.g., reservoir tanks, sand filters, capturings) are designed to last 15-20 years, it was difficult to assess the longevity of the CSFW-constructed components, given that most had been built relatively recently.

One particular example of a community abdicating responsibility for constructing its own systems and the results obtained thereby is worth noting. Eight MCKs were built by a local contractor in Kalijaga in West Lombok under WASHES. The community contracted these out rather than building the system themselves, because they were unable to mobilize resources quickly enough, and a local contractor offered to build the systems on a credit basis. The evaluation team inspected five of those MCKs during its visit, which took place about 6-12 months after the MCKs had been constructed. At two sites, the masonry (which could be scraped off by fingernail) was clearly inadequate. Tanks showed evidence of leaking at 3 MCKs, taps had few if any valves and leaked, and drainage was almost completely ignored. Standing water was in evidence at nearly all the MCKs. Tank caps were missing at several sites.

Conversations with villagers made it apparent that they were unaware of the sometimes poor quality of the installations. When villagers take the role of passive beneficiaries (who are either unaware of or do not complain about low quality work), feelings of ownership and subsequent incentives for insuring the long term sustainability of the system can be reduced significantly. Also, they were uncertain of the division of responsibilities between

the local contractor and villagers as to who would build what. It was unclear whether the local contractor was responsible for drainage and the tank top. In principal, while CARE FOs are responsible for supervising and inspecting construction, conflicting responsibilities or scheduling makes it impossible sometimes to adequately supervise construction at all sites for which they are responsible.

Therefore, CARE should consider additional technical training to focus on providing better information to villagers on proper construction methods and materials, so that they can better supervise local contractors themselves when CARE FOs are unavailable. In addition, when outside contractors are used (which should be discouraged for the reasons given above), CARE should provide villagers with a draft agreement between them and the local contractor which includes a clear description of final product specifications, amount of materials to be used, approximate scheduling, and responsibilities for any system components to be constructed by anyone other than the local contractor.

Construction planning and management appeared problematic at some CSFW and later WASHES sites in all provinces visited. At such sites, construction planning was haphazard, often undertaken without the full understanding of all participants (village water committees, skilled/unskilled laborers, contractors responsible for providing materials, and CARE FOs) of what needed to be done and when. FOs should take more time to develop construction plans and discuss schedules with all parties, and tie those schedules to M&E procurement and externalities like harvesting/planting. It would be helpful to develop lists of all required inputs (equipment, materials, personnel), to determine who will do what and when, and to secure the agreement of all parties on minimum specification requirements (such as dimensions and concrete mixes).

Ideally, funds for all equipment, materials, and skilled labor should be collected prior to the initiation of construction. In reality, this often does not happen. Funds are collected in a piecemeal fashion (for good reasons, such as, farming communities are unable to come up with large amounts of cash until after successful harvests). Equipment and materials are also purchased piecemeal. As funds become available, lengths of pipes or bags of cement are purchased, and either temporarily stored at a central site (such as the head of PPAB/HIPPAM's house, or, as was done at Danger, in the mosque itself), or installed forthwith.

This piecemeal approach to the collection of funds and construction, while perhaps unavoidable given the reality of the resource mobilization process, has several implications. First, it is difficult for the FO, who typically has responsibility for

2-4 sites, to schedule time to properly supervise construction. Occasionally, conflicting construction schedules demand that he be in two different places at the same time. Secondly, this approach can lead to inefficient use of manpower resources. Scheduling and organizing skilled/unskilled laborers is logistically difficult. For example, you as a team leader of a community construction group plan to work at a site building a ferrocement storage tank and an MCK, but only have enough materials (cement, sand, stone, chicken wire, rebar, and wire) for the tank base and the tank, but not the MCK. You will then have to bring together the skilled and unskilled laborers twice, once for the base and tank, and again (after additional brick, cement, sand, and rebar are purchased) to build the MCK. Getting everyone involved again for the second effort will unnecessarily double the required planning effort.

A second, more problematic, result of piecemeal construction is that construction quality may suffer. For example, if you are building a capturing, and you have enough materials for outside and interior walls, and the necessary piping for the outlet, overflow, and cleanout access manhole, but not for the top, and you go ahead and begin to build the structure, saving for the top for another day, when the top is built, there will be a "cold joint" (the interface between the old concrete in the sidewalls and the new concrete in the freshly built top). A cold joint is much more likely to leak at some point in the future than if the capturing were built all at once so that no cold joints occurred.

If, in spite of improved planning and activity coordination between an FO's sites, conflicting time demands make it simply impossible for the FO to be on-site during certain critical construction activities, a system of periodic inspections should be arranged. For example, if the first long stretch of ditch had been dug, and the village committee was ready to lay a stretch of the mainline, the FO should make plans to inspect the ditch and pipe before the pipeline is buried. He can alert villagers to any improper procedures, and help prevent problems before they occur. FOs should make an agreement with villagers to make inspections at critical junctures in the construction process, before anyone proceeds to the next phase.

Similarly, FOs should carefully discuss the design of and specific construction procedures for all major system components to make sure that villagers understand all important points before construction begins. A few extra hours of explanation before construction begins can save days of trying to fix a problem later on. Villagers should be discouraged from using outside local contractors who provide turn-key systems or components, since this undercuts the feeling of community management, ownership, and responsibility for quality control for their systems. Also, it undermines the community's ability to deal with operation and maintenance problems later on, making

them more reliant on outside assistance when something goes wrong.

Given the problems noted above, it would be helpful to establish a strategy for insuring better quality control for construction. That strategy has two major points:

- o villagers need to be more aware of the consequences of poor quality construction. Short term savings in installed cost can lead to premature failures, and increased O&M costs. Additional technical training is required so that villagers have a better understanding of important design and construction parameters; and

- o if it is necessary to use local contractors, CARE should assist villagers to draw up agreements that state cost, and specifications of end products, assign responsibilities for any components for which the contractor is not responsible, specify inspections which determine acceptability of the product, address method of payments, and deal with default scenarios.

A number of possible approaches to insuring quality control were discussed with CARE staff. One proposal is a quality control rebate. In WASHES, communities were required to provide 50% of the "total cost" of the project. However, the "total cost" did not include the cost of expensive items such as technical assistance, overhead, and other costs necessary to support the project's activities. The 50% of the value of equipment, materials, and labor that CARE provided, along with direct FO involvement in construction, allowed CARE to apply leverage to insure greater quality control of the system. In CSFW, communities are asked to provide 100% of the "total cost", and as a result feel that CARE cannot dictate designs or construction practices.

The quality control rebate might work as follows. Communities would be required to put up the full 100% of equipment, materials and labor costs as currently required. CARE FOs would provide more intensive training and support activities as discussed above. CARE might offer to rebate 10-15% of the community's cash contribution (in cash), but only if the final system passes strict inspection by either the responsible PO or PM. Since the GOI contribution of M&E funding is only given in materials (typically pipe), this could not be used to support this proposal. However, CARE unrestricted funds could be used for this purpose. This would provide a very strong incentive for villagers not to short-cut construction, but rather to build quality systems which will be more sustainable over the long-term. While it could be argued that this violates the spirit of CSF, in fact communities do not pay 100% of total project costs anyway, since CARE provides free TA and logistical support.

Quality control is an important indicator of project sustainability, and is important to the perception by others of the success of the project. This has been documented in development literature [10] as being itself an indicator of sustainability. Government agencies (such as Cipta Karya) and donor groups working in RWSS tend to take dim views of the project if, in spite of its tentatively demonstrated success in mobilizing community resources, the physical systems themselves are of poor quality. They may well point this out as being indicative of what happens when communities are encouraged to design and build their own systems, instead of letting people who really know what they are doing do the work.

1.3 System Operation and Maintenance

The adequacy of community preparation for O&M at CSFW sites is difficult to address, given the relative newness of the systems. Since CSFW systems (when properly built) are designed to last 15-20 years, identification of major repair needs at this early stage is unlikely. Having said that, the evaluation team feels that like quality control, there is a need to deal more effectively with O&M. For example, at some sites visited (e.g., Banjarsari in EJ), large pipe leaks were left unrepaired. At other sites, tank leaks led to standing water around storage tanks; a health problem. At others (Klayu), user groups had removed valve, taps, and plugs and let water run freely, with subsequently high water wastage. This was a direct cause of there being no water available at two other MCs on the system. Much of this wastage may be due to villagers' removal of control valves initially installed (or designed to be installed) inside storage tanks. Typically, both gate valves and/or float valves are installed on inlet pipes inside the tanks. Water wastage in the IKK projects, as well as in several WASHES communities, has been addressed by the installation of water meters. Any house connections in upcoming CSFW systems should also include meters as a way of both minimizing wastage and equitably billing for water consumption.

Communities require additional training in O&M to help insure the sustainability of their systems. This should include periodic system inspections, an understanding of proper O&M procedures, access to spare parts and skilled labor, water conservation, and a useful system of insuring that funds are available to cover recurrent O&M costs when they occur.

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[10] Can They Get Along Without Us?: Sustainability of Donor-Supported Health Projects in Central America and Africa, Thomas Bossert, University Research Corp., 1990.

1.4 Technology Selection

CARE is fortunate that so many sites for gravity-fed systems are available. Gravity systems have distinct advantages, in that they:

- o provide a relatively low-cost solution to low to moderate site water requirements;
- o are relatively easy to maintain with skills typically available in local communities; and
- o typically, are more sustainable over the long term than any pumped water supply.

Several CARE technical staff requested additional information on technology selection. Additional training is required on the selection of appropriate systems to meet site-specific conditions, including specific consideration of quantity, accessibility, reliability, and water quality (QARQ) issues. This training should include any or all of the following types of systems: gravity fed, handpumps, hydraulic rams, open wells, and others (diesel, electric, solar, and wind pumps). Besides engineering issues related to design and construction and maximizing operating efficiency, this training should cover determining installed and recurrent costs, and appropriate methods of cost recovery.

1.5 Water Quality

Water quality needs to be considered at several different points in the system. First, quality of the source needs to be determined. In most (but not all) cases, CARE systems use natural springs. The water is capped and piped directly without filtration or treatment to storage reservoirs. In a few cases, the source was river or irrigation water which was then run through a slow-sand filter before being used. No chemical treatment was used in any system. Second, secondary sources of contamination within the system need to be examined. For example, water can become contaminated by dirty storage tanks, or by improper sanitation practices at public taps (e.g., washing babies' bottoms and contaminating water outlets). Third, water can become contaminated in secondary storage in users' homes. CARE routinely does water quality testing before any source is developed, testing for turbidity, and biological (bacteria and fecal) and chemical (nitrates, carbon dioxide, manganese, and iron) contaminants. For sites where excessive bacteria occurs even after capping the spring, slow-sand filters are used to remove bacteria. While chemical contamination is not generally a major problem (except for minerals like iron in some areas), at one site in WJ, after the source had been developed (in this case, a spring in a previously unused swampy field), rice fields

were planted around the protected source. In such a situation, the possibility exists that pesticides will be used in the rice paddies which might contaminate the source. While the community had been instructed not to use pesticides in that area, in addition to physically protecting the source with a proper capturing, CARE technical staff took further precautions by surrounding the capturing with clay soil brought in from another area.

A second site where the possibility of pesticide contamination existed was in NTB (Merce), where the source was a river that ran through a valley lined with rice fields. Here, CARE installed a slow sand filter to remove river sediment and bacteria before the water entered the main pipeline. However, this will do nothing to remove pesticides, if any were present in the source (and according to pre-construction testing, none were). CARE staff assured the evaluation team that no farmers in the area used pesticides (they have already been warned by CARE against doing so) as most rice farmers do in Indonesia, but it is recommended that the water quality at the site be monitored from time to time to assure that this remains the case.

Very few of the open wells observed during the site visits (none of which were developed by CARE during the project) were properly lined with anything except brick. Given their frequent location in densely populated villages, often within close proximity of sanitation facilities, and in areas of relatively shallow water tables, it is quite likely that the wells had appreciable levels of fecal contamination. Where sanitation facilities are being constructed under the auspices of the CARE project, villagers should be well advised to locate them at proper distances from unprotected wells. In addition, they should be encouraged to properly seal the wells with masonry to further reduce the possibility of groundwater contamination.

For rural water systems, the responsibility for on-going monitoring of water quality in principle lies with the Ministry of Health. CARE routinely does pre-construction water quality testing for both chemical and biological contaminants. While this is a commendable practice, unless the physical situation around the source changes dramatically over time (a factory built nearby, or rice fields developed and pesticides used), it is unlikely that continued monitoring of chemical contaminants is necessary. However, monitoring of fecal coliform levels should be done on a regular (annual) basis as part of the periodic site monitoring program recommended elsewhere in this report.

Since the MOH is not typically able to meet its responsibilities for periodic monitoring, it is probably appropriate for CARE to take on the responsibility to periodically monitor water quality in the systems it has been responsible for installing. CARE has purchased fairly expensive

water quality testing kits. However, after initial testing of the site source prior to construction, it is probably only necessary to monitor for fecal contamination after that point. At some sites where contamination from nearby pesticide use is a possibility, samples can be taken and analyzed by the local MOH laboratory.

There are three water quality laboratories where detailed water quality analysis can be done. They are located in South Sulawesi, Yogjakarta, and Jakarta. CARE has purchased six water quality testing units for its field offices, each consisting of a fecal coliform field kit, an MF incubator for field incubation of fecal coliform, and a portable laboratory, for a total cost of over US $ 5,000 per system. Cheaper water quality field testing kits are available, such as one recently developed by OXFAM. Although not as powerful in terms of testing capabilities, CARE may want to consider buying these cheaper yet quite capable units should the need arise to purchase more testing equipment in the future.

Based on an admittedly small sample of interviews, communities in rural Indonesia appear reluctant to pay for water quality. This was evidenced by a reluctance to mobilize resources for gravity systems when open well sources were already available. Similarly, while villagers accept free handpump-equipped boreholes from MOH, often they did not make much effort to maintain and repair those handpumps to obtain the benefits of cleaner water, if open wells or other sources (e.g., rivers or irrigation ditches) were easily accessible. Thus, while villagers were typically willing to pay for quantity, accessibility, and reliability, they evidenced little concern for the fourth QARQ variable, quality. A lack of appreciation for the health benefits of clean water supply was particularly noted in NTB, where few people we interviewed saw the need for investing in any sanitation facilities whatsoever.

1.6 Sanitation and Health and Hygiene Education

While formally a component of CSFW (added in the second year of project implementation) and WASHES (again, added later in the project), sanitation in general and health and hygiene education (HHE) in particular have not received adequate community level attention in the project thus far. This varies somewhat between different provinces, with EJ having the most success with sanitation interventions and NTB having the least. The level of sanitation awareness varies accordingly between EJ and NTB. In EJ, the majority of people at project sites we visited use latrines. In NTB, the majority do not. In NTB, people routinely defecate in rivers or gardens, and have little apparent concern or awareness for the health implications of this practice.

At the community level, CSFW sanitation activities in theory begin with the FO undertaking a formal assessment of sanitation facilities and practices at candidate sites, using standard forms used in all field offices, typically with the assistance of the subdistrict sanitarian. This is done before the formal agreement is concluded to develop a water supply in the community. After the decision is made to implement a project in that community, actual training in sanitation takes place. The local sanitarian is also invited when informal training (in NTB) and formal classroom training (in EJ) for health and hygiene is conducted before the start of construction. Except for NTB sites, this is the end of the health component as currently practiced.

In NTB, the new sanitation training modules were test at one site with health kaders (not the community or the HIPPAM). Their reaction was that it was not worth including in community training because the people's knowledge, attitudes, and practices (KAP) were in such opposition to the HHE training that it would have little effect on behavior. While NTB FOs made efforts to introduce latrines by discussing health benefits with users, there has been little success thus far. Prior to construction, FOs ask if anyone is willing to build latrines with a bowl provided by CARE and paid for by the GOI. Typically, there are only 1-2 positive responses per village. When there are no positive responses, FOs encourage at least one family to build a demonstration latrine. Also, NTB staff showed an HHE film from GOI's Information Department at one site, but that generated little interest as well.

In EJ, MCKs or private latrines are installed as part of the water system construction in all areas where they do not currently exist, so coverage is quite high. Sanitation systems were generally well-designed and constructed[11], and some had one feature of particular interest. At most CARE sanitation installations observed during the evaluation, standard pit latrines or latrines with septic tanks (which require either periodic pumping which is not done here, or building a new tank when the old one fills up) were built. However, at several EJ sites, CARE staff had built leach fields onto their septic tanks, greatly reducing maintenance needs and minimizing the need for building new tanks.

Also, in EJ, novel dissemination approaches were used. At one project site (Wonoanti), one of the technical kaders (himself a professional puppeteer) used a puppet show to successfully demonstrate to the community the benefits of latrines. Now, almost all houses involved in the projects there (both CSFW and

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[11] Appropriate Sanitation Alternatives: A Planning and Design Manual, World Bank Studies in Water Supply and Sanitation No. 2, The World Bank, Washington, DC, 1982.

WASHES) have and use latrines. In general, sanitation coverage in EJ is quite good. At 60-70 % of the water project sites[12], almost everybody has access to and regularly uses either a public (typically 4-5 families per latrine) or private latrine.

CARE's Village Primary Health Care (VPHC) Project has activities in all three of the provinces also where CSFW works. There is some degree of clustering among the VPHC and CSFW sites. For example, in EJ, VPHC staff accompany the CSFW FO on his site visits and help conduct training on primary health care and sanitation at about 20% of the water sites. VPHC works in NTB, but only in one subdistrict, which is not one where CSFW operates. In general, CARE's NTB operations are more dispersed, since they work in six districts. In EJ, water projects are in only two districts.

There are a number of dissemination methods which CARE may want to consider adopting as part of its planned increase in effort to promote HHE in its water projects. For example, one commercial noticed on the national TV broadcast encouraged boiling all drinking water. The commercial showed people getting their water from a variety of sources, including open wells, buying from vendors, and using handpumps (a Dragon handpump mounted on a capped well was shown). The final scene showed a teapot with the message: boil your water before drinking it, no matter what the source. While it might be argued that TV commercials are directed at a much different audience than CARE water projects, field visits showed that this was far from true. CARE should consider the feasibility and cost of developing HHE-related commercials for public TV. Also, there are existing GOI-supported programs which include distribution of HHE-related leaflets for inclusion in school curricula and radio program targeted at rural areas. CARE's own magazine, Asyik, is a useful vehicle for disseminating information about HHE in general, and the health benefits of clean, reliable rural water supplies specifically. Supporting ties between CARE's VPHC and CSFW should be encouraged wherever possible.

The recently developed (late 1990) training modules[13] related to sanitation and HHE have yet to be widely implemented in any of the Field Offices (but they are being used at all new CSFW sites). This reflects a general lack of emphasis on sanitation aspects in the project thus far. Since the real objective of the CSFW project was to demonstrate the viability of the financing concept, rather than to have a significant impact

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[12] Estimate based on discussions with a variety of EJ informants.

[13] See Appendix Twelve for a current list of all the CSFW Training Modules. There are some 21 different modules directly related to sanitation and health and hygiene education.

on community health (at least over the short term), this was not an unreasonable approach. However, now that the project has become fairly well established, there is clearly a need for an increased emphasis on HHE in order to derive maximum benefit from the project.

CARE should consider the potential advantages of coordinating its HHE efforts more closely with MOH, in association with the Posyandu in each village and the Puskesmas in each subdistrict where CARE works. CARE has, in fact, been assisted by the Puskesmas in providing training in HHE in Lombok. CARE would do well to consider opportunities for increased clustering of CSFW and VPHC sites. This would be a more efficient use of CARE funds, in that a good part of the investment in rural development is the time and effort spent developing relationships of trust with villagers (and their chosen representatives). Once this relationship is established, it can readily be applied to the development of activities in more than merely one sector.

2.0 COMMUNITY MANAGEMENT

This chapter discusses the social context of the CSFW project, presenting roles and responsibilities of village and government organizations involved in water system planning and development.

2.1 Community Participation in CSFW

The level of direct community involvement in all phases of water supply and sanitation system design, construction, and operation is the component of this project which makes it most unique. Participation and resource mobilization, however, do not necessarily occur at the level of involvement and with the high quality of results as was initially hoped for in the project design. CARE provides community-level training, extension services, and technical consultation in both formal and informal settings in the construction skills, appropriate technology and sanitation, project organization and management, and community health and hygiene education. Those are all parts of the community empowerment effort by CARE to develop motivation, increase awareness, improve skills, and strengthen a community's bargaining capability for dealing with government agencies, village elite groups, or private enterprises.

The participation and self-reliance components are based on the hypothesis that the higher the level of participation, the better the quality of system developed, since the community takes a direct part in the process, and subsequently feels more responsible for supervising the construction process. With self-reliance in resource mobilization, it is expected that the community will have a strong sense of belonging and ownership of the system, thus, the higher the community's self-reliance, the more sustainable the system will be in the hands of the community's self-management.

The concept of community participation was not completely new when WASHES began in 1982. Prior to this, there were various rural development projects in areas such as potable water provision that incorporated participation and self-reliance aspects. These included projects initiated and self-financed by local communities themselves (usually called "pure self-reliance" projects), or projects financed by various types of government subsidies, grants, or funded by foreign agencies and channelled through different government bodies. The level of participation varies from village to village, or region to region. Factors affecting contribution levels include village per capita income level, level of awareness, the community's need to develop projects according to their own priorities, their ability to organize and mobilize resources, leadership patterns, and value systems that tend either to promote or discourage participation and self-reliance.

Participation and self-reliance goals are institutionalized in the Panitia Pembangunan Sarana Air Bersih (PPSAB, or Water

Project Committee) during construction, and Badan Pengelola Sarana Air Bersih (BPSAB, or Water Management Body), after construction is completed. Community water organizations promoted by CARE need to be differentiated from similarly-named groups formed by district governments. Potable water projects supported by the GOI currently do not recognize the kind of committee established by CARE. The construction of physical infrastructure, while planned and designed by GOI's Cipta Karya, is typically undertaken by contractors. While projects are sometimes self-managed by community organizations such as LKMD (Village Development Committee), usually the construction itself is done by contractors. There is always some level of self-financing in these projects, for which committees are formed to act on behalf of LKMD.

A distinction is made between provincial and district water projects. At the provincial level, the project owner is the provincial-level Ministry of Public Works agency, Cipta Karya (usually referred to as PW, from the parent organization). As a rule, PW only carries out large-scale water development projects (greater than Rp. 100 million). When projects are completed, their management is handed over to Badan Pengelola Air Minum (BPAM, or Drinking Water Management Body), which is under the auspices of PW for the next five years. When the system is well established, its management is transferred to Perusahaan Daerah Air Minum (PDAM, or Regional Government Water Enterprise) under the Department of Home Affairs, since the system is a source of revenue for both regional governments and system O&M.

Drinking water project development for district level government is done by the District Office of PW, funded by a variety of budget sources such as the District Health Office, District Government's Budget for Rural Development, the State Forestry Enterprise, and international agencies such as UNICEF, UNDP, Plan International, AIDAB, USAID, etc., whose funds are usually channelled through MOH or MOHA. Projects of this sort usually are small scale (less than Rp. 100 million). Such projects are not necessarily easy to coordinate, because of their typically remote and often scattered locations in the interior, mountains and hills, or otherwise isolated areas. Since they are generally for low income groups, and not financially lucrative for public enterprises, they are more appropriate for community self-financing. After completion, their management is turned over to various water management groups. In East Java (EJ), since 1986, this body has been called the HIPPAM (Himpunan Pendudukan Pemakai Air Minum, or Association of Drinking Water Users). The Governor's regulation[14] regarding goals, functions, structure, and procedures established Coordinating Committees for small scale drinking water project development and management outside BPAM/PDAM at the provincial, district, and sub-district levels. In 1989, GOI recommended that other areas follow the EJ

[14] Governor's Instruction No. 9/1989, November, 1989.

HIPPAM model, but not all provinces agreed to or have been able to follow this model. It was recently adopted in NTB, although it is not yet widely known or practiced at the village level. WJ (WJ) still maintains the old PPSAB/PBSAB.

HIPPAM is intended to be the only self-supporting institution for small drinking water systems in rural areas. The point of adopting the HIPPAM model is that there have been many different organizations developed by GOI (not only in drinking water, but also in irrigation and other projects), but few people really benefit from, use, or maintain them. Many systems are either not properly maintained, or simply do not function at all, indicating a lack of responsibility or sense of ownership and participation by the community. With increased participation and self-reliance implicit in the HIPPAM model, it is hoped by the GOI that systems will become more sustainable. Also, GOI hopes the HIPPAM system will help to increase community awareness that clean water is a consumption and an economic good, so they will be more willing to accept that they should pay for it.

In urban areas this is more readily accepted. In some such areas, bottled water is actually more expensive than gasoline (on a per liter basis). In rural areas where water is abundant and easily obtained, it is regarded as a free and private good. Through HIPPAMs, the GOI would like to encourage the perception that clean water is not necessarily only a private, but rather a semi-public good (especially where potable water is limited). Thus, it should be regarded as a common property resource as well, so that decisions on its access and use should be made by communities and the government. While the GOI would like to exercise more control on water and use it as a revenue source, government support is more limited in rural areas, so communities are encouraged to develop their own water supplies (with or without government support) using their own resources to the extent possible.

The GOI is well aware that the establishment of the HIPPAM model throughout Indonesia (or even within a given province) requires time and continuous effort. Other organizations must also be taken advantage of, such as the LKMD, cooperatives, neighborhood or hamlet committees, private and public enterprises, village governments, or informal groups or individuals. For that purpose, within the HIPPAM framework, the EJ Government established a Coordinating Group at the provincial, district and sub-district levels to coordinate the development of potable water supplies outside of the traditional BPAM/PDAM environment. At the provincial level, the chairman of the Coordinating Group is the Head of Socio-Cultural Division of BAPPEDA (the Provincial Planning Board). At the district level, it is the BAPPEDA Chairman himself, and at the sub- district level, it is the sub-district head (i.e., the Camat).

The findings given below are based on visits to several WASHES, as well as CSFW sites in WJ, Pacitan (EJ), and Lombok (NTB). In the CSFW cases, since many CSFW sites are still in the

early phase of system development, conclusions given here are fairly tentative. At many sites, CARE's technical assistance has focused so far primarily on community preparation, consisting of initial contact and project familiarization, community motivation, and preliminary system design. At some sites, more information was available since many CSFW sites were extensions or rehabilitations of work done under WASHES, which in some cases might imply some community management problems. Community management problems differed between CSFW and WASHES sites.

In WASHES, communities were initially only required to make in-kind contributions such as local materials (e.g., sand, stone, or locally-made bricks), and labor. Later WASHES encouraged communities to provide up to 70% contributions, usually including cash. CSFW communities were required to provide cash to buy all pipes, cement, and other equipment. Communities agreed to invest considerable sums of money for system construction, plus pay user fees for maintenance, repair, administration, or system expansion. Willingness to pay is strongly tied to the perception of water as a marketable commodity.

2.2 Field Findings

The following sections discuss the findings of the evaluation team in the community management/participation area which came out of the visits to the three CARE Field Offices and a variety of CSFW and WASHES sites in each of those provinces.

2.2.1 Water as a Commodity

People's perception of water as a common-property resource (free access to everyone) or marketable good varies considerably in Indonesia, for both physical and cultural reasons. Many CSFW and WASHES sites are in areas of relative water scarcity, at least in the 3-4 month long dry season. Water scarcity varies considerably from province to province, as well as within provinces (especially on Lombok). Some sites are short of water in both dry and wet seasons. At such sites, ground water is either absent or too deep to be easily accessed without expensive drilled wells. Examples in WJ include Nagreg, or in certain places within villages like Cikadut and Kertawangi. In these places, water sometimes needs to be trucked in from distant sources. Water for washing, cooking, and drinking has become a marketable commodity, and a private good. Since the price of water is expensive, water purchases have come to represent a substantial percentage of the household budget, especially where demand is high and household incomes low. In Nagreg for example, the current price of water is Rp. 50 per liter, and normal household expenditure for drinking water is around Rp. 60,000 monthly, which is quite a burden for ordinary rural people.

Water-scarce areas are common in WJ, especially at higher elevations. In other cases, water-scarce villages or hamlets are situated not far from springs, creeks, rivers, or GOI-built reservoirs. There, water is not perceived as a marketable

commodity, since while it is scarce, it can still be obtained free, just not easily. For example, in Rancakalong, before the WASHES water system was built, people got water from nearby springs and rivers, or (especially richer families) paid others to do so every 2-3 days. This is also done in Kertawangi, which is now involved in CSFW system development.

Villages in Pacitan, at both WASHES and CSFW sites, are mostly located in mountainous areas, and depend mostly on springs, creeks, or irrigation ditches as sources. Springs are many, but yields are small (sometimes less than 0.5-1 liter per second), adequate only for a small number of people. Traditionally, water is treated as a common property resource, and a free commodity to be shared with others. In other locations, people use water from dug wells. In still other villages, the GOI has built large water systems to which people have either house connections or use public taps.

In Lombok, rural areas are either dry (especially in the south) or wet (with generally sufficient water sources,in the north). The WASHES hamlets of Pencor and Kertaraharja are at higher elevations in the upper Gangga sub-district, where system extensions are being made under CSFW. The situation is similar to Pacitan and some parts of WJ where CSFW projects are in process. People there are dependent mostly on spring water, and large quantities of good quality water are viewed as private goods, nonetheless requiring social organization, or as semi-public and common property resources.

A way to determine the degree to which water is a market or common property resource is by looking at its unit price (cost per unit volume) or how much households spend for water on a daily or monthly basis. Another associated indicator is the extent to which water is commercially produced. To estimate the degree to which water is considered a private or public good, determine the number of house connections in a hamlet or village, and the extent to which a community values drinking water higher than water for washing and cleaning. This information may also be useful in the site selection process.

2.2.2 Community Response to the Self-Financing Concept

The degree of scarcity of clean water at the community or household level influences a community's perception of water as a marketable commodity. This perception in turn influences the willingness of the community and households to invest in and pay user fees for reliable water systems. Another important factor affecting this perception is a community's per capita income and its distribution. During site visits, no systematic estimation of total or per capita income levels was made. Inferences about correlations between income level and willingness to invest or mobilize resources are thus not possible. Nonetheless, estimates can be made about relationships between poverty and water scarcity, and between poverty and ability to invest and mobilize resources. In theory, one might expect it to be difficult for a

poor community in need of water to self-finance projects, but it can and has happened at some CSFW sites.

From information collected at CSFW sites such as Cikadut (former WASHES site) and Nagreg in WJ, and Sidomulyo and Wonoanti in EJ (both former WASHES sites), it appears that the community's willingness to invest does not depend solely on income level; other factors need to be taken into account. Two of the three WASHES projects have high participation indices[15], while three out of five CSFW projects have high indices, one middle and one low. Sidomulyo has a low index, although its income is high. From this, it can be concluded that investment decisions are dependent upon both income level on one hand and participation, and that the latter seems to play an important role as a balancing factor to income. Similarly, the Lombok village of Gondang has a low income, but a high participation index, while nearby Danger has a higher income, but a lower participation index. Both made decisions to invest in water supplies using CSFW, but collection of funds is easier in Gondang than Danger. Wanasaba, a CSFW site still in its initial phase, has both high income and high participation indexes. Wanasaba is ready in fact to start construction, but has not yet obtained permission from Cipta Karya to access a particular spring source which is also the source for an irrigation project of a nearby village.

Often the initiative to invest in water does not come directly from a community. In WASHES, communities are chosen to participate in the project after receiving initial information and training from CARE and sometimes local government agencies. In CSFW, the initiators are usually government or village officials, especially village heads and the village elite. In Nagreg, Kertawangi, and Sekarwangi, WJ, the initiators are lurah (village leaders) who heard about CSFW from nearby villages. In Jatiroke, a group of local teachers and tobacco traders took the initiative. In Cikadut, it was the chairman of the KUD. In Pacitan villages, the initiators are either village heads or LKMD vice chairmen (who represent the community). In Lombok, the main players in water affairs are community leaders, as seen in Gondang and Danger, although in Wanasaba, it is the village head. The key to effective community response to water project initiation is usually in the hands of the community elite, but also they need support from the community as a whole, whose attitudes depend on the degree of their social discipline.

One other important factor influencing a community's response to the project is their experience with past government projects. Often, people think that projects such as provision of clean water is the responsibility of the GOI, or at least should be GOI-subsidized. Experience has also shown them that

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15 The participation index is based on a GOI determination of two variables, the first of which is how much money typically the community gives to support any government project in a village (rated on a 0-10 basis), and the second is based on whether projects in the village are well-maintained.

government projects or subsidy are often not timely and sometimes never materialize at all. They may know of other villages which received water projects subsidized by foreign funding agencies. The presence of government-funded projects or other external subsidies has weaken the spirit of self-reliance in many places. Elsewhere, other problems weaken the ability of communities to undertake self-help projects like CSFW. For example, in two particular startup CSF hamlets (West and East Kumbung) in Danger, and another (Rempek) in Lombok, people witnessed fellow villagers competing to have illegal house connections, and blocking people from other villages from accessing water by damaging pipes, because there was no working water management organization. When there is no village participation or sense of collective ownership, they express interest in getting the CARE community training so they can better develop a sense of ownership and the capability for improved water system management.

2.2.3 The Village Institutional Setting

To encourage people to participate and to mobilize resources, CARE provides organizational training based on the Construction Committee (PPSAB) and Management Committee (BPSAB), in agreement with the GOI. The chairmen and other functionaries are elected through community meetings, especially through LKMD and formalized by LMD (the village parliamentary body). After the committee is formed, with chairman and vice chairman, secretary and vice secretary, treasurer and vice treasurer, and head of several sections, some of them are selected to receive CARE training in construction, management, and health and hygiene. When the PPSAB finishes its job, it is dissolved and replaced by the BPSAB. At WASHES sites, members of the two committees were basically the same. Those who were trusted in the old committee and have proven themselves capable of accomplishing the job well, are given new responsibilities managing water distribution and system maintenance, although some may be replaced by other persons after some time. This process is different between WASHES and CSFW.

In WJ, there is a greater variety of water management committees. For example, in Cikadut the water management body has been transferred from PBSAB to the Water Unit of KUD. The construction of the system extension under CSFW was carried out by this unit. In Jatiroke, a group of informal leaders took the initiative in forming a water system construction committee. In Nagreg, the village head initiated the project, and directly appointed the LKMD to do the job acting directly as the committee. Similar cases occurred in Mekarwangi and Kertawangi, now planning CSFW projects.

It appears that the extent to which the village head and LKMD head play their roles depends on the degree of institutional development or activities of those rural institutions. In Pacitan for example, formal leaders have significant roles. While PPSABs were formed under WASHES, after construction was finished, responsibilities were handed over to HIPPAMs. This

institution usually emerges after a system covers more than one hamlet. When the system covers only one hamlet, it is more practical to have just a PBSAB, as seen in Banjarsari and Kedung Menjangan, where HIPPAM is not established.

In Pacitan, HIPPAMs were developed in several areas (e.g., Wonoanti and Sidomulyo) under CSFW. When HIPPAMs already exist, they act directly as a construction committee. However, HIPPAM's role cannot be easily separated from that of the LKMD and LMD. While technical plans are drafted by the HIPPAM, it does not possess decision-making power. The draft plan is then discussed in LKMD among members of the community, because it involves resource mobilization and community participation and therefore needs the LKMD's consent. The operational plan is reviewed and agreed upon by LKMD, then brought to LMD as a legislative body. When LKMD concurs, it is automatically agreed to by the village head as chairman of LKMD. It is then passed back by LKMD to HIPPAM for execution.

In NTB, HIPPAMs were legitimized by the governor in 1990. As in EJ, HIPPAMs are coordinated by Camats at the sub-district level, but unlike in EJ, the Camats, in their capacity as HIPPAM coordinators, are coordinated by BPAM/PDAM. In water affairs, the Camat is assisted by his staff in charge of development, the Head of Puskesmas (Rural Health Center), the sub-district level representative of district Public Works, and the other person considered necessary by the Camat. In WJ, there are only PPSAB/BPSAB in most places, mostly covering only one or two hamlets. The regional government, through the Social Bureau of Regional Government, coordinates efforts through the HIPAB (or Water Management Association). The Bureau consists of several sectoral representatives, including the provincial office of Public Works, Health, Environment, Rural Development, etc.

The NTB Regional Government is one of the early followers of the EJ HIPPAM model. Since it is relatively new, the HIPPAM model is practically unknown at the village and district level. In WASHES sites, there are only BPSABs or PPSABs when they start a CSFW project, or only LKMD as the formal project owner. In Gondang, now undertaking the extension of Sangkukun Water System developed under WASHES, it is the old BPSAB that executes the project. In Wanasaba, which never had a WASH project before, the committee is directed by LKMD with the lurah acting as chairman, but the real manager of the project is the head of LKMD. In Danger, LKMD is not directly active in water affairs.

Two institutions that play significant roles in Lombok are the mosque committee and mosque youth. While the PPSAB or the LKMD is formally responsible, the mosque committee always becomes involved. It especially acts to motivate and get initial agreement from community members, and later serves as a mechanism to collect funds for the water project. In Batu Kantar, funds needed to extend the WASHES-constructed system were contributed by the mosque, which earned the money trading fertilizer purchased from funds donated by the community. In Danger,

community members signed a promissory note to the mosque to pay a certain amount of money in six month installments to be used to both rehabilitate the mosque and build a water system. In this village, the pipe is kept in mosque's storage area on public display as an encouragement for continued resource mobilization. In Gondang, the BPSAB collects funds itself, but announcements are made through the mosque.

Mosques can also be focal points for water distribution. In Lombok, every village has a congregational mosque, a main mosque or a central mosque. The main water tank, either with (MCK) or without (MC) a built-in toilet, is constructed in the mosque yard, where people collect water, wash clothes, and take baths; some even have direct house connections. For example, in Sidomulyo village in Pacitan, the mosque is a distribution point. Unlike Lombok, Sidomulyo has one central mosque, located in the Islamic boarding school, 10 smaller congregational mosques, and 52 mosque/Qur'anic schools for children, all of which are water distribution points. By locating water tanks around and as an integral part of the mosques, the community feels obliged to properly maintain the system and supervise distribution. User fee collection is also done through the mosque.

2.2.4 Leadership Systems

A wide variety of leadership arrangements were observed in the villages visited during the evaluation, some of which are discussed in this section. In rural Indonesia, the patrimonial and paternalistic patterns of leadership still prevail. With the advance of village government and government-sponsored community institutions, this traditional leadership pattern has gradually weakened. The advance of "modern" or new institutions such as village government (the executive branch), LKMD (community-based planning board and executing body)), LMD (judicial branch), PKK (women club), Karang Taruna (youth club), Puskesmas (sub-district level community health center), Puspenmas (government information agency), and Remaja Masjid (mosque youth club, in Lombok), provide opportunities for more educated persons (e.g., secondary or vocational school graduates) to play a greater role in village affairs. In the last few years, their knowledge and technical know-how have been upgraded and renewed by various government courses. Also, CARE contributes to strengthening community institutions and capabilities by training in community management, construction techniques, and health and hygiene education.

The most influential leaders in rural areas (particularly for government-supported rural development efforts) are the lurah (or Kapala Desa) and Camat at sub-district level. The second most important leader is the vice chairman of LKMD. Since the chairman of LKMD is the lurah, the vice chairman is the "real" chairman, representing the community. The cadres that act as PPSAB/BPSAB members are usually appointed by the lurah and the vice chairman of LKMD. Members tend to be heads of hamlets, informal leaders, school teachers, ex-school masters, or local

technicians. In Lombok, the informal leaders are practically all religious leaders. In many cases, the water projects initiators are not formal leaders. Where formal institutions are already established, initiators are usually the lurah or the head of LKMD. The management of BPSAB usually consist of informal leaders, especially in Lombok. But in Pacitan, the governor has directed that HIPPAMs are to consist of formal leaders, although from the lower ranks of village government. In reality, this may or may not happen.

In Cikadut, the water unit management are KUD staff. The head is a woman graduate from cooperative management school. In WASHES, PPSAB and PBSAB members are teachers and farmers, in addition to local government staff. In villages such Nagreg, Kertawangi, Mekarwangi and Cigugur Girang, where the LKMDs have been established, formal chairmen of PPSAB are always lurah, although the person really in charge of day to day operations is the LKMD head. There are also situations such as Cigugur Girang where small groups led by farmers and traders operate very small water distribution systems. According to one informant, similar groups exist in other places. Outside the HIPPAM system in Sidomulyo some groups of people operate their own private system. In Wonokarto, where no HIPPAM exists, there are a number of small private or collective water systems (including one operated by the lurah which uses a diesel electric pump). In such systems, groups consist of 5-10 households and typically do not collect user fees, but rather collect money on an ad hoc basis when O&M costs are incurred.

In Jatiroke (WJ), the CSFW water committee chairman is an ex-school master active in tobacco trading. The committee resembles a "private enterprise" or pre-cooperative, operating independent of LKMD. In Pacitan, in spite of the governor directive, HIPPAM members are informal leaders like teachers and farmers. However, roles of lurah and LKMD heads are important, because the HIPPAM itself does not have decision-making power about resource mobilization and user fees. At the hamlet level, committee chairmen are usually hamlet heads who are not formal leaders. Except in Wanasaba and a few other places, informal leaders play more significant roles in water affairs than formal leaders.

In Lombok, successful leadership is characterized by a good understanding and cooperation between formal and religious leaders. In water affairs, the religious leaders influence communities through sermons and religious education. Not all of them play a direct role in system management, but many religious school teachers (private and government religious schools are common in Lombok) do play active roles in water committees. In some areas, soliciting the support of local religious leaders may have a decided impact on the success of project implementation.

One matter which can strongly affect project success in a particular location (particularly resource mobilization) is the identification by the FO of a key figure in the community. In

WJ, they have to be able to find someone who is both a formal leader and is trusted by the community, since in some previous projects funds collected from villagers were diverted and villagers are (rightfully) concerned about this happening again. Since the assumption is often made that the GOI is supplying adequate funds to cover water projects, villagers are concerned that their contributions go for the purchase of materials and construction, rather than to displace a portion of the existing GOI or other private grants, which can then be diverted elsewhere. In most areas, people's trust is typically placed in teachers, higher level government officials or wealthy farmers. In some areas, FOs need to approach the lurah and the head of LKMD.

2.2.5 Roles of Women

Those who deal most directly with water are women. Women are most often seen at the water tanks and distribution points, bathing, washing children, clothing, and dishes, or carrying water home. However, on lists of PPSAB/BPSAB or HIPPAM members, women's names are noticeably absent (except in Cikadut, where the KUD water unit manager and her staff are educated women.) Women's formal roles in water supply are primarily through PKK and Posyandu. In interviews, PKK and Posyandu members typically deny that they have no formal role in water matters. They do admit that their roles are different from men. For example, during construction the lurah and LKMD always solicit active PKK participation to prepare food for workers. Often, they mobilize the necessary resources (cash, materials, food, labor) for this activity from among themselves. It is generally acknowledged that it is not appropriate for women to directly engage in physical construction, although exceptions do sometimes occur.

In fact, women can play more active managerial roles such as construction supervisors, and be active in administrative positions such as treasurers and secretaries in the PPSAB, BPSAB or HIPPAM. Women were seldom observed in such positions during the site visits. CARE could have made a point to train women for these jobs, but because the training was done after the committees had already been established, and since there were no women on the committees, none were trained in construction and management. Typically, in health and hygiene education courses, almost all of the participants were women. In interviews, they explained that graduates were all active in PKK and Posyandu, and were active in primary health care instruction among the other villagers.

In addition, women are in charge of managing collective water use in the household. They are asked by their husbands to maintain the tank, taps, and supervise the use of water. In hamlets, the head of the water distribution committee is always the head of the hamlet, but wives are always asked to do their husband's job, including collecting user fees. But, they are not involved in the formal decision making, since that is viewed as the men's job. More active participation of women in decision-

making can only occur if there is agreement from the lurah or the LKMD head. CARE could, as part of its agreement with the villagers regarding technical assistance, intervene in this matter.

2.3 Water as a Factor in Community Development

One important aspect of WASHES (thus far characteristic of CSFW, and discussed at greater length in the previous chapter) is the weak connection between provision of water and the promotion of village sanitation and environmental protection among villagers. In some provinces (notably NTB), except for sanitation facilities at MCKs, few sanitation facilities were either installed or in use. Sometimes, waste water from taps was not drained away, creating adverse environmental impacts from water system development. In other areas however (e.g., Gondang village, especially in dusun Pencor and Kertaraharja), water development had several positive impacts on environmental conditions. With newly available water, villagers manage their yards and compound gardens both individually and collectively, growing plants, trees, and hedges. Women sweep their yards every morning. Community organization and training has encouraged villagers to repair and renovate their houses, and house latrines have been built by many households. Some of this is due to women now having additional time which they had previously spent collecting water from distant sources. Now they are able to actively participate in the PKK and Posyandu, and have more time for productive agricultural activities such as planting cloves and other cash crops. According to the villagers, these activities have only emerged after their water system was installed. As a result, Gondang village won first price award in the annual village competition for NTB in 1989/1990.

A different positive impact occurred in three dusuns of Soka village of Pacitan (well known for its soybean cake cottage industry), where the WASHES project was first started. In the past, soybeans were washed in the river, which is neither clean nor sufficient in the dry season. With the new water system, women (the primary producers) wash soybeans at the public taps, increasing productivity significantly.

With the development of their new water system, communities agree to establish both a water management committee and "pre-cooperative" groups. In the three villages of Sidodadi, Sadar, and Al-Hikmah, each group has 35 members. They agree to pay a user fee of Rp. 50 per person per month, in addition to Rp. 200 per month for the cooperatives. Also, they agree to pay another Rp. 200 per person for regularly attending meetings. User fees are kept in cooperative treasuries. Loans are paid in two or three installments (Rp. 30,000-80,000) at 2-½% interest. In April, 1991, the loan outstanding at al-Hikmah group was Rp. 1,2 million. Concurrent membership in both the cooperative and the water organization helps to avoid the potential problem of using water user fees for savings and loan activities (SLAs). The cooperatives collect small monthly contributions also (in the

form of rice), to be sold for cash and used as an additional loanable fund. Other arrangements occur, for example, in Gawang (Pacitan), there was a Family Income Generating Project (through P2K, or Peningkatan Pendapatan Keluarga) as part of the Family Planning Program. The community was given a Rp. 500,000 revolving fund, which has grown by a factor of 16 to Rp. 8,000,000. This money is used for SLAs, and to make a loan to support a CSFW project there.

The relationship between CSFW/WASHES projects and other community development activities depends on the creativity of the individual FO. In most areas, FOs have not directly promoted community involvement in other activities (nor were they supposed to). However, identifying and motivating key persons to assist in water project development sometimes results in generating those persons' interest in ancillary or complementary development activities. Summaries of conclusions and recommendations drawn from the above discussions are given in Part Four, Sections 1.2 and 2.2 respectively.

3.0 RESOURCE MOBILIZATION

Over the last 10 years, CARE/Indonesia has been increasing communities' contributions to the construction costs of water and sanitation systems, as can be seen from Figure Two. At its termination, WASHES project required a 50% contribution from the community (e.g., labor, materials, cement, pipes, and accessories). Coupled to this was a parallel emphasis on community payment for O&M. Unlike either existing or previous CARE/Indonesia WS&S projects, CSFW is designed to test the assumption that villagers are willing and able to finance systems without direct subsidies from CARE or the GOI, and to fully maintain a system and replace it at the end of its useful life.

Communities are expected to cover construction and O&M costs of the system, both cash and in-kind, but are not required to pay for the costs of technical assistance. To achieve the objective a wide assortment of resource mobilization mechanisms have been explored by communities and CARE. So far there are 34 CSFW sites, 16 of which are completed (meaning 90% or better). Thus, many sites visited by the evaluation team were WASHES sites, and findings have been drawn from both projects.

3.1 Resource Mobilization Mechanisms

In CSFW, communities typically use one or more of the following mechanisms to pay for their water systems: in-kind contributions; cash (from savings, sales of goods or services); loans (from banks or vendors); and grants (from local factories, or other donors). These options are discussed in this section.

3.1.1 In-Kind Contributions

Commonly, rural villagers contribute labor for community projects such as mosques or roads. Thus in costing the systems it is expected that all construction labor will be provided by the community, and that they will collect locally available materials (e.g., sand and stone). Most communities have provided labor, and men, women, and children are involved. In some cases, those people who have higher opportunity costs for their labor are allowed to pay cash, and poorer community members get paid for extra labor. In more than one instance all labor was paid for from such cash contributions.

3.1.2 Cash

Most systems are either gravity flow or rainwater catchment, using pipe, cement, and other materials that are paid for in cash. A household contribution from each user is the most common method of raising cash (in one community in EJ every family in the whole community contributed, in spite of the fact that not all contributors became system beneficiaries). The main determinants of the amount have been the type and cost of the system, and whether it includes individual household connections or public

MCKs. In WJ for instance, the wealthiest province where CSFW operates, there is more demand for household connections. In EJ and NTB, only public facilities are being constructed. Contributions are always greater for private than for public systems. In WJ, a common method of financing is to try and sign up as large a number of people wanting household connections as possible using a flat fee, and so pay for the first part of the system. In NTB and EJ, it sometimes happens that the household contribution is determined by the socioeconomic class of the household according to the GOI national classification system[16]. Amounts raised ranged from Rp. 3000 to Rp. 150,000, the average being about Rp. 50,000.

So far, experience with collection of household contributions progresses well in EJ for public systems, and often runs into some difficulty in WJ (mainly for private installations) and NTB (for public systems). Often, difficulties stem from committees' over-optimistic estimates of the number of households willing to pay the buy-in amount (e.g., Cibodas and Cikadut in WJ, or Rempeck in NTB). Eventually, most communities have raised significant sums, but it has taken much longer than expected and less money than anticipated has been raised.

In addition to household contributions, potential users have generated much smaller amounts of cash by the following means: collection and sale of agricultural products (e.g., coconuts); hunting and selling wild boars; cultural performances (e.g., puppet and film shows); and selling labor. In NTB, religious leaders have played a key role in motivating villagers. In WJ (Sukajadi), the religious tithe "zakat" was used to raise funds[17].

In some discussions during the site visits, it was proposed to support the development of savings and loan associations (SLA) and income generating activities (IGA) under CSFW to better enable communities to pay for their water systems. While the evaluation team supports the idea of SLAs and IGAs as an important component of community development, to expect CARE staff to directly provide technical assistance for establishing them would certainly over-burden them at this point, and so is not advised. Supporting this position is the opinion of the former CARE Regional Technical Advisor for Small Economic Activity (RTA/SEAD), who in 1987 investigated and rejected the idea of CSFW promoting IGAs among water users to raise cash for other purposes. Reasons cited included the real possibility of conflict for village resources between parallel projects (as has indeed occurred over other community priorities, e.g., a mosque); and doubts surrounding IGA potential to actually generate sufficient cash surpluses.

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16 Indonesia has a national classification system which applies to all villages and households. The criteria include not only socioeconomic conditions, but also ideological issues. The system is widely used by community leaders to determine contributions to community projects. However, it does not guarantee equity as those who make the determination of classification are usually in Class 1 (the uppermost).

17 From the pamphlet Resources Mobilization in the CSFW Project, M. Judd, CARE/Indonesia, 1988.

Table RESOURCE MOBILIZATION FOR CSFW SITES (1988-1991)
(at 31/05/91)

AVG COST /PERSON NTB 16,478 Rp.
WJ 21,104 Rp.
EJ 13,294 Rp.

% OF SYSTEM COMPL	SITE NAME	FY ST	FY CO	TOTAL COST (Rp.)	COMMUNITY CASH CONTRIBUTIO (Rp.)	CASH GRANTS (Rp.)	SOURCE GRANTS	LOAN AMOUNT (Rp)	SOURCE OF LOAN	TOTAL USERS	% COMM CASH +INKIND CONTR	% LOAN OF TOT COST	TOTAL COST/ PERSON	COMM CONTR SO FAR/ PERSON
NUSA TENGARA BARAT														
0%	Garuda	91		13,516,000	0	0		10,000,000	BPD	390	0%	74%	34,656	0
0%	Latonda I	91		19,000,000	0	0		0		780	0%	0%	24,359	0
10%	Danger	91		17,500,000	1,800,000	0		0		2,438	10%	0%	7,179	738
15%	Sorimila	90		19,662,000	600,000	0		0		715	3%	0%	27,499	839
85%	Sankukun	90		93,419,000	52,500,000	0		8,200,000	pipe fac	5,571	56%	9%	16,770	9,425
100%	Lareu	90	91	13,842,000	10,342,000	0		3,500,000	BPD	845	75%	25%	16,381	12,239
WEST JAVA														
0%	Tugumukti	88		54,677,905	0	0		0		454	0%	0%	120,436	0
0%	Wangisagara	88		13,040,200	0	0		0		520	0%	0%	25,077	0
0%	Cigugurgirang	90		15,000,000	0	0		0		3,000	0%	0%	5,000	0
0%	Cibogo	89		15,000,000	0	0		0		2,400	0%	0%	6,250	0
0%	Padamulya	88		87,828,000	0	0		0		3,120	0%	0%	28,150	0
0%	Kertawangi	88		72,563,620	0	0		0		6,629	0%	0%	10,946	0
0%	Jambudipa	88		8,783,535	0	0		0		329	0%	0%	26,698	0
0%	Sukamukti	88		43,914,000	0	0		0		1,560	0%	0%	28,150	0
25%	Nagreg	90		54,560,000	13,640,000	0		6,000,000	supplier	1,500	25%	11%	36,373	9,093
50%	Mwkarwangi	89		53,698,600	26,849,300	0		7,000,000	BANKAP	450	50%	13%	119,330	59,665
90%	Cikadut	87	90	52,563,000	28,306,700	0		19,000,000	supplier	968	54%	36%	54,301	29,242
90%	Jatiroke	87	88	4,250,000	1,325,000	0		2,500,000	supplier	600	31%	59%	7,083	2,208
100%	Pasirhalang	87	88	6,500,000	4,500,000	0		2,000,000	BRI	600	69%	31%	10,833	7,500
100%	Sukajadi	87	88	6,000,000	6,000,000	0		0		600	100%	0%	10,000	10,000
100%	RW.10 Cibodas	87	88	7,191,955	7,191,955	0		0		752	100%	0%	9,564	9,564
EAST JAVA														
0%	Kitri	91		no cost yet	0	0		0		113	0%	0%	0	0
0%	Bulih	91		no cost yet	0	0		0		284	0%	0%	0	0
0%	Kebak/Mantren	91		no cost yet	0	0		0		270	0%	0%	0	0
0%	Ngunut	91		no cost yet	0	0		0		270	0%	0%	0	0
0%	Krajan	91		no cost yet	0	0		1,200,000	supplier	175	0%	0%	0	0
50%	Pendem	90		851,000	797,000	0		0		275	94%	0%	3,095	2,898
100%	Dadapan	90	90	2,336,400	2,120,000	216,000	FK. ORSOS	0		162	91%	0%	14,422	13,086
100%	Bubakan	89	89	30,035,400	15,035,400	15,000,000	JAWA POS	650,000	BRI	918	50%	2%	32,718	16,378
100%	Sidomulyo	88	89	8,685,900	6,185,900	0		2,500,000	BRI	663	71%	29%	13,101	9,330
100%	Ngamban	89	89	2,000,000	2,000,000	0		0		202	100%	0%	9,901	9,901
100%	Sekar	90	90	2,725,800	2,473,800	252,000	FK. ORSOS	0		189	91%	0%	14,422	13,089
100%	Tinatar	90	90	2,336,400	2,120,400	216,000	FK. ORSOS	0		162	91%	0%	14,422	13,089
100%	Sruiten	90	90	5,050,500	3,050,500	0		2,000,000	supplier	328	60%	40%	15,398	9,300
100%	Pager	89	90	6,523,200	6,285,200	0		238,000	PPAB	405	96%	4%	16,107	15,519
100%	Sumber	89	90	2,151,000	2,151,000	0		0		300	100%	0%	7,170	7,170

Source: Project data and ca site interviews by ...

3.1.3 Loans

Obtaining a loan(s) from a bank, a material and equipment supplier, or other sources is the principal way communities are supplementing their own cash resources to pay for systems. It is also the area in which CSFW has concentrated most of its technical assistance in resource mobilization.

a) Banks

One of CSFW's objectives is to obtain access to credit for community water systems from financial institutions. Another addresses the need to encourage communities to use bank credit. Past experience with some rural credit programs in Indonesia have made some rural villagers cautious of dealing with banks. Added to this is the widespread lack of understanding of how to approach a bank, although at least one bank visited by the evaluation team, the Bank Rakyat Indonesia (BRI) in EJ, has extensive local coverage so the lack of exposure can be expected to change in certain districts.

CARE has reconnoitered the complex array of Indonesian financial institutions operating in the recently deregulated environment, and built solid relationships with three provincial branches of national banks: Bankap, a commercial bank, and two GOI development banks, BRI and Bank Pembangunan Daerah (BPD). CSFW decided against using loan guarantees with banks, on the grounds that it wanted to see how far existing bank policies and procedures could be used for community water systems, both for WASHES and CSFW sites. Indicative of the progress is the fact that banks have extended six loans valued at Rp. 25,650,000 to six communities with a total of about 4,000 beneficiaries. Loan size varied from Rp. 1-19 million (See Figure Three below). Eight other communities paid for their water systems completely out of their own pockets (except for some typically small grants).

None of the banks have policies for loans for community water systems. They do differentiate between investment and consumption loans, and agreed to classify community loans under the investment category, carrying a slightly lower interest rate. At the same time, these efforts are regarded as being for social rather than profit purposes, even by the commercial bank. Even so, the lack of a bank policy covering community loans has not been a brake on lending at this level. This is completely due to individual managers at the provincial and district level having been persuaded personally by CARE staff of the need to assist rural communities, and having the authority to grant loans under such circumstances.

Status of Communities Using Loans – CARE Water Project

Sites	Project	Loan Amount (Rp)	Date of loan	Interest Rate (%)	Interest Rate Calculation	Lender	Collateral	Loan made to	Satus
WEST JAVA									
Buah Kapas	WASHES	2,000,000	April'90	1.8	Declining balance	BANKAP	Land certificate	Individual	Repaid in full
Sirnajaya	WASHES	1,000,000	nd	nd	nd	Supplier	nd	Individual	Repaid in full
Margajaya	WASHES	1,300,000	nd	2.25	Flat rate	Supplier	Land certificate	Individual	Balance Rp.1,000,000
Sukajadi	WASHES	4,100,000	Aug.'90	2.25	Flat rate	Supplier	Land certificate	Individual	Balance Rp.2,400,000
Mekarraharja	WASHES	2,500,000	April'90	1.8	Declining balance	Supplier	Land certificate	Individual	Repaid in full
Mekarraharja	WASHES	1,000,000	nd	2.25	Flat rate	Supplier	Land certificate	Individual	nd
Juhut	WASHES	10,800,000	Nov.'90	2.25	Flat rate	Supplier	Land certificate	Individual	Balance Rp.10,500,000
Cibodas	WASHES	< 1,000,000	nd	nd	Flat rate	Supplier	None	Individual	Repaid in full
Cikadut	CSFW	19,000,000	nd	0	Flat rate	Supplier	None	KUD	Balance Rp.17,000,000
Tegalwaru	CSFW	nd	nd	2.25	Flat rate	Supplier	Land certificate	Individual	nd
Mekarwangi	CSFW	7,000,000	June'90	nd	Declining balance	BANKAP	Guanratee from Helping Hands	Individual	Balance Rp.5,800,000
Nagreg	CSFW	6,000,000	April'91	2.25	Flat rate	Supplier	Land certificate	Individual	Balance Rp.6,000,000
Jatiroke	CSFW	2,500,000	nd	2.25	Flat rate	Supplier	Land certificate	Individual	nd
Pasirhalang	CSFW	2,000,000	nd	nd	Flat rate	BRI	Land certificate	Individual	nd
SUB TOTAL CSFW		36,500,000							
EAST JAVA									
Banjarsari	WASHES	1,270,000	April'88	1.5	Flat rate	BRI	Land certificate	Individual	Repaid in full
Candi	WASHES	3,000,000	June'90	1.5	Flat rate	BRI	Land certificate	Individual	In process
Bangunsari	WASHES	750,000	March'90	1.5	Flat rate	BRI	Land certificate	Individual	nd
Bangunsari	WASHES	1,000,000	May'90	1.5	Flat rate	BRI	Land certificate	Individual	nd
Gawang	WASHES	3,000,000	nd	0	Flat rate	P2K	None	Individual	In process
Bulubesar	WASHES	580,000	nd	0	None	Supplier	None	Group	Repaid in full
Dersono	WASHES	< 1,000,000	nd	nd	Flat rate	BRI	Land certificate	Individual	Repaid in full
Pager	CSFW	238,000	nd	0	None	PPAB	None	PPAB	Repaid in full
Bubakan	CSFW	650,000	nd	1.5	Flat rate	BRI	Land certificate	Individual	nd
Wonoanti (Sriten)	CSFW	2,000,000	nd	0	None	Supplier	None	Individual	nd
Wonoanti (Bulih and Krajan)	CSFW	1,200,000	Sept.'90	0	None	Supplier	Land certificate	Group	Repaid in full
Sidomulyo	CSFW	2,500,000	Nov.'87	1.5	Flat rate	BRI	Land certificate	Individual	Repaid in full
SUB TOTAL CSFW		6,588,000							

Sites	Project	Loan Amount (Rp)	Date of loan	Interest Rate (%)	Interest Rate Calculation	Lender	Collateral	Loan made to	Satus
NTB									
Kalijaga (Mamben)	WASHES	13,000,000	March'90	1.8	Flat rate	BPD	Land certificate	Individual	In process
Kalijaga (Kalijaga)	WASHES	4,400,000	Dec.'89	0	None	Contractor	None	Individual	Balance Rp.15,000
Kalijaga (Kalijaga)	WASHES	200,000	nd	0	None	Supplier	None	Individual	Repaid in full
Pancasila	WASHES	16,000,000	Nov.'90	1.8	Flat rate	BPD	Land certificate	Individual	In process
Pangadangan	WASHES	< 500,000	nd	0	None	Supplier	None	Individual	Repaid in full
Aiknyet	WASHES	240,000	nd	0	None	Supplier	None	Individual	Repaid in full
Ndano	WASHES	4,000,000	nd	0	None	Pipe factory	None	Group	Apply
Sorimila	WASHES	5,000,000	nd	nd	Flat rate	BPD	Land certificate	Individual	Apply
Selelos	WASHES	2,000,000	Dec.'88	nd	Flat rate	BRI	Land certificate	Individual	Repaid in full
Kaliaga	WASHES	300,000	nd	0	None	Supplier	None	Individual	Repaid in full
Kadindi	WASHES	200,000	nd	0	None	Supplier	None	Individual	Repaid in full
Lareu	CSFW	3,500,000	Feb.'90	1.5	Flat rate	BPD	Land certificate	Individual	Repaid in full
Sankukun	CSFW	8,200,000	nd	0	None	Pipe factory	None	Group	Apply
Garuda	CSFW	10,000,000	nd	1.8	Flat rate	BPD	Land certificate	Individual	Apply
SUB TOTAL CSFW		21,700,000							
TOTAL CSFW		64,788,000							

Notes:

1. BRI: Bank Rakyat Indonesia (National Government Bank)
2. BPD: Bank Pembangunan Daerah (Provincial Government Bank)
3. BANKAP: Bank Asia Pacific (Private Bank)
4. KUD: Village Cooperative Unit
5. P2K: Family income development for family planning member
6. PPAB: Water Development Committee
7. nd: No Data

Source: Project records and interviews by evaluation team.

Nevertheless, each bank required collateral acceptable to them, which in practice has been individual land certificates. With one exception, all loans for water systems have been secured in this way. However, possession of a land certificate is far from universal, and obtaining one can be both costly and time-consuming. The fact that all communities who have taken a bank loan have been able to resolve the issue of private property guaranteeing a community project is regarded as a useful indicator of community cohesion - itself a key determinant of successful systems. Yet there are a number of WJ communities where individual property owners are not prepared to put up their land as collateral, fearing that users will not pay their contributions. The communities' efforts are now stalled.

Individual land certificates are not required for all bank loans to communities. The BRI in EJ makes loans for agricultural inputs to villagers with the only collateral being a letter signed by the KUD, the village cooperative committee. They cannot do the same for water committees because they have no legal status. Progress towards institutionalizing the water committees being promoted in EJ by GOI, and recently agreed to in NTB, might offer potential for a similar collateral arrangement. Another avenue worth exploring would be the use of a recently obtained official decree from the Provincial Governor linking some water committees with the GOI water agency (PDAM).

Neither interest rates, how they are calculated, nor loan repayment terms are similar among the three banks. Bankap calculates on a declining balance, but their rates are higher, currently 2.75% per month (just raised from 2.25%). BRI charges 1.5% per month and less on larger loans, calculated on the total loan amount. Repayment periods are monthly for Bankap, and after the harvest for BPD. Evidently the rates are high and interest charges should encourage communities to raise as much cash as they can from their own resources before taking out a loan, and then to repay it as soon as they can. In contrast to the interest rates, bank fees are reasonable at the three banks.

The repayment history has been good so far in almost every case, with one notable exception, a WASHES site (Mamben hamlet in NTB) where Rp. 5 million is overdue. In this case the bank made 26 separate loans to each group operating a public facility, and each loan is repaid individually. In a few cases, there have been delays, mostly because community leaders have used the funds for personal use before repaying them. (No doubt the fact that often they are the person providing the collateral strengthens their perception that they have a right to do so.)

There appear to be no hard and fast debt to equity ratio guidelines. Some loans are large (e.g., Rp. 16 million). Given that few communities have a well formulated plan for loan repayment, if things go wrong, they can get behind quickly. The CSFW Project Implementation Reports (PIR) have all mentioned the desirability of keeping loan sizes down. Limiting loan size is

desirable, bearing in mind that the most important objective is to have a loan no larger than necessary, which can be repaid according to the agreement negotiated with the lender. CSFW needs to work with bank(s) and communities to find solutions to repayment problems. Establishing minimum debt to equity ratios (with a cash equity of at least 75:25), achievable repayment schedules, and limiting loan sizes (e.g., Rp. 15 million or less) would help address this problem. CARE should not assume direct responsibility for any loans.

Project staff maintain only informal contact with a community past the completion of construction, even if there is a loan. Banks' interest could sour rapidly if overdue loans are not put back on track, and the incidence of repayment problems kept down. Project staff should schedule periodic visits e.g., quarterly, and advise a community until its loans have been repaid in full.

All banks interviewed regarded their experience as positive and indicated their intention to make more loans for CARE assisted communities. They all expressed a desire to formalize their relationship with CARE in a memorandum of understanding spelling out roles, responsibilities, and expectations of each party. It would include such areas as CSFW and bank staff roles in determining loan size and repayment schedules, monitoring and collection, and handling repayment difficulties. Banks requested more involvement in planning and monitoring. Two have already been to community meetings and provided information on bank policy and procedures. Clearly, the experiment is entering a new phase having proved to banks that they could lend and get repaid. Relationships with each bank should be formalized in a memorandum of understanding. Since banks desire more involvement, their role should be expanded to include reviewing community financing plans, and some joint monitoring visits with CARE staff.

Starting at the provincial level with banks was a conscious choice by project staff. In view of the complexity and logistical difficulties in Jakarta, the evaluation team believes it was definitely a correct one, since it was first necessary to prove the usefulness of the CSF approach before any widespread dissemination. But so far, the link with the individual bank in each province has not yet been extended to other provinces or, more importantly, to the national level. Cross provincial and national links should be built with the three banks, with the long term aim of obtaining a bank policy on loans for community water systems. This will entail progress on a number of fronts: community guarantees versus individual property as security; lower interest rates, and; the legal position of the water committees. This activity should proceed in tandem with the establishment of linkages with donor organizations as described below.

There is every indication that the World Bank and the Asian Development Bank (ADB) are interested in the potential of self-financing. But it is not evident that they are aware of how important it is for communities to have access to financing under

terms which further the aims of all parties to have sustainable water systems in both rural and peri-urban areas. In other words, they have not yet established a loan program for CSFW. Yet, if only a fraction of the amount of capital pouring into water and sanitation systems was used to provide community loans, the impact could be significant. Interestingly, CSFW has already decided in its recent Strategic Planning Document to start a dialogue with the multi-lateral lenders. The time seems right to try and forge a pilot project between one or more of them and the banks with which CSFW has established a relationship. Such a project would likely seek to provide a loan to the Bank of Indonesia (the Central Bank), and from it to interested banks for lending for community water systems. The low interest loan from the multi-lateral lender could then be re-lent at consessionary rates; it should also provide for experimentation with community guarantees, for example involving the water committee and the LKMD.

In that light, linkages should be established with multi-lateral lenders with a declared interest in community self-financing, (e.g., World Bank and ADB, as well as the Central Bank). The long term goal would be to convince them of communities' need to access credit if they are to self-finance; and to develop a loan program with selected Indonesian banks for on-lending to communities hopefully at lower than commercial rates and with alternative arrangements for securing the loans.

b) Suppliers

Just as it did with banks, each CARE field office obtained agreement from 1-2 local suppliers of construction materials to offer credit to CARE-assisted communities. Some supplies were lent to communities via the LKMD for projects other than water systems (e.g., mosques) prior to CARE's contact. Five loans for a total of Rp. 38,900,000 have been provided to five communities. Different suppliers have different views on interest and collateral. In EJ and NTB, the principal vendors require neither, and both deny interest charges are reflected in prices, but this could not be verified. In WJ, the vendor has a line of credit from Bankap, and lends to communities under the same terms he receives from the bank.

Loan repayment has been satisfactory except for one vendor in WJ who has experienced problems with overdue loan repayments on over 50% of his loans. Reasons for this include a large loan amount (Rp. 16 million); not meeting with the committee; and excessively short and unrealistic repayment periods agreed to by committees. Characteristic of all supplier loans is a very short repayment period from 1-3 months. Also, they rely on CSFW to recommend a community, so much so that none of them meet the committees in the village. For their part, committees appear to agree to almost any terms so as to secure a loan. Relationships with each supplier are as personalized as those with banks, and in one instance an FO felt obliged to pass through one particular FO because he made the initial contact.

To facilitate dealings with vendors, relationships should be formalized, and roles, responsibilities, and expectations spelled out. One vendor role should be to meet with the water committees like any other client. Vendors should be fully aware of overall financing plans, and negotiate realistic repayment plans with communities. CSFW field staff should assist communities to determine the appropriateness of very short term loans in their overall financing plan, and ensure the supplier(s) is aware of it.

c) Revolving Loan Funds

In Gawang (a WASHES site in EJ), individuals accessed a local revolving loan fund established by P2K, the village level branch of the National Family Planning Coordinating Agency (BKKBN) to pay their household contribution. In WJ, project staff convinced an informal charitable group called Helping Hands and the Lionesses to use Rp. 7 million they had raised as a guarantee fund with Bankap rather than as a grant to only one community. Then Bankap made a loan to a CSFW community.

d) Other Loan Sources

In Sirnajaya (a WASHES site in WJ), the KUD provided a Rp. 1 million loan through a pipe supplier. In Pager (a CSFW site in EJ), the Water Committee itself provided a loan to the community.

3.1.4 Grants

Three communities obtained grants on their own initiative: one for Rp. 7 million from a jeans manufacturer, another for Rp. 7 million from a local newspaper, and another for Rp. 1 million from a group of farmers who passed on part of a GOI grant for raising tobacco. The evaluation team feels that this is a perfectly appropriate way for communities to raise funds, and that it should be encouraged wherever possible. However, grants should be an adjunct to, and not used completely in lieu of, cash and in-kind contributions to support a community's system, lest the important (and sustainability-insuring) feeling of system ownership be lost in the shuffle.

3.1.5 User Fees

For activities ranging from user fee collection to community construction procedures, if there is one constant in CSFW, it is that there is considerable variability in nearly everything. So it is for user fees for system O&M and eventual replacement. There are sixteen completed CSFW sites (some of which were located on Sumbawa where the evaluation team did not go), so findings are drawn, to a large extent, from the more numerous WASHES sites visited during the evaluation. The four common categories of user fee collection were:

- collected on a regular (e.g., monthly) basis;

- collected annually, or seasonally as harvests make cash available in communities;

- collected on an ad hoc basis as needed for repairs or subsystem expansion efforts; or

- not collected at all.

CSFW advises regular collection into an established fund, but in practice many communities do so on an as needed basis, so that when the system breaks down it may take a while to decide how to collect the funds and then actually convince beneficiaries to comply. In the interim, households may (and often do) revert to contaminated water sources (rivers or irrigation ditches). But at least two of the WASHES sites visited by the evaluation team had a well-functioning user fee system in operation, and collections were regular. Other sites visited had records indicating at least some collection of fees. The evaluation team recommends that communities be strongly encouraged to collect fees on a regular basis (e.g., monthly, or at most seasonally, if conditions so dictate), to help insure that adequate funds will be available to immediately and adequately address any needs for funds to make necessary repairs.

In spite of irregularities in the collection system, many WASHES sites have begun to accumulate funds, largely because gravity flow systems are generally low maintenance. For public systems i.e., MCKs, fees are generally flat amounts per household, ranging from Rp. 100 to 500, averaging about Rp. 300. These amounts appear low, which would indicate that determining the rate is not necessarily based on a good community understanding of the projected costs for maintenance and replacement. In one unusual community, Cibodas in WJ (effectively controlled by 20 landholders and one charismatic leader), there is even a progressive user fee, with a maximum consumption limit (all connections have flow meters) above which users consuming more than their allotted share will be cut off. Whatever system is used, and even if it is supposedly regular, it would appear that fee collection in general is somewhat erratic, and enforcement is often lax.

CSFW provides some advice and training on determining and collecting user fees. Although one of the indicators of the related project objective is for there to be "proper records and basic accounting procedures..." there is room for improvement. CSFW needs to play a more active role in training committees in how to set user fees and how to implement effective collection system. Also, it should encourage the use of the standard record keeping system and train committees in its use.

3.2 Financial Planning and Management

3.2.1 Planning

As impressive as the array of resource mechanisms are as

indicators of community initiative and confirmation of their willingness to pay, too few committees interviewed had coherent and realistic plans to finance their system as costed by them and CARE. At best, they had a general idea for financing part of it. In many instances, the plan to have a water and sanitation system conflicted with another priority (e.g., a mosque or an electrification scheme). It would seem apparent for committees not to expect people to contribute to two projects simultaneously, but this is not the case. One suggestion to avoid this problem is to inform the LKMD (where it exists, i.e., other than in NTB) of water system development planning, so that it can be integrated with other development projects under consideration.

Few communities could demonstrate that they had explored the full range of mechanisms of in-kind and cash contributions from the community, loans, and grants. There is not much sharing with each community of mechanisms other communities have used, although there are cross-visits (visits by one community interested in CSFW to another community already in progress). But this only shares one community's experience, whereas CSFW has experience with many more. CSFW did sponsor one workshop in WJ, wherein HIPPAM members from a number of villages got together to discuss their experiences. CARE paid for one or two representatives to attend from each water committee from the previous year's completed WASHES sites in that province, along with GOI representatives (from provincial and district CKs, and BAPPEDA). Topics discussed included O&M, user fee determination and collection, bookkeeping training, and any other problems encountered and how they were dealt with. CARE paid for a second such workshop the following year, partially funded by the community representatives themselves. The third year (August, 1989), the WASHES community of Rancakalong hosted it, and the communities paid for it themselves (although it was organized by CARE). Meetings were a source of much of the information used in the CARE-assisted Water Supply Survey (CAWS). WASHES communities were taught simple accounting methods during the workshop, but there are wide variations in the actual books kept from place to place. Clearly, more training in this area is required.

In the opinion of the evaluation team, too many communities are accessing credit without careful consideration of the various options available to them; and often agreeing to the terms proposed by the lender without appreciating the consequences. As a result some of the loans are too large and the repayment periods too short, particularly with vendors. When repayment has run into difficulties (e.g., as in a WASHES site, Cikadut in WJ), where the community has only been able to repay 2 million out of a 19 million loan to a supplier, their only plan is to wonder if a bank might help them out.

Some of the most significant results of this lack of planning are evident in a number of WASHES sites visited by the team. In one, Rempek in NTB, WASHES constructed the main system, while many public facilities wait for the community to raise the funds. In many cases, construction is piecemeal which can lead to quality

control problems and households not knowing when they may get water, if at all. In another case (Kertawangi in WJ), the cost of the planned system is so high that it appears extremely unlikely it could be paid for by the community. At two other sites, progress is stalled because the committees' plan for collection collapsed at the first attempt, and they require additional assistance to determine what to do next.

To date, CSFW has not played a major role in assisting communities to develop a financial plan, to carry out plans, and to resolve difficulties. The thinking at CSFW has been a combination of the view that communities know how to do this well enough, and the orientation and background of project staff, who have been molded by many years as designers and constructors of water systems. They do not see this as a significant part of their job. Although there are training modules yet to be taught, they are not part of a comprehensive resource mobilization training package. Yet when communities are required to finance the whole cost of a system and not only 50% of it, and using a combination of mechanisms all with different risks and costs, a financial plan is vital for success. A comprehensive resource mobilization training package would help CSFW to better achieve its goals in this area.

3.2.2 Financial Management and Control

As is the case with most rural communities, financial management practices and controls are generally weak. Many committees have books and receipts, and some have bank accounts, but they are rarely tied together. It is difficult to understand these, and they do not provide an audit trail. But the fact that there is some basic understanding and literacy offers the opportunity to install simple systems that can be audited. CSFW should focus additional training efforts on communities in the use of a simple, standardized record-keeping system (CARE/USA is in the process of developing such a system). It is especially important that committee members know how to audit the records and bank accounts also. Although CSFW has encouraged committees to deposit funds in bank accounts, not nearly enough are doing so. Of the committees interviewed during the evaluation, two have accounts in the name of an individual on the committee, and only his signature is required for a withdrawal. In both instances, the amounts he can access are significant. There are no bank restrictions on the committee opening an account in its name rather than in an individual's name.

Some communities are far from a bank branch, and they need to keep some funds on hand during both the construction and O&M phases. The balance should be banked for security reasons, and to obtain the 20% - 30% being offered presently by every bank on savings deposits. All communities should open a bank account as soon as they start raising funds. It should have appropriate controls, (i.e., more than one signature required for withdrawals).

Conclusions regarding the area of resource mobilization are

summarized in Part Four, Section 1.3. A set of key factors which strongly influence the success or failure of resource mobilization efforts are given in Part Four, Section 3.3.

4.0 HUMAN RESOURCES AND INSTITUTIONAL DEVELOPMENT

This chapter addresses training issues related to CSFW's on-going planning and implementation. It covers training of CARE staff, training of beneficiary communities by CARE staff, and training of other groups (GOI, PVO, etc.) which has already taken place or is planned to take place. The use of the Training Modules recently developed by CSFW staff is reviewed, and recommendations are made for modifications of the CSFW community training approach, and the responsibilities and time allocation of CSFW Field Officers.

4.1 Overview of Staff Responsibilities and Training

A formal training needs assessment was not conducted during the evaluation. Comments in this section are based on conversations with CARE staff from all three Field Offices and CIHQ. In general, CARE technical field staff seem well qualified to carry out their assigned tasks in water system planning, design, and construction. This is in no small way due to the experience many of them have gained through the WASHES project, which was much more narrowly focused on construction than is CSFW. Further, senior staff at some Field Offices are themselves very well qualified in water resources development due to participation in other water projects through agencies such as UNHCR. In other training areas such as resource mobilization and hygiene education, it is more difficult to make a judgement since extensive community training in these areas has yet to be delivered at many sites. However, Field Officers say that they feel more comfortable training communities in how to build water systems than they do providing training in resource mobilization or HHE. Given the sanitation situation in NTB, they felt also that their efforts were better rewarded building a water system than convincing people to build latrines they do not want.

It would be helpful for the long term human resources development aspect of the project to conduct a formal training needs assessment among CARE staff. This should reflect not only the technical assistance needs discussed in this report, but also those which will result from the implementation of the March 1991 CSFW Strategic Plan. Actual staff training needs were also somewhat difficult to determine since the amount and type of training actually given to CSFW communities varies considerably, depending upon what the FO's perception was about a particular community's training needs.

4.2 Recommended Additional Staff Training

During Field Office and site visits, there were some areas in which CARE staff expressed interest in receiving additional training. Those areas are summarized below, along with several additions suggested by the evaluation team:

- o construction supervision and inspection;

- o development and negotiation of agreements between communities and contractors (where appropriate, see construction management above);

- o project management, including budgeting, planning, personnel supervision, meeting facilitation, English language skills, e.g., the whole range of non-technical skills needed to better carry out their job responsibilities;

- o technical training in system design, technology selection and costing, HHE (many mentioned that they felt particularly awkward giving training in the non-technical areas such as resource mobilization, community management, and HHE); and

- o the comprehensive resource mobilization "package" proposed in Part Three, Chapter Three of this report, which focuses on developing a proper and comprehensive plan developed in close coordination with communities for system costing, mobilizing resources, and payment of loans.

Interestingly, a number of FOs and POs felt that they could use additional technical training, while field office management staff generally felt that not to be necessary. The justification for additional training was that when hired, FOs usually do not have a technical background, but rather are promising generalists. At present, they receive no formal training from CSFW in any area except community management. Their technical training consists of three months of on the job training working together with existing FOs, then they are turned loose to handle sites on their own.

4.3 Training Modules

CARE staff have developed more than eighty training modules covering the areas of initial project familiarization, community management, resource mobilization, technical design and system construction, and health and hygiene education. These modules were developed during an extended workshop in 1990, and were revised and made available to Field Offices in October of that year. They have been used to varying degrees at different sites, where field staff have been asked to evaluate their usefulness and applicability. Some field staff felt that there were too many training modules in some areas, some felt that additional modules were needed in certain technical areas (e.g., technology options, and operation and maintenance), others felt that with a broader range of module options, they could more readily pick and choose among the lot. Nearly everyone agreed that the modules were seen as guides to training in a particular area, and need not necessarily be followed in any great detail. The evaluation team suggests that no further modifications of existing modules be made until considerable field

exposure has taken place, so that multiple iterations on the module design can be avoided.

It would be helpful (but no doubt difficult) to determine precisely the extent of community training provided at each site, where modules were used and where they were not (and why not). This would pave the way for eventual streamlining of the large set of modules down to a size which FOs (and communities themselves) could better deal with. Having done that, CARE's plans (as per the March 91 CSFW Strategic Planning Report) for FY92 regarding changes in the training approach and plans to combine and condense the modules would better reflect FO and community needs.

The considerable effort taken to develop the modules could have greater benefit by making them available to a wider audience. This could take place in several ways. First, at CSFW communities, the training modules could be presented to wider audiences within the community itself. For example, financial management modules could be presented to both the local HIPPAM and members of LKMD required to do bookkeeping on other projects. Second, provincial GOI staff in EJ requested that certain modules be presented by CARE staff to BAPPEDA, MOH, PDAM, and PW staff. Representatives from these organizations would then become well-versed enough in the modules to take them out to non-CARE water sites and teach them to communities themselves. Discussions have already taken place about funding for these activities, and line items from "matching budgets" have been identified to support such efforts. Workshops have already taken place in NTB and EJ to inform district level representatives from the groups mentioned above about the CSFW approach and project goals. In EJ, discussions on the training modules have already taken place at the provincial level, but actual training sessions have yet to be conducted. The evaluation team finds these activities most encouraging, and suggests that they be considered for all Field Offices.

4.4 Modification of CSFW Community Training Approach

The CSFW community training program is based on a Training of Trainers (TOT) approach. FOs direct their training directly at the HIPPAM (or the local equivalent water committee in areas where HIPPAMs do not exist), with the intention that the HIPPAM members will then become trainers of other groups or individuals in the community. Construction training varies slightly, in that villagers directly participate in the construction of one or more examples of each structure (e.g., a ferrocement storage tank, or an MCK) before taking responsibility for making their own. The FOs try (where possible, given the time constraints discussed above) to oversee construction of all other major system components. An alternative to this approach which would likely strengthen both quality control as well as increase efficiency of use of available human resources would be to train certain teams in the community to build and become specialists with certain components (e.g., ferrocement tanks). These groups would be used then to build (or at least supervise the construction of) all ferrocement tanks in

that system, and the quality of each tank would (in theory) increase with experience. Other specialist groups could be responsible for laying pipe, building the captering, or constructing MCKs.

What follows is another proposal for using available human resources more efficiently. It appears somewhat optimistic to expect that each FO could be sufficiently familiar with and successfully provide all types of required training for each of his or her sites, ranging from construction to resource mobilization. Rather, CARE should consider the use of FO Training Teams consisting of three to four members (the same group as under a given PO). Each of the FOs would still be required to be competent in construction supervision, since that is the most critical task requiring careful and timely supervision of community efforts. However, rather than having each FO become a specialist in providing training in the whole gamut of subjects, including community management, resource mobilization, and health and hygiene education as well, each member of the Training Team would be encouraged to develop a somewhat different (yet complementary) set of training skills. This might increase the efficiency of providing a wide variety of training, and also increase the quality of the training provided.

In order to put these team concepts in context, consider the way FO time is currently allocated. FOs are typically required to take responsibility for about three sites at a time (at some sites as many as ten, which seems quite unreasonable). In theory, of these three sites:

- o one would be in the initial preparation stage, requiring familiarization training in community management, setting up a water committee, and resource mobilization;

- o the second site would be actively involved in construction, and would receive priority attention from the FO should scheduling of any other activities conflict with construction supervision;

- o at the last site, construction would have already been completed, and the FO would be involved in monitoring the site, providing any needed support for O&M, water quality testing, system inspection, and reviewing loan repayment status.

Where this arrangement is followed, it allows the FO to properly supervise construction as a first priority, provide training as a second priority when construction supervision is not required, and to schedule the less time consuming periodic visits to monitoring sites between training sessions.

Using the FO Team Training concept, FOs would specialize in two of the four training areas, which are:

- o Community Formation and Negotiation - including familiarization with the CSFW approach, formation and negotiation, and project planning;

- o Water and Sanitation Technologies - including technology selection, system design, construction planning and supervision, quality control, and operation and maintenance;

- o Hygiene and Sanitation Education - including the health benefits of improved water supplies, sanitation practices, improving the local environment, and developing strategies for monitoring health impacts;

- o Resource Mobilization - including the "RM package" discussed in Chapter Three, identifying available resources, financial administration, dealing with banks and vendors, and planning loan repayments.

FOs could then assume responsibility for more than the traditional three sites, with the understanding that they would take on the training responsibilities at an additional site (or perhaps two, depending upon how the work load actually worked out), but only in two of the four training areas. This would allow them to:

- o become better informed about training specialties;

- o develop more organized presentations which would better benefit the communities to be trained; and

- o provide support to more communities, diminishing the dependence of each project community on only one FO.

While lessening the burden associated with required familiarity in a wide range of topics, this approach would necessitate better organizational and task scheduling skills by FOs and Project Officers/Managers. Having two FOs working in each community would decrease the possibility that project activities would grind to a halt in one of the secondary (training) communities when one of the FOs for that site has to spend a lot of time at his/her primary (construction) site. It would also increase flexibility and prior site familiarity in cross-visiting sites in support of FOs on work-related absences or vacation. Using this approach, a team of 3 FOs could cover a total of 9 sites.

5.0 INSTITUTIONAL LINKAGES AND POLICY IMPLICATIONS

Institutionally, the project is a fairly vertically-integrated development unit (undertaking planning, training, and construction) with minimum integration into existing Indonesian government agencies dealing with rural development. Because the project is designed to demonstrate the viability of the CSFW approach, this approach is not necessarily inappropriate. For the initial phase of the project, this was in all likelihood a more efficient utilization of project resources to insure more timely achievement of the project's intermediate goals. No doubt, it would have been a much more difficult and lengthy process to plan, implement, and monitor WS&S development in a wide variety of villages in three provinces had CARE worked directly through existing GOI agencies.

Sustainability is an issue which receives much attention in water resources development these days, and with good reason. While the factors that affect sustainability (basically, the set of characteristics which help insure that a project or activity will be continued long after the project donor or funder has left the scene) are legion, institutional issues in sustainability revolve around several specific questions:

- o Has an existing local institution(s) been identified which is willing to absorb the activities of the donor project into its institutional structure after the donor project is over?

- o Is that institution capable of meeting the various responsibilities which will insure continued achievement of the project's goals? In other words, Does it have the physical (equipment, materials, and financing) and human (skilled laborers, professionals, trainers, and managers) resources to undertake these responsibilities?

- o Does the institution have sufficient political stability to maintain its position over the long term?

It is time for CARE to begin to address these questions seriously if it truly seeks to achieve the long term policy goal of CSFW, which is to dramatically affect the way the GOI develops water resources in Indonesia by having communities pay for and manage their own water supplies.

5.1 Changing Focus of the Project

As CSFW moves from being primarily focused on demonstrating the viability of the CSFW concept to attempting to influence water resources development policy within the GOI, CARE should consider how institutional linkages with GOI agencies closer than those forged thus far might be of comparative advantage in the

achievement of this project policy goal. For example, thus far, there appear to be few formal linkages with the GOI at the national level, other than with their designated counterpart MOHA (which is not an implementing, but rather an overseeing agency). Similarly, at the regional level, CARE has little, or no formal or informal linkages with Cipta Karya in some provincial offices. As the primary GOI agency involved in rural water supply, CARE would be well advised to strengthen its formal relationship with Cipta Karya if substantive policy change with regard to community participation and payment for rural water and sanitation systems is to be accomplished. Doing so would help establish institutional constituencies having a vested interest in achieving the broader policy goals of the project.

It is unlikely that CARE will continue to be the primary delivery mechanism for community self-financed RWSS services over the long term in Indonesia. If the project continues to show promise over the remainder of its implementation period, other groups will no doubt incorporate its approach into their projects. However, unless the approach is integrated more closely into existing Indonesian WS&S institutions rather than standing nearly by itself (as is currently the case), it risks sacrificing its long term policy objective at the expense of accomplishing its intermediate goals. CARE seems to be most interested in having other donor and international PVO organizations buy into its approach, rather than convincing the GOI itself of its wisdom. While integration of the CSFW concept in donor-funded WS&S projects is indeed a worthy goal of the project, integration of the concept into GOI development policy, planning, and implementation would considerably enhance its long term level of effectiveness.

Closer coordination with GOI agencies is envisioned in the recently completed CSFW/MST strategic plan[18]. Quarterly meetings are planned with MOHA, as well as USAID, the World Bank, UNICEF, WHO/UNDP, CIDA, and AIDAB. Given the current heavy work load of the CSFW/MST, coupled with the not insignificant logistical difficulties in arranging and attending meetings in Jakarta, it remains to be seen whether or not this will actually take place. Nonetheless, the evaluation team supports the intention to coordinate CSFW activities more closely with GOI counterparts.

Also, the evaluation team finds it encouraging that the CSFW approach is receiving exposure in official GOI documents such as the Repelita, wherein the intention of increasing community participation in development and O&M of water supplies is clearly stated. However, achieving this in reality may be quite difficult, even though initial steps are being taken at least at the district level in some areas (e.g., Pacitan).

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[18] Report of the Strategic Planning and Management Skill Building Meeting, CARE/Indonesia CSFW Management and Support Team, Bandung, West Java, March, 1991.

5.2 Coordination with Other WS&S Sector Agencies

Since the CSFW project is essentially an autonomous activity, it is doubly important that it makes determined efforts not only to insure the effective implementation of the project, but also to disseminate the results of its development efforts by:

- o coordinating with other major players (GOI, donors, PVOs) in the sector in Indonesia, and keeping them well-informed of its implementation approach;
- o appropriately documenting project successes (and dealing immediately and effectively with failures) to make certain that it is perceived as a successful approach to RWSS development; and
- o establishing and maintaining contact with important multi-lateral players who are, either now or are likely to be, funding sources for RWSS activities in Indonesia.

At the regional level, CARE does make an effort to coordinate its activities with other GOI and donor agencies working in the sector. The level of this effort varies from one Field Office to another. For example, in NTB, CARE CSFW staff and the CR attend more or less monthly meetings with staff from UNICEF, AIDAB, and PLAN International, with variable attendance from District and Provincial BAPPEDA, Cipta Karya, and MOH staff. In EJ, CARE has worked extensively with a variety of GOI agencies, including MOH, Cipta Karya, and BAPPEDA, and may soon strengthen those linkages further by providing direct training to staff from those agencies in community management, and health and hygiene education. In WJ, CARE's relationships with GOI agencies need better coordination for the mutual benefit of all parties. The general perception of CARE's water development efforts by the various GOI and non-GOI agencies interviewed by the evaluation team was fairly positive. In order to further strengthen those perceptions of CARE's capabilities and the benefits of CSFW's community technical, management and financial training programs, CARE should make a concerted effort to include MOH and Cipta Karya representatives in that training in other provinces as well. CARE might even consider working in direct support of several Cipta Karya small village water systems during their planning and construction phases, providing joint training to encourage both parties further to work together more constructively.

At the national level, however, there appears to be little coordination or interaction with national level GOI or donor agencies involved in providing WS&S services throughout Indonesia. The evaluation team believes that efforts should be made to rectify this situation. For example, rather than attempting to develop and support yet another inter-agency working group in WS&S, CARE might consider sponsoring a conference on the Sustainability of RWSS in Indonesia. It could use such a conference as a forum for demonstrating the viability of the CSF approach with studies

developed internally (see recommended studies discussed in Part Three, Chapter Seven below), and solicit papers from other major players on their RWSS experiences. CARE could also take that opportunity to encourage other major players in the RWSS sector to integrate the approach into their own projects by offering to provide seminars to interested parties in the use of the CARE training modules. CARE might have something to learn as well which can be applied to future CSFW activities, and it would help to establish the perception of CARE's institutional strengths in the sector by other players. At the conference, the issue of developing a working group in RWSS could be raised, to determine whether adequate support and justification for such a group existed.

While others' perceptions of the success of the project may seem at first not that important, it has been shown[19] that the general perception of a project as a successful one is a good indicator of its long term sustainability after initial external funding ends. This may be largely due to the ability of a recognizably successful development approach to better attract follow-on funding from other sources, such as government development budgets or other external funding agencies, (e.g., bilateral and multilateral donors).

CARE should also establish contact with the World Bank Regional Water and Sanitation Group (RWSG) in Singapore (soon to relocate to Jakarta), and the Water Supply Division of the ADB in Manila to let them know what experience has been gained and what lessons learned from the implementation of CSFW thus far. The ADB has evidenced its interest in the RWSS subsector in Indonesia by a series of loan packages (the IKK rural water supply projects) and various TA activities in support of the subsector (The WS&S Sector Study of Indonesia and other associated upcoming TA activities, which also support a CSFW-like approach to RWSS). If, as suggested in the resource mobilization chapter, it would be helpful to solicit a source of soft loans to support future CSF efforts here, establishing more direct links with the major multi-laterals working in Indonesia is the way to begin to lobby for such loans.

Finally, CARE should continue to seek ways of working with the major bilaterals (AIDAB, USAID, and CIDA) in the water sector. CARE designed, and is a major bidder on, the upcoming AIDAB rural water supply project in NTB. CARE's SRCD Project, funded through CIDA, is actually the largest CARE water activity in Indonesia. Modifying the SRCD water program to reflect the lessons learned in CSFW would strengthen that project. Opportunities to work with USAID in the peri-urban water sector to expand the range of applicability of the CSFW concept are being explored. There is a brief discussion in Appendix Seven of several possible scenarios

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19 Can They Get Along Without Us?: Sustainability of Donor-Supported Health Projects in Central America & Africa, Thomas Bossert, University Research Corp., 1990.

wherein the CSFW approach could be applied to peri-urban areas (some existing CSFW sites are peri-urban). There is also a proposed Scope of Work for a consultant to undertake a pre-feasibility study of applying the CSFW approach in peri-urban areas. CARE may wish to develop proposals to work with USAID on the PVO umbrella project in the eastern islands, on income and employment generation activities, which may involve the continued application of the CSFW approach.

5.3 Participation of the Private Sector

The community-focused development approach which characterizes this project is working with the private sector in its purest form, individuals working together for their own mutual self-interests. This approach clearly differentiates CSFW from many of the other GOI and donor-funded WS&S development efforts in Indonesia. Historically, GOI WS&S interventions have been characterized by government providing equipment, materials, and technical services for system design and installation, with little or no input from villagers except in terms of supplying construction labor (typically unskilled).

The private sector has a number of potential roles to play in CARE water and sanitation activities. For example, while Cipta Karya does have often well trained technical personnel in water project engineering design and construction, human resources limitations and government policy dictate that construction is typically contracted out to private sector contractors. The major roles of Cipta Karya personnel are system design and construction, supervision and inspection. This is a perfectly suitable arrangement in an entrepreneurial society such as Indonesia, and should be encouraged.

However, while most contractor-built systems commissioned by Cipta Karya are no doubt well-built, some contractors, in an attempt to increase profit margins by using poor quality construction practices (e.g., "short-sacking", or using insufficient cement in making concrete) produce inadequate systems with short useful lifetimes. CARE, in its efforts to improve the quality control of its own systems, might take the opportunity of work with Cipta Karya staff to develop better joint approaches to construction supervision to help assure quality control. This might take the form of developing a manual of agreed upon construction planning and practices. This should include specification of periodic inspections at critical junctures during construction, such as inspecting foundations, wire and rebar, prior to applying masonry to ferrocement tanks, or inspecting pipe ditches prior to backfilling.

Another area where CARE could work together with Cipta Karya is in developing a set of procedures for operation and maintenance of both gravity flow and piped water systems, as well as a separate manual for handpump O&M. Previous Cipta Karya projects appear to have paid insufficient attention to developing community-based O&M

capabilities, with the not unexpected result that systems sometimes failed prematurely, requiring either rehabilitation or installation of entirely new systems. Both the construction practices and O&M provisions manuals could help improve the quality of services provided by the private sector in RWSS in Indonesia.

Finally, one approach which has been applied in some countries is the use of maintenance contracts with private sector contractors. Also, in this approach, the builders agree to provide maintenance and repair support for projects that they build, for an additional annual fee. This provides an incentive to build quality systems to minimize recurrent costs of maintenance and repair for the contractor. This would be particularly useful for handpump and hydraulic ram systems, but might be applicable to GFPW systems as well. It is not known whether such arrangements have been used with success in Indonesia.

6.0 PROGRESS TOWARDS PROJECT GOALS

This chapter reviews progress towards project goals by assessing the achievement of Intermediate Goals as given in the PIRs[20]. Seven out of nine of CSFW's intermediate goals[21] deal specifically with Resource Mobilization, and so the discussion in this chapter focuses largely on Resource Mobilization.

6.1 Resource Mobilization Goals

This section deals with progress towards the project objectives concerned with Resource Mobilization, and comments on the appropriateness of the objective and its indicators for the remainder of project implementation. Goals One and Nine deal with issues other than Resource Mobilization, and are discussed in the next section.

Intermediate Goal # 2: Generate maximum community inputs for the construction of water and sanitation systems. The indicator: 75% of communities contribute 50% of costs before obtaining a bank loan. Thus far, about 70% of CSFW communities have contributed in excess of 50% of project costs prior to obtaining loans. Some have contributed nearly 100% of costs, obviating the need for any loan.

The reason for the 50% contribution target is so that communities raise a significant portion of the costs before taking out a loan. This not only goes a long way towards getting community buy-in, but also keeps down the loan size. However, the indicator does not distinguish between in-kind and cash contributions, nor it seems do the banks. It is possible that the community contribution is mostly in-kind labor, while all but a small percentage of the cash costs are paid for by a loan. Because there are no limits on loan size thus far, this could result in large loans. Experience in this and other projects has shown that loan sizes are best kept small. They are easier to manage and repay, and cost less in interest charges[22].

The indicator misses one source of funding three communities have found, namely grants from private companies and individuals. Receiving a grant increases a community's equity prior to obtaining financing, which is always beneficial. The argument is sometimes made that it is not their own contribution. This seems to miss the point that the community has shown initiative to obtain the money, and should not be penalized for having done so.

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[20] In the project proposal, these are called "Objectives". In the later PIRs, they are called "Intermediate Goals". The PATs are specific quantitative objectives such as number of systems installed, or number of training courses presented.

[21] See Appendix Twelve for a matrix of CSFW Goals and Objectives, taken from the Project Proposal.

[22] PIR # 4 suggests a maximum of Rp. 20 million.

Yet it would be unfortunate if the whole system was paid for by a grant, because of the importance of a strong feeling of community ownership to long term sustainability.

The guideline of 50% contribution either in cash or in-kind should be used for any community intending to get a grant or loan. A community intending to take out a loan should also have to raise at lease 25% of the cash costs of the system before taking out a loan(s). At the same time there should be a loan ceiling established at Rp. 15 million.

Intermediate Goal # 3: Increase willingness of communities to use credit (if necessary) to finance their water and sanitation facilities. Key indicators are: a "voluntary" decision to request a bank loan for which individual land is used as collateral.

In spite of the finding in the feasibility study prepared prior to the project, that some areas have had bad experiences with past credit programs, the experience to date in CSFW is that most communities are almost too willing to take a loan, if they can come up with the collateral. Loans are available not only from banks, but also from material suppliers and sometimes other sources (e.g., P2K) and the indicator should reflect this. Some suppliers say they do not charge interest or increase their prices. However, all extend only very short term loans, so they are probably most useful as part of a financing package comprised of longer term bank loans.

The indicator of private land as collateral for community systems is appropriate for now. Land certificates are the only collateral acceptable to the banks, and without agreement by individuals, communities cannot access bank financing. The target for FY 89 and FY 90 was eleven CSFW sites, and to date eleven sites have taken out loans. The objective addresses only a community's willingness to use credit from a bank if necessary, which does not seem to be a limiting factor to community self-financing. A better indicator would be the number of communities which are able to put together a financial plan, of which credit from any source is a part, if necessary, and achieve the objective of completing the system and repaying the loan as agreed.

Intermediate Goal # 4: Improve and increase lending institutions' willingness to experiment with and provide community loans for WS&S systems.

The same targets as IG #3 above apply and they have not been met. Only 6 loans have been made by the two different banks, although of course there have been a number of loans made to WASHES sites, another 11 in fact. CSFW communities have taken as many loans (5) from vendors. In spite of the low number of loans in CSFW, there has been considerable progress overall (3 banks are making loans), adapting existing bank policy, but remaining immovable on the issue of collateral and demanding commercial

interest rates. The project has achieved already as much experimentation as it can with the banks at the provincial and district level; new indicators are required, these are:

> o further progress requires work at the national level towards policy change on collateral requirements and interest rates, and development of a lending program for community water systems.
>
> o to determine if a multi-lateral donor/lender (e.g., the World Bank) with an interest in community self-financing could be encouraged to provide a soft loan for a program channelled through selected banks.

Intermediate Goal # 5: Upgrade community financial management and collection skills. Indicators are: water committees are developed which meet regularly, deal successfully with donors, GOI agencies, banks, and their constituents, and successfully manage system finances as evidenced by good standardized records of expenditures and income.

This objective has not received the attention it requires. In general, communities have been left much to their own devices to plan, manage, and control all aspects of financing their water systems. It is evident from the indicators that the project presumed this would be handled by the water committee with minimal project assistance. In practice, as detailed in Part Three, Chapter Three above, many communities are weak in this area and need assistance. Planning is conspicuous by its absence from the objective, as is sharing information on methods of Resource Mobilization between communities.

The importance of both these needs has been discussed in the section on resource mobilization and cannot be stressed too highly. Given its importance, this should be the first intermediate goal, not the fifth. A good plan is the foundation for the whole resource mobilization approach. Intermediate goals should include financial planning, management, and control, and would include the present Objective # 6. Indicators would include: a) development of a more comprehensive resource mobilization package; b) training of staff up to Project Manager in the package; c) inclusion of resource mobilization training for communities in the job descriptions of field staff; and d) training of each committee and implementation of recommended plans, record keeping systems and controls.

Intermediate Goal # 6: Increase communities savings and debt-servicing capacity for CSF of water and sanitation systems. This goal, along with its indicators, should become part of the previous objective.

In terms of its objectives, savings accounts were opened by many (but not all) CSFW communities. Deposits are made with considerable variability (see Part Three, Chapter Three on user

fees). Again, loan repayments vary considerably with respect to their timeliness. Repayments are more regular in the case of banks, and less regular when loans are from equipment vendors.

Intermediate Goal # 7: Improve operation and maintenance of systems by the communities. Indicators include: established and well-managed user fee collection systems, less than 25% delinquency rates, proper accounting practices, and properly planned-for and implemented O&M.

While this goal is not prima facie associated with resource mobilization, most of its associated indicators are, so it has been included here. As there are few completed CSFW sites, findings from WASHES sites are most revealing. Most communities are attempting to operate and maintain their systems, but with a few notable exceptions, they need additional assistance in setting rates, collection, record-keeping, and financial controls if the objective is to be achieved. In some communities, technicians have been identified who can handle O&M responsibilities, but in many sites (especially those with handpumps) this is not the case. The same is true of prompt response to problems, which varies significantly from place to place. This goal should be retained, and the indicators, as they stand.

Intermediate Goal # 8: Improve the availability and utilization of favorable credit packages for CSF water supply and sanitation systems. Indicators are: reduced interest rates and collateral amounts. This intermediate goal is best regarded as part of Intermediate Goal # 4, and should be folded directly into it.

6.2 Other Intermediate Goals

Intermediate Goal # 1: Increase community initiative in the development and construction of clean water and improved sanitation systems. The indicator is: twenty communities have requested CARE assistance in developing improved RWSS systems thus far.

This IG has clearly been achieved, since fifty sites have agreed thus far, to participate in the project and pay all direct costs associated with system development. In 23 of these communities, viable water committees have already been established. Sixteen sites have completed their systems already, and an additional 18 are in progress.

Intermediate Goal # 9: The CSF approach to water and sanitation systems development is promoted throughout Indonesia. The indicators are: project results are documented and disseminated, NGOs are actively involved in project implementation, active working groups in RWSS at the national and regional level are established, and a National Community Water and Sanitation Services Foundation is established.

Initial implementation of the project is certainly well

underway. Progress has been fairly well documented, but not enough dissemination of results has taken place yet. Hopefully, this report will help to further the achievement of this objective. Local NGOs have been involved, but only in a fairly peripheral way thus far. No Foundation has been established, and indeed this indicator has been dropped from later project documentation. Informal working groups have been established in EJ, WJ, and NTB. (In WJ, the working group includes Helping Hands, Lionesses, and local Cipta Karya representatives on an occasional basis). CARE's contacts with other major players in the RWSS subsector appear to be increasing, and CARE has been involved in the review and planning of several major RWSS projects. The evaluation team finds this encouraging, and recommends that CARE continue to expand its efforts in this area.

A general comment on the achievement of intermediate goals is to reiterate that the real purpose of the first phase of CSFW (currently ending) is to test the viability of the CSF approach to RWSS development. Now that this has begun to be established, it is time for the project to realign its direction, and begin to balance the hitherto strong focus on resource mobilization with increased emphasis on areas such as quality control of construction, closer (and extended) monitoring of already completed sites, strengthening institutional linkages, health and hygiene education, and long term project sustainability.

The evaluation team recommends that additional intermediate project goals be developed to recognize this changing emphasis of the project. For goals related to monitoring, institutional linkages, and to a lesser extent, health and hygiene education, the CSFW/MST strategic planning document mentioned previously has made worthwhile steps, and these should be further developed to reflect comments made in this evaluation report, then clearly stated in an overall reformulation of CSFW intermediate goals. In addition, goals which focus on construction quality control and long term project sustainability should be developed and included in the project working documents.

7.0 PROJECT MANAGEMENT AND IMPLEMENTATION APPROACH

This chapter discusses staffing structure and management, the general approach to project implementation, the site selection process, monitoring and reporting requirements, and expenditures and budget projections.

7.1 Staff Structure, Levels, and Management

An organigram of the CSFW project management structure is given in Appendix Four. At the national level, the project head is the Project Coordinator (PC), supported directly by two (soon to be three) Assistant Project Coordinators (APC), one primarily responsible for resource mobilization, the other for sanitation and HHE, the third for engineering, and one Management Assistant. At the Field Office level, under the Chief Representative (CR) and Assistant Chief Representative (ACR) at each Field Office, are the Project Managers (PM). The number of PMs varies from province to province, but there are currently three PM positions for CSFW, two of which are not currently filled (in EJ and WJ). Under the PM at each Field Office are a number of Project Officers (PO), each of whom are responsible for 3-4 Field Officers (FO). The FOs are essentially technical assistants and extension specialists who do most of the actual work in the CSFW communities.

CARE technical field staff appeared to be quite competent to accomplish the tasks for which they were responsible. Additional technical assistance was available through senior managers at all three field offices, since the CR in EJ was an engineer, the ACR in WJ had considerable design and construction management experience in Indonesia and elsewhere, and the CR in NTB had extensive management experience in water resources development. Nonetheless, all three CRs felt that they could use another technical water specialist in their Field Office. In two cases (EJ and NTB), this may be due to the as yet unfilled CSFW Project Manager positions. These positions should be filled as soon as possible. The soon to be hired APC for Engineering will also help alleviate the need for in-house technical backup. Besides spending considerable time in each of the Field Offices, the new APC's responsibilities will include improving the BOOM technical manual, standardizing system and component designs across all three Field Offices (each of which uses somewhat different designs), and formalizing and standardizing construction practices.

Field Office staff felt that the degree of autonomy from CIHQ has decreased recently, which is true. In an effort to standardize procedures across all Field Offices, the CSFW Management and Support Team (CSFW/MST, the PC and APCs in Jakarta) is imposing structure on field office personnel who have largely taken responsibility for implementing their projects from each Field Office in the past. Since this trend for standardization necessarily results in more top down management, it is recommended that the CSFW/MST make reasonable efforts to include Field Office staff in all major planning exercises so that the Field Offices will be more likely to buy into

policy decisions. The emphasis on more participatory management should include participation in major planning exercises (such as developing the CSFW/MST Strategic Plan) and policy decisions (such as the decision to adopt the CSFW approach as the basis for all future CARE/Indonesia activities in the WS&S sector). Including senior managers from the Field Offices in these activities will help to better insure their active support when such plans or decisions are made. Otherwise, managers may feel slighted by not being involved in decision making, while they are responsible for implementing policy changes resulting from those decisions. Some degree of decentralization of decision-making responsibility may also be appropriate for budgetary decisions, most of which are currently made by CIHQ.

The CSFW/MST is already encouraging more participatory decision making by formalizing quarterly project meetings between the PC and APCs (from Jakarta), and the CRs, ACRs and PMs (where they exist, otherwise the PO), and all POs from the Field Offices. Agendas for these meetings are drafted by the CSFW/MST, and suggestions for additions or modifications are solicited from the Field Offices. Also, twice a year all CRs and Jakarta senior staff participate in a senior staff meeting. In addition, there are two national-level FO training sessions conducted each year. The first of these focused on the development of the Training Modules and reviewing the appropriateness of the CSFW approach. Future sessions will focus on technical areas such as sanitation and HHE. Given the regular visits to Field Offices (ten days a month on the average) from all members of CSFW/MST, there appears to be more than adequate opportunity for coordinating project activities at all levels. Care should be taken to insure that time demands from planning and staff training activities do not become so burdensome that actual project implementation is assigned lower priority.

The project should consider taking greater advantage of the resource magazine Asyik, of the Environmental Education Teaching Materials Project. This relatively small Project works with the Ministries of Health, Home Affairs, Religion, and Education to provide a magazine (a comic book, essentially) which is directed at primary school children. It focuses on improving health and environmental practices by increasing their awareness of the impacts of their behavior in those areas. At this point, it is a pilot project working in 120 primary schools in only one subdistrict in Lombok. However, because of its direct operational linkage with the formal education system, its product and process could apparently be easily transferred to other school districts with few institutional obstacles. Adopting the magazine in primary schools in CSFW communities would have the advantage of raising the communities' awareness of the health impacts of proper water use and sanitation practices, thus helping to achieve the health and hygiene goals of the project.

7.2 General Approach to Project Implementation

Based on a review of early project documentation, the project was quite thoroughly planned, particularly for a PVO-implemented project. Documentation of CSFW implementation processes has been done exhaustively, from carefully crafted flowcharts of each step of the process, to detailed reporting requirements, to the wide range of lesson plans comprising the Training Modules. Many of these documents have been developed (or revised) recently, and have yet to receive adequate field testing to determine their appropriateness. It is appropriate that the project move ahead from an initial phase with considerable effort devoted to the development of implementation tools, to a phase with greater emphasis on project implementation (including training in management, Resource Mobilization, and HHE and construction).

The WASHES project placed heavy emphasis on design and construction of water systems, with some attention paid to community management and (later on in the project) to Resource Mobilization. The initial design and the first half of CSFW focused heavily on community management and Resource Mobilization, much less on construction, and hardly at all on health and hygiene education. While not always a problem, the reversal of emphasis is quite evident in the quality of construction at some of the project sites. In light of the quality control issues discussed at length in Part Three, Chapter One, the project management should (and does intend to) shift some of the project emphasis back to construction, at least so that quality control at all project sites is adequately insured. Having a system that is completely community designed, managed, and paid-for, but which is not properly constructed does no one any good. It is a financial and management burden on the community itself, and reflects poorly on CARE's priorities. The evaluation team fully supports the current effort to increase careful supervision of all construction done under the auspices of CSFW.

One shortcoming of the project (again, not in all provinces) was the short shrift given to the sanitation and health and hygiene education effort. In order to maximize the health benefits of the project, HHE needs to be implemented on a regular basis at all current and future project sites. While the evaluation team understands that this is particularly difficult in NTB for cultural reasons, we nevertheless feel that CARE/NTB staff need to continue their efforts to heighten CSFW communities' awareness of the health benefits of better sanitation practices. We note the innovative approach taken by CARE/EJ project staff in their successful coordination with GOI Ministry of Health staff (Posyandu, Puskesmas) in promoting HHE in that area.

While the evaluation team fully supports the community management approach taken by the project, certain assumptions have been made which have to be re-examined based on experiences thus far. In one Field Office (WJ), it was initially assumed that the project design mandated that if a community was able to mobilize

adequate resources, it would also be able to design, build, and manage its own water system with minimal intervention from outside organizations. This was not the case. While communities can certainly do much to develop their own water supplies, it is quite clear that there are limits to their abilities to handle the whole process themselves, and that proper technical assistance is required to assist them in planning programs, mobilizing resources, and constructing their systems. Communities should be encouraged to do all they can to help themselves, but not beyond the level of their technical and managerial competence. That is where CARE staff come in. For example, according to the original project proposal and management staff, communities (not FOs) were actually supposed to do their own technical surveys for system design. This was beyond their capabilities. In WJ, the policy has been to let the community do everything, and the CARE staff in that office agree that project design and construction has suffered as a result.

There is a need to formalize the community training process. Thus far, it has been somewhat informal, and did not take full advantage of all the time invested in the newly developed Training Modules. This is not to say that all Training Modules need to be used at all sites, but rather that FOs need to evaluate more carefully which are most necessary at each, and not make those decisions based in part upon which of the modules they personally feel comfortable working with.

7.3 The Site Selection Process

There has been considerable experimentation around site selection. Initially, it was a complex and detailed process involving a whole series of survey instruments. It started at the District Level, followed by a system for ranking villages (using the Village Ranking Form, or VRF), followed by a household and community survey of socioeconomic, cultural, and technical variables. Underlying this complexity were real concerns not to select only well-off villages, but to select those with a willingness and ability to pay where a system was technically feasible. It became evident early on that conducting the surveys absorbed an inordinate amount of staff time. Also, they yielded much data which did not directly assist staff to make the few key decisions to be made before starting to work with a community. Now the village level surveys have been condensed into one short survey from which the decision to enter a community can be made.

In WASHES, site selection was based on formal selection criteria. In CSFW, basically anyone who feels they can mobilize adequate resources is considered a candidate for technical assistance. In part, this is because it can be difficult in some areas (e.g., NTB, but not EJ) to identify communities which are interested, capable, and willing to participate in CSFW. It would be worthwhile to formalize the site selection process (as envisioned in NEEDS), so that easy or inappropriate sites are not chosen for assistance. Again, this has to do with understanding just who the audience is for CSFW. Well-off communities are going to be more

likely to be able to mobilize resources to pay for their own systems, so it makes sense not to eliminate them from consideration just because of their economic status. This pertains more to CSFW than WASHES.

The NEED site selection process was only developed one year ago, and none of the sites we saw were picked on the basis of NEED. Rather, they were selected through a number of different approaches. Sometimes, a village representative hears about the program, and approaches CARE directly. Other villages are proposed by various GOI agencies. For example, communities can apply for GOI-funded water supplies by first applying through their village leadership to the district-level PDAM, which then forwards their request to provincial level BAPPEDA, where it is added to a list developed annually (this process occurs in both EJ and WJ). These lists are based on a number of criteria reflecting both government policies as well as physical parameters, such as the number of people critically in need of water and the availability of water sources. From this extended list, a prioritized short list is made based on urgency of need (reflecting water scarcity or poor quality), disease incidence, population density, and other factors.

Once on the list, certain agencies (GOI, donor, PVO) take responsibility for certain sets of sites. CARE selects sites from these lists on a negotiated basis for inclusion in both WASHES and CSFW. In general, NTB staff feel that many of the easier sites are given to GOI agencies (which are often developed with UNICEF assistance), and the more difficult ones (based on distance away from main roads, physical layout, limited capacity of sources, widely distributed water users, etc.) are given to groups like CARE and AIDAB. AIDAB in NTB says that CARE always selects the easier sites. In WJ, BAPPEDA tries to give CARE the most difficult sites. There are no apparent conflicts in EJ between CARE and BAPPEDA regarding site selection. Sometimes, CARE ends up working in particular communities suggested by the Government, which the organization initially rejected. On the other hand, CARE has never exactly been prevented from working at a particular site.

Also, other less formal arrangements occur. For example, the Lurah at Merkerwangi first spoke with LKMD, who submitted his request to PDAM, which then submitted it to the provincial level BAPPEDA to get on the master list for consideration. The Lurah at Nagreg said that after he had submitted his request to LKMD, it was forwarded to Bappeda, then to the Bupati, who had heard that CARE had a project in Cibodas. The Bupati then told the Lurah to contact CARE directly, which he did, and a formal association was established.

The most recent development in site selection in CSFW is the Site Selection Study. This is a hybrid which incorporates information from the series of technical, economic, and community management surveys used earlier in the project to gather site data, along with the information in the NEED document. Its purpose is to technically evaluate a candidate site to determine whether it fits

basic technical selection criteria, then screen for socioeconomic characteristics which indicate the probability of successful implementation of the community management and resource mobilization components of the project. This document is still in draft at this time, and will likely be field tested and revised before it becomes a standard site selection tool.

Other suggestions for site selection include choosing new CSFW sites from the group of former WASHES sites to take advantage of already learned skills. For example, if on-going monitoring of completed sites were to identify communities where extension of the system is desired, CARE FOs could do a survey to determine overall water system coverage, and areas with unmet water needs could be encouraged to build facilities using the CSFW approach.

7.4 Reporting and Project Documentation

The evaluation team experienced some difficulty in determining exactly what project activities had taken place at each of the project sites. Various members of the evaluation team reviewed the project files at each of the field offices. Each contained varying documentation. One document which would have been very helpful for the evaluators (and, we believe, for the project's Management and Support Team) would be a chart with a list of all major activities to be undertaken at each site. As the activities were begun and completed, they would be checked off on the chart. This would allow a quick determination of the status of project activities at each site. A draft of this proposed Site Status Report (which indicates the level of detail we consider appropriate, rather than making an attempt to be comprehensive) is given in Appendix Eleven. While the evaluation team is aware of and sympathetic to the currently high level of reporting requirements for project staff, we feel that this status report (which, once the form was developed, would only require checking off the lists as specific activities were completed at each site) would be a very useful summary of site status requiring a minimum additional burden on Field Office staff.

There is a need to improve project monitoring and reporting so that project progress can be more readily identified. This would include expanded fact sheets for all sites (updated upon completion of major site objectives such as organizing of HIPPAM or completion of physical construction), as well as up-to-date sheets on loans applied for, approved, and payment status. Current Reporting requirements need to be reviewed so that reports can be combined and condensed, especially in view of increasing requirements for project staff time in support of the enhanced training initiative.

7.5 Expenditures and Budget Projections

The rate of expenditure of funds will change as the WASHES project terminates at the end of FY 91 (in one month). At present, 50% of the CSFW Management and Support Team's time is billed to WASHES, along with 50% of all Field Office staff working in the WS&S sector. In addition, 35% of the Evaluation Officer's, 25% of the Country Director's, and 35% of the Training Officer's time is billed against WASHES and CSFW together. This will all fall to CSFW after the upcoming termination of WASHES. All support for these staff will fall under the CSFW budget as of July 1. Current staffing levels will shortly be increased as two additional Project Managers are hired in EJ and NTB, and additional Field Officers are hired on in those same Field Offices. This will increase project monthly expenditures for staff and associated support expenses by about 100% above current levels.

PART FOUR - CONCLUSIONS, RECOMMENDATIONS, AND LESSONS LEARNED

This final section of the evaluation report summarizes the conclusions, recommendations, and lessons learned which were developed in the detailed discussions in the findings sections above. The summaries are themselves broken into the four areas of:

- o water engineering and sanitation;
- o community participation and management;
- o resource mobilization; and
- o other areas (such as project design, implementation, management, and sustainability).

1.0 CONCLUSIONS

1.1 Water Engineering and Sanitation:

1.1.1 In general, communities have shown themselves capable of successfully undertaking the design and construction of their own water supply (and to a lesser extent sanitation) systems, when properly trained and supervised by CARE field staff.

1.1.2 Engineering designs for both WASHES and CSFW sites met or exceeded conventionally accepted design standards, and designs varied somewhat in different CARE Field Offices. Technical innovations such as the development of quite large (up to 57 m^3) bamboo cement tanks were notable. The use of local materials where possible in construction is commendably high.

1.1.3 The great majority of systems installed are gravity-fed, piped systems, although hydraulic rams, handpumps (from WASHES), and rainwater catchments are used in some areas. A broader range of technology options (e.g., well rehabilitation, diesel pumps, expansion of handpump use stressing proper O&M, and wind and solar pumps) when gravity systems are not applicable areas might be helpful.

1.1.4 WASHES sites built prior to 1988, have higher and more consistent construction quality control than do CSFW or post-1988 WASHES sites, reflecting the lower level of supervision in CSFW. Close supervision of critical construction phases would eliminate or at least minimize this problem. At some CSFW sites, builders' attempts to reduce construction costs (by using insufficient cement in mixes, or insufficient masonry thickness for floor slabs) sometimes led to low quality output.

1.1.5 Communities are sometimes poorly informed of the impact of poor construction practices. This could easily be addressed as part of pre-construction technical training. If necessary, cross-visits could be made both to communities where construction was properly done and to those where it was not.

1.1.6 CARE field staff appear generally well qualified to carry out their required tasks. However, in some cases the time demands on FOs led to insufficient monitoring and inspection of on-going community-led construction, with less than adequate results.

1.1.7 Some communities make unauthorized (or at minimum ad hoc) house connections directly from storage or distribution points. System design is based on public tap demand, so this may lead to overtaxing the system capacity, or to inadequate delivery to some subsystems. Communities need to be informed that this is an unwise practice. They should be made more aware of the consequences of excessive water wastage. Some clearly were either unaware of this or simply did not care.

1.1.8 O&M needs to be more directly addressed in technical training. Villagers have not been adequately encouraged to deal with problems as soon as they occur (leaky pipes/tanks), and not let them get to the point where serious problems arise.

1.1.9 The level of sanitation services varied considerably between the three provinces. In EJ, in about 60% of the villages nearly everyone had access to, and regularly used either public or private latrines. In several NTB CSFW sites, almost no one did, and rivers were the most common defecation sites. CSFW activities in WJ and EJ usually include sanitation facilities, except where they already exist.

1.2 Community Participation and Management

For potable water supply, the notion of community management was known and practiced to some extent in much of rural Indonesia, but on a small scale. The provision of safe and reliable water on the scale and standards prescribed by CARE needs a more refined concept of community management, as introduced by CARE through training of and consultation with local communities. Improvements need to be made to transform this conceptual model into reality. Community management develops from the hypothesis that the greater the community participation and self-reliance in the project, the higher the probability of project sustainability, since through participation a sense of ownership and belonging will grow. Participation and self-reliance are functions of the level of a community's awareness of water as basic need, the scarcity of clean water that shapes the perception of water as a market commodity, and the level of income that influences the decision to pay for the convenience of having water. From site visits to many WASHES and CSFW sites, the major conclusions are:

1.2.1 The probability of a community's initiation and successful completion of a water project is contingent upon water scarcity, degree of access, level of coverage, and awareness of the health benefits of water quality, since these shape villagers' perception of water as a basic need and a marketable commodity. Willingness to invest in water systems varies from place to place, but is more likely in communities which accept the idea that water is a market (not a free) commodity. Willingness to pay user fees is influenced by the perception of water as a private good, and its convenient access by users.

1.2.2 Because of the need to mobilize local resources, CSFW sites tend to be chosen based on level of income (including per capita, per household and total community income). Experience indicates that income level by itself is not the only decisive factor in project success. Other factors taken into account also are the anticipated degree of community participation (influenced by community awareness of the benefits of potable water at both the leadership and general community level) combined with the community's ability to mobilize resources. Final decisions to make investments and implement projects depend on the FO's and other key person's ability to motivate sufficient community contributions.

1.2.3 In motivating and managing communities, a key factor in project success is the FO's ability to identify and work with the formal community leader (village or LKMD head), who himself must have the necessary political will and confidence to coordinate with informal leaders who are trusted by the community and have the ability to organize and manage. These informal leaders are typically ex- or current schoolmasters or teachers, or (in NTB and to some extent EJ) progressive religious organization leaders.

1.2.4 Rural community development projects are usually carried out by existing village institutions such as the LKMD, KUD, PKK, etc. Their ability to initiate and successfully complete projects varies from one village or region to another. In many sites, new projects (especially innovative ones like CSFW) may be implemented apart from or only peripherally connected with formal village institutions. In some sites, PPSABs may operate separately from existing institutions. In others, water committee responsibilities are carried out directly by the LKMD or KUD, or by other water management groups such as BPSAB, HIPPAM, KUD, private or state agencies, or informal groups. Each regional government seems to have its own policy regarding water committees and management organizations.

1.2.5 Women's roles in WS&S development and management are limited at many sites, often due to widely held beliefs that women are unsuitable for physical construction activities. Women are, however, deemed suitable for health activities. Through CARE policy intervention with village leaders, women could play useful roles in construction supervision, system management, and administration. Thus far, CARE FOs have not actively encouraged women's participation in management/technical training, nor insisted on including women on water committees. More direct linkages between PKK, Posyandu, and water committees could encourage more active women's roles.

1.2.6 Religious institutions (e.g., learning centers and small mosques in Pacitan or large mosques in Lombok) can play important roles in motivating people, mobilizing resources, water management, and system maintenance for CSFW projects. Progressive religious leaders can also play an integrative role where the community is not united in its response to the project.

1.2.7 In water system expansion (where the system is expanded from one hamlet to others), involvement of village leaders (Lurah or Kepala Desa) is critical. The role of the subdistrict head (Camat, chairman of the HIPPAM Coordinating Team in EJ) is crucial when replicating HIPPAMs from one village to another.

1.2.8 CSFW has certain implications in the process as well as the quality of project output such as:

- o CSFW processes are slower than WASHES, because additional time is needed to convince community members to mobilize their own resources (especially cash) in the initial phase;
- o CSFW projects may mainly involve small numbers of more well-to-do families, especially in the initial investment phase. This may have exclusionary effects on poor families (e.g., Jatiroke);
- o CSFW construction quality tends to be lower, since low budgets minimize necessary community contributions; and
- o CSFW pays inadequate attention to related WS&S aspects like sanitation, health, and environmental protection and development. CARE's ability to insure quality control including health and sanitation may increase if some modicum of subsidy is provided.

1.2.9 CARE's experience at some sites shows that water can be an entry point for a broader range of development activities (e.g., village cleanliness, gardening, environmental protection) which, while not part of CSFW, can provide direct benefits to communities. There is also the potential for water to induce productive and income generating activities, depending on the initiative and the ability of villagers to broaden the scope of benefits from CSFW training. Programs such as the Family Planning Program Component and P2K's Household Income Generating Activity (e.g., Banjarsari) may themselves help promote CSFW goals.

1.3 Resource Mobilization

1.3.1 The many different ways communities and their committees have used to generate resources demonstrates their commitment to finding creative solutions to finance their own systems. It proves that there are many options any one community can choose from. However, there could be more project involvement in this process and more structured sharing of methods between communities and the 3 districts in which the project operates.

1.3.2 Community willingness to pay is tempered by variations in the economic conditions of the three Provinces - NTB is demonstrably poorer than WJ. This does not necessarily mean that wealthier communities are more successful at completing projects. It does mean that with similar system costs and the same number of users, poorer communities will pay more per household. The per capita cost of systems varies for many reasons; one sure way of

getting a system cost down is to have more people share it. Having said that, it is important that the project work closely with the water committee to share the burden equitably between wealthy and poor members of a community. Especially NTB has large gaps in many communities between a few large landholders and many landless or very poor individuals, and their relative contributions.

1.3.3 CSFW has developed good relationships with three banks (one in each district) which enabled both WASHES and CSFW communities to access loans. None of the loans would have been possible without CSFW intervention. Given similar progress with material suppliers, it is a solid foundation for additional community access during the next phase of the project. CARE must also work at the national level to secure policy change and cheaper, more accessible loans.

1.3.4 Access to financing is essential for CSFW to work. Most communities simply do not have the cash to pay all the upfront costs, but they can pay over time. There may be cases where system per capita cost far exceeds the average, so CSFW should establish criteria and procedures for judging cases of extreme hardship as justification for subsidies. One criterion might be a multiple of average provincial per capita cost. Another might be demonstrated community motivation and attempts to increase the number of potential users. Hardship cases should be the exception rather than the rule, and should require approval of the PC.

1.3.5 The assumption that all communities would be able to develop achievable financing plans for water systems because they have planned and executed other community projects has proven incorrect. The main reason is that water projects are more complex, have more varied options, and only involve those willing and able to pay. Communities need assistance with understanding their options, choosing the correct one, and carrying out successful plans.

1.3.6 One obstacle in collecting contributions or initial investments and user fees is that some communities are heavily burdened with debt (for either consumption or productive purposes or both). This should be reviewed by FOs when evaluating community willingness and ability to invest in systems and pay user fees.

1.3.7 CSFW is only at its mid point and it is too early to make final judgements about its approach. Many communities are at various stages in the process of financing systems without direct subsidies by CARE and GOI, and there are real differences in conditions and progress between WJ, EJ and NTB. CSFW has refined its approach, and offers considerable promise as a means of:

- enabling communities to get a water and sanitation system without depending on GOI;
- enabling GOI to use its scarce resources for far more communities;
- ensuring ownership by the community which translates into sustainable systems because they are willing to maintain what they pay for.

1.4 Other Areas

1.4.1 The formal site selection process appears adequate to focus CARE water development efforts on poorer communities. However, the reality is that some (particularly peri-urban) well-off communities have received CSFW assistance. No doubt this reflects in part the 100% community self-financing requirement as currently implemented.

1.4.2 Sites need to be monitored regularly, even after construction is complete. To address preventative maintenance issues, monitoring might best be scheduled on a 3-month basis for the first year after completion, and on a 6-month basis thereafter.

2.0 RECOMMENDATIONS

2.1 Water Engineering and Sanitation

2.1.1 Quality Control

2.1.1.1 Community technical and management training must focus more directly on construction planning, scheduling, and management, including the need for and benefits of proper supervision during critical phases of construction. Communities should be well informed of reasons for minimum design standards, and quality differences between various kinds of construction materials. Key persons in the community should be identified and encouraged to take active roles in construction supervision.

2.1.1.2 Project-trained community members have made substantial contributions in nearly all phases of system design and implementation in their communities, and should continue to be encouraged to do so. However, there are limitations on their capabilities when it comes to specific technical areas (e.g., surveying, or tank design), so that their level of involvement and control of project activities should be subject to their technical and managerial experience and competence.

2.1.1.3 Agreements should be signed by CARE and the HIPPAM (or BPAB in some provinces) prior to initiation of construction, listing roles and responsibilities of each party, proposed construction scheduling, payment methods and schedule, system design specifications, and construction standards. Agreements should also be acknowledged and signed by the subdistrict leader. Alternatively, the agreement may be first established at the provincial level, with ancillary agreements at the district level.

2.1.1.4 Schedules for construction should be carefully planned with communities in order to minimize the possibility that CARE FOs will not be available during critical phases of construction. If this is not possible, and activities are taking place at two of the FO's sites at the same time, FOs should request assistance of an FO from another site to oversee construction on a temporary basis.

2.1.1.5 When dealing with local contractors, CARE should assist villagers in drawing up agreements which give specific cost and specifications for end products, explain responsibilities for any construction components for which the contractor is not responsible (drainage was an example at some sites), specify inspections which determine acceptability of the product, address method and timing of payments, and deal with default scenarios.

2.1.1.6 System and component designs should be standardized using existing designs available from each CARE Field Office. Standardization should be supervised by the new Technical APC, with significant inputs from all field staff who were involved in the development and use of the current design plans.

2.1.1.7 One proposed strategy to help insure quality control is to rebate 10-15% of project material and equipment costs to the community upon completion of construction if and only if a final inspection by the local Field Office Project Manager shows that the system fully and completely complies with all system design specifications. Support for such a proposal is not shared by all evaluation team members.

2.1.2 Operation and Maintenance

2.1.2.1 Additional training is needed to raise community awareness of the need for proper and timely O&M procedures and to develop a capacity for undertaking these procedures themselves (e.g., timely repair of pipe and tank leaks before they require replacement) to increase reliability and sustainability of systems, and to reduce recurrent O&M costs (especially handpumps and hydraulic rams).

2.1.2.2 Access to spare parts and skilled labor for O&M must be assured, and cost recovery measures to pay for them (especially for handpump systems) must be developed.

2.1.2.3 Communities need to be made aware of the need for water conservation, which has developed into supply problems for subsystems at some sites, especially for house or individual yard connections.

2.1.2.4 Sites should be monitored on a regular basis after completion of construction (e.g., every 3 months for first year, every 6 months thereafter). These regular monitoring visits should include site inspection for potential problems of all major system components (e.g., for gravity systems, this would include the capturing(s), walking the main pipeline, all break-pressure, sedimentation, and storage tanks, slow-sand filters, and water points) plus water quality testing for fecal contamination. To make best use of the FO's time, the monitoring visits might also include a review of loan repayment status, and a general discussion with villagers of any other problems they may have encountered.

2.1.3 Sanitation and Health and Hygiene Education

2.1.3.1 CARE's strategic planning for the remainder of the project emphasizes the need to focus increased attention on encouraging communities to take fuller advantage of both sanitation and health and hygiene education training available through CSFW to build and use both public and private sanitation facilities in their communities. The evaluation team fully supports this initiative, since increased health and hygiene education has the potential for significantly increasing the health benefits of CSFW.

2.1.3.2 The project should focus increased manpower resources on the implementation of sanitation training using existing Training Modules as appropriate at all project sites (this is not such a concern at all sites, with some exceptions in EJ and WJ). There is a definite need to raise CSFW communities' awareness of the health impacts of proper sanitation practices, especially in NTB.

2.1.3.3 Standardized HHE training procedures should be used at all Field Offices. HHE training procedures (which vary among Field Offices), should use existing Training Modules as their basis.

2.1.3.4 The project should encourage the inclusion of MCKs or private latrines where appropriate in overall system design. However, this should happen only after appropriate HHE has been properly implemented for all CSFW (and WASHES) communities, and only after community interest in building and using these facilities is clearly established.

2.1.3.5 Additional efforts should be made to strengthen linkages between CSFW's health and sanitation component and village environmental improvement by cooperating with community activities carried out by LKMD, Puskesmas, PKK, Posyandu, Karang Taruna, or KUD. FOs can encourage these institutions to apply their management skills in developing systematic plans for carrying out activities such as:

- village clean-up campaigns through "gotong royong (working together)" (such as at Sangkukun);
- greening of their surroundings by yard gardening and tree planting (especially in marginal areas); and
- self-help construction of sanitation facilities like drainage, sewerage, grey water soakaways, capping off of old wells, garbage collection and pit disposal, and recycling where appropriate (CARE might consider developing this as a separate comprehensive sanitation package, or Training Module component).

Another institutional linkage could be made with existing savings and loan programs to indirectly promote income-generating activities. HIPPAM can make partnerships with pre-cooperative groups (such as the one in Kedung Menjangan).

2.2 Community Participation and Management

2.2.1 CARE's efforts so far have been mainly focused on familiarizing communities with CSFW objectives and processes during the initial project phase, and technical management and resource mobilization in later phases. CSFW's scope should be extended to strengthen community management capabilities by:

- o Building the leadership and management capability of community elite, so that they promote participation from below and mobilize resources; and

- o Promoting community empowerment by raising its awareness and technical capability so community members will not only contribute labor, but also play active roles in management, and increase social responsibility and sense of ownership.

2.2.2 Where formal government institutions (e.g., LKMD, PKK, KUD) are well established and active, partnerships should be entered into with those institutions. However, if formal institutions are not quite ready (true in many areas), CSFW can cooperate with non-formal, "pure" voluntary organizations (e.g., religious institutions such as mosques or mosque youth groups) for motivation, resource mobilization (especially cash), water distribution and maintenance. When water committees are well-established, they can exert leverage to promote activities of those formal institutions.

2.2.3 To increase the role of women, especially in decision making and management, women should be included from the very beginning in the construction committee and subsequently in the water management committee. The intervention of Lurah and the LKMD chairman is necessary to ensure women's direct involvement in the project. Women can play increasing roles in:

- o supervision of construction work;
- o financial management, or as treasurers;
- o participating in resource mobilization efforts;
- o collection of user fees;
- o system maintenance, especially MCs, MCKs, and taps;
- o secretarial support;
- o controlling distribution and consumption of water; and
- o sanitation, health, education, extension services.

To empower women with the awareness, knowledge and skills needed, it is suggested that women be included in training for management (administration and bookkeeping), construction design and techniques, public health, sanitation and environment. Women should also be guaranteed a specified minimum level of representation on CSFW water committees. The recommended minimum level is 25%.

2.2.4 To help insure more equitable distribution of benefits and to better incorporate the wishes of lower income families, CARE should mandate a specified minimum level of representation on water committees by lower income families (as defined by GOI standards). A suggested level is 25%. Equitable representation would also be better assured if committee members were elected rather than appointed.

2.2.5 To promote sustainability, CARE should develop a program to institutionalize the HIPPAM concept by replicating it in other provinces. A study should be made to analyze experiences and develop materials for replicating the HIPPAM model. Dissemination should be started in one district in a given province, then extended to other districts in that province before moving to other provinces. CARE might also consider organizing ex-trainees into an association to help coordinate HIPPAM replication.

2.3 Resource Mobilization

2.3.1 CSFW should take an active role in working with bank(s) and communities to find solutions to repayment problems. Because repayment problems often originate in poor loan agreements, project staff should work with both parties to ensure each loan has a minimum debt to equity ratio, especially cash equity of at least 75:25, and an achievable repayment schedule. Limiting the maximum loan size to Rp. 15 million and aiming for lower amounts should be considered.

2.3.2 Project staff should schedule periodic visits (e.g., quarterly), and advise communities until loans are repaid in full.

2.3.3 Relationships with banks should be formalized in memorandums of understanding. In light of banks' desires to be more involved, their role should be expanded to include reviewing community financing plans, and some joint monitoring visits with CARE staff.

2.3.4 Cross-provincial and national links should be built with the three banks, with the long term aim of obtaining a bank policy on loans for community water systems. This will entail progress on a number of fronts: community guarantees versus individual property as security; lower interest rates; and, the legal position of the water committees. This activity should proceed in tandem with the next recommendation.

2.3.5 Linkages should be established with multi-lateral lending agencies with a declared interest in community self-financing of WS&S (e.g., the World Bank and ADB), as well as the Central Bank. The long term goal would be to convince them of communities' needs to access credit if they are to self-finance, and to develop loan programs with selected Indonesian banks for on-lending to communities (hopefully at lower than commercial rates and with alternative arrangements for securing the loans).

2.3.6 Relationships with vendors should be formalized and roles, responsibilities, and expectations spelled out. One vendor role should be to meet with water committees as with any other client. They should also be fully aware of overall financing plans, and so negotiate realistic repayment plans with communities. On the CSFW side, FOs should assist communities to determine the appropriateness of very short term loans in their overall financing plan, and to ensure that the supplier(s) is aware of it.

2.3.7 CSFW should play a more active role in training water committees to set user fees and implement effective collection systems.

2.3.8 CSFW should develop a comprehensive resource mobilization package. CSFW staff would be trained first, then potential users (not just committees). The training should inform them about the full range of options; ensure plans are developed for an acceptable per capita cost, taking account of the cost of the system, the number of users and sources/amounts of outside financing; and advise them about borrowing procedures, and negotiating correct-sized loans and realistic repayment plans.

2.3.9 CSFW should focus additional training efforts on communities in the use of a simple, standardized record-keeping system (CARE/USA is in the process of developing such a system). Also, it is especially important that committee members know how to audit the records and bank accounts.

2.3.10 All communities should open a bank account as soon as they start raising funds. It should have appropriate controls i.e., more than one signature required for withdrawals.

2.4 Other Areas

2.4.1 Project Design and Site Selection

2.4.1.1 A more precise definition of what community self-financing is should be agreed upon (e.g., 100% of all M&E plus labor, amount of cash and external grants) to reflect additional information which has come out since the original project formulation.

2.4.1.2 CARE needs to agree more clearly upon what the major components of the project are (level of intervention at each site), what should be included, and what should not. Components should be prioritized and realistically reflect financial, time, and staffing constraints.

2.4.1.3 CARE should develop recommended limits on the size of its projects, in terms of number of beneficiaries served, and/or overall cost of the project (linked perhaps to length of necessary mainline).

2.4.1.4 Existing site selection criteria (e.g., used in SRCD, NEEDS or the recently proposed Site Selection Feasibility Study, also Chapter 7) should be taken more specifically into account when making site selection. Thus far in the project, just about anyone who expresses an interest in community self-financing is accepted as a candidate project community.

2.4.2 Institutional

2.4.2.1 Coordination: Increased coordination with other players in the RWSS sector has been mentioned in the three main areas above. The project should further promote coordination by:

- o Sponsoring a conference with all major players (GOI agencies, bilaterals, multilaterals, Indonesian and international PVOs, and other development assistance groups) to discuss the CSFW approach in terms of their experiences in RWSS. This may evolve into regular contacts between major players, and subsequently improved planning of water resource development; and

- o Examining approaches to more closely include relevant GOI agencies involved in RWSS (BAPPEDA, MOH, Cipta Karya) in CSFW future planning and implementation.

2.4.2.2 CSFW should identify GOI and NGO agency(ies) most likely expected to carry on the CSFW approach to RWSS development, and begin to provide training and technical assistance to institutionally strengthen those agencies to increase their capacity to sustain the project over the long term.

2.4.2.3 A series of standard agreements should be developed which allow CARE, communities, government agencies, and local private contractors to agree upon delivery of specific goods and services. These agreements should make provisions for inclusion of product specifications, costs, payment schedules, and responsibilities for all concerned parties.

2.4.2.4 Marketing the Concept: The best marketing tool for the project thus far is communities telling their neighbors about their satisfaction with their own involvement in CSFW. Marketing approaches proposed in the current strategic plan (pamphlets, conference/journal papers, videos), while ambitious, are a reasonable approach to expanding community and organizational awareness of the CSFW approach to WS&S development. As CSFW technical implementation progresses, CARE should make greater efforts to increase public awareness of the project and its goals and methods.

2.4.3 Management and Budget

2.4.3.1 Relatively long site development times under CSFW (due to the need to mobilize community resources) may inhibit timely completion of site interventions within the specified project time frame. Staffing levels need to be reconsidered in light of the current strategic plan, which seems quite ambitious. The number and detail of activities in that document seems well beyond the capabilities of existing staff, so that either staffing needs to be increased or sites cut back. This will even become more of an issue when increased emphasis on training is realized. Also, the workload needs to be reconsidered in light of activities recommended by the evaluation team in this report. It may also be necessary to increase supervision of FOs.

2.4.3.2 FOs should not be assigned more than one site at a time at which construction is underway, so that proper construction supervision can be better assured. They should hold concurrent responsibility for community training at a second site, and long term monitoring at a third site. CARE should consider the development of FO teams whose members specialize in certain technical areas, so that every FO will not have to be well-versed in such a wide variety of training specialties (e.g., community management, system design and construction, resource mobilization, health and hygiene education). However, every FO should be well-versed in system design and construction management and supervision.

2.4.3.3 Project management and staff should jointly discuss ways of decreasing the currently heavy reporting loads by combining/condensing current reports. Having said that, the evaluation team recommends several additional reporting and monitoring requirements, including site status reports (checklists of all activities accomplished thus far) which provide a summary of project activities at each site to date, expanded loan repayment monitoring sheets, and expanded fact sheets.

2.4.3.4 Since this is an implementation not a research project, surveys and data collection efforts done by the project should directly contribute to achieving project goals.

2.4.3.5 The evaluation team supports CARE's intention to hire more female staff at all levels of the project. It is recommended that especially at the FO level (who are exclusively men at this time), women be recruited in the general expansion of project staffing.

2.4.3.6 The current staffing structure with three APCs is a good one. Getting an additional APC in the technical area will help to better coordinate technical activities across all Field Offices, including standardizing engineering plans, codify recommended construction planning and management practices, and improve the BOOM Manual. Consideration should be given to hiring one additional technical specialist at each Field Office to provide direct technical support to FOs as the implementation of increased community training makes greater demands on FOs' time.

2.4.4 Training

2.4.4.1 Training modules developed thus far (as currently revised) are useful guides in community training. However, they have yet to be widely used by FOs. It is recommended that additional modules be developed to address certain technical areas not yet addressed. FOs should be encouraged to be selective in their use of appropriate modules (reflecting existing community capabilities at each site), and not feel that all had to be used at all sites.

2.4.4.2 Additional training is required in the general area of management for mid-level project staff. This should include areas such as personnel management, scheduling, and planning. At the FO level, additional technical training is required, especially in the areas of technology choice and system design, negotiation, and resource mobilization.

3.0 LESSONS LEARNED

As part of the ADB's review of the water sector in Indonesia, a proposed strategy for the development of RWSS was developed. The principal recommendation of that strategy is well worth quoting here. The ADB report said that in order to help insure the long-term sustainability of rural water supply and sanitation projects, it is necessary to:

> "Enhance true community participation in the development process by involving the community in the collection of basic data, planning, selection of technologies, funding, construction, and operation and maintenance of community systems. Develop independent community credit systems and government technical agency support to assist the community plan and provide their inputs. Engage community development training specialists to facilitate community participation in projects and to train Government agencies and NGO movements in the methodologies of sustainable community development."

Indeed, this is precisely what CARE has attempted to do in this project (with some success thus far), with the minor exception of providing the technical assistance directly from its own staff to communities rather than through Government agencies. This final section of the evaluation report summarizes the major lessons learned in CSFW thus far.

3.1 Water Engineering and Sanitation

CSFW is a very promising approach to developing rural water supply (and to a lesser extent sanitation) systems, particularly in the face of increasing constraints on GOI financial and manpower resources to support such projects.

There are limits to the appropriateness of complete community control of water system development and management, which in some cases have been exceeded in the project so far. These limits do not mean that community self-financing and control of system development is not a good approach, but rather that appropriate technical assistance must include stronger supervision and technical/managerial support by CARE at critical points in the project (especially construction). It is very important for CARE to establish mechanisms to insure that quality control is maintained in community financed systems. This is not a major stumbling block to project success, but it does require more attention than it has thus far received to insure system sustainability over the long-term. In a broader sense, this shows that one assumption in the project proposal was partially incorrect. The assumption was that if communities were properly trained in resource mobilization, community management, and construction, and were able to access adequate loans to complement their own resources, they would in theory be able to build, operate, and maintain systems on their own. In fact, project experience thus far has underlined the need for CARE to provide continuing supervisory support to CSFW communities throughout all phases of the project (including the post-construction phase) to insure the success of project efforts.

3.2 Community Participation and Management

When properly trained and assisted by CARE, communities have demonstrated their interest in the CSFW concept by developing active, responsible water management committees which (through a wide variety of individual approaches) have been involved in the design, resource mobilization, construction, and management of community water supply (and in some cases sanitation) systems.

While a number of organizational, institutional, and personal conflicts of interest have delayed or blocked implementation of project interventions at some sites, at many more sites the approach has been proven a useful one for empowering communities to assume responsibility for developing and maintaining their own organizational and physical infrastructure. Focusing more attention on certain areas (e.g., O&M, HHE) which thus far have received inadequate attention will further improve the benefits to communities, and hopefully provide further incentives to replicate this approach in other communities.

3.3 Resource Mobilization

Experience in CSFW is short, but CARE's experience in other water projects stretches back 10 years, and WASHES in particular, with its greater number of sites, is a rich source for insights into the key factors making for successful self-financing. Among these are a real desire among the potential users and payers (not just community leaders or water committee members) for either more water, easier access, or access during the dry season. People are not nearly as willing to pay for quality and so communities with existing water systems have less interest in CSFW.

Trust in community leaders and water committee members is critical. Some communities have had problems with misappropriation of community-raised funds, and are cautious about further involvement in such programs. Matched with a need for trust is a need for competence to carry out a project successfully. CARE has managed to help develop this competence in water committee members at many sites. Increased attention to community training and utilization of the Training Modules developed for this purpose should increase the probability of replication of project efforts in other communities.

An achievable financing plan which matches the initial system cost (and later user fees) with realistic household contributions of cash and labor, plus external financing from loans and grants must be well understood and agreed to by the users. Perhaps the most significant variables in the plan are the cost of the system and the number of users. If these two parts of the financing equation are seriously out of balance, the household contribution becomes too high, loan(s) become too large, and repayment problems can become a serious issue.

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Appendix Two - List of Persons Interviewed

CARE/Indonesia (Jakarta Office)
Peter Middlemiss, Country Director
Iskandar, Deputy Director
Dan O'Brien, CFSW Project Coordinator, Assistant Country Director
Budi Rahardjo, Assistant Project Coordinator
Catharina Haryono, Assistant Project Coordinator
Ann Goddard - VPHC Project Coordinator
Prudence Williams - ASIK Magazine Project Manager
Mary Judd, consultant, and former CFSW Project Coordinator

CARE/Indonesia (Bandung - West Java Regional Office)
Chief Representative
Assistant Chief Representative
Project Manager
Field Officers

CARE/Indonesia (Mataram - NTB Regional Office)
Chief Representative
Assistant Chief Representative
Project Manager
Field Officers

CARE/Indonesia (Pacitan - East Java Regional Office)
Chief Representative
Assistant Chief Representative
Project Manager
Field Officers

Government of Indonesia
Numerous representatives from Cipta Karya, BAPPEDA, and BAPPENAS in all three provinces.

U.S. Agency for International Development (USAID)
James Jackson, Acting Director, Office of Voluntary and Humanitarian Programs (VHP)
Abas Rozali, Program Assistant, VHP
Nancy Langworthy, Office of Program and Project Support

Other Donor Agency and PVO/NGO Representatives
UNICEF (NTB) - Sinung Daru Kristanto, Project Officer
AIDAB - John Wilkinson (contractor from Coffey and Partners)
Yayasan Pagelaran - Cece Sumantri, Otoy Padmanegara
Helping Hands - Helen Lok, Mien Sugandi
Lionesses - Emmy Helen Martono
Puskesmas (WJ) - Dr. Retno

Bank and Other Private Sector Representatives

Bank Asia Pacific (WJ)- Lanny Yanthi (Marketing Manager), Johan Gozali ((Marketing Credit)

Bank Rakyat Indonesia (EJ) - Sardjono (Manager), Sudjito and Hendro (Rural Credit Managers)

Bank Pembangunan Daerah (NTB) - Drs. H. Mohd Zain (Manager), Abdul Azim, Yanu

Material Suppliers - Yopi (WJ), Pelangi Co. (EJ), and Cipto Inc. (NTB)

Appendix Three - Comparison of Various Storage Tank Technologies

A brief discussion of the advantages and disadvantages of the different types of reservoir tanks used throughout the project helps explain the approaches taken by different field offices. There were three main kinds of tanks constructed by the project: ferrocement; bamboo cement; and brick. Their advantages and disadvantages are:

Ferrocement tanks are, in general, faster to build, and cheaper, stronger and longer-lasting than other design alternatives. They are also not as susceptible to damage as are other designs from repeated drying out and rewetting (which might occur due to repeated system outages due to maintenance or frequent repairs). However, they do have some drawbacks, primarily having to do with the need for close supervision to insure precise masonry mixtures (cement, sand and especially the amount of water used) during construction, and proper curing procedures thereafter. If not properly cured after building, their strength can be significantly reduced and useful lifetimes shortened. Immediately after construction, sufficient water must be available for curing. If the water source is too far away, people may be discouraged from curing them properly. It is also very important to have clean sand for their construction, which costs more money. Villagers may view this as an unnecessary expense, and unwisely attempt to cut corners here. Incremental construction (see Construction Management below) can cause cold joints, and subsequent leaky tanks. Properly cured ferrocement tanks take maximum of ten days to build (and less with experienced labor).

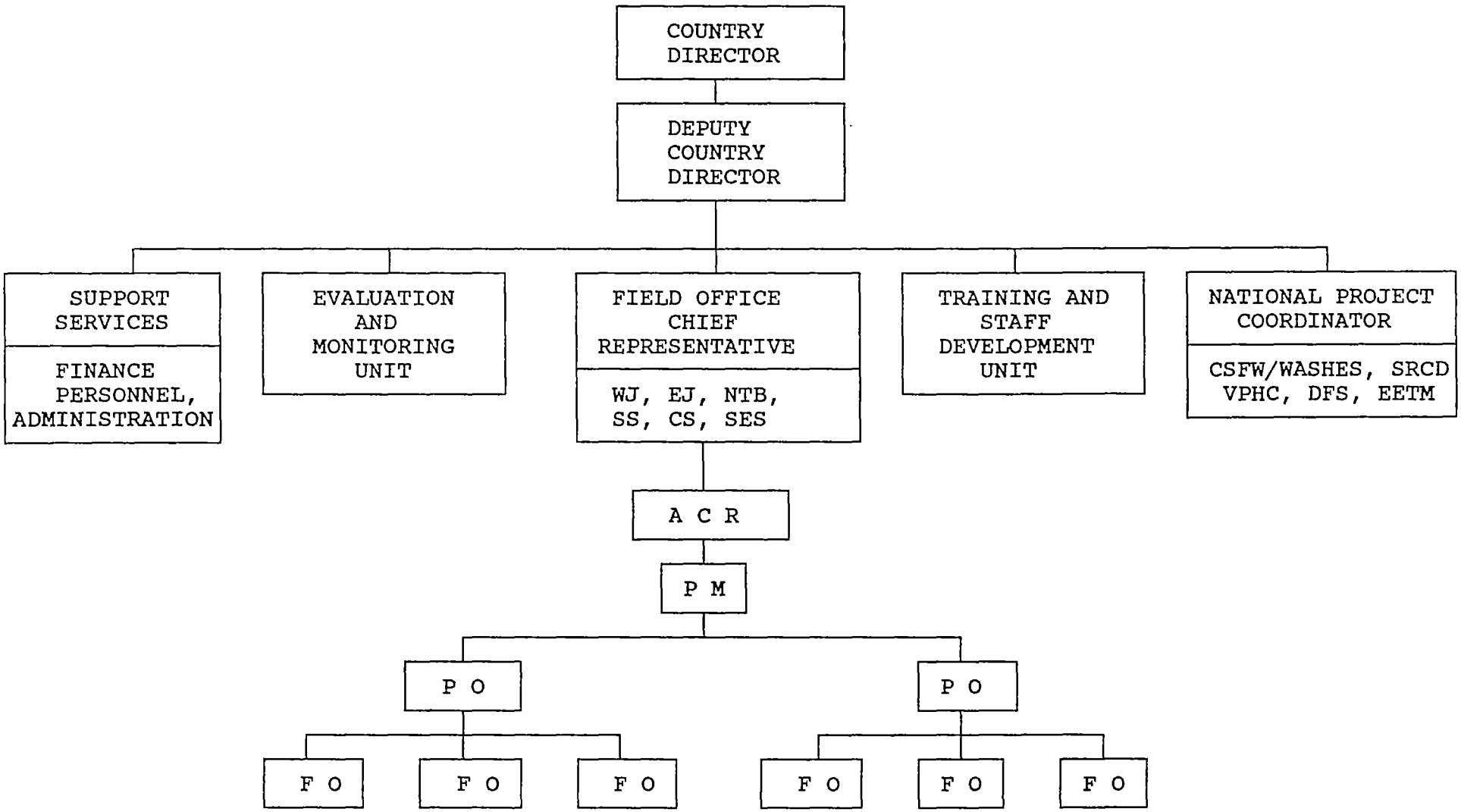
Brick tanks are the easiest to build, requiring the least technical training and construction supervision to insure acceptable construction. There is no great problem if the masonry mixture is somewhat too wet, or if the quality of sand is not so high. Square brick tanks (which take about 14 days to build), while much less robust than ferrocement, are somewhat cheaper, since they require no rebar and wire. However, round brick tanks of equivalent strength (such as those installed by Cipta Karya at some sites visited in NTB) are generally more expensive than bamboo cement and ferrocement tanks. Again, if they are allowed to completely dried out, they can crack and subsequently leak. Brick floors tend to crack, so it is necessary to use more expensive reinforced concrete floors. The underfloor is typically rock/gravel/dirt fill, which is then covered with stone, then covered with reinforced concrete. Brick tanks are commonly used in both East and West Java, although West Java also used bamboo cement. In NTB, brick tanks were used from 1981 until 1985, after which they went to exclusive use of ferrocement.

Bamboo cement tanks are a comparatively new technology for which the project has undertaken considerable research and development. B/C tanks are about 20% cheaper than ferrocement, but require the use of the right kind of bamboo (bamboo tali, or flexible bamboo, which is hard to find in places like NTB). It also takes more training to teach villagers how to properly build the bamboo mat. The amount of water used for the masonry coating is very critical. Curing of bamboo cement tanks is even more critical than for ferrocement, since

if the bamboo is not dried slowly enough, a space is created between the bamboo mat and the masonry which will significantly weaken the structure. Also, since NTB is hotter and drier than other areas, masonry tends to dry quicker, which can cause cracks. Like brick tanks, if a bamboo cement tank undergoes periodic complete drying out, it can develop cracks and leaks. Bamboo cement tank floors consist of (from the bottom up) layers of stone, then masonry, then bamboo mat, then masonry again (the inner coating of the tank floor).

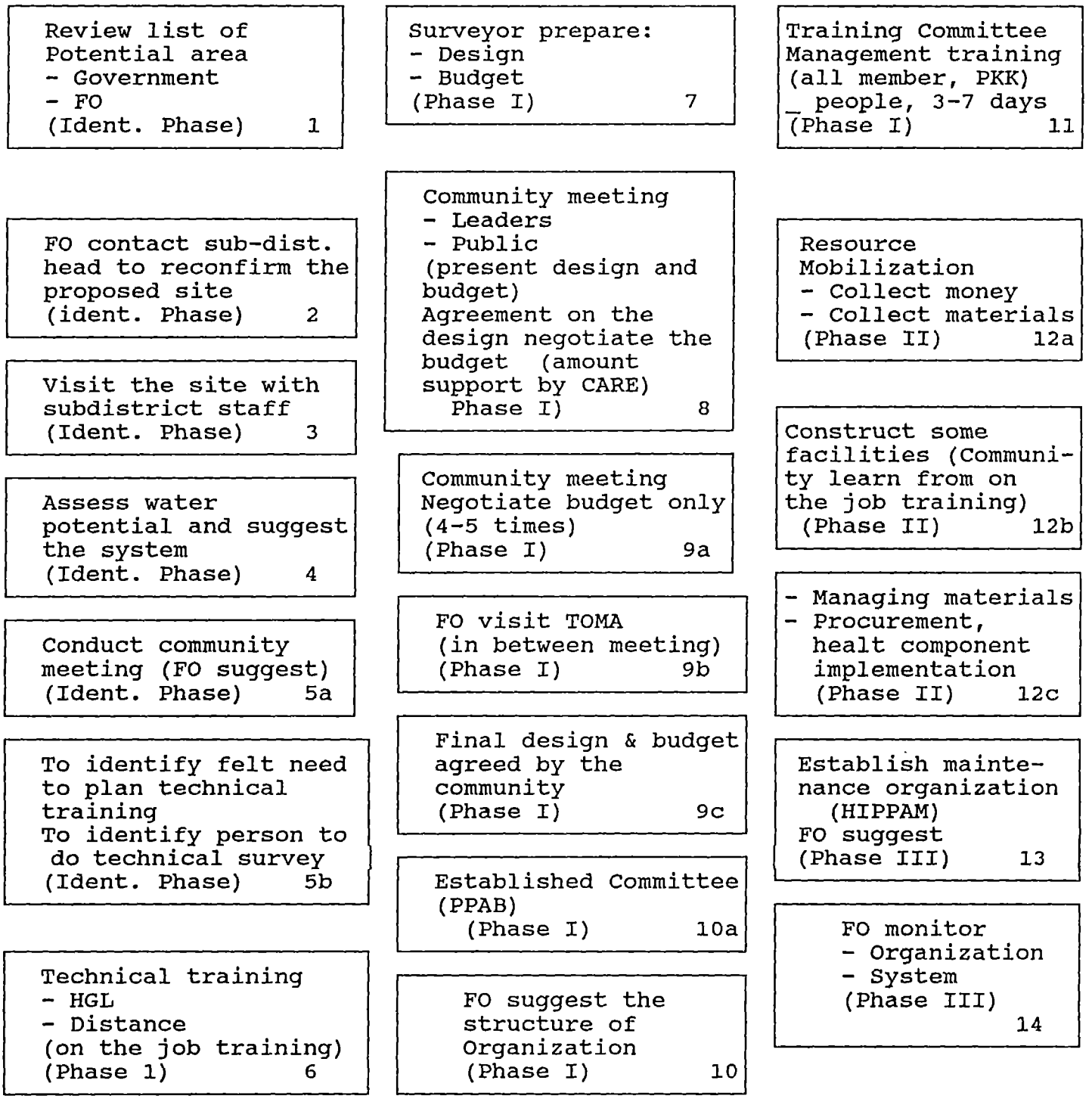
Appendix Four

CARE INTERNATIONAL, INDONESIA
ORGANIZATION CHART



Appendix Five

IMPLEMENTATION STAGES OF CARE INDONESIA WATER PROJECT



Appendix Six - Suggested CSFW Research Topics

During the evaluation, several areas were identified where the project should consider devoting some resources. These are areas where a particular study might elucidate an area of interest, or a technical assistance activity might help CARE staff better achieve project objectives, but which would ordinarily not be able to be addressed directly by project staff given their current heavy work load. Proposed studies are:

1) Case Studies of Project Sites

This activity would involve detailed studies of 3-4 sites from either the WASHES or CSFW projects. The individual site studies would involve the history of project activities at the site, extended interviews with beneficiaries and project staff on the particulars of the site, and a close look at what worked and what did not. Selecting sites across the spectrum (early as opposed to later sites, sites with large loans versus those which were completely financed by contributions, sites in different provinces) would allow some degree of comparison of different development approaches and their effects on project success.

A related activity might be to develop a set of important factors related to the success or failure of CARE WS&S projects (e.g., level of community income, contributions as a percentage of overall project cost, amount and type of community training provided, or level of equitable representation on water committees), then do a detailed statistical analysis to determine which of the factors were most influential in determining the success or failure of project interventions across all CARE-assisted sites.

2) Review of Technology Options for Water Supply

In the CSFW project thus far, CARE has used primarily gravity flow piped water (GFPW) systems. In WASHES, handpumps, rainwater catchment tanks, and hydraulic rams have been used. This technical assistance activity would consider a broader range of technology options which might be used effectively and economically at future CSFW sites, including broader application of improved handpumps (e.g., Afridev, India Mark IV), mechanical pumps (e.g., diesel, grid electric, solar and wind), and alternative designs for GFPW system components. This TA would include an assessment of hydrological conditions at existing and potential CARE sites as an indicator of the applicability of certain technologies, as well as training for CARE staff in the engineering, economics and operation and maintenance of rural water systems.

3) Application of the CSF Approach to Urban or Peri-Urban WS&S

A scope of work has been written for this activity, and is given in Appendix Seven of this report.

Appendix Seven - CSF Peri-Urban Water Supply and Sanitation

As a prelude to the proposed Scope of Work given below, several scenarios for possible CARE involvement in peri-urban or urban water supply are briefly discussed to illustrate the areas in which the CSFW approach might be applied.

Scenario One - Existing Experience in CSFW

CSFW is already involved in peri-urban communities. An example is Cikadut, a community on the edge of town just off a major road, or Cibodas, which is right on a main road, but whose outskirts meander uphill towards a water source for a gravity-fed piped water (GFPW) system. Ideal peri-urban locations for CSFW project intervention would have the following characteristics:

- o an accessible and year-around reliable water source physically situated to allow developing GFPW systems;
- o be a homogeneous enough community to be able to organize a viable and effective village water committee to mobilize resources and plan construction); and
- o located close enough in to be considered peri-urban.

The trouble with restricting oneself to involvement in such communities is that there are not likely to be many of them.

Scenario Two - Non-GFPW Peri-Urban Sites (Mainline Tie-Ins)

In the many communities where CARE's gravity-fed, piped water supply approach is not physically possible, alternative options for either developing new pumped water systems or improving existing systems might exist. CARE could assist communities tying into nearby existing mains, and handle the rest of the project just like it has with the numerous WASHES projects which added on subsystems or allowed house connections from existing mains. CARE could still continue to do all other community support tasks such as training and TA in establishing water committees, assisting in resource mobilization, providing technical training on construction and construction supervision, and O&M. It would have the added task of facilitating coordination with existing GOI water agencies which make decisions about system resource allocation, and which are responsible for overseeing construction of subsystems and mains.

Several problems specific to this situation would also have to be addressed. One is how to insure reliability of supply. This could be done by, whenever possible, tying into two existing mains from different directions, so that one outage occurred for whatever reason, the community would still have access to water.

Second, there would be the problem of added demand on the existing main. Community demand would have to be very carefully

estimated. Training to specifically address water wastage should be provided. Where house connections existed, meters should be installed, and progressive water tariffs (above design demand levels) should be charged. It might even be advisable to put meters on public water points (MCs or MCKs) so that areas of excessive demand could be easily identified, should system-wide demand problems arise.

Third, there may be a problem of increased wastewater disposal. This may not be much of an issue, since in the inner city communities where CARE might work in this project, it is quite likely that all waste water disposal would just go into an existing ditch. The additional demand may not have any noticeable impact.

Fourth, improving water availability in some areas might have the undesired result of encouraging more migration into those areas, and (among other undesirable outcomes) accelerating demand well beyond the design capacity of the system. Site selection for project communities in such areas would have to be much more carefully conceived and strictly applied to help insure the success of project activities at such sites as discussed here.

Scenario Three - Improving Existing Water Resources

For systems which either: 1) have existing piped water supplies which are either inadequate or inoperable, or; 2) use open wells, CARE could apply a somewhat modified version of the CSF approach to expand or rehabilitate those systems. It could supply the usual range of TA (developing water committees, resource mobilization, etc.) as well as work with existing water system developer (Cipta Karya perhaps) to obtain approval for any necessary larger pipe connections, and to balance estimated anticipated growth with existing supply limitations.

Alternatively, for communities using open wells (either with or without handpumps), CARE could provide TA for rehabilitating wells (masonry-lining of common brick-lined wells, installing aprons and drainage soak-aways, developing drainage to existing wastewater facilities), or installing pumps (hand, electric, diesel, etc.) to increase output from the existing source. Alternatively, if the existing source is a pipe connected to mains which are not currently able to meet demand, CARE could provide TA to upgrade mains connections, and/or add public taps or house connections.

One area of suggested caution in the rehabilitation of existing open wells and groundwater in general is that in some areas such as Jakarta, salt water intrusion and general groundwater contamination is becoming more of a problem. CARE would have to carefully ascertain the water quality of any proposed or existing groundwater source prior to committing itself to rehabilitation or development of that source to insure that the source is potable.

Equally important to consider are the constraints of the informal sector (i.e., community water committees) in accessing services provided by the formal sector (government water agencies). The study must also review these constraints and make recommendations for overcoming them. Willingness and ability to pay, water rate structures, land tenure, institutional arrangements, resource (physical, financial, organizational) availability, and legal constraints must also be reviewed.

Appendix Seven

Proposed Scope of Work for a Feasibility Study of Applying the CSFW Approach in a Peri-Urban Environment

The purpose of this activity is to determine which interventions hold the most promise for extending the CSFW approach to the development of water supply and sanitation systems in a peri-urban environment in Indonesia. The consultant, with a background in the technical, financial, and social aspects of water supply in a peri-urban environment, will undertake the following tasks (with the direct support of an Indonesian sociologist/economist with experience in the WS&S sector):

- Review existing documentation on the unique aspects of peri-urban water supply and sanitation systems in developing countries produced by sources including the WASH Project, WHO, and the World Bank.

- Identify communities where CARE/Indonesia has already gained experience in peri-urban water supply and sanitation. Note how the CSFW approach used in these areas varied from that used in rural areas, if at all.

- Interview CARE, UNICEF, AIDAB, World Bank, USAID, and Indonesian PVO staff involved in the WS&S sector to determine their perceptions of the feasibility of CSF in peri-urban areas.

- Interview Cipta Karya, MOH and other GOI staff responsible for providing WS&S services in urban and peri-urban areas to determine what opportunities and constraints (physical, institutional, community organizational, financial, legal, etc.) exist for PVOs working in the urban environment.

- Visit at least three potential sites each in the Bandung and Jakarta areas to: 1) assess social and institutional constraints of implementing the CSFW approach; 2) identify existing means of water supply; 3) examine existing sanitation systems and practices; and 4) identify and review existing community organizational structures which might indicate the potential capability for developing community water committees in these areas.

- Develop a set of alternative scenarios wherein the CSFW approach might be successfully applied to a broader range of peri-urban communities than those in which CARE has worked thus far (refer to scenarios given above as examples), noting probable opportunities and constraints of these scenarios.

- o With the sociologist/economist, write a report on the feasibility of extending the CSFW approach to a variety of peri-urban situations in Indonesia.

Given the complex interactions and responsibilities of GOI agencies providing a wide range of WS&S planning, construction, management, operation and maintenance services across the urban/peri-urban/rural spectrum, it is strongly recommended that the expatriate consultant already have experience working in the WS&S sector in Indonesia.

Appendix Eight - Team Planning Meeting

In addition to initial discussions between the Evaluation Team Leader and CARE/Jakarta and GOI representatives, primary planning for the evaluation exercise was done during a three day Team Planning Meeting (TPM) during the second week of May in Jakarta. The TPM followed the standard model developed for USAID's Water and Sanitatio for Health (WASH) Project. The schedule was as follows:

Day One:

8:00-9:30	Introduction to the Program
9:45-11:45	History of the Project and Current Status
11:45-12:30	Identification of Clients and Their Agendas
12:30-1:30	Lunch
1:30-3:30	Review of Evaluation Terms of Reference and Individual Team Members' Scopes of Work
3:30-5:30	Teamwork and General Approach

Day Two: Review of Project and Supporting Documentation (this w a CARE/Indonesia staff holiday, so the core evaluation team spent the day reviewing necessary reports)

Day Three:

8:00-9:00	Administrative Issues and Logistics
9:00-12:30	The End Product - Development of Detailed Outline of t Evaluation Report
12:30-1:30	Lunch
1:30-5:30	Development of the Detailed Evaluation Workplan
5:30-6:00	Closure

TERMS OF REFERENCE

1. **Country:** Indonesia

   Project: Community Self Financing for Water and Sanitation Systems (CSFW)

   PN: 31

2. **TOR Prepared By:** Dan O'Brien

3. **Date TOR Prepared:** November 2, 1990
   Date TOR Revised: December 28, 1990

4. **Evaluation Point Person:** Glenn Gibney

5. **Project Funding Cycle:** July 1988 to June 1993

6. **Donor:** USAID

7. **Background of the Project:** CSFW is a 5 year pilot project designed to demonstrate that rural communities are willing and able to develop and finance improved water and sanitation facilities. The project is currently being implemented in the provinces of West Java, East Java, and Nusa Tenggara Barat (NTB).

Communities who participate in the CSFW project build their own water and sanitation systems with training and technical assistance from CARE. Communities take full responsibility in the following activities:

- Assessing the community's water and sanitation needs
- Surveying for design of water and sanitation systems
- Establishing a committee capable of organizing and undertaking project activities
- Planning project activities and designing water and sanitation systems
- Mobilizing and managing resources
- Constructing water and sanitation facilities
- Operating and managing the systems

The goal of the CSFW project is: Increased access of rural communities to reliable and safe water supply and sanitation facilities through their effective participation in the independent financing and maintenance of these facilities.

Intermediate goals of the project are listed below.

1. Increased community initiative to develop and construct their own clean water and improved sanitation systems.

2. Maximum community inputs generated for the construction of water and sanitation systems.

3. Increased willingness of communities to use credit, if necessary, in developing their own water supply and sanitation facilities.

4. Improved and increased bank and other lending institutions' willingness to experiment with and provide loans for rural community self-financing water supply and sanitation.

5. Improved community financial management skills, especially in collecting contributions and in organizing and managing long-term loans for water and sanitation systems.

6. Increased communities' savings and dept-servicing capacity for community self-financing of water and sanitation systems.

7. Improved self-sustaining mechanisms for the operation and maintenance of installed and functioning facilities at all project sites.

8. Improved availability and utilization of favorable credit packages for community self-financing of water and sanitation systems.

9. The community self-financing approach to water and sanitation systems development and rehabilitation promoted throughout Indonesia.

8. **Overview of the Evaluation:** This is a mid-term or formative evaluation and is scheduled to take place from February 5 to March 2, 1991; a total of 26 days. The team leader, however, will participate an extra 7 days. This includes evaluation planning (January 24-27) and final report writing (March 3-5).

Project activities in all three provinces (West Java, East Java, and NTB) will be assessed during the evaluation. The results will be used to make improvements in the project design and implementation.

Specifically, the evaluation will assess the project goals and strategy, implementation including staffing, design and construction of water and sanitation systems, participation of women, role and importance of credit, and future directions.

9. **Evaluation Questions:**

1. What progress has been made in achieving the project's goals? Should these goals be changed? Is so, how?

2. How adaptable is the current project strategy to other government and nongovernment institutions working in the development of community-level water and sanitation systems?

3. What can be done to increase the participation of women in decision-making roles?

4. Is the number of staff and staffing structure adequate to effectively implement the project?

5. How effective and efficient are the monitoring and reporting systems?

6. Have the water and sanitation systems been designed and built correctly? How appropriate are these systems for communities that finance their water and sanitation systems?

7. What experiences (including payments, delinquency rates, and financial data) have communities had using credit to finance their water and sanitation systems? Are all communities capable of mobilizing resources to finance water and sanitation systems?

8. What are the most effective and appropriate methods of marketing the project's approach to other government and non-government institutions working in water and sanitation development?

9. What influence has the project had on water and sanitation policy at the local level?

10. How appropriate and effective are the project's activities for achieving the goals?

11. Will the proposed hygiene (user education) strategy enable CARE to coordinate with and have an impact on other health programs in the area?

12. Would the basic CSFW concept and project approach be applicable to other areas? If so, where?

DSKDOB/TOR

Appendix Ten - Recommended References for CARE Field Offices

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UNDP, Briefing Kit - A Guide for the Evaluator: The Project Evaluation Information Sheet, New York, August 1990.

USAID/Indonesia, Country Development Strategy Statement for FY 1989-1993, Jakarta, January 1988.

The WASH Project also has a wide variety of reports on community participation, women in development, institutional and human resources development, water/health linkages, health education, finance, program development, and evaluation which can be obtained by request from the WASH Operations Center, 1611 N. Kent Street, Room 1001, Arlington, VA, USA 22209-2111 (FAX) 703-525-9137.

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STAGE 5 PROJECT IMPLEMENTATION PART I

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Appendix Twelve

MODIFIED PROJECT SCHEMATIC
CSF OF WATER AND SANITATION PROJECT (FY89 - FY93)

GOALS AND OBJECTIVES

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
GOAL: To increase access of rural villagers to reliable and safe water supply and sanitation facilities through effective participtionof rural communities in the independent financing and maintenance of water supply and sanitation systems.	This project is not being evaluated at the goal level	This project is not being evaluated at the goal level	This is a long-term and on-going goal.
OBJECTIVES: 1. Increase community initiative in the development and construction of clean water & improved sanitation systems.	Twenty communities request for CSF improved water and sanitation systems in Phase I (1988-1991).	Letters from the communities denoting their interest and intention to construct water and sanitation systems through CSF. Same as above.	Social marketing approach is effective in influencing communities on value of clean water. Large number of community leaders can be convince that CSF is a viable approach for constructing water and sanitation systems. CSF will include material and construction costs of the sytems and not CARE's personnel and operations cost for Phases I and II.

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
2. Generate maximum community inputs for the construction of water and sanitation systems.	Seventy-five percent of the participating communities contribute at least 50% of the costs of the constructed water and sanitation systems (prior to a bank loan).	Cost analysis of the physical construction of the project.	No major economic hardships will results, e.g., drought, that will make it impossible for communities to participate or meet their commitment. No major increase in price of materials. There will be some communities that will be able to pay & contribute up front for the entire system. There will also be some communities that will not be able to contribute the full amount of the funds required. All efforts will be made to maximize community participation towards 100% self-financing with decision on financial subsidy based on evidence of need and availability of alternate funding sources.
3. Increase willingness of communities to use credit, if necessary, to assist them in developing their own water supply and sanitation facilities	Participating communities make voluntary decision to request for bank loans. Designated individuals from the communities use their land as collateral for bank loans. Individuals or community groups submit loan applictions to banks.	Open-ended interviews with community leaders. Review of bank documents. Open-ended interviews with bank officials. Review of loan applictions at banks.	Strong leadership or leadership potential in the community is available. Land certification are available and can be used as collateral. Community members with land title are willing to use their land as collateral.

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
	The above indictors will be observed in the following communities Provinces FY89 FY90 FY91 East Java 2 3 3 West Java 1 2 3 N. T. B. 1 2 3 TOTAL 4 7 9		Alternative forms of credit or income generation sources can be utilized to support CSF.
4. Improve and increase bank and other lending institutions willingness to experiment with and provide loans for rural community self-financed water supply and sanitation systems.	Submitted loan applications are approved and funds released by the banks in the following communities: Provinces FY89 FY90 FY91 East Java 2 3 3 West Java 1 2 3 N. T. B. 1 2 3 TOTAL 4 7 9	Review of loan documents and contracts at the respective lending institutions.	Communities requesting loans have acceptable repayment record.
5. Upgrade community financial management skills, especially in collecting contributions and in organizing and managing long-term loans for water and sanitation systems.	Community water users' associations and construction groups are developed and functioning in the following manner: Hold periodic consulting sessions with community members and establish sub-committees if necessary. They are trusted and their advice and instructions followed by the community.	Open-ended interviews with committee members, formal and informal community leaders. Review of minutes of community meetings.	Strong leadership is active in the communities. Community leaders are willing to participate. Repayments are solved by the committee and community leaders either by themselves or after consultation with local government and lending officials.

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
	Maintain full control of all aspects of the community water and sanitation project such as organization of water use, users' fees, collection of local material and funds, organization of community labor, and inventory of all outside project materials.	Review of accounting and other financial and transactional records kept by the committees.	
	Liaise with CARE and the Government. Operate independently of CARE's support.		
	Collection of local material and cash contributions is well organized and recorded.	Same as above	
	Appropriate bookkeeping procedures are followed by all committees for all cash transactions.	Same as above	
	Money collected by the committees is kept in the bank or in another secured place before its use.	Same as above	
	Smooth flow of regular loan repayment collection from community members and repayment to the lending institution. Repayment records are kept and updated regularly.	Same as above	
	Basic inventory records of deliveries and usage of materials are maintained by the committees.	Same as above	

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
6. Increase communities savings and debt-servicing capacity for CSF of water and sanitation systems.	A savings account at the nearest lending institution is opened for a water users' unit, e.g., MCK unit.	The savings account book.	Banking facilities are within reasonable distance from the village. Communities are able to raise and manage acceptable levels of funds.
	Regular deposits into the savings account. If no loans are involved, deposits of any amount are acceptable so long as they are regular, in order that process of learning to save is demonstrated. If loans are involved, regular deposits of the loan repayment amount or more are acceptable.	Review of the savings account book.	
	Communities are on time and regular with their loan repayments for CSF of water and sanitation systems.	Review of the loan repayment records kept by the committees. Open-ended interviews with bank	
7. Improve self-sustaining mechanisms for the operation and maintenance of installed and functioning facilities at all project sites.	A water-user fee collection mechanism is established by the community.	Review of water-user fee cards kept by each household.	No major loss of water source at spring or ground level.
	A committee is established and trained to manage the user fee funds.	Open-ended interviews with committee members.	No other competing or more favorable water sources available.
	Less than 25% delinquency rate is demonstrated in the collection of user fees, at least one year after the system is established.	Review of the water-user fee records maintained by the committee and the user fee cards kept by each household.	
	Proper records and basic accounting procedures are maintained by the village water user committee on the collection of user fees and their use. Collected funds are kept in a bank. Sufficient funds are available for repair purposes at all times.	Review of the committee's accounting records and documents.	

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
	Community designated technicians in charge of the maintenance and repair of the water system are appointed, trained, and have a defined job description. Technical problems of the water system are promptly and independently solved by the community.	Open–ended interview with the technicians. Observations of physical systems. Open–ended interview with community members to see if they receive water regularly.	
8. Improve the availability and utilization of favorable credit packages for CSF of and water sanitation systems.	Nominal interest rate is lowered to below 1.5% fixed per month or to below 18% per annum. Collateral requirement is lowered to below 100% of loan amount. Communities that want self–financing through a loan receive credit at the above favorable terms.	Review negotiation documents with banks. Review loan contracts of communities. Same as above. Same as above.	The experimental community loan site are successful enough to encourage banks continued support for community water projects. The availability of favorable credit packages for CSF of water and sanitation systems will occur only in Phase II which is dependent on the results of Phase I.
9. The CSF approach to water and sanitation systems development and rehabilitation is promoted throughout Indonesia.	Initial implementation of the CSF project by CARE. Documentation and dissemination of project results.	Regular CARE project reports. Publications on the project at the end of Phases I and II. Seminars at the end of Phases I and II for Government and donor agencies.	Support and participation for the project can be generated at National and Provincial levels. The CSF project for CARE is over by the end of Phase II. It becomes NCWSSF's program at the beginning of Phase III and has an unlimited lifespan.

GOAL/OBJECTIVES	INDICATORS	VERIFICATION	MAJOR ASSUMPTIONS/REMARKS
	Involvement of local NGOs to promote CSF of water and sanitation systems.	Training sessions in Phases I and II for members of local NGOs. Presence of members of local NGOs working in communities for CSF of water and sanitation systems by Phase II.	
		Legal charter of the NCWSSF.	
	The establishment and functioning of a National Community Water and Sanitation Services Foundation by the beginning of Phase III.	Open-ended interviews with board members and staff. Review of NCWSSF program reports.	
	Establishment and active working group at national and provincial levels providing meaningful input for project improved application.	Recommendation and adoption of recommendation by government, banks and NGOs.	