

PJ-ABD-236
1521 102713



WATER AND SANITATION
FOR HEALTH PROJECT

**COMMUNITY PARTICIPATION
IN WATER SUPPLY PROJECTS
AND ORT ACTIVITIES
IN TOGO AND INDONESIA**

Operated by
CDM and Associates

Sponsored by the U.S. Agency
for International Development

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WASH FIELD REPORT NO. 260

MARCH 1989

The WASH Project is managed
by Camp Dresser & McKee
International Inc. Principal
cooperating institutions and
subcontractors are: Associates
in Rural Development, Inc.,
International Science and
Technology Institute, Inc.,
Research Triangle Institute,
Training Resources Group,
University of North Carolina,
At Chapel Hill.

Prepared for
the Office of Health,
Bureau for Science and Technology,
U.S. Agency for International Development,
WASH Activity No. 350

WASH Field Report No. 260

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IN TOGO AND INDONESIA

Prepared for the Office of Health,
Bureau for Science and Technology,
U.S. Agency for International Development,
under WASH Act No. 350

by

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March 1989

Water and Sanitation for Health Project
Contract No. 5942-C-00-4085-00, Project No. 936-5942
is sponsored by the Office of Health, Bureau for Science and Technology
U.S. Agency for International Development
Washington, DC 20423

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EXECUTIVE SUMMARY

The Problem

It is now widely claimed that community involvement in the design, construction, and maintenance of rural water supply systems is essential to sustain and replicate them. It has been further claimed that the benefits of such involvement induce the communities themselves to make better use of subsequent opportunities for health improvement.

This stimulus to participate in a subsequent project maximizes the payoff from the water supply project. However, the question of how and under what conditions participation in a water supply project has such an effect is still unanswered. It is unlikely to be the only motivation. Previous studies suggest that other factors might also motivate the villagers.

This report describes a case study of four villages in Togo and Indonesia where oral rehydration therapy (ORT) activities were introduced after the villagers had participated in the construction, operation, and maintenance of improved water supply systems. The study was intended to guide project designers and implementers on the community participation components likely to maximize the impact of health projects to follow.

Rationale for the Case Study

Community participation implies that members are empowered to make decisions at each phase of the project. It emphasizes group process for learning and collective action for resolving local problems.

To draw lessons from the success of the water supply projects in the two countries in influencing villagers to participate in a later ORT project, the study needed to answer two questions:

1. What factors associated with the community participation approach used by the water supply projects influenced villagers to participate in a subsequent ORT project?
2. What were the relative effects of these factors on stimulating participation in the ORT project, given certain social and ecological conditions beyond the control of the water supply project?

The case study design was selected as the most appropriate for documenting details of: (1) the interactions between project workers and villagers that increased community participation in improving water supplies; (2) the social

and ecological conditions of the project village environment; and (3) the effects of these interactions and conditions on villagers' participation in the ORT project.

Lessons Learned

There is no universal design for a rural water supply system that can guarantee sustained community involvement. However, a design can embody elements that increase the likelihood that community participation in building the system will be a stimulus to participation in subsequent health activities.

The findings from this study indicate that water projects in which communities participate will stimulate community participation in subsequent ORT activities when: (1) Village Development Committee (VDC) members and women users perceive that the health benefits of an improved water supply are more important than mere convenience; (2) VDC members and women users perceive the social benefits of community involvement in a water supply project; (3) the VDC plays a mobilizing role in recruiting and influencing participation, rather than an implementing role; (4) project workers use structured activities to exit from a village; (5) the VDC and the village chief have structured reporting mechanisms for supporting and supervising community volunteers; (6) power and influence are not centered in the village chief but shared with subchiefs; (7) ethnic stratification is addressed through equal representation of ethnic groups in project activities and decisions; (8) project workers speak the village vernacular; (9) the village population is small; (10) villages are physically accessible to facilitate project workers' visits and the delivery of project goods and services; and (11) water quality or quantity is a problem of health more than of convenience.

The following recommendations are therefore made for water and health sector planners and policymakers:

1. Initiating and Sustaining Community Outreach

Projects should organize VDCs to mobilize wider participation rather than to take responsibility for actual implementation.

Projects which depend on volunteer health workers should develop structured reporting mechanisms for their use.

2. Ensuring Wider Participation

Project workers should include subchiefs when initial contact is made with the village chief. The inclusion of subchiefs ensures wider participation by different segments of the community and a decentralization of power.

Project workers need to increase the social benefits of participation for women, who are essential to the success of any subsequent child survival project. Appointing a female

pump minder who would automatically serve on the VDC is an example of how women could increase their social status and input. Bringing together women from neighboring villages to learn additional skills about ORT is another example of how project involvement could expand the resources available to them.

3. Designing Community Education Components

Health benefits from an improved water supply system are not perceived simply by participating in its construction, operation, and maintenance. Projects should include a health education component that gives VDC members the same training as ORT volunteers to ensure a clearer understanding of the link between health benefits from an improved water supply and diarrhea.

4. Overcoming Problematic Conditions in the Project Environment

Projects should formally acknowledge the existence of ethnic diversity even in small villages. An effort should be made to recruit project workers who speak the local language. In a large village, organizing more than one VDC would mitigate the problems of representing and mobilizing the various subgroups in the community.

Villages located far from a main road should receive special attention to ensure that visits by project workers and the delivery of project goods and services occur with regularity.

Consideration should be given to assigning priority to villages where the felt need for an improved water supply is expressed in terms of health rather than of convenience.

Conclusions

The different ways in which project workers interacted with villagers to organize a VDC, to develop the skills of VDC members, to determine a program of VDC activities, and to establish a followup program after the completion of the water supply system showed how variations in the community participation approach affect perceptions of project benefits. Social and ecological conditions also appeared to influence the execution of the community participation approach and perceptions of the benefits.

Chapter 1

INTRODUCTION

1.1 Effects of Community Participation in Water Supply Projects

It is now widely claimed that community involvement in the design, construction, and maintenance of rural water supply systems is essential to sustain and replicate them. It has been further claimed that the benefits of such involvement are not confined to improved project performance or a reduction in the usual range of water-related diseases, but that the communities themselves are able to make better use of subsequent opportunities for health improvement. For example, a recent study in Indonesia and Togo found that a diphtheria, pertussis, tetanus (DPT) immunization program had completion rates of 60 percent and 55 percent respectively in each country for villages involved in water supply projects as compared with 49 percent and 40 percent for villages that were not (Eng et al, 1987). Similar results in Malawi showed that expanded program of immunization (EPI) rates in villages involved in a water supply project that included a hygiene education component were twice the rates of villages that had a project without a hygiene education component or no project at all (Briscoe and Young, 1987).

This stimulus to participate in subsequent immunization activities maximizes the payoff from the water supply project. However, the question of how community participation provides a stimulus is still unanswered. It is unlikely to be the only motivation. The Eng et al. (1987) study showed that DPT immunization completion rates within the group of participating water project villages ranged from 15 to 100 percent in Togo, and 25 to 97 percent in Indonesia. This degree of variability suggests that factors other than community participation are influencing villagers to make better use of subsequent health opportunities. If these factors could be identified, health and water sector planners could exploit them to increase the beneficial effects of community based water projects and the health projects to follow.

1.2 Purpose of Report

This report describes a 1987 case study by the University of North Carolina of four villages in Togo and Indonesia where ORT projects were started after the completion of water supply systems in which the communities had participated. The study was funded by the Water and Sanitation for Health (WASH) Project under contract No. 5942-C-00-4085-00.

It was intended to:

- Uncover those factors associated with water supply project operations that influenced villagers to participate in the ORT project

- Examine the effects of these factors in maximizing the benefits of the ORT project, given certain social and ecological conditions in a village.

The chapters that follow describe the case study methodology and the study questions; the findings comparing the villages from the two projects, and the factors and conditions which emerged from the analysis; and the conclusions and recommendations for programming and planning in the water and health sectors. The questionnaire and an analysis of the responses appear in Appendix A.

1.3 Definitions of Community Participation and Social and Ecological Conditions

Community participation is defined as community involvement in decisions related to the planning, financing, construction, operation, and maintenance of a project. It emphasizes the group process for learning and collective action for resolving local problems. It is in contrast to the approach in which specialists and funding agencies outside the community make all the decisions related to project planning, implementation, and evaluation. This latter approach emphasizes rapid installation.

These two approaches differ in the kinds of activities taking place, the villagers and outsiders engaged in these activities, and the nature of each side's involvement. The activities relate to decision making, implementation, and evaluation, and the project actors are local leaders, local residents, government personnel, and foreign personnel. The different aspects bringing actors and activities together include the incentives for participation, the mechanism for participation, the extent of involvement over time, and the impact of involvement on the interactions among villagers or between villagers and outsiders. This study was interested in sorting through the elements of the community participation approach used by successful water supply projects to identify the critical actors, the essential activities, and the important processes which influenced villagers to participate in the subsequent ORT project.

Social and ecological conditions surrounding community participation refer to the context or environment in which a project is operating but over which a project has no control. Social conditions include village leadership patterns, the characteristics of village chiefs, and the history of ethnic conflict. Ecological conditions include the size of a village, its geographic remoteness, the location of its previous water source, and the adequacy of water supplies. The study was interested in discovering under which of these conditions the critical actors, essential activities, and important processes of community involvement in a water supply project were powerful influences in stimulating villagers' participation in the subsequent ORT project.

The study investigated villages from two water supply projects that had used the community participation approach--the Togo Rural Water Supply Project funded by the U.S. Agency for International Development (USAID), and the Indonesia CARE-USA Rural Water Supply Project which had also received USAID funding. These projects were chosen because: (1) they had been the focus of other studies

of successful water projects using the community participation approach; (2) there were ongoing ORT projects in the villages; (3) the sponsoring agencies were willing to supply project documentation; and (4) the local USAID Offices of Health showed interest in the study.

1.4 Overview of the Case Study Projects

1.4.1 Togo Rural Water Supply Project

The Togo Rural Water Supply Project, begun in 1980 and completed in December 1987, installed nearly 1,000 tube wells equipped with foot pumps in 745 villages and towns. A unique feature of this project was its sociohealth component, which integrated community organization and health education activities to involve villagers in installing, operating, and maintaining their wells. The field workers initiating these activities were Togolese social affairs agents. The final evaluation attributed a large part of the project's success to its community participation approach and to its careful training of the social affairs agents in health education and community organization, of the village development committee (VDC) members in local management, and of villagers in hygiene education (Roark et al., 1988; Yacoob et al., 1988).

In its last three years, the project broadened community participation to involve more women in decisions concerning the operation and maintenance of the water system. It established the position of "pump minder," in which a woman living near the well was made responsible for overseeing the proper use of the system and monitoring the operation of the pump. The pump minders were not only appointed by the VDCs but also became full VDC members.

During the final year, an ORT project was started in villages with completed well installations. The VDC selected five women, who thereby became VDC members, as ORT volunteers. These five women and one VDC member were then trained to give demonstrations and provide individual counseling to mothers in the preparation and administration of sugar-salt solutions for children with diarrhea.

Funding was provided by USAID, France's Fund for AID and Cooperation, and the European Economic Development Fund. The U.S. Peace Corps assisted at the village level and two full-time technical advisors assisted at the national and regional levels.

1.4.2 Indonesia Rural Water Supply Project

The Indonesia Rural Water Supply Project, begun in 1979, installed 100 gravity water supply systems and 1,000 handpumps, as well as some shallow-well and deep-well handpump systems and a few rainwater catchment systems. The implementing agency was CARE-USA, whose development strategy stresses community involvement and fits well with Indonesia's national philosophy of *gotong rayong*, meaning self-help.

CARE employed and trained Indonesian project workers who lived in the village during the construction phase and participated in village life to draw political, religious, and other leaders into the planning and implementing activities for operating and maintaining the water system. In each village, the details of implementation were set by a subgroup of the village community endurance institution (VCEI), a voluntary civic body found in most Indonesian communities. By tying water project responsibilities to the activities of an indigenous organization, project workers encouraged the VCEI subgroup to organize neighborhoods and involve villagers in the project. The success of the CARE community participation approach is explained largely by this strategy of using existing decision-making infrastructures, rather than creating a mechanism which would compete for human resources and power.

The VCEI subgroups eventually functioned as VDCs through which project workers continued to maintain contact with villagers after the completion of the water system. This made trouble-shooting and monitoring connected with operations and maintenance more efficient and predictable.

In 1986 the project added a health life activity (HLA) component to improve community health. HLA included ORT, environmental health, nutrition, and sports education activities. The village headman selected both men and women representing each hamlet in the village to serve as HLA volunteers, known as *kaders*. They were trained for one week to target 10 families in their respective hamlets to accept and use free packets of oral rehydration solutions (ORS), as well as to motivate all families to participate in other HLA activities. The *Kaders* kept a monthly record of their activities which were initially monitored by the project workers who then transferred the monitoring function to the village headmen. Yearly workshops bring together one or two active *kaders*, one VCEI subgroup member, and the village headman from each participating village. At these workshops, problems and ideas are exchanged and each village sets up a program of activities for the following year. The location of these workshops rotates among villages.

Funding for the project was provided by USAID. Two full-time technical advisors assisted at the national level and one at the regional level.

Chapter 2

CASE STUDY

2.1 Case Study Purpose

To draw lessons from the success of these two water supply projects in influencing villagers to participate in a later ORT project, the study needed to answer two questions:

1. What factors associated with the community participation approach used by the water supply projects influenced villagers to participate in a subsequent ORT project?
2. What were the relative effects of these factors on stimulating participation in the ORT project, given certain social and ecological conditions beyond the control of the water supply project?

The case study design was selected as the most appropriate for documenting details of: (1) the interactions between project workers and villagers that increased community participation in improving water supplies; (2) the social and ecological conditions of the project village environment; and (3) the effects of these interactions and conditions on villagers' participation in the ORT project. To uncover important factors, processes, and conditions, the case study method focuses on the details of what took place in the "real" setting of a project village and the trends of association between project inputs and outcomes. Each case is described from the perspectives of the various actors --project workers, village leaders, influential members of community groups, and the villagers themselves. The data are "miniature" in scope because of the small number of cases, but are "richer" in validity because the cases are saturated with detail.

2.2 Selection of Project Villages

The selection of cases from each of the two water supply projects was based on the following criteria:

- One project village which had participated in the completion of an improved water system and was highly involved in the ORT community education project
- One project village which had participated in the completion of an improved water supply system and was minimally involved in the ORT community education project.

High involvement was indicated where ORT volunteers were carrying out their responsibilities and were supported and supervised by the village leadership. Low or minimal involvement was indicated where the majority of ORT volunteers were not carrying out their responsibilities.

Differences between the high activity level ("H") and low activity level ("L") ORT villages could then be noted with reference to the ways in which the community participation approach had been followed and to the social and ecological conditions surrounding each village. These differences could then be examined for factors and conditions common to the two "H" and the two "L" villages.

2.3 Data Collection Methodology

Prior to data collection, the research team reviewed documents and data sets from past studies and reports specific to both the water projects and the ORT programs in Togo and Indonesia. In March 1987, the team had an opportunity to meet with Louis O'Brien, USAID/Togo project specialist for the rural water supply project, who was visiting the U.S. and provided the team with background information on the water project and the ORT program.

The team used semi-structured informant interviews, in-depth group interviews, and nonparticipant observations to gather information on all possible factors and conditions. Interview questions were predominantly open-ended to limit the range of responses. Respondents were asked to report on their own perceptions and interactions, and also those of other community members.

Informant interviews were conducted in homes or at local gathering places, such as the old and the new water sources. Group interviews were conducted whenever groups of three or four people were found. Their responses are reported as one interview. Informal conversations were also held with villagers, water project staff, and the agents who worked in each village, but these responses were not included with the interview findings.

The researchers also used the ethnographic method of nonparticipant observation of interactions. For example, they observed a number of village events, including VDC meetings, the local markets, a church service, an ORT demonstration, a wedding, a funeral, a criminal arrest, and a community meeting in an "L" village.

Two research assistants in the Department of Health Education at the School of Public Health of the University of North Carolina collected the data--Kathryn Luchok, an American medical anthropologist, in Togo, and Rachmat Hargono, an Indonesian physician, in Java. Water project administrative staff in each country selected village sites according to their perceptions of ORT activity level in the communities. However, in Togo, rainy season problems prevented Luchok from reaching the "L" village, forcing her to collect data from a project village that had moderate involvement in ORT activities.

With the help of project staff, the researchers hired female interpreters, who were given an explanation of the goals of the study and trained in the use of interviewing and participant observation techniques. The interpreters were instructed to translate questions and answers verbatim, as far as possible, and to avoid leading the respondents by inflections, gestures, or facial expressions. They were also trained to make observations of village events and interactions. The researchers and interpreters worked closely together during the field visits, comparing notes and observations at the end of each day. The interpreters were valuable not only for their language skills, but also for the cultural insight they brought to interpreting daily village activities.

The two researchers and their interpreters were introduced to their two village sites by water project personnel (USAID in Togo, and CARE in Indonesia), and spent approximately ten days in each village.

Approximately 30 informant and 10 group interviews were tape recorded in each village, using the semi-structured interview format (see Appendix A). The researcher asked the questions, which the interpreter translated. The interpreter then translated the answers, which the researcher wrote down. The researchers selected informants to represent three village statuses (leaders, VDC members, and users). "Leaders" included both formal leaders, such as chiefs, and informal opinion leaders, such as the local schoolteacher. "VDC members" included those who were enlisted for the water supply project, and, in Indonesia, the *kaders*, who were either men or women trained to conduct a range of primary health care activities, including ORT. In Togo, *femmes responsables*, the counterparts of the *kaders*, were women trained by the project staff to conduct ORT educational activities only. "Users" were village men and women who did not fit into the other two categories; most, but not all, used the new water sources.

Both researchers kept detailed field notes on observations, conversations, and interviews, and at the end of each day reviewed these notes and their impressions of the day's events with their interpreters, both for accuracy and as a way to add to their information base and verify inter-observer reliability.

2.4 Method of Analysis

The interviewers returned from the field with extensive handwritten and taped records of each interview, and field notes from their informal conversations and observations. The information had to be coded in such a way that the findings could be sorted and analyzed by village, gender, status, etc. Content analysis of the data was used to uncover repeated perceptions, activities, and ecological conditions.

The research team first eliminated questions which had not elicited clear answers, then searched the responses from all remaining questions for cover terms -- concepts or words used repeatedly to describe perceptions about the water project, the ORT project, and community participation. For example, "less illness," "people not so sick," or "family in better health" were frequently mentioned in people's responses about perceived benefits. Thus, the concept of decreased morbidity became a cover term for the analysis. A total of 35 cover

terms emerged from the content analysis, and were entered as codes in a data base each time they appeared in a response. This enabled the use of the microcomputer data base program, dBASE III Plus, to search, categorize, and count the various perceptions reported in the 160 interviews.

The disadvantage of using a computer for content analysis was the possible bias from compressing rich responses with lengthy explanations into two-to-three-word codes to accommodate the limitations of computer memory space. In an effort to reduce bias, the interviewers, who could detect subtle shades of meaning in terminology, themselves coded the responses and entered the data. They met with the research team at regular intervals to check for possible inconsistencies in their coding decisions.

Data from the observations and informal conversations were maintained in their original narrative form, since codes were not necessary for a small sample size. The two interviewers assembled these data from project documents and the field notes they had kept to form the fullest description possible of each village. The research team then reviewed the descriptions to organize the information into a typology of discrete categories of activities and ecological conditions.

For each country, comparisons between the "H" and "L" villages were made to identify those factors and conditions that were common and those that were unique. Then the "H" villages from both countries were compared to determine factors and conditions that were identical, regardless of country. The same was done for the "L" villages.

Chapter 3

FINDINGS

3.1 Togo Project Operations and Village Conditions

3.1.1 Ecological and Social Conditions

In Togo, the "L" village has two-and-one-half times the population of the "H" village, with similar distribution by age and gender. The "L" village population is more widely dispersed, with people living in wards away from the center of the community. The geographic characteristics of the two are the same; both villages are in the plateau area. Both villages have a primary care clinic and a primary school, but the "L" village is more remote from the paved main road linking it to a district town, where the hospital and secondary schools are located.

Prior to the USAID Rural Water Project, the "H" village drew water from a nearby river contaminated with guinea worm, and the "L" village from a river that was farther away and became a trickle during the dry season. Thus, the insufficient supply for "L" and the guinea worm problem for "H" created different needs. It was not possible to determine from the data whether the "H" villagers perceived a relatively greater need because of guinea worm, but they frequently made the association between guinea worm and a contaminated water supply.

No difference was found in occupation or religion. The "L" village is ethnically homogeneous. Ethnic conflict was found in the "H" village, where economic and physical stratification corresponds with ethnicity. The improved water source is located farther away from the Kabeye ethnic group, which is also less well represented on the VDC.

More people in the "H" village speak the predominant language of the region (Ewe) and of the nation (French), whereas more people in the "L" village speak only the local language (Adja), causing a problem for the water project worker, who does not speak it.

The indigenous organizational structure is the same in both villages, although some variations were found in the composition of the VDCs and in the way they hold meetings. Nonetheless, the purpose of the VDC is widely known in both villages.

The leadership styles and tenure of village chiefs differ. The relationship between the village chief and the subchiefs is more effective in the "H" village, and the VDC and the project worker are less dependent on the chief, whose role is to sanction rather than direct the mobilization of wider village participation.

3.1.2 Planning for Community Participation

Both villages were approached in the same way, although "L" had requested a well before being included in the project. A project worker from the Office of Social Affairs contacted the chiefs and subleaders in both villages about participating. Each chief then called a village meeting at which the project worker asked the people to elect a VDC to handle pump installation and maintenance. In both cases, he suggested that one woman serving as a pump monitor be appointed to the VDC, and stipulated that the chief could not be a committee member since the VDC would automatically serve under his guidance.

3.1.3 Community Participation in Water Supply Construction and Maintenance

At both sites, villagers contributed labor, food, and some money during pump installation. The "L" chief reported that the agent had consulted him about the type of pump to be installed, its location, and other aspects of planning the installation, and thus he felt he had been given some decision-making power. The chief in "H" did not feel that he had had any part in the decision-making process, although the agent had kept him apprised of the implementation. No one else in either village reported any decision-making power beyond choosing the VDC members.

In "H," the original VDC proved ineffective, and at the agent's suggestion a new committee of younger, better-educated members was elected and was in place after the pump was installed. However, the pump was installed before the VDC had collected the 50,000 West African francs, approximately US\$167.00, needed for a pump repair fund. Eventually, the VDC assessed households about 17 cents per adult woman and 35 cents per adult man to raise this money. Because of the difficulties many villages had in collecting a repair fund, the project changed its policy to require this fund before drilling would begin. The new policy was in effect for "L," which was contacted after "H" was. In order to get the drilling started in "L," VDC members personally advanced money for the repair fund. Most of them complained they had not been reimbursed, but the agent reported they had assessed user fees at the pump to recover their investment. Most villagers at both sites claimed, however, that they had contributed to the pump fund. In both villages it is difficult to collect money to maintain the fund.

The composition of the VDC varies somewhat in the two villages. Both villages have a male president, a male secretary, a male pump repairman, and a female pump monitor. After the pump had been installed, five women (*femmes responsables*) in each village were trained in ORT and became VDC members. There are more men on the VDC in "H" which also has a man and a *femme responsable* who are Kabeye. The remaining members are Ewe, the predominant ethnic group.

In "L," VDC meetings are open to the public but are held in a small meeting room, so fewer nonmembers can attend. In "H," meetings are held at the school, so more villagers attend. The chief or the chief's representative usually attends VDC meetings in both villages. The "L" village project worker attends irregularly, playing more of a trouble-shooting and supervisory role than the educational and management training role undertaken by his counterpart in the

"H" village. Nonetheless, VDC members in both villages report that they have developed organizational skills since working on the committee, and believe they are now better able to motivate villagers to work together. VDC officers have, in fact, attended workshops on how to run and manage committee activities.

The purpose of the VDC is widely known throughout both villages. Committee members represent different wards and are responsible for informing the villagers in their wards of committee activities. Most villagers attend community meetings called by the chief and the committee, but few outside the committee are active in organizing community affairs. "L" villagers appear to be more willing to heed the recommendations of the VDC and other community leaders.

Villagers in "H" have more complaints about the pump than villagers in "L." Many people, especially Kabeye villagers, still use the river as their primary water source, while in "L" most people use both the pump and their cisterns. In both villages, most people prefer to use the pump water for drinking.

The project worker is striving to make the "H" village more self-sufficient, but because many villagers believe community funds will be mishandled, they are not very interested in contributing money for community projects. However, many villagers noted that intervillage relationships have been improving. The VDC members feel more competent to implement community projects since the water supply project was instituted, and are currently exploring the idea of a group farm as an innovative way to collect yearly fees for pump maintenance.

The project worker in "L" does not speak Adja, so he deals with the VDC in French, relying on the VDC secretary to translate. The VDC and villagers seem somewhat intimidated by the worker, and unsure of their ability to complete development projects on their own. However, villagers believe they work together better as a community since the pump was installed. As in "H," the VDC seems to be the focal point for innovation and structure in community development. About ten years ago, community farm funds were embezzled by a supervisor (not from the village), and the villagers disbanded the cooperative. Since the pump installation, they have begun a new cooperative and many farmers report increased income from this change. A portion of this income goes into funding community projects.

3.1.4 Community Participation in ORT

The VDC in "H" was responsible for selecting the five women who were trained to be ORT *femmes responsables*. All are literate, and three are unmarried. In "L," all the *femmes responsables* are married, have children, and are illiterate. They and the VDC were trained in the village, while those in "H" were trained in Notse, a town about 20 kilometers away, with *femmes responsables* and VDC members from other nearby villages. The ORT project uses a homemade sugar/salt solution for rehydration. Most committee members and all *femmes responsables* in both villages could correctly describe how to make and use the solution. Most villagers had heard of the campaign and believed the solution was effective. Those who had used it were satisfied with the results and would use it again if the need arose. Older women without young children, childless

women, and most men did not know the specifics about ORT, but most mothers of young children did. Most women said they were interested in any method that would increase child survival.

Femmes responsables in "L" report that the training has increased their status in the community, and that this has not caused any resentment among other villagers. The husbands of the married *femmes responsables* report that they are proud of their wives' positions. The *femmes responsables* report that the training gave village women recognition by outside agents for the first time, an opportunity to participate as VDC members on an equal basis with men, and a chance to help others in the village.

The *femmes responsables* in "H" report no change in status, but it appears they enjoyed a somewhat higher status to begin with, and that they participated in VDC meetings before they became *femmes responsables*. The *femmes responsables* in both villages are pleased to have learned a useful skill, and are eager to learn more about health issues.

The *femmes responsables* in "H" are better organized than those in "L," and each *femme responsable* has given three demonstrations in her ward so far. All say these demonstrations were well-attended by both women and men. In "L," the *femmes responsables* report that they give demonstrations when asked by villagers and women from neighboring villages, and that they will also prepare the solution or demonstrate its preparation to individuals on request. They have never sought out demonstration participants as the *femmes responsables* in "H" have.

3.2 Indonesia Project Operations and Village Conditions

3.2.1 Ecological and Social Conditions

In Indonesia, the "L" village has two-and-one-half times the population of the "H" village, with similar distribution by age and gender. The "L" villagers are more widely dispersed, living in hamlets away from the center of the community. The geographic characteristics of the two are the same; both are located in the mountainous western part of Java. However, the "L" village is more remote from the paved main road that links it to the nearest district town, where a hospital and secondary school are found. Both villages have a health clinic and a primary school.

Prior to the CARE Rural Water Supply Project, the "H" village had a system of community wells that required more effort to draw water than in the "L" village, where a bamboo pipe gravity system brought water from a distant spring to community reservoirs. Thus, the need to upgrade the existing system was more pressing in "H" than in "L."

No differences were found in occupation, religion, or ethnic homogeneity. Sundanese is the local tongue spoken in both villages, but the national language of Indonesia is spoken by more people in the "H" village.

The indigenous organizational structure is equally developed and defined in both villages. The water project used the existing VCEIs rather than a new structure as the basis for organizing a VDC.

Leadership styles and tenure for village headmen differ. The relationship between the village headman and the heads of hamlets is more effective in the "H" village, and the project worker and the VDC depend less on the village headman, whose role is to sanction rather than direct the mobilization of village participation.

3.2.2 Planning for Community Participation

After these villages had been chosen as project sites, the CARE workers discussed the feasibility of the project with the village headman, the VCEI, the Village Deliberation Institution, and representatives from neighborhoods at each site. Subsequent meetings were held with a subgroup of the VCEI, which became the VDC, to work out the details of project implementation, including the responsibilities of all parties involved. The representatives then held meetings in their neighborhoods.

3.2.3 Community Participation in Water Supply Construction and Maintenance

In both villages, CARE installed gravity systems to pipe water to the village reservoirs and installed several public water taps. Individuals could choose to pay an additional fee to have water piped to their homes.

In each section, 10 to 15 neighborhoods banded together to install water taps. CARE provided some of the materials, such as pipes and cement, and the technical assistance. The villages provided the land, manpower, and all other required materials. The neighborhood groups decided on the location of the water tap, the contribution of each member, and how the project would be implemented. Each group assigned a rotating detail of workers to join VDC members and village officers in building the water source protector and reservoir. The VDC and village officers supervised the work, assisted by CARE workers. In both villages, the people preferred to use the existing VDC rather than form a new committee. Each neighborhood in rotation took responsibility for water source repair and for providing the labor to clean the water source daily.

Project workers lived in the villages during the installation, returning after completion on regular visits with suggestions for more activities.

3.2.4 Community Participation in ORT

In both villages, CARE added on an HLA component to improve community health and recruited *kaders* from each hamlet to be trained for this activity. CARE asked the village headmen to choose the *kaders*, using the criteria of literacy, willingness, and availability to serve. The volunteers were trained for about a week.

After training, *kaders* chose 10 families in their neighborhood as target families. Their duties included motivating these families to get involved in health activities and helping health personnel distribute free ORS packages. *Kaders* were not paid, but were encouraged to raise funds independently. In some cases the headman gave them the initial capital and permitted them to manage it. Since distribution was not a problem in West Java, the health department decided to use ORS packages. However, *kaders* were also taught how to make homemade sugar-salt solutions in the case of an emergency.

Kaders held an annual workshop, assisted by CARE, where they set up a program for the following year. The workshops were also attended by the village headman, one VDC member, and one or two *kaders* from other parts of West Java. The location of the workshops rotated from one village to another.

To monitor the HLA program, CARE developed a monthly report form to be completed by the *kaders*. CARE project workers also made periodic site visits, progressively less frequent, while gradually transferring the monitoring function to the village headmen. In "L," the headman neglected to supervise the *kaders'* activities, so that only 5 of the original 20 are still active, mostly in helping with village administration and social affairs. Almost all the *kaders* from the isolated hamlets dropped out, even though they were very active during training. In "H", many *kaders* were relatives of village leaders and had participated in village activities before. Some have dropped out because of family conflicts, but almost half of the original 20 are still active and have set up a clinic to distribute basic medicines, including ORS packages.

3.3 Effects Associated with Participation

Content analysis of the villagers' reports of effects they associated with participating in the project and with the technologies introduced yielded three categories of benefits:

1. Health and personal benefits included new ideas on water safety, cleanliness, and personal hygiene, a reduction in morbidity and mortality, and increased social status, political power, and self-esteem.
2. Tangible benefits included access to a year-round water supply, time saved in water collection, increased income because of this time saving, and increased information about water- and ORT-related technologies.
3. Social benefits included greater community willingness to work for a common cause, increased confidence in community competence, increased abilities to organize and manage community activities, and increased accessibility or availability of services.

These, of course, were not the words or terms used by the villagers, but the cover terms generated from the content analysis.

3.3.1 Caveats

As mentioned earlier, questions yielding no clear responses were eliminated. Among these were questions asking respondents to name the "disadvantages" or "worst things" about the new water source and ORT. The most negative comments were either "no benefit" or "don't know" because the respondent either did not use the new water source or did not have young children. There are two possible explanations for this lack of perceived negative consequences. The first is that the need for an improved water supply and for ORT was so great that villagers could see only the positive aspects. The second is that the questions may have been worded inappropriately or that the interviewers were not able to induce the villagers to speak candidly. However, the interviewers were trusted enough to elicit sensitive information on ethnic conflict (of which project workers were unaware) and negative comments about village leaders. Thus, inappropriate wording was the most likely reason.

Tables in Appendix A show the responses, by country, on the benefits from the new water source, from participation in the water supply project, and from the ORT program. The benefits are broken down into health, tangible, social, and no benefit categories. The percentages are of respondents in each village who included a given category in their answer to the question. Because of important differences in the two ethnic groups in Togo, a parenthetical percentage is given for the Ewe respondents only. For all villages, respondents to whom particular questions did not apply are excluded in the denominator for the percentages. It should be noted that with multiple responses allowed, the percentages generally add up to well over 100.

3.3.2 Benefits from the Technology Introduced

In both the "H" and "L" villages, people cited benefits from the improved water system itself and from changes it had made in their lives. No significant difference was found in the number of benefits reported by the Indonesian "H" and "L" villages. However, in Togo, the "L" village described nearly twice as many benefits as the "H" village. This can be explained by one ethnic group's unequal access to the water pump in the "H" village. Kabeye respondents were more likely to say they did not gain any benefits or did not know of any.

In both countries, differences were found in the kinds of benefits cited by the "H" and the "L" villages. Health benefits were much more salient than tangible benefits in the "H" villages, whereas the opposite was true for the "L" villages. In the "H" villages, 82 percent of the respondents in Togo and 96 percent of the respondents in Indonesia said that the best things about the new water source were safer and cleaner water, cleanliness, and personal hygiene, whereas only 27 percent in Togo and 52 percent in Indonesia cited the tangible benefits of time and effort saved, convenience, year-round supply, and easier and closer access. In contrast, 100 percent of the Togolese and 83 percent of the Indonesian respondents from the "L" villages gave tangible benefits and health benefits an almost equal level of significance.

When asked how the improved water supply had changed their lives, 81 percent of the respondents in the "H" village in Togo and 100 percent in Indonesia cited better health, cleanliness, and child health, whereas time and effort saved, and more income were given by only 29 percent in Togo and 81 percent in Indonesia. In contrast, 100 percent of Togo's "L" village cited tangible benefits compared with only 69 percent who cited health benefits. In Indonesia, no difference was found in the responses of the "H" and the "L" village on health benefits the improved water supply had brought.

Health benefits from ORT activities were the major ones cited by "H" and "L" villages. However, responses were more accurate in the "H" villages, which cited use in an emergency more often, whereas treatment for, or prevention of, diarrhea was cited more often in the "L" villages.

Social benefits were not cited by any of the project villages. This perhaps can be explained by the specificity of the questions which asked about benefits to individuals from the improved water supply and ORT.

3.3.3 Benefits from Participating in the Projects

All villages reported benefits from being involved in the projects, with insignificant differences between "H" and "L" villages in the level or kind of benefits cited.

Social benefits reported when villagers were asked what they gained from community participation in the construction, operation, and maintenance of a water system included greater availability and accessibility of services, more community management skills, the chance to discuss village problems, and greater ability to organize. In Togo 27 percent, and in Indonesia 89 percent, of respondents in "H" villages cited these social benefits. For the "L" villages, 24 percent in Togo and 83 percent in Indonesia cited social benefits. While these differences are slight, social benefits from participating in a water supply project do appear to be more important for the villages. No significant difference was found in either country for the reported health benefits (reduced morbidity and mortality) from participating in the water supply project. In Indonesia, 33 percent of the "H" village respondents cited tangible benefits (increased information), while only 7 percent in the "L" village did. No difference was found in tangible benefits cited by the Togolese villages.

When asked about benefits from participating in the ORT project, the villagers gave similar responses. The same social benefits were described in all project villages, with one exception. Greater availability and accessibility of services were cited only in the Indonesian villages, because there is no ORT service provided by the health care system in Togo. And in both countries, no significant difference was found between the "H" and "L" villages in tangible or health benefits from participating in the ORT project.

However, differences were found when responses were compared according to the community status of the respondents (Table 3A). A significantly greater proportion of VDC members in the "H" villages than in the "L" villages reported social benefits (75 percent and 38 percent in Togo, 100 percent and 75 percent

in Indonesia). In the "H" villages VDC members perceived more social benefits than did users. Moreover, a similar trend was found in their perceptions of health benefits from participating in the ORT program (Table 4A). In general, VDC members consistently reported health benefits from improved water supply and from ORT for children more often than did leaders or users.

Responses by gender (Table 3B) show that a significantly greater proportion of women in the "H" villages than in the "L" villages reported social benefits from participating in the water supply project (25 percent and 16 percent in Togo, 85 percent and 75 percent in Indonesia), and within the villages there was less discrepancy between social benefits perceived by men and by women. Additionally, women in the "H" villages perceived health benefits from the ORT program more often than did women in the "L" villages (Table 4B).

3.4 Discussion of Findings

3.4.1 Factors in Community Participation Approach Influencing Participation in Subsequent ORT Projects

Three major factors emerged in comparing "H" and "L" village operations and activities to increase community participation:

1. Mobilization Role of VDC

The VDC in each "L" village functioned as an implementing group fully accountable for completion of the water project. In each of the "H" villages, the VDC served as a mobilizing group to recruit others to implement the water project. The village at large, therefore, felt accountable for dealing with the inevitable problems of project operation and maintenance.

When ORT activities were introduced subsequently, the "H" villages had a larger pool of volunteers from which the VDC could recruit health workers. This factor appeared to be particularly important for involving women, who traditionally are underrepresented in VDC membership. Women in the "H" villages reported more often that they had attended VDC meetings and were involved in VDC-sponsored activities.

It should be acknowledged that the mobilizing role of the VDC in the "H" villages had not been explicitly intended. It evolved on its own.

2. Structured Exiting Activities for Agents

Agents working with "H" and "L" villages maintained contact after the water systems had been completed by attending VDC meetings. However, the attendance of agents in the "H" villages was more regular and structured because they had

specific tasks to accomplish. They came prepared with an agenda, rather than simply a readiness to react to whatever questions the VDC members raised.

Thus, when ORT activities were introduced, the transition from a focus on water supply was more easily achieved by the agent and the VDC. It was not characterized by a flurry of activities after a hiatus following the completion of the water project. ORT appeared to be a natural extension of the water project and the role of the VDC.

Again, this structured exiting process had not been explicitly planned by the water project. It came from the personal initiative of the particular agents working with the "H" villages.

3. Structured Supervision and Support Activities for VDC and Village Head

In the "L" villages, neither the VDC nor the village head played any apparent role in supervising or supporting ORT volunteers. However, in the "H" villages the volunteers mentioned their responsibility for reporting to the VDC or the village head. Consequently, they were more active, sought out participants for ORT demonstrations on their own, and were less likely to drop out.

3.4.2 Effects of These Factors on Stimulating Participation in ORT Project, Given Social and Ecological Conditions Beyond Control of the Water Supply Project

Three major effects associated with participation in a project and the introduction of a technology were found to distinguish "H" from "L" villages:

1. Health Benefits from Resulting Improvement

In influencing participation in subsequent health improvements, the *level* was not as important as the *kind* of perceived benefits from an improved water system. The findings indicate that when a community perceived health-related benefits to be more important than either tangible or social benefits, it was more likely to take on ORT activities introduced after the water system had been completed.

The logic behind this is clear. ORT is an intervention directly related to health, whereas the health implications of an improved water supply are not as apparent. However, when these are understood and appreciated, then the health implications of ORT activities subsequently introduced are also more easily understood and their benefits anticipated.

Moreover, when participation in a water supply project stimulates a community to participate in ORT educational activities, it follows that a clearer understanding of ORT will result. When villagers have the misconception that ORT will treat or prevent diarrhea, they will eventually become disillusioned with ORT and the credibility of the health workers.

2. Social Benefits from Participating in a Project

Villagers did make a distinction between benefits from the improvement itself and from participating in its implementation. Although health and tangible benefits could follow from the acceptance of a technology, they saw that social benefits came from community participation.

In other words, if a technology is introduced without community participation, the "public goods" of collective management and organizing skills or accessibility to services will not be enhanced. The community will not gain problem-solving experience from a nonparticipatory water supply project.

3. VDC Membership and Gender

Community status and gender did appear to be related to the social and cognitive links that are made between participation in improving water supply and in improving child survival. While it is assured that organizing a VDC will directly involve the community in planning and implementing a water supply project, it was in the "H" villages more than in the "L" villages that VDC members perceived the social benefits from participation and the health benefits from an improved water supply. Moreover, this same link of perceived benefits was made more often by women. Since it is the women who are responsible for the handling of water and the health of children, the success of the subsequent introduction of ORT activities is enhanced by the women's perception of benefits.

Six important social and ecological conditions emerged from the findings to show differences between the project environments of "H" and "L" villages.

1. Influence of Subchiefs

Power and control in "H" villages were found to be shared with subchiefs rather than held by a single chief, regardless of whether he was autocratic or benevolent, experienced or new. The greater influence of subchiefs made the role of the VDC in mobilizing wider participation by villagers more effective.

It also reduced dependence on a single chief. The active involvement of subchiefs in the water project facilitated the subsequent recruitment and support of ORT volunteers from each of the wards.

2. Ethnic Stratification

While social and economic stratification along ethnic lines was found only in the Togo "H" village, its influence and the way the project tried to deal with it were considered important. The project did acknowledge the existence of a minority ethnic group by making sure the VDC had a Kabeye member and that one of the *femmes responsables* was a Kabeye. The Kabeye chief reported that his group did participate in the construction of the water system and contribute to the pump repair fund. However, it appears the project had underestimated the degree of conflict between the Kabeye and the Ewe. The Kabeye did not use the water pump because it was located across the road in the Ewe area of the village. Consequently, Kabeye respondents did not perceive any benefits from the improved water supply, yet they did perceive benefits from ORT activities. One interpretation is that stipulating ethnic representation on the VDC and among *femmes responsables* partially counterbalanced the obstacles posed by ethnic stratification.

3. Language

Since "H" villagers would speak the national or predominant regional language, agents who worked there could communicate directly with them in the language with which they were most comfortable. Being forced to communicate through a translator or in their second language could reduce spontaneity at VDC meetings and inhibit rapport outside.

4. Population Size

"H" villages were smaller in population. An anthropological rule of thumb is that a community has no more than 500 households. A village larger than this is assumed to contain several subgroups and therefore to render a single VDC less effective.

5. Accessibility to Resources

"H" villages were closer to a main road connecting them to a district town. This gave them no special access to basic services, since the "L" villages also had nearby primary schools and health posts. But it did give them the advantage of being accessible to the outside world because of the greater number of transportation modes (trucks, taxis, buses) that travelled the main road. It was easier for agents to

come to "H" villages and for supplies and equipment to be delivered, whereas "L" villagers were aware of the difficulties project personnel had in reaching them.

6. Need for Improved Water Supply

"H" villages had a greater need for an improved water supply because existing sources were either inadequate or contaminated. It is a truism that people will act on a felt need. When a village supply is contaminated with guinea worm as in Togo, or functions only during the rainy season as in Indonesia, participation in improving and maintaining a water system is internally, rather than externally, motivated.

Chapter 4

LESSONS LEARNED

There is no universal design for a rural water supply system that can guarantee sustained community involvement. However, a design can embody elements that increase the likelihood that community participation in building the system will be a stimulus to participation in subsequent health activities.

The findings from this study indicate that water projects in which communities participate will stimulate community participation in subsequent ORT activities when: (1) VDC members and women users perceive that the health benefits of an improved water supply are more important than mere convenience; (2) VDC members and women users perceive the social benefits of community involvement in a water supply project; (3) the VDC plays a mobilizing role in recruiting and influencing participation, rather than an implementing role; (4) project workers use structured activities to exit from a village; (5) the VDC and village chief have structured reporting mechanisms for supporting and supervising community volunteers; (6) power and influence are not centered in the village chief but shared with subchiefs; (7) ethnic stratification is addressed through equal representation of ethnic groups in project activities and decisions; (8) project workers speak the village vernacular; (9) the village population is small; (10) villages are physically accessible to facilitate project workers' visits and the delivery of project goods and services; and (11) water quality or quantity is a problem of health more than of convenience.

It is therefore recommended that water and health sector planners and policy makers include the following activities in the community participation approach:

i. Initiating and Sustaining Community Outreach

Projects should organize VDCs to mobilize wider participation rather than to take upon themselves the responsibility for actual implementation. This would strengthen the outreach abilities of the VDC to increase participation in projects that follow.

Projects should include structured exiting activities for agents to carry out with the VDC after the completion of a water system to ensure a smooth transition to subsequent projects and to sustain the viability of the VDC.

Projects which depend on volunteer health workers from the community should develop reporting mechanisms for their use. Regular reporting will sustain the work and interest of health workers and the goodwill of VDC members. Project workers should, however, continue to take responsibility for continuing education.

2. Ensuring Wider Participation

Project workers should include subchiefs when initial contact is made with the village chief, who can then specify a role for them in project activities. The inclusion of subchiefs ensures wider participation by different segments of the community and a decentralization of power.

Social benefits from participating in a project more readily accrue to VDC members and male villagers. Project workers need to increase the social benefits for women, who are essential to the success of any subsequent child survival project. Opportunities for women to play a role in VDC-sponsored activities and to be members of the VDC should be structured into the water project. Appointing a female pump minder who would automatically serve on the VDC is an example of this. Bringing together women from neighboring villages to learn additional skills about ORT is another example of how project involvement could expand the resources available to them.

3. Designing Community Education Components

Health benefits from an improved water supply system are not perceived simply by participating in its construction, operation, and maintenance. Projects should include a health education component that gives VDC members the same training as ORT volunteers to ensure a clearer understanding of the link between health benefits from an improved water supply and diarrhea.

4. Overcoming Problematic Conditions in the Project Environment

Projects should formally acknowledge the existence of ethnic diversity, even in small villages, and its impact on decisions such as the location of a water pump.

Language barriers between community members and project workers are not unusual, particularly where there are ethnic minorities. An effort should be made to recruit project workers who have the necessary language capabilities.

If a village is large, organizing more than one VDC would reduce the sociological and logistical problems of representing and mobilizing the various subgroups in the community.

Villages far from a main road should receive special attention to ensure that visits by project workers and delivery of project goods and services occur with the same regularity as in villages close to a main road. More isolated villages are sensitive to poor accessibility which is beyond their control.

Consideration should be given to assigning priority to villages where the felt need for an improved water supply is expressed in terms of health rather than of convenience.

In conclusion, the different ways in which project workers interacted with villagers to organize a VDC, to develop the skills of VDC members, to determine a program of VDC activities, and to establish a followup program after the completion of the water system showed how variations in the inputs of a

community participation approach can result in different perceptions of project benefits. Moreover, the social and ecological conditions in the project environments also appeared to influence the execution of the community participation approach, and the perception of benefits. Thus, the above recommendations should be used to fine-tune the activities and responsibilities of project workers intending to use the community participation approach to rural water supply systems as a means to maximize the benefits to villagers from subsequent health projects.

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APPENDIX A
COMMUNITY SURVEY AND ANALYSIS OF RESPONSES

I. COMMUNITY SURVEY

Community Participation Questionnaire

Interviewer Number: _____ Name of Region: _____
Date: _____ Name of District: _____
Respondent Number: _____ Name of Locality: _____
Provider Number: _____

COMMUNITY PROFILE

- 1.1 Total population size of village: _____
- 1.2 Percent of females ____ Percent of males _____
- 1.3 Number of infants under one year of age _____
- 1.4 Number of children aged one through five _____
- 1.5 Number of children aged five through fourteen _____
- 1.6 Number of female adults fifteen and above _____
- 1.7 Number of male adults fifteen and above _____
- 1.8 Name the major ethnic groups residing in your village.
- 1.9 Name the major occupations of your village members.
- 1.10 Number of Religious Institutions in your village.
Mosque _____
Church _____
Temple _____
Other _____
- 1.11 How many Hospitals are in your regency/prefecture?
- 1.12 How many Health Centers are in your sub-district/canton?
- 1.13 How many Health Stations are in your village?
 - 1.13.1 If none, how much time does it take to get to the nearest Health Station?
- 1.14 How many health practitioners are in your sub-district?
- 1.15 How many Elementary Schools are in your village?
- 1.16 How many Secondary Schools are in your sub-district/canton?
- 1.17 How many water sources are in your village?

RESPONDENT PROFILE

- 2.1 Age:
- 2.2 Sex: M ___ F ___
- 2.3 Ethnicity:
- 2.4 Languages/dialect spoken:
- 2.5 Occupation:
- 2.6 Marital Status:
Single ___
Married ___
Divorced ___
Widow ___
- 2.7 Religion:
- 2.8 Highest Grade Completed:
- 2.9 How many children under five years are you caring for?
- 2.10 How many children, five years and older, are dependent on you?
- 2.11 With which community groups do you participate?
- 2.12 What things do you spend most of your cash on?
- 2.13 From among the following things that you spend cash on, what are the four most important to you?
Health ___
Education ___
Food ___
Housing ___
Clothing ___
Recreation ___
Charity ___
Transportation ___
Water ___
Electricity ___
Community projects ___

RELATIONSHIPS WITH OUTSIDE AGENTS

- 3.1 Have there been any outside workers who have come to your village?
- 3.2 What have been their reasons for coming to your village?
- 3.3 For as far as you can remember who was the FIRST outside worker who came to your village?
- 3.3.1 When did s/he come?

- 3.3.2 How did this worker make him/herself known to the villagers?
- 3.3.3 What did s/he want to do in your village?
- 3.3.4 Did the village benefit from this worker's coming to your village?
- 3.3.5 How?
- 3.3.6 What did your village want him/her to do that s/he did not do?
- 3.3.7 What were the reasons for not doing it?
- 3.3.8 Did you personally benefit from this worker's coming to your village?
- 3.3.9 How?
- 3.3.10 What did you personally want him to do that he did not do?
- 3.4 From what you best remember who was the LAST outside worker to come to your village?
 - 3.4.1 When did s/he come?
 - 3.4.2 How did this worker make him/herself known to the villagers?
 - 3.4.3 What did s/he want to do in your village?
 - 3.4.4 Did the village benefit from this worker's coming to your village?
 - 3.4.5 How?
 - 3.4.6 What did your village want him/her to do that s/he did not do?
 - 3.4.7 What were the reasons for not doing it?
 - 3.4.8 Did you personally benefit from this worker's coming to your village?
 - 3.4.9 How?
 - 3.4.10 What did you personally want him to do that he did not do?
- 3.5 Describe the BEST outside worker who has come to your village.
 - 3.5.1 Who introduced him/her.

- 3.5.2 How s/he introduced him/herself.
 - 3.5.3 How s/he worked with the leaders.
 - 3.5.4 How s/he worked with the villagers.
 - 3.5.5 How s/he worked with you.
 - 3.5.6 How decisions were made about the project.
 - 3.5.7 Who made the decisions.
 - 3.5.8 Were you part of the decisions?
 - 3.5.9 How long the outside worker stayed in your village.
 - 3.5.10 In what manner s/he left the village.
 - 3.5.11 What benefits (personal, social, tangible, health) s/he left behind for the village.
- 3.6 How long ago was this?
- 3.7 Has this affected the work of outside workers who came after him/her?
- 3.8 Describe the WORST outside worker who has come to your village.
- 3.8.1 Who introduced him/her.
 - 3.8.2 How s/he introduced him/herself.
 - 3.8.3 How s/he worked with the leaders.
 - 3.8.4 How s/he worked with the villagers.
 - 3.8.5 How s/he worked with you.
 - 3.8.6 How decisions were made about the project.
 - 3.8.7 Who made the decisions.
 - 3.8.8 Were you part of the decisions?
 - 3.8.9 How long the outside worker stayed in your village?
 - 3.8.10 In what manner s/he left the village.
 - 3.8.11 What benefits (personal, social, tangible, health) s/he left behind for the village.
- 3.9 How long ago was this?
- 3.10 Has it affected the work of outside workers who come after him/her?

- 3.11 The next time outside workers comes to your village, what would you advise them to do to promote more participation in community activities? (Activity and behavior of workers)

PARTICIPATION

- 4.1 In what kinds of community activities have you participated?

None	_____
Schools	_____
Roads	_____
Housing	_____
Religious	_____
Institutions	
Wells	_____
Sanitation	_____
Irrigation	_____
Community	_____
Development	
Other	_____

- 4.1.1 If yes, what did you do for each activity.

- 4.1.2 If no, why haven't you participated?

Inadequate	_____
knowledge	_____
Sociocultural	_____
Inhibition	_____
No need	_____
No interest	_____
Lack of money	_____
No time	_____
Other	_____

- 4.2 Why did the village participate in the water supply activity?

To receive cash (remuneration)	_____
To receive in-kind services	_____
To receive a promotion	_____
To receive village recognition	_____
To receive self satisfaction	_____
To receive spiritual satisfaction	_____
To strengthen village relationships	_____
To donate time to a charitable cause	_____
Other	_____

- 4.3 Why did you (or did you not) participate in the water supply activity?

BENEFITS FROM WATER SOURCE

- 5.1 How much time did it take to gather enough water for one day before the village had the new water source?

- 5.2 How much time does it take with the new water source?

- 5.3 What are the best things about the new water source?
- 5.4 What are the worst thing about the new water source?
- 5.5 What were the best things about the [original water source]?
- 5.6 What were the worst things about it?
- 5.7 Has the new water source improved your life as an individual in any way?
- 5.7.1 How?
- 5.8 Has it improved the lives of the members of your household?
- 5.8.1 Who and how?
- | | |
|--------|-----|
| Health | --- |
| Income | --- |
| Time | --- |
- 5.9 If you save time now, what do you do with the extra time?
- 5.10 Do you prefer using the new water source or the [original water source]?
- 5.10.1 Why?
- 5.11 Do you use the water from the new source in different ways than you used the water from the [original water source]?
- 5.12 Do you still use the [original water source]?
- 5.12.1 If yes, what for?
- 5.13 Are you satisfied with the water quantity from this new water source?
- 5.14 Do people have to make a line to get the water in this water source?
- 5.15 How long, in average, do people have to wait to get water? (Probe: most of the morning, etc.)
- 5.16 What do you think about water quality of this water source?
- 5.17 Where do people like you like to get together and spend time with each other?
- | | |
|------------------|-----|
| Old water source | --- |
| New water source | --- |
| Bar/Tea Shop | --- |
| Market | --- |
| In the fields | --- |
| Chief's house | --- |
| Other | --- |

- 5.18 Why do you prefer these places?
- 5.19 What kind of village needs or activities do you usually talk about when you get together at these places?
- 5.20 What topics do you discuss at the new water supply that are different from the ones you discussed at the [original water source]?
- 5.21 Has the new water source changed the tasks of the members of your household?
- 5.21.1 How?
- 5.22 Has the new water source changed your relationship with other people in your village?
- 5.22.1 How?
- 5.23 Has the new water source changed your relationship with other villages?
- 5.23.1 How?
- 5.24 Has the new water source changed your relationship with other villages that do not have a new water source?
- 5.24.1 How?

(QUESTIONS FOR LEADERS)

- 5.25 Do you think that this new water source has enhanced your reputation as a leader with other villages?
- 5.26 Do villagers respect you more now than before?
- 5.26.1 Why?

PARTICIPATION IN WATER PROJECT

- 6.1 Did the village need the CARE/USAID water source at the time it was built?
- 6.2 Who had the idea to put a new water source in this village?
- 6.3 Who decided where the new water source would be?
- 6.3.1 How did they decide?
- 6.4 Was there a meeting or meetings about putting in the new water source?
- 6.4.1 Who attended these meetings?
- 6.4.2 If you attended, what did you do in these meetings?

- 6.5 Were you consulted about where the new water source should be?
- 6.6 Was anyone in the village consulted about this?
 - 6.6.1 If so, who was consulted?
 - 6.6.2 Why do you think they were consulted?
 - 6.6.3 Did you wish to be consulted?
- 6.7 Did you have any say in the kind of technology put in the village?
 - 6.7.1 Who else had a say in the choice?
 - 6.7.2 Why do you think they had a say in this decision?
- 6.8 Did you feel you had a part in putting in the new water source?
 - 6.8.1 What did you contribute?
 - 6.8.2 Who else contributed?
- 6.9 Were you paid for your contributions?
 - 6.9.1 How much?
 - 6.9.2 Was anyone paid for their contributions?
 - 6.9.3 If paid, how did you feel about being paid?
 - 6.9.4 If not paid, why did you volunteer labor or materials?
 - 6.9.5 How do you feel about having volunteered them?
- 6.10 How satisfied were you about the manner in which the new water supply was implemented? (the process)
- 6.11 When the new water source breaks down, whom do you tell?
 - 6.11.1 Why do you tell that person?
 - 6.11.2 How was that person chosen to handle the new water source maintenance?
 - 6.11.3 Do you agree with that choice?
 - 6.11.4 Did you have any say in who was chosen?
- 6.12 Are there other problems besides maintenance?
- 6.13 Whom do you contact about these problems?
 - 6.13.1 How was that person chosen?

- 6.13.2 Do you agree with that choice?
- 6.13.3 Did you have any say in who was chosen?

BENEFITS FROM PARTICIPATING IN THE WATER PROJECT

7.1 You have told me about participating in the water project. Tell me how things have changed for you since you participated in the water project.

7.2 What benefits did you receive from participating in the water supply project?

- Community management skills _____
- Ability to organize _____
- Self help financing _____
- Ability to discuss _____
- village problems _____
- Reduction in mortality _____
- Reduction in morbidity _____
- Increased accessibility of services _____
- Increased availability of services _____
- None _____
- Other _____

7.3 In your opinion, what are the advantages of participating in the water supply project for:

7.3.1 yourself

7.3.2 your household

7.3.3 your village?

7.4 What are the disadvantages (if any) of participating in the water supply project for:

7.4.1 yourself

7.4.2 your household

7.4.3 your village?

HEALTH PARTICIPATION

8.1 Have you participated in any health activities?

8.2 Which one(s)?

- None _____
- Cholera control _____
- Child vaccination _____
- Malaria control _____
- Nutrition _____
- Child Diarrhea/ORT _____
- Family planning _____
- Others _____

- 8.2.1 If you participated, what did you do?
- 8.2.2 If not, why not?
- | | | | |
|-----------------------------------|-----|--|--|
| Inadequate knowledge | ___ | | |
| No need | ___ | | |
| No interest | ___ | | |
| Lack of materials
and supplies | ___ | | |
| Lack of money | ___ | | |
| Sociocultural
inhibitions | ___ | | |
| No time | ___ | | |
| Other | ___ | | |
- 8.3 Did you take your child for immunizations?
- 8.3.1 Why, or why not?
- 8.4 How did you hear about the immunizations?
- 8.5 Did the village children need immunizations?
- 8.5.1 Why?
- 8.6 What are the best things about immunizations for your children?
- 8.6.1 For yourself?
- 8.7 What are the worst things about immunizations for your children?
- 8.7.1 For yourself?
- 8.8 Where were the immunizations given?
- 8.8.1 Was that convenient for you?
- 8.8.2 Did you have any say in where the immunizations were given?
- 8.8.3 Did you have any say in what time the immunizations were given?
- 8.9 Did you participate in any ORT program?
- 8.9.1 If you participated, what did you do?
- 8.9.2 If not, why not?
- | | | | |
|-----------------------------------|-----|---------------|-----|
| Inadequate knowledge | ___ | Sociocultural | ___ |
| No need | ___ | inhibitions | |
| No interest | ___ | No time | ___ |
| Lack of materials
and supplies | ___ | Other | ___ |
| Lack of money | ___ | | |

- 8.10 Why did your village participate in the ORT program?
- To receive cash (remuneration) ---
 - To receive in-kind services ---
 - To receive a promotion ---
 - To receive village recognition ---
 - To receive self satisfaction ---
 - To receive spiritual satisfaction ---
 - To strengthen village relationships ---
 - To donate time to a charitable cause ---
- 8.11 What benefits did your village receive from participating in the ORT program?
- Community management skills ---
 - Ability to organize ---
 - Self help financing ---
 - Ability to discuss village problems ---
 - Reduction in mortality ---
 - Reduction in morbidity ---
 - Increased accessibility of services ---
 - Increased availability of services ---
 - Other ---
- 8.12 From where did you learn about the ORT program?
- Radio ---
 - Television ---
 - Newspaper/magazine ---
 - Schools ---
 - Organized community campaign ---
 - Health organization ---
 - Friends/relatives ---
 - Religious Institution ---
 - Market place ---
 - Other ---
- 8.13 Did the village need ORT for its children?
- 8.13.1 Why?
- 8.14 What are the best things about ORT for your children?
- 8.14.1 For yourself?
- 8.15 What are the worst things about ORT for your children?
- 8.15.1 For yourself?

II. ANALYSIS OF RESPONSES

Table 1A: Answers to question 5.3, "What are the best things about the new water source?", broken down by status.

	TOGO		INDONESIA	
Status	"H"	"L"	"H"	"L"
	Health Benefits			
User	75%	88%	100%	65%
VDC	100%	88%	86%	100%
Leader	78%	100%	100%	50%
	Tangible Benefits			
User	25%	100%	56%	82%
VDC	13%	100%	29%	88%
Leader	22%	100%	75%	75%
	No Benefits			
User	25%	0%	0%	0%
VDC	0%	0%	0%	0%
Leader	22%	0%	0%	0%
	N =			
User	12	17	16	17
VDC	8	8	7	8
Leader	9	6	4	4

Table 2A: Answers to question 5.7, "How has the new water source improved your life as an individual?", broken down by status.

Status	TOGO		INDONESIA	
	"H"	"L"	"H"	"L"
Health Benefits				
User	64%	65%	100%	100%
VDC	100%	88%	100%	100%
Leader	71%	50%	100%	100%
Tangible Benefits				
User	18%	100%	94%	93%
VDC	25%	100%	67%	75%
Leader	29%	100%	50%	100%
No Benefits				
User	36%	0%	0%	0%
VDC	0%	0%	0%	0%
Leader	29%	0%	0%	0%
N =				
User	11	17	16	16
VDC	8	8	6	8
Leader	7	6	4	4

Table 3A: Answers to question 7.2, "What benefits did you receive from participating in the water supply project?", broken down by status.

	TOGO		INDONESIA	
Status	"H"	"L"	"H"	"L"
Health Benefits				
User	58%	82%	13%	6%
VDC	100%	100%	14%	13%
Leader	55%	100%	50%	50%
Tangible Benefits				
User	0%	6%	56%	6%
VDC	13%	0%	0%	13%
Leader	0%	0%	0%	0%
Social Benefits				
User	17%	6%	81%	88%
VDC	75%	38%	100%	75%
Leader	11%	50%	100%	75%
No Benefits				
User	42%	12%	0%	6%
VDC	0%	0%	0%	0%
Leader	44%	0%	0%	0%
N =				
User	12	17	16	17
VDC	8	8	7	8
Leader	9	6	4	4

Table 4A: Answers to question 8.11, "What benefits did your village receive from participating in the ORT program?", broken down by status.

	TOGO		INDONESIA	
Status	"H"	"L"	"H"	"L"
Health Related Benefits				
User	0%	0%	94%	92%
VDC	0%	13%	86%	75%
Leader	11%	0%	100%	100%
Health Directed Benefits				
User	58%	65%	25%	0%
VDC	100%	100%	57%	63%
Leader	56%	83%	25%	75%
No Benefits				
User	42%	29%	0%	0%
VDC	0%	0%	0%	0%
Leader	33%	17%	0%	0%
N =				
User	12	17	16	13
VDC	8	8	7	8
Leader	9	6	4	4

Table 5A: Answers to question 8.14, "What are the best things about ORT for your children?", broken down by status.

	TOGO		INDONESIA	
Status	"H"	"L"	"H"	"L"
Health Related Benefits				
User	0%	0%	0%	0%
VDC	0%	0%	0%	0%
Leader	0%	0%	0%	0%
Health Directed Benefits				
User	55%	41%	100%	100%
VDC	100%	100%	100%	100%
Leader	56%	83%	100%	100%
No Benefits				
User	45%	59%	0%	0%
VDC	0%	0%	0%	0%
Leader	44%	17%	0%	0%
N =				
User	11	17	15	17
VDC	8	8	6	7
Leader	9	6	4	4

Table 6A: Answers to question 8.14.1, "What are the best things about ORT for yourself?", broken down by status.

Status	TOGO		INDONESIA	
	"H"	"L"	"H"	"L"
Health Related Benefits				
User	33%	41%	0%	0%
VDC	100%	88%	0%	29%
Leader	0%	80%	0%	0%
Health Directed Benefits				
User	11%	0%	92	100%
VDC	0%	0%	50	71%
Leader	11%	0%	100%	100%
No Benefits				
User	56%	59%	0%	0%
VDC	0%	13%	50%	0%
Leader	89%	20%	0%	0%
N =				
User	9	17	13	16
VDC	8	8	4	7
Leader	9	5	4	4

Table 1B: Answers to question 5.3, "What are the best things about the new water source?", broken down by gender.

	TOGO		INDONESIA	
Gender	"H"	"L"	"H"	"L"
	Health Benefits			
Female	92%	84%	100%	70%
Male	77%	100%	86%	77%
	Tangible Benefits			
Female	25%	100%	56%	95%
Male	17%	100%	49%	56%
	No Benefits			
Female	8%	0%	0%	0%
Male	22%	0%	0%	0%
	N =			
Female	12	19	20	20
Male	18	14	7	9

Table 2B: Answers to question 5.7, "How has the new water source improved your life as an individual?", broken down by gender.

	TOGO		INDONESIA	
Gender	"H"	"L"	"H"	"L"
	Health Benefits			
Female	92%	100%	100%	100%
Male	67%	100%	100%	100%
	Tangible Benefits			
Female	33%	84%	100%	95%
Male	13%	92%	17%	88%
	No Benefits			
Female	8%	0%	0%	0%
Male	33%	0%	0%	0%
	N =			
Female	12	19	20	19
Male	15	13	6	9

Table 3B: Answers to question 7.2, "What benefits did you receive from participating in the water supply project?", broken down by gender.

	TOGO		INDONESIA	
Gender	"H"	"L"	"H"	"L"
	Health Benefits			
Female	92%	84%	15%	15%
Male	56%	100%	29%	11%
	Tangible Benefits			
Female	0%	5%	40%	10%
Male	6%	0%	14%	0%
	Social Benefits			
Female	25%	16%	85%	75%
Male	33%	36%	100%	100%
	No Benefits			
Female	8%	11%	0%	5%
Male	45%	0%	0%	0%
	N =			
Female	12	19	20	20
Male	18	14	7	9

Table 4B: Answers to question 8.11, "What benefits did your village receive from participating in the ORT program?", broken down by gender.

	TOGO		INDONESIA	
Gender	"H"	"L"	"H"	"L"
	Social Benefits			
Female	0%	5%	95%	88%
Male	6%	0%	86%	89%
	Health Benefits			
Female	83%	79%	35%	25%
Male	56%	79%	29%	44%
	No Benefits			
Female	17%	21%	0%	0%
Male	39%	14%	0%	0%
	N =			
Female	12	19	20	16
Male	18	14	7	9

Table 5B: Answers to question 8.14, "What are the best things about ORT for your children?", broken down by gender.

	TOGO		INDONESIA	
Gender	"H"	"L"	"H"	"L"
	Social Benefits			
Female	0%	0%	0%	0%
Male	0%	0%	0%	0%
	Health Benefits			
Female	82%	63%	100%	100%
Male	56%	53%	100%	100%
	No Benefits			
Female	18%	37%	0%	0%
Male	44%	46%	0%	0%
	N =			
Female	11	19	18	19
Male	18	13	7	9

Table 6B: Answers to question 8.14.1, "What are the best things about ORT for yourself?", broken down by gender.

	TOGO		INDONESIA	
Gender	"H"	"L"	"H"	"L"
	Health Related Benefits			
Female	70%	63%	0%	6%
Male	24%	50%	0%	11%
	Health Directed Benefits			
Female	0%	0%	94%	94%
Male	6%	0%	60%	89%
	No Benefits			
Female	20%	37%	0%	0%
Male	71%	50%	40%	0%
	N =			
Female	10	19	16	18
Male	17	12	5	9

APPENDIX B
DESCRIPTIONS OF THE FOUR PROJECT VILLAGES

APPENDIX B

DESCRIPTIONS OF THE FOUR PROJECT VILLAGES

TOGO: GEOGRAPHICAL CHARACTERISTICS

Both village study sites are in the Plateau region of Togo. The high ORT village ("H") lies on the main paved road between the district capital and the national capital. There is a railroad station in the village, as well as a public bus stop. The village is easily accessible; contact with outsiders has been frequent.

The low ORT village ("L") is in a remote area near the Benin border. It can be reached by a rough dirt road which washes out frequently during the rainy season. Villagers must walk, bicycle, or catch rides on the few motorbikes in the village in order to reach larger towns in the area.

TOGO: ORGANIZATIONAL STRUCTURE

The "L" and "H" villages have similar organizational structures. The village chief and a council of elders handle most village affairs, although the national government no longer allows village chiefs to handle legal and political matters. These matters are now handled at the Prefecture level of government. Both villages are divided into wards. In "H," each ward has a traditional chief who in the past had responsibility for overseeing the affairs of his ward. Nowadays, the position seems to have only symbolic significance; the ward chiefs report they have no real power. However, the chief does consult them about village affairs. In "L," no one was identified as a ward chief. Most deliberation about village affairs is done through village-wide meetings. The chief generally calls the meeting, and the majority of adult men and women attend. Decisions are usually arrived at through discussion and consensus.

In "H," the chief is relatively young, fairly well-educated, and dynamic. Many villagers distrust him, however, because of the disappearance of some community funds several years ago. His authority is also compromised somewhat because of controversy surrounding his succession. Many people seem to fear reprisals from the chief if they overstep their bounds, and thus seem reluctant to discuss village problems with each other.

The chief of "L" is not particularly active, but is benevolent, respected and openminded, allowing other individuals to take charge of community activities. He is elderly, has no formal education, and has been chief for over 25 years. Unlike in "H," the chief has the full support and trust of the entire village, and discussions about village problems seem more open here.

Both villages have a variety of community organizations including political organizations, youth organizations, and women's organizations. These organizations appear to be much more active in "L." "H" also has a parent-student organization, community clean-up every Thursday morning, and leprosy control and guinea worm eradication campaigns, which are both health concerns in the village. There is no guinea worm in "L," but there is a community farm,

a concept that agricultural agents try to encourage in all Togolese villages, even though very few villages actually have one.

TOGO: DEMOGRAPHIC CHARACTERISTICS

The Togolese village sites did not have reliable statistics about village composition. The estimates of village size varied widely for each village. The USAID records report that "L" has a population of 850 and "H" has a population of 300. "L" is certainly larger and more widespread than "H." The village chief and secretary in "H" could not even venture a guess about the age and sex ratios in the village. The secretary of the Village Development committee gave some estimates in "L," but they appeared to diverge from the USAID population estimate and from the total population estimate given by the secretary. He said there were more females than males, a large percentage of the population were children under 15, and slightly fewer adult women than adult men. From observations, the composition of both villages seemed similar, and the proportion of children to adults is probably accurate.

TOGO: SOCIOCULTURAL CHARACTERISTICS

In "H," there are two major ethnic groups, the Ewe and the Kabeye, who live in separate sections of the village. Historically, the Ewe have dominated the Kabeye, who migrated from the northern region of Togo about 20 years ago and began as farm laborers for Ewe landowners. Now many Kabeye own their own land, but despite living next to Ewe for several years, there is little interaction between the two groups. The Kabeye have a chief, but he defers to the main (Ewe) village chief. The Kabeye chief feels that he has no power in the village, and many Kabeye people report a certain amount of animosity between the two ethnic groups, while the Ewe tend to play down any conflicts. While some Kabeye speak Ewe, the majority of them do not. Most younger villagers have completed primary school; those that have also speak French. Some boys go on to secondary school in a town about 20 km away, but few actually graduate. Most villages are animists, and Christians report that other villagers oppose their beliefs. There are no churches in the village.

"L" is ethnically homogeneous; almost all villagers are Adja. The villagers speak Adja and Mina, a local trade language. Younger men who have gone to primary school also speak French. Despite the fact that there is a primary school in the village, fewer children attend compared with "H." the school in "H" is a large, centrally located concrete building, and there are several teachers and a school director in residence. In contrast, the school in "L" is composed of just a few thatched roofs over rough benches on a patch of land distant from the center of the village. Only one teacher lives in the village. Also, in contrast with "H," very few girls go to school in "L." While many young women in "H" have completed primary school, none of the women interviewed in "L" had even attended school. While the majority of residents in "L" are animists, there are four Christian churches and a sizable minority who belong to Christian denominations. The different religious groups appear to coexist peacefully.

TOGO: SOCIOECONOMIC CHARACTERISTICS

In both villages, the majority of residents engage in subsistence agriculture, and also grow cotton and peanuts for export. Most farmers own their own land in "L," but there is a sizable minority of sharecroppers in "H." Many women in both villages are also traders, although in "H" they tend to trade imported manufactured goods, such as canned foods and cigarettes, while in "L" they tend to trade local produce, foodstuffs, and poultry. Most women in "L" are farmers as well as traders, while more women in "H" trade exclusively. In both villages there are also a few employees from the national cotton company and at least one schoolteacher. In "H" there is also one shop owner.

Sanitation facilities are poor in both villages. Most villagers do not have latrines, using the bush surrounding the villages instead. There is only one latrine in "L" and only a few in "H." All are privately built and owned, although it appears that some of them are used by villagers from outside the owners' compounds.

"H" seems to have more socioeconomic stratification than "L." There is a greater range in types of housing; some prosperous people have large whitewashed homes with tin roofs, while poorer villagers have small thatched-roof dwellings. Only a few people have cisterns in their compounds. The Ewe part of the village looks much more prosperous than the Kabeye part, but within the Ewe section there is still a great deal of variation. The types of clothes vary more in "H" as well; many prosperous men and women have large wardrobes of western clothes.

In "L," villagers seem to be similar in socioeconomic status. The village is relatively prosperous, and many houses have tin roofs and cement cisterns. Most farmers own their land and also raise goats and chickens. There is little variation among houses. There is also little variation among styles of dress. All women and older men wear traditional clothes, while most young men wear western clothes. These villagers have fewer clothes than prosperous "H" villagers, but everyone in "L" seems to have about the same number of clothes.

TOGO: SERVICES AND FACILITIES

There are no rural health centers in either village. The health post nearest to "H" is in a village about 2 km away on the main road and to "L" is 12 km away. Many people in "H" go to Notse, a large town 20 km away, where there is a hospital. In both villages people complain that they need a health post in the village to handle emergencies and to assist women in childbirth. There are traditional healers in both villages, but they were more prominent in "H" even though people had easier access to western medical care. Despite efforts to interview healers in both villages, only two healers from "H" agreed to be questioned. Information from these interviews and from informants in both villages indicated that some traditional practitioners rely mainly on divination, others on conducting ritual cures, others on herbal remedies, and still others on a combination of these elements. The healers interviewed indicated that they respect western medical traditions and often refer people to hospitals for treatment of physical symptoms, while they concentrate on

treating spiritual ones. In both villages, traditional and western medical practices appeared to coexist comfortably.

INDONESIA: GEOGRAPHICAL CHARACTERISTICS

Both village study sites are located in the western part of Java in a mountainous area. The high ORT village ("H") is 17 km northeast of the district capital city. It is divided into five hamlets which are clustered close together off a main road that connects two cities. The main transportation is a public minibus.

The low ORT village ("L") is 45 km south of the district capital city. A main asphalt road runs through it. A minibus is the main form of transportation to the nearest subdistrict town. To go further, people have to ride a horse-drawn cart to the closest small city and then use a public bus. This village is divided into about 8 widely scattered hamlets, linked by a rutted gravel road. A few hamlets are across an unbridged river. Only hamlets along the main road are easily accessible by vehicle; people must go on foot to reach many of the isolated hamlets.

INDONESIA: ORGANIZATIONAL STRUCTURE

The organizational structure in both villages is based on a traditional pattern, with some modifications due to the government's reformulation of village organization. The village administration consists of a village headman, assisted by a village secretary and village office staff. There are also some activity/social groups that are responsible for specific issues or activities in the village such as the women's organization, youth organization, and the village community endurance institution. The village deliberation institution consists of many informal leaders from different parts of the village who function as an advisory board to the headman on matters concerned with development. The hamlet headman is a vital link between the village headman and the hamlet. His role is to transmit ideas for village development from village to hamlet level, and vice versa.

The headman in "H" has been in office for about 20 years and the headman in "L" for about three years. Their differing levels of experience affect their performance in administering the village organization.

In both villages, decisions are normally made through a process of deliberation and consensus. Regular meetings are held among hamlet headmen, village officers, and chiefs of activity groups. Anyone may initiate ideas for discussion at these meetings. All village officials and family heads attend a yearly meeting to legitimize any prior decisions made.

INDONESIA: DEMOGRAPHIC CHARACTERISTICS

According to the village secretary's record, the population of "H" in 1986 was 2380, of whom 1160 were male and 1220 were female. The number of infants was 31 (1.3%), children under 5 was 169 (7.1%), children between 6 and 14 was 487 (20.5%), adults between 15 and 55 was 1508 (63.4%), and adults over 55 was 185 (7.8%).

In "L," the village secretary recorded the population as being 5334, of whom 2596 were male and 2738 female. The number of infants was 127 (2.4%), children under 5 was 452 (8.5%), children between 6 and 14 was 1475 (27.7%), adults between 15 and 55 was 3025 (56.7%), and adults over 55 was 255 (4.8%).

INDONESIA: SOCIOCULTURAL CHARACTERISTICS

The people of both "H" and "L" are Sundanese, although a small number of other ethnic origin are found in both villages. In both villages practically all are Moslems and the majority speak Sundanese. However, most people in "H" also speak Indonesian, the official language of the country, making it easier to communicate with outsiders. Fewer people in "L" speak Indonesian. Both villages have a traditional social practice called *gotong royong* or "mutual self-help philosophy," which means that many activities in the community should be undertaken by all village members to lighten the load.

INDONESIA: SOCIOECONOMIC CHARACTERISTICS

The main occupation of the people in "H" is farming; rice is the leading crop and source of income, supplemented by cassava, sweet potatoes, and peanuts. Villagers also grow a large variety of fruits in their own yards for sale. Since crops are harvested at different times throughout the year, people have a source of income all year long. Some people work as government employees, small businessmen, and tenant farmers.

Occupations in "L" vary more than in "H." Many of the people, particularly young people who live nearest to the bigger subdistrict town, work in factories. People who live further from the town work as tobacco farmers or paddy farmers. Government employees, small businessmen, and sharecroppers are also found.

INDONESIA: SERVICES AND FACILITIES

The main health facility in "H" is a health center in the subdistrict town 2 km away from the farthest part and about 150 meters from the closest part of the village. The educational facilities are two public elementary schools, one public secondary school, and one religious secondary school inside the village.

In "L," there is a small hospital about three km away, reached by an asphalt road. The main hospital is about eight km away, reached by a small gravel road. The health center is about two km away in the subdistrict town. Six elementary schools and three religious elementary schools are the main educational facilities inside the village. At least one school is located in each section of the village. The nearest secondary school is at the subdistrict town.