WATER AND SANITATION
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COMMUNITY PARTICIPATION IN WATER SUPPLY PROJECTS AS A STIMULUS TO PRIMARY HEALTH CARE: LESSONS LEARNED FROM AID-SUPPORTED AND OTHER PROJECTS IN INDONESIA AND TOGO

WASH TECHNICAL REPORT NO. 44

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by

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Table of Contents

Table of Contents (cont'd)

GLOSSARY OF ACRONYMS

CCCD	Combatting Childhood Communicable Diseases Project
DPT	Diphtheria pertussis tetanus vaccine
EEC	European Economic Community
EPI	Expanded Program of Immunization (funded by USAID)
FED	Fonds Européen de Développement (European Development Fund--European Economic Community)
IDRC	International Disease Research Centre
INPRES	Indonesian Government program in water supply and sanitation
IRC	International Resource Center for Water Supply
ORT	Oral Rehydration Therapy
PAHO	Pan American Health Organization
SRI	Social Research - Indonesia
UNC	University of North Carolina at Chapel Hill
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	Water and Sanitation for Health Project
WHO	World Health Organization

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EXECUTIVE SUMMARY

Overview

This report summarizes research on the influence of community participation in water supply projects on the subsequent participation of community members in other primary health care and child survival activities. Field research focused on four projects (AID-supported and other) in Indonesia and Togo, but the findings are important for all primary health care, child survival, and water supply policy-making and programming.

The full report of this research, which is only summarized here, is available from WASH as Working Paper No. 42.

Background and Significance

Field experience strongly suggests that how a water supply project is implemented in a community may not only have a direct effect on the community during the life of the project, but also may affect future activities introduced to the community. Experience indicates that, where water supply and sanitation projects meet an important "felt need" of the community, they provide an effective entry point for primary health care activities in that community and thereby increase the impact of primary health care interventions. Improving a community's water supply may thus not only improve health through clean water but may also serve as a stimulus or catalyst for increasing participation in other primary health care activities. Previously, however, there has been little if any systematic research to describe and document the precise relationship between water supply projects and subsequent primary health care efforts.

Purpose of the Study

The present study was thus designed to answer the following broadly stated question: What is the overall relationship between a community's participation in a water supply project and that community's subsequent participation in other primary health care activities? A second purpose was to develop a conceptual framework for understanding, operationalizing, and evaluating community participation.

Methodology

The study was a field-based investigation that took place from September 1985 to November 1986. To answer the above question, researchers examined the involvement of communities in a water supply project and then in primary health care activities introduced after the project. Field research was conducted in Togo and Indonesia, and results were analyzed at the School of Public Health at the University of North Carolina at Chapel Hill. Field data were collected from 60 villages--30 in each country. Of the four water

projects examined, two have been funded by the U.S. Agency for International Development (AID)--the Togo Rural Water Project and the CARE-USA Rural Water Supply Project in Indonesia. In each country, the 30 villages were of three types:

1. Villages in which participatory water supply projects had been carried out. (By "participatory water supply project" is meant a project that involves community members in making decisions about the planning, implementation, construction, and operation of the water supply systems created or improved by the project.)

2. Villages in which non-participatory water supply projects had been carried out. (By "non-participatory water supply project" is meant a project that does not involve the beneficiary community in making decisions about the planning, construction, and operation of the system.)

3. Control group villages in which no water supply project had been carried out.

The study tested the following hypothesis: Communities that participate in decision-making during all phases of a water supply project will display higher rates of participation in primary health care activities than similar communities where there has been no participatory water supply project. To measure participation in subsequent primary health care activities, DPT (diphtheria, pertussis, tetanus) series completion rates were chosen as an indicator and compared in the 60 villages after exposure to regional vaccination programs.

Major Findings and Conclusions

1. Significantly more children completed the DPT immunization series in the communities in which participatory water supply projects had been carried out than in the communities where no water supply project had been carried out (or in which only a non-participatory water project had been implemented).

   a. In Indonesia and Togo, DPT series completion rates in the communities where participatory water supply projects had previously been carried out were consistently higher (55-60 percent) than in the communities where only non-participatory water projects had been carried out.

b. In Indonesia, DPT series completion rates in the communities where non-participatory water supply projects had previously been carried out were similar to completion rates in the control villages where no water supply project had been carried out.

2. General conclusion: the "stimulus effect." Participatory water supply projects (water supply projects that emphasize community involvement) appear to have a "stimulus effect" on a community's subsequent involvement in primary health care activities. Participation in immunization and perhaps other primary health care and child survival activities is greater in communities in which participatory water supply projects have been carried out than in communities where no water supply project has been carried out.

3. Water supply projects without community participation do not have the same stimulus effect as participatory water supply projects--those that involve community participation.

4. Other findings from the field research constitute an unusually rich source of detailed data on community participation and the amount of time and project resources needed to achieve effective participation.

Major Recommendations

For policy and programming:

1. This secondary "stimulus effect" of participatory water supply projects should be recognized as increasing the overall health impact of improved water supplies brought about through a community-based strategy.

2. This "stimulus effect" should also be recognized as an important contribution to child survival and other primary health care efforts. This secondary influence from one kind of health effort to another is increasingly important as resources become more scarce.

3. Given the need to increase the participation of rural people in primary health care and child survival activities, a community participation strategy should be developed to link water projects with other health activities being introduced in rural communities. This strategy needs to be long-range and sequenced.

WHAT ABOUT OTHER FACTORS? FEMALE?

For evaluation:

4. Guidelines for evaluating community participation in all primary health care projects, including water supply projects, should be developed and distributed.

For further research:

5. The present study should be replicated in other countries, and additional studies should be conducted in Indonesia and Togo to further verify the trend shown in this study.

Project Design and Policy Implications

1. To be effective and sustained, a water supply project must have community participation.

2. Community participation must be integrated with the hardware components of a water supply project and must be planned with equal care.

3. Health interventions are adopted more readily by community members when the project begins with activities that are a community's felt need. Water is always a felt need.

4. Planners can sequence primary health care and child survival activities according to a more specific logic and effective sequencing.

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Chapter 1

INTRODUCTION

1.1 Rationale for and Significance of the Study

Water supply projects in developing-country communities play multiple roles, influencing lifestyles, health status, and economic development. In determining the eventual impact of a water supply system, the human factor is key. The strategy chosen for improving a community's water supply may have not only a direct effect on the community during the life of the project but may also have an indirect effect on activities subsequently introduced to the community by other types of projects.

Advocates of community participation emphasize that involving members of the intended beneficiary community in decisions related to planning and implementing a development project increases the project's effectiveness and impact. Such participation yields a community more aware of the need for certain changes in behavior, more willing to alter their lifestyles or community practices accordingly, and more eager to sustain project achievements after foreign donor funding comes to an end.

Participatory water supply projects often have secondary effects and impacts beyond their primary effect of extending the availability of safe water and reducing the incidence of water- and sanitation-related disease. One of these effects, of course, is creation of a system that is sustainable and that remains in operation after the donor-sponsored project has come to an end. But there may be other important secondary effects and impacts as well.

Water supply projects that emphasize community participation may facilitate entree into the community for future development activities. A participatory water supply project that meets a felt need in the community can create and strengthen the decision-making and communication patterns that often pave the way for the introduction of other innovations. Thus, a participatory water supply project might improve health not only by reducing the incidence of water- and sanitation-related diseases, but also by increasing the acceptance and use of other primary health care and child survival initiatives.

Reported project and related field experiences strongly suggest such a link between water supply projects and subsequent primary health care efforts. Review of the current health and development literature also supports the idea that such a link exists, although this does not appear to have previously been researched or documented. This "secondary effect" may be a critical part of the overall health impact of water supply projects. If information about this secondary effect were available, then planners could sequence primary health care and child survival activities in a more logical and effective way.

1.2 Purpose of the Study

The present study was designed to answer the following broadly stated question:

> What is the overall relationship between a community's participation in a water supply project and that community's subsequent participation in other primary health care activities?

A second purpose was to develop a conceptual framework for understanding, operationalizing, and evaluating the social and behavioral phenomena of community participation. This was judged necessary because there is little consistency in how community participation is conceptualized and then measured and evaluated in U.S. Agency for International Development (AID)-supported and other projects.

1.3 Definitions

There are two basic strategies for development projects: one emphasizes community involvement and participation, the other emphasizes the role of "outsiders."

By "participatory water supply project" is meant a project that involves community members in making decisions related to the planning, financing, implementation, construction, and operation of the water supply system created or improved by the project.

By "non-participatory water supply project" is meant a project in which specialists and funders from outside the community make all the decisions related to planning, implementation, and evaluation of the water supply system. This kind of project emphasizes rapid installation.

Chapter 2

CONCEPTUAL FRAMEWORK FOR ANALYZING AND EVALUATING COMMUNITY PARTICIPATION

2.1 The Need for a Conceptual Framework

Many health projects use participatory strategies, and much has been written about community participation. But "participation" is not consistently conceptualized, measured, or evaluated in projects that use it. Participation encompasses numerous activities and situations, leaving much room for confusion about how participation is provided, what effect it has, and to what degree it exists in a given project. Related terms such as "felt needs," "bottom-up planning," "motivation," and "integrated development at the village level" refer to highly complex concepts, but are used in different ways by different people (Feachem 1980; Uphoff, Cohen and Goldsmith 1979). Sound analysis or evaluation of any aspect of community participation requires a coherent conceptual framework.

2.2 Degree of Participation

Most water supply projects use some degree of community participation to achieve their objectives. The solid line in Figure 1 illustrates the direct relationship between water supply, community participation, and health practices. However, the effects of community participation brought about by activities in the water sector may extend beyond water-related health practices. As a community learns new skills in working together with outside personnel and resources, its response to other primary health care activities may change. The broken line in Figure 1, connecting community participation in improved water supply to participation in primary health care activities, illustrates this secondary effect.

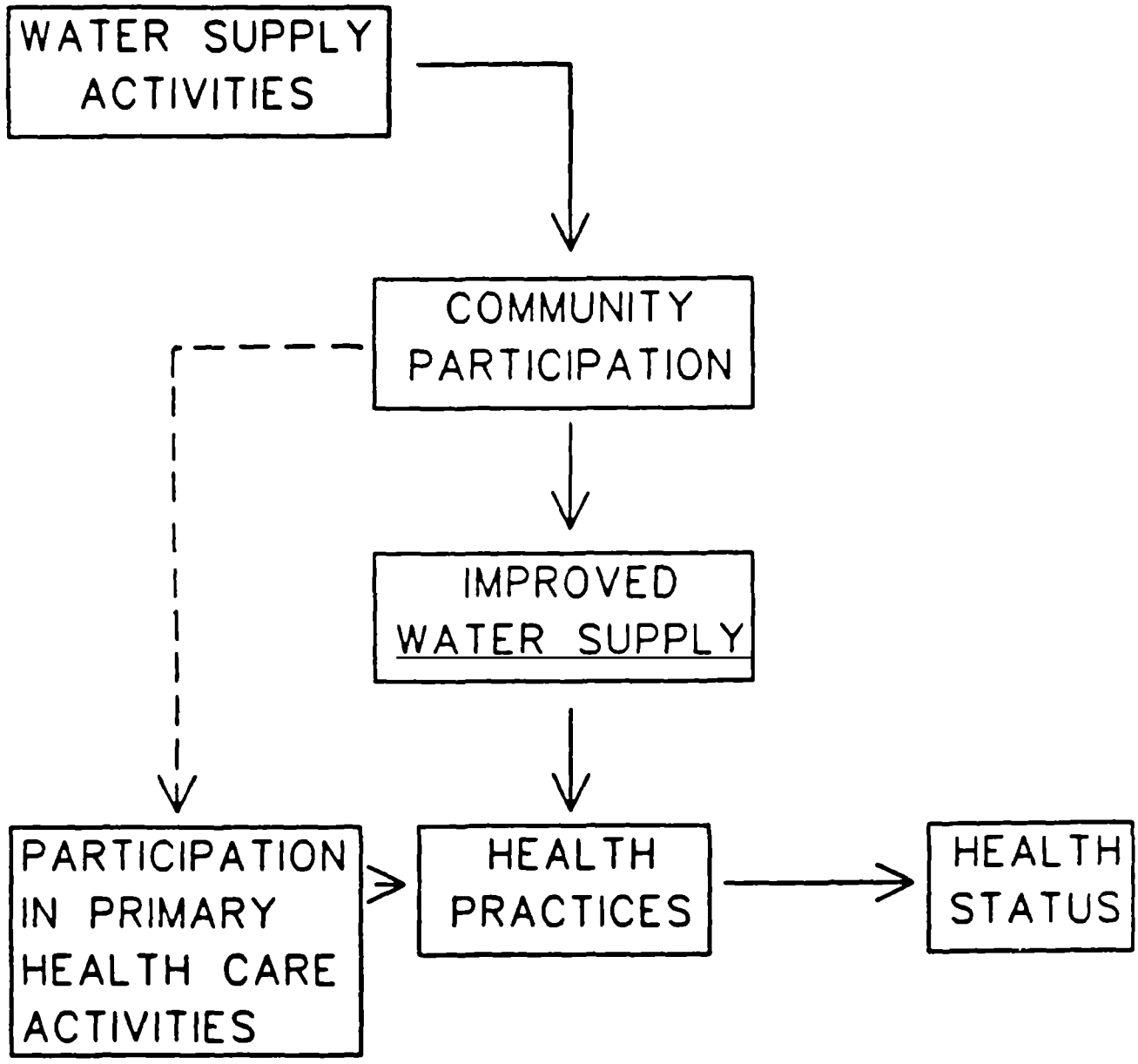
The nature and extent of participation encouraged by a water supply project varies. This ranges from minimal participation--outsiders soliciting the community's land, labor, or materials--to fully involving the community in decision-making throughout all phases of the project. Community participation is not simply a yes/no variable that is either present or absent. Rather, community participation occurs in varying degrees.

2.3 The Dimensions and Context of Participation

To analyze community participation in the water supply projects investigated, the following conceptual framework was developed. An expansion of a model developed by Norman Uphoff, John Cohen, and A. Goldsmith, this framework also draws on other models developed by Sherry Arnstein and Susan Rifkin (see Appendix A).

FIGURE 1

The Relationship between Water Supply Activities
and Community Participation



The model begins by breaking participation down into several "dimensions" and "contexts" (see Figure 2). "Context" includes the project's task environment--specifically the historical, ecological, and social factors that strongly affect patterns of participation. "Context" also includes the relationship between the project itself and the patterns of actual participation that emerge. The "dimensions" of participation provide a detailed description of the process, telling what kind participation is taking place, who is involved in the participatory process, and how the participatory process is actually carried out.

The "who" dimension is important to understand. When the "rural poor" are expected to participate, it is often unclear exactly who in this large and heterogeneous group is actually meant. The general types of participants are local leaders, local residents, government personnel, and foreign personnel. The amount, distribution, and trends of participation can be assessed basically by looking at the "who" and "what" dimensions. These dimensions may be seen as variables that represent the critical actors and components of participation in a project. These include participation in decision-making, in implementation, in benefits, and in evaluation.

The "how" dimension addresses how participation takes place, continues, or declines, and why it has the particular patterns that it does. The how dimension includes:

1. The Basis of Participation: Does the initiative for participation come mostly from above or below? Are the inducements for participation more voluntary or coercive?

2. The Form of Participation: Participation can be individual or collective, with formal or informal organizations. The form participation takes often changes over time.

3. The Extent of Participation: Participation may range from a single event to an intermittent or continuous stream of activities.

4. The Effect of Participation: People are empowered when they are involved in decision-making and implementation.

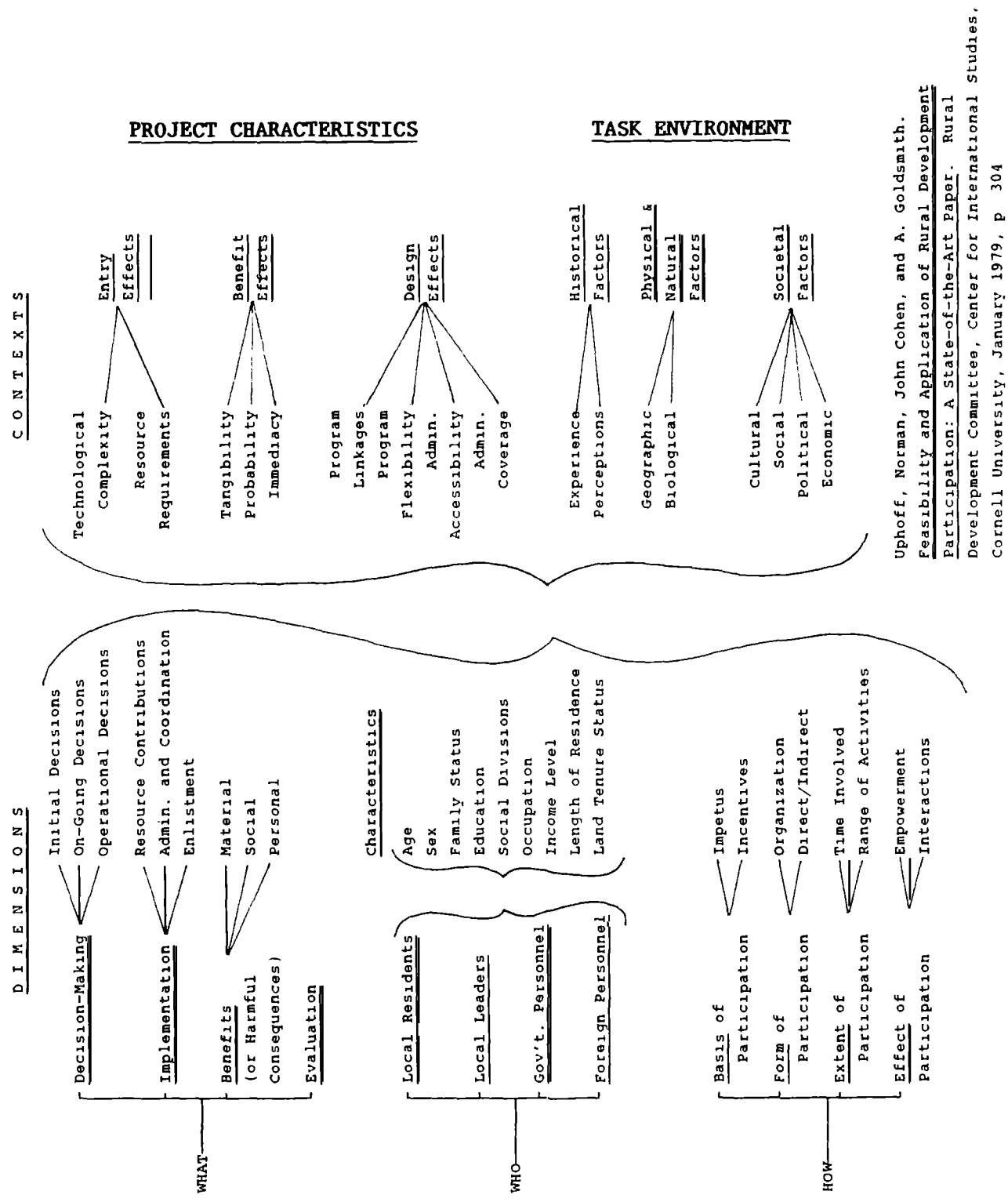
2.4 Planning and Training for Participation

Also to be identified are the original intention of the project planners to gain community participation and the training of health workers to elicit community participation.

It is essential for project planners to include participation among the objectives they hope to achieve through the project and to devise a basic strategy to achieve participation. Participation does not happen by accident but must be the intended goal of planners.

FIGURE 2

The Context and Dimensions of Participation



Uphoff, Norman, John Cohen, and A. Goldsmith. Feasibility and Application of Rural Development Participation: A State-of-the-Art Paper. Rural Development Committee, Center for International Studies, Cornell University, January 1979, p 304

A number of questions can be asked about planners' intentions:

- What activities did the planners intend community members to participate in?
- Who was to participate in each activity?
- How did the planners intend this to occur?

In looking at training, the following questions may be asked.

- Who is to be trained?
- What is to be conveyed through the training?
- How are training content and methods determined?

Assessing intention and training along with implementation more fully explains project outcomes as well as differences among projects. Placing community participation within a framework leads to a more analytic description and operationalization of participation in a water supply project. This framework can ultimately provide planners of water supply projects with more useful information on how to evaluate the primary and secondary influences of participatory interventions.

Chapter 3

THE FIELD RESEARCH

3.1 The Research Design

The study used a cross-sectional, quasi-experimental design to compare participation in primary health care activities in three groups of villages in each of two countries:

- villages with a participatory water supply project,
- villages with a non-participatory water supply project, and
- villages with no improved water supply.

The study aimed to find out whether or not a participatory strategy in implementing a water supply project would affect the extent to which a community would utilize other primary health care services. To measure this effect it was necessary to choose a primary health care intervention that is not influenced by the direct impact of a water supply project and for which reliable data exist in the individual villages.

Participation in an expanded program of immunization (EPI) was chosen as the indicator or measure. However, full immunization coverage was not used as an indicator because the coverage levels would be too low to show much variation. The study therefore used the percentage of children who had completed the DPT (diphtheria, pertussis, tetanus) immunization series as an indicator. This series of three injections requires more sustained participation over time and therefore demands more extensive social and behavioral changes than a one-time vaccination.

The study made the following hypotheses:

1. Communities that participate in decision-making during all phases of a water supply project will display higher completion rates of the DPT vaccination series than will similar communities where non-participatory water supply projects have taken place.

2. Communities where non-participatory water supply projects have taken place will display completion rates of the DPT vaccination series that are similar to those of communities where no water supply project has taken place.

3.2 Country Selection

Countries for collection of field data were selected after careful review of project documents and interviews with project directors. The criteria for selection were as follows:

1. There had to be "similar" areas in the country in which
   - a successful participatory water supply project had been carried out at least two years previously,
   - a successful non-participatory water supply project had been carried out at least two years previously, and
   - no improved water supply existed.
2. Immunization and other primary health care activities had to be ongoing in the areas.
3. There had to be a local social science expert available to collaborate in the research.
4. The local USAID Office of Health, AID/Washington regional bureaus, and other missions had to exhibit interest in the research.
5. Verifiable sources of data on primary health care outcomes had to exist in the country.
6. The sponsoring donor agency had to be willing to supply project documentation.

The following countries were initially identified as having had good participatory water supply projects: in Africa, Burundi and Togo; in Asia, Nepal, Indonesia, and Sri Lanka; and in Latin America, Bolivia, Colombia, and Guatemala. On the basis of intensive document review and discussions with project directors and staff involved in the projects and knowledgeable personnel in other organizations,* this list was narrowed down to projects in only five countries: Burundi, Togo, Indonesia, Colombia, and Guatemala. Finally, projects in Togo and Indonesia were chosen.

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* CARE, the U.N. Development Program (UNDP), the International Disease Research Centre (IDRC), the World Bank, the U.N. Children's Fund (UNICEF), Agua del Pueblo, the Pan American Health Organization (PAHO), the World Health Organization (WHO), and the International Reference Center for Community Water Supply.

3.3 The Projects in Togo

In Togo, the participatory water supply project chosen for analysis was the Togo Rural Water Project, which began in 1980 with a scheduled project completion date of December 1987. It is funded by AID and the European Economic Community (EEC) and housed in the Ministry of Health and Social Affairs. The purpose of the project is to improve the health and living conditions of 120,000 rural persons living in two regions of Togo (about 150 villages in the Savannah region and 250 in the Plateau region). The project has drilled 535 tube wells, equipped 400 wells with foot pumps, and provided a complementary "socio-health" component.

The "socio-health" component is primarily a community organization effort which involves villagers in a series of organizational, technical, and human relations activities. Togolese social affairs agents initiate most of these activities after receiving extensive training in community-organization and health-education skills. Community participation is defined as a continuous learning process which makes possible community action for the resolution of local health problems.

By mid-project, 80 percent of the planned boreholes had been completed, of which 80 percent were positive. Also, 350 village health committees had been formalized and their officers trained. Of these 350 committees, 80 percent had set up funds to maintain the foot pumps.

The non-participatory water supply project selected was a limited-contact project that the EEC had previously initiated in the Plateau region: the Fourth FED (Fonds Européen de Développement) Water Supply Project. In this project, external teams drilled tube wells and installed pumps in villages needing better water supplies. No community participation was sought, and no effort was made to organize a community-based system for maintaining the pumps.

Control group villages were drawn from a Ministry of Health and Social Welfare list of villages not served by improved water supplies.

The Togolese field collaborator for the study visited each village and verified its water-supply status. Lists of villages in each of the three categories were arranged by prefecture (an administrative unit) and a stratified random sample was drawn of 10 villages in each category, for a total of 30 villages (see Appendix B for a list of study villages).

The Plateau region is also being served by the AID-funded Combatting Childhood Communicable Diseases (CCCD) Project. One of the CCCD interventions is increased vaccination coverage. A July 1984 baseline survey found that only 12.4 percent of children aged 13-24 months had completed the DPT immunization series. In 1985, immunizations were made available in the Plateau region, subsequent to the Togo Rural Water Project.

3.4 The Projects in Indonesia

Villages in the participatory water supply project category all had been part of the CARE-USA Rural Water Supply Project in the province of West Java. CARE-USA has been involved in water supply projects, with AID funding, since

1979 in three areas of Indonesia: Bali, Java, and Nussa Tenggara Barat-Lombok. CARE, whose development philosophy stresses community involvement and participation, works intensively with a community during the implementation of a water supply project, with the average length of contact in a village being one to two years from start to finish. CARE employs Indonesian field-workers to carry out much of the community organization and education activities of the project. These workers often live in the village during the construction of the water supply system, participating in village life and in building the water supply system and involving local political, religious, and informal leaders in planning and implementing the project.

Initially CARE selected villages on the basis of discussions with regional government leaders. However, as news of the available service spread, CARE workers were approached directly by village leaders asking for help in improving their village water supplies. By 1985, CARE had installed 90 gravity water supply systems and 880 handpumps as well as some shallow-well and deep-well handpump systems and a few rainwater catchment systems.

The non-participatory water supply project villages were drawn from villages that had been part of the INPRES program, an Indonesian government program controlled, essentially, by the office of the president. INPRES funds primary health care activities, including hygiene and sanitation projects that are largely non-participatory. Water supply projects begin at the puskesmas (community health center) where a sanitarian is on staff to work with local government officials. Typically, a community leader approaches the sanitarian for assistance in improving the community's water supply. Funds may be solicited from the government Health Department and the sanitarian distributes these to the village leaders. The sanitarian supervises the water supply project and recruits local labor for construction. Villagers receive a small fee for their work. A community participation philosophy is not usually emphasized.

A sample of ten CARE villages was selected from a verified list, which had been stratified by district. The CARE villages selected were then matched with villages that had participated in the INPRES program and, for a control group, villages that had not been served by improved water supplies. Criteria for matching the villages were similarity in population size and socioeconomic status, distance from a health center, and location in the same district. The Indonesian field collaborator for the study visited each village to verify its similarity to others in the sample. (The villages selected are listed in Appendix B.)

3.5 Sites Selected

To summarize, field data were collected from 60 villages--30 each in Togo and Indonesia. The four projects or programs examined were the following:

AID-funded projects:

- the Togo Rural Water Project, and
- the CARE-USA Rural Water Supply Project in West Java, Indonesia.

Projects funded by others:

- the Fourth FED Water Supply Project in Togo, and
- the Government of Indonesia's INPRES water supply program.

In each country, the 30 villages were of three types:

1. Participatory water supply villages: 10 villages in which participatory water supply projects had been carried out:
   - in Togo, the Togo Rural Water Project, and
   - in Indonesia, the CARE-USA Rural Water Supply Project.
2. Non-participatory water supply villages: 10 villages in which non-participatory water supply projects had been carried out:
   - in Togo, the Fourth FED Water Supply Project, and
   - in Indonesia, the INPRES water supply program.
3. Control group villages: 10 villages in which no water supply projects had been carried out.

In each country, the 30 villages chosen for the study were selected because

- they were all located in the same region of the country (West Java in Indonesia and the Plateau region in Togo),
- they were believed to be comparable demographically, and
- they were believed to be comparable in distance from a clinic or health post where primary health care services are available.

Both the participatory and the non-participatory water supply villages had been exposed to a similar primary health care activity (the vaccination

program) after their improved water supply systems had been completed. The control villages had also been exposed to the vaccination program but had not been served by a water supply project.

3.6 Data Collection

Field data were collected from three sources: community leaders, the field-workers involved in the participatory projects, and immunization records.

3.6.1 Interviews with Community Leaders

Community leaders in both participatory and non-participatory water project villages were interviewed to gain a community perspective on the process of implementing the water supply project. Interviews were conducted with the village chief and one male and one female village leader. A sixteen-item community leader questionnaire was designed to assess issues and behaviors relevant to community participation, both in the water project and during the years surrounding its implementation.

The questionnaires were administered as a semi-structured interview in a casual conversational format, since many of the respondents were not literate. Interviewers were trained to conduct a conversation with respondents, putting them at ease and weaving the questions into the natural flow of the interaction. Interviews were conducted on a one-to-one basis and took 30 to 45 minutes. At the end of the interview, the interviewer completed the interview checklist/questionnaire.

Questions concerned the general experience of the community in terms of collective activities, including community groups in existence and community projects undertaken before and after the water supply project. A series of questions was also asked to determine the level and nature of the involvement of the community in specific phases of the project. Respondents were asked to state who was involved at various phases of the project, to describe the project itself and the length of time it took to complete the water system, and to list the permissible uses of water from the system.

Sustainability issues were also investigated. Respondents were asked how the water system is repaired and how the community handles the acquisition of spare parts.

In villages that were part of the Togo Rural Water Project, respondents were also asked questions specifically about the project, i.e., how the wells committee was functioning, the contributions of villagers to the maintenance of the system, and the interest of villagers in micro-projects that followed the installation of the wells.

3.6.2 Interviews with Field-Workers

Field-workers from participatory projects were also interviewed, using essentially the same format as the community leader questionnaire. To better understand the amount of follow-up given to the village, field-workers were

asked to comment on their contact with the village after the project. (Non-participatory project villages did not have field-workers assigned to them, and thus these interviews were only conducted in the participatory villages.)

3.6.3 Immunization Records

In both Togo and Indonesia, immunization data were collected on the DPT series vaccination. In Indonesia, records are kept on the DPT status of children aged 3-14 months, while in Togo the CCCD Project collected information on children 12-36 months. This difference in age groups is not significant for the study, however.

In Indonesia, field collaborators reviewed records maintained in each puskesmas for villages within its jurisdiction. Several years of records were examined to decide which year of data would be the most reliable (judged by assessing the completeness and neatness of records as well as by when the personnel had received training in record-keeping). A copy of these records and a summary of the data were sent to the principal investigators at the University of North Carolina at Chapel Hill (UNC) to verify how the rates had been calculated and to agree on the most reliable year.

In Togo, because similar records were not available for each community in the study, data were collected by interviews with mothers in each village. (The data collection methodology used by the CCCD Project in collecting immunization information from mothers was used.) Basically, the village chiefs were informed in advance by project field-workers as to when interviewers would be arriving. The chiefs then called together the mothers of all children aged 12-36 months and asked them to bring their children's birth certificates (to verify the child's age) and vaccination cards with them. Using a special form, the interviewer then extracted the information about each child in the community from the vaccination cards. If a mother did not have a card, the interviewer was trained to ask her if the child had received the first, second, and third DPT shots and the dates when they were received. However, such reports were presumed less reliable than vaccination card information. If mothers did not have birth certificates, then interviewers checked program records from the Ministry of Health and Social Affairs, CATHWEL agents, or auxiliary midwives. Moreover, interviewers did not record data for children who did not appear physically to fall within the age range of 12-36 months, even in the face of a documented birth date.

Chapter 4

FINDINGS

There are two major categories of findings: findings concerning participation in water supply projects and findings concerning participation in immunization.

4.1 Participation in Water Supply Projects

Findings related to the dimensions of community participation in the water supply projects constitute an unusually rich source of detailed data on community participation. These findings describe

- the kinds of community groups community members participated in,
- participation in community projects before the water supply project,
- the kind of participation during specific phases of the water supply project,
- participation in community projects after the water supply project,
- decision-making responsibility during the project,
- the permissible uses of the water supplied (i.e., for drinking, cooking, bathing, washing clothes or utensils, brick-making, watering of gardens, agricultural/commercial uses, and health/community development uses),
- who is responsible for repairs of the water system,
- the length of time needed to complete the project,
- the length of time to repair the system, and
- how repairs and spare parts are paid for.

4.2 Participation in Immunization

4.2.1 Validity of the Sample

The data collected verified that the three groups of villages were, with one exception, similar in terms of the selection criteria and thus constituted a valid sample.

In Indonesia, the three groups of villages were proven similar in terms of their average population size (CARE: 3,104, INPRES: 3,034, control: 3,444); their distance from a health center (an average of 6 kilometers away in each group); and the number of children aged 3-14 months (CARE: 74, INPRES: 83, and control: 83). The 30 villages in the three groups represented a total of 94,820 people.

In Togo, the villages in the participatory and non-participatory groups were similar. The villages in all three groups appear to have had the same number of children aged 12-36 months (an average of 39 in each group). The AID project villages and the Fourth FED Water Project villages appear similar in terms of the other criteria also (the average population being 856 and 1,025 respectively and the distance to a health clinic being 8 and 10 kilometers, respectively).

In Togo the control villages, however, turned out to be somewhat dissimilar on two counts, and so they were excluded from further analysis. They turned out to be smaller (average population of 585) and also closer to a health clinic (5 kilometers away). Analysis of the relationship between distance to a clinic and DPT completion rates showed that DPT completion rates were nearly twice as high for villages less than 10 kilometers from a health post as for villages more than 10 kilometers from a health post. In addition, only 68 percent of the mothers interviewed in the control villages had vaccination cards, as compared to 96 percent of the mothers in AID project villages. Reliance on mothers' reports could have had an inflationary influence on vaccination information. Hence it was concluded that no further analysis of the control villages in Togo was warranted.

4.2.2 Comparison of DPT Series Completion Rates

In both Indonesia and Togo, villages in the participatory water supply project groups had consistently higher DPT series completion rates than villages in the non-participatory groups (see Figures 3 and 4).

In Indonesia, 60 percent of the children aged 3-14 months in the CARE project (participatory) villages had completed DPT series, in contrast to only 49 percent in the INPRES (non-participatory) villages.

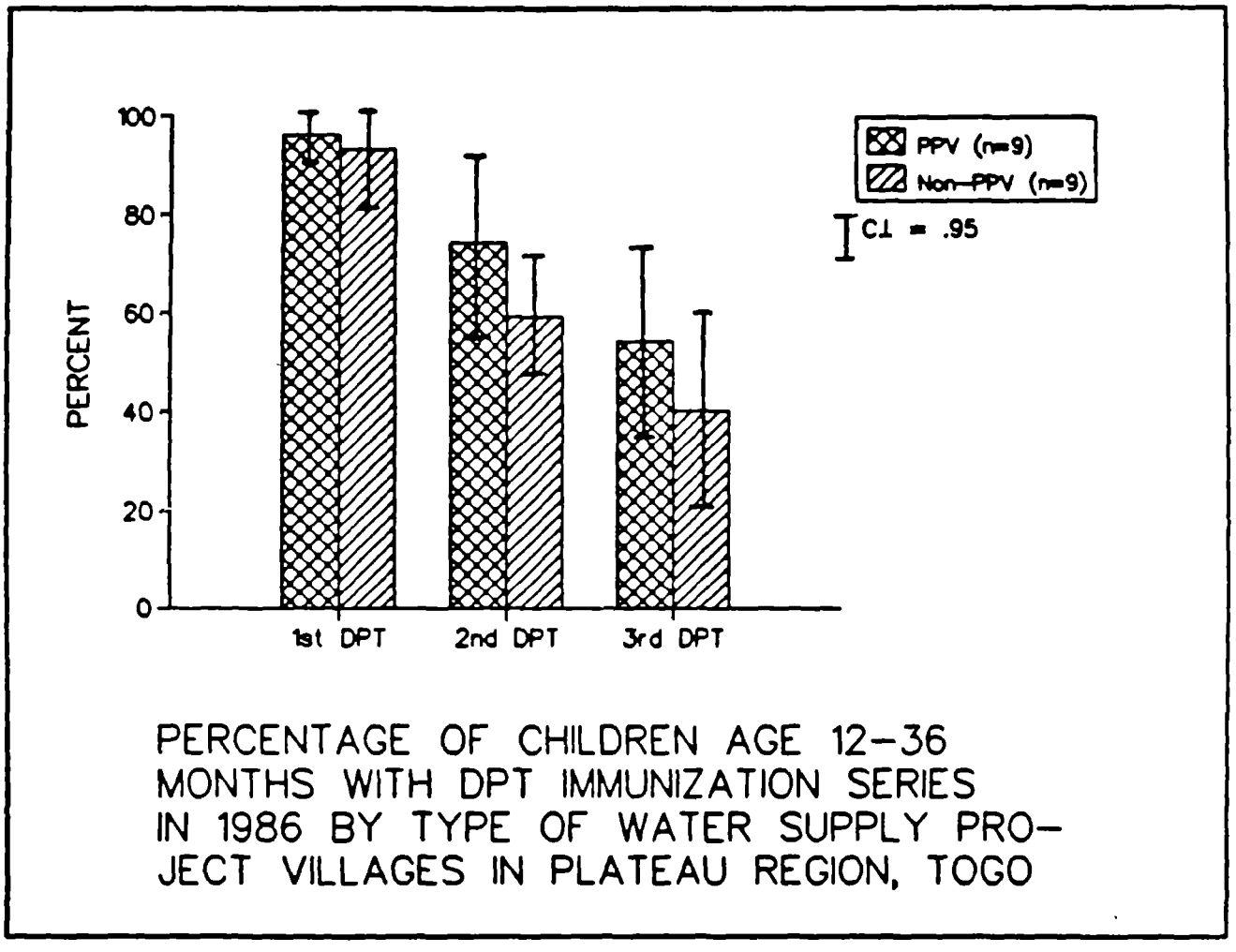
Results were similar in Togo. There 55 percent of the children aged 12-36 months in the Togo Rural Water Project (participatory) villages had completed DPT series, in contrast to only 40 percent of the children in the same age group in the Fourth FED Water Project (non-participatory) villages.

These data support the first hypothesis: communities that have had participatory water supply projects will have higher percentages of children who have completed the DPT immunization series than villages with non-participatory water projects.

In Indonesia, villages in the non-participatory water supply group (INPRES) had essentially the same DPT completion rate (49 percent) as did the control villages (those with no water supply project). These data support the second hypothesis: communities where non-participatory water supply projects have taken place will have DPT series completion rates similar to those in communities where no water supply project has taken place. In Togo, given the dissimilarity of the control group, this comparison was not carried out.

FIGURE 3

DPT Series Completion Rates and
Type of Water Supply Project in the Togo Sample

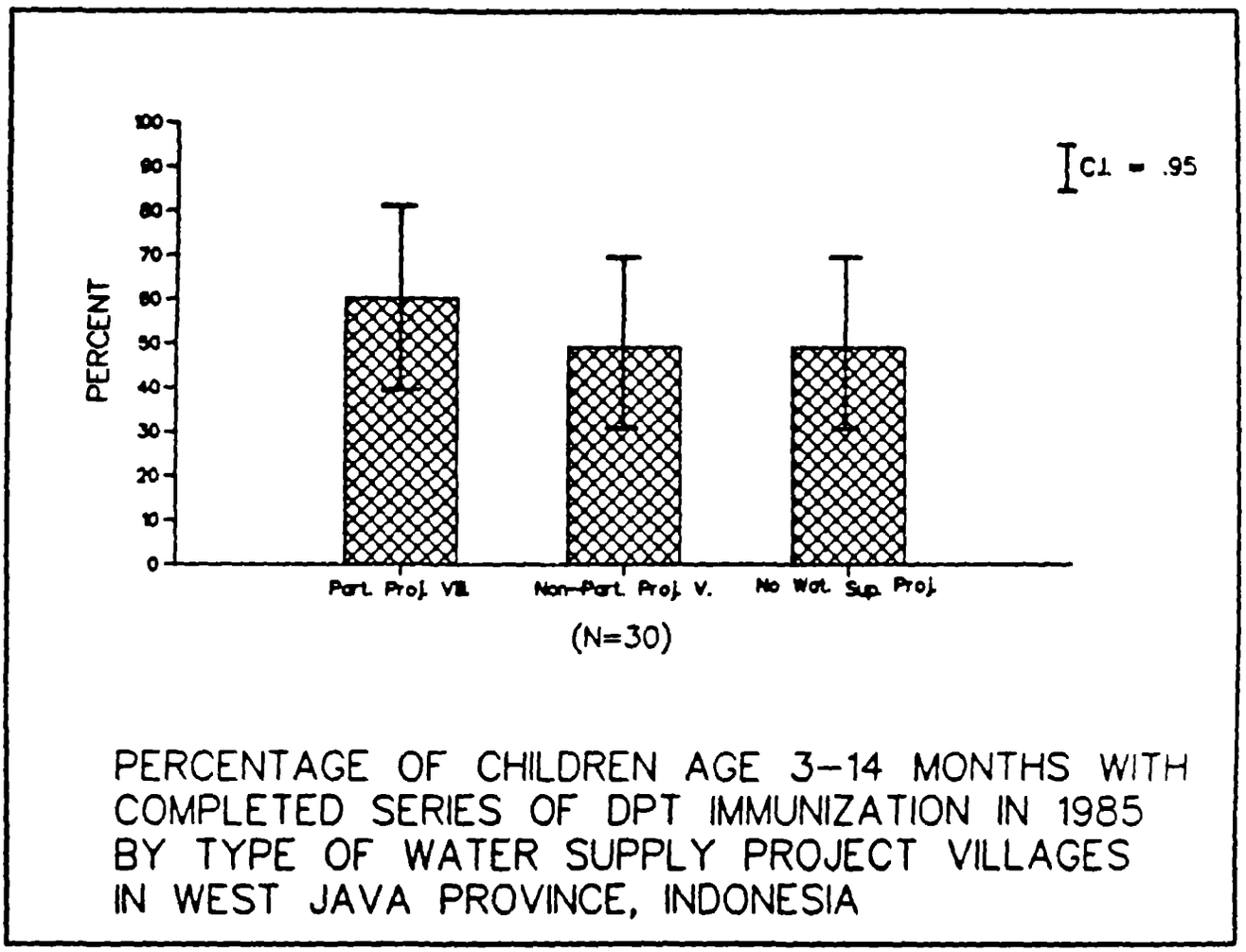


KEY

n = number of villages
C.I. = Confidence Interval
PPV is "participatory project village"
Non-PPV is "non-participatory project village"

FIGURE 4

DPT Series Completion Rates and
Type of Water Supply Project in the Indonesia Sample



KEY

N = total number of villages in sample
C.I. = Confidence Interval

4.3 Discussion of the Findings

These findings constitute important evidence that a community's participation in a water supply project does influence that community's subsequent participation in primary health care services. The fact that similar findings emerge from not just one but two countries strengthens their reliability. The findings do not constitute definitive proof, but the trend is clear.

A possible explanation for the findings is that the villages in the participatory groups were more participatory to begin with and thus would have had higher immunization rates whether or not there had been a water supply project. However, the data do not support this speculation.

The community leader questionnaire ascertained the extent to which villages had had community projects before the water supply project. All had had some involvement in planning, decision-making, construction, and maintenance for a number of different community projects (including school construction, clinic construction, bridge construction, road construction, food growing, and village clean-up). The data show that the study villages in Togo and Indonesia did not differ appreciably in the amount of community project activity that was either ongoing before the water projects had begun or after the water system had been completed.

One might also ask about the influence of the family planning program in Indonesia, which is widely renowned for having built on the age-old tradition of gotong-royong, or mutual self-help, to elicit highly effective community participation. Was it not this family planning program, rather than participatory water supply projects, that paved the way for the higher levels of DPT series completion? In fact, villages in which there had been not only participatory family planning activities, but also a participatory water supply project, showed higher levels of DPT series completion than did the villages that had been involved only in family planning but had no participatory water supply project.

Further interesting comparisons between the participatory and non-participatory villages derive from the responses of field-workers and community members to a matrix of questions designed to assess who was involved in planning the water supply project, who determined the need for it, who built the system, and who maintains it. One might expect that in participatory projects more community members would take part in decision-making than in non-participatory projects, while more outside personnel would be involved in decision-making in the non-participatory projects. The data did not confirm this expectation.

Instead it appears that the two participatory water supply projects elicited a partnership type of community action in which the involvement of community members and outside agency workers was about equal. Moreover, outside workers were involved consistently with the community in all the kinds of decisions that had to be made. In other words, the who, what, and how of participation were almost the same for outsiders as they were for insiders. Specialization of roles was minimal.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions may be drawn from the findings. (For each conclusion, the findings on which it is based are summarized.) The recommendations that follow are addressed to USAID mission development and health officers and to PVO project officers.

5.1 Conclusions

5.1.1 Effect of Participation on DPT Completion Rates

Summary of Findings

In villages that have had participatory water supply projects, consistently higher percentages of children completed the DPT immunization series than in villages that have had non-participatory water supply projects.

In Indonesia, 60 percent of the children aged 3-14 months in the participatory water project (CARE) villages had completed DPT series, in contrast to only 49 percent in the non-participatory water project (INPRES) villages.

In Togo, 55 percent of the children aged 12-36 months in the participatory water project (Togo Rural Water Project) villages had completed DPT series, in contrast to only 40 percent in the non-participatory water project (Fourth FED Project) villages.

Conclusion

These findings indicate that communities in which participatory water supply projects have been carried out will have higher percentages of children who complete the DPT immunization series than communities where non-participatory water projects have been implemented.

5.1.2 Comparison of Non-participatory and Control Villages

Summary of Findings

In Indonesia, villages in the non-participatory water supply project group (INPRES) had essentially the same DPT completion rate (49 percent) as did the control villages (those with no water supply project).

Conclusion

This finding indicates that communities in which non-participatory water supply projects have been implemented will have DPT series completion rates similar to those in communities where no water supply project has been implemented. Water supply projects without community participation are not enough to stimulate participation in EPI services.

5.1.3 Effect of Participation on Primary Health Care Activities

Summary of Findings

In communities in which participatory water supply projects have been carried out, higher percentages of children complete the DPT immunization series than in communities where no water supply project has been implemented (or in which a non-participatory water project has been implemented).

Conclusion

This finding strongly suggests a more encompassing conclusion: communities in which participatory water supply projects have been carried out will have higher levels of participation in subsequent primary health care and child survival activities than in communities where no water supply project has been implemented (or in which a non-participatory water project has been implemented).

5.1.4 The Stimulus Effect

Participatory water supply projects appear to have a "stimulus effect" on that community's subsequent involvement in primary health care activities. Participation in immunization and perhaps other primary health care and child survival activities is greater in communities in which participatory water supply projects have been carried out than in communities where no water supply project has been carried out.

This secondary "stimulus effect" increases the overall health impact of improved water supply brought about through a participatory strategy.

Water supply projects without community participation do not have the same stimulus effect as participatory water supply projects that involve community participation.

5.2 Project Design and Policy Implications

Secondary effects of health efforts is an increasingly important health financing and programming consideration as resources have become more scarce. Given the goal of worldwide immunization by 1990, the secondary "stimulus effect" of participatory water supply projects can be an important contribution to child survival efforts.

Achieving high coverage in oral rehydration (ORT) and immunization programs is a major problem. Accordingly, if community-based water supply projects can have a significant impact on raising immunization levels or increasing the use of ORT, it would be a boon to primary health care.

One of the four strategies identified by UNICEF to increase immunization coverage is "to reduce drop-out rates between first and last immunizations by strengthening community participation." A participatory water supply project may be an important mechanism for improving community participation in immunization services.

Obviously, this does not mean that participatory water supply projects are in any sense the sole strategy for increasing immunization completion rates or that participatory water supply projects should be a prerequisite for all immunization and ORT activities. It does mean, however, that planners who look at long-term strategies for improving health status should consider participatory water supply projects as an important initial activity in communities where primary health care and child survival activities are being introduced.

Virtually any water supply project can be used as a mechanism to gain entree into a community. A water supply project that emphasizes community participation, however, has the particular advantage of increasing the community's capacity to participate in future activities that require community initiative and action and individual behavioral change.

Involving community members in the design, construction, and operation of a water supply project creates decision-making structures and communications patterns that make it easier to introduce future innovations and have them accepted. A community in which a participatory water supply project has been completed is more informed about the need for primary health care and more competent, because it has learned to shoulder the responsibilities of building and maintaining a community water supply system. The construction and operation of a community-based water supply system requires at least a minimal input from the community in the form of donated land, labor, and materials. Inevitably, the organizational efforts required by a participatory water supply project lead community members to develop new skills and strengthen old ones as they work with each other and with outside agencies. The resultant internal decision-making structures and working relationships usually provide a more solid base for determining how new ideas and technologies should be introduced.

5.3 Recommendations

For Policy and Programming

1. Given the need to promote the participation of rural people in primary health care and child survival activities, a community participation strategy should

be developed to link the water projects and other health activities that are being introduced into communities. This strategy would need to be long-range and sequenced.

(An example is the strategy adopted by the Government of Colombia, which sees water supply projects as the initial step in rural development.)

For Evaluation

2. Develop guidelines for evaluating community participation in all primary health care projects, including water supply projects. Evaluations are notorious for not involving community members, or for only including them on an ad hoc basis. Community members should be asked to suggest criteria for evaluation. The perception and values of local people should have a more central place in the evaluation process.

For Further Research

3. Replicate the present study in other countries and field sites and conduct additional studies in Indonesia and Togo to further verify the trend shown in this study. (In Togo and Indonesia, conduct an in-depth retrospective analysis of the socio-cultural factors and the history of participatory activities in each village before the water supply project.)

4. Conduct further research on how participation in water supply projects relates to participation in subsequent health activities. For example:

   a. Concerning causality: What are the determinants of different kinds of participation? What factors in the environment, if any, make certain kinds of participation more or less likely? What incentives are most likely to bring about certain kinds of participation?

   b. Explore the consequences of different kinds of participation. For example: To what extent can elements of participation be treated as causes capable of promoting

certain intended effects? What kinds of participation can lead to specified outcomes or at least make them more probable? What kinds of participation are most likely to contribute to sustainability of project achievements?

c. Compare the stimulus effect on participation across a range of primary health care services.

d. Track benefits (participation) over time as new services or activities are introduced into the same communities. For example, having completed the present study, researchers could return to examine the number of mothers who can accurately mix and administer oral rehydration solutions. (An ORT campaign was implemented subsequent to the immunization program.) A fourth study group of villages that had participated in the water supply project and in the ORT campaign, but not in the immunization program, could be added to observe if the effects are additive, simply sustained at the same level, or something else.

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APPENDIX A

Conceptual Models for Understanding Community Participation

APPENDIX A

Conceptual Models for Understanding Community Participation

Several analysts have constructed useful conceptual models for understanding community participation. Three such models appear especially effective.

One is the "Ladder of Citizen Participation" developed by Sherry R. Arnstein (see Figure 5). "Rungs" on the ladder represent a progression of who has power over program decisions and resources. The more decision-making authority that community members have in connection with a project, the more participatory the project.

A second useful conceptual model is that developed by Susan B. Rifkin (see Figure 6). This is a matrix for analyzing community health projects and programs according to the use of three different approaches (medical, health planning, or community development) to deal with six programmatic issues (the rationale for the health services, the purpose of community participation, professional roles, community health worker roles, evaluation, and financial support).

Both of these models have limitations, however, especially when applied to water supply projects.

A third model--perhaps a more suitable one for describing and analyzing community participation--was developed by Norman Uphoff, John Cohen, and A. Goldsmith (see Chapter 2). This model systematically breaks participation down into several "dimensions" and "contexts." "Dimensions" are the following: the kind of participation taking place, the sets of individuals involved in the participatory process, and the specific characteristics of that process. "Context" refers to relationships between the characteristics of the project itself and the patterns of actual participation that emerge.

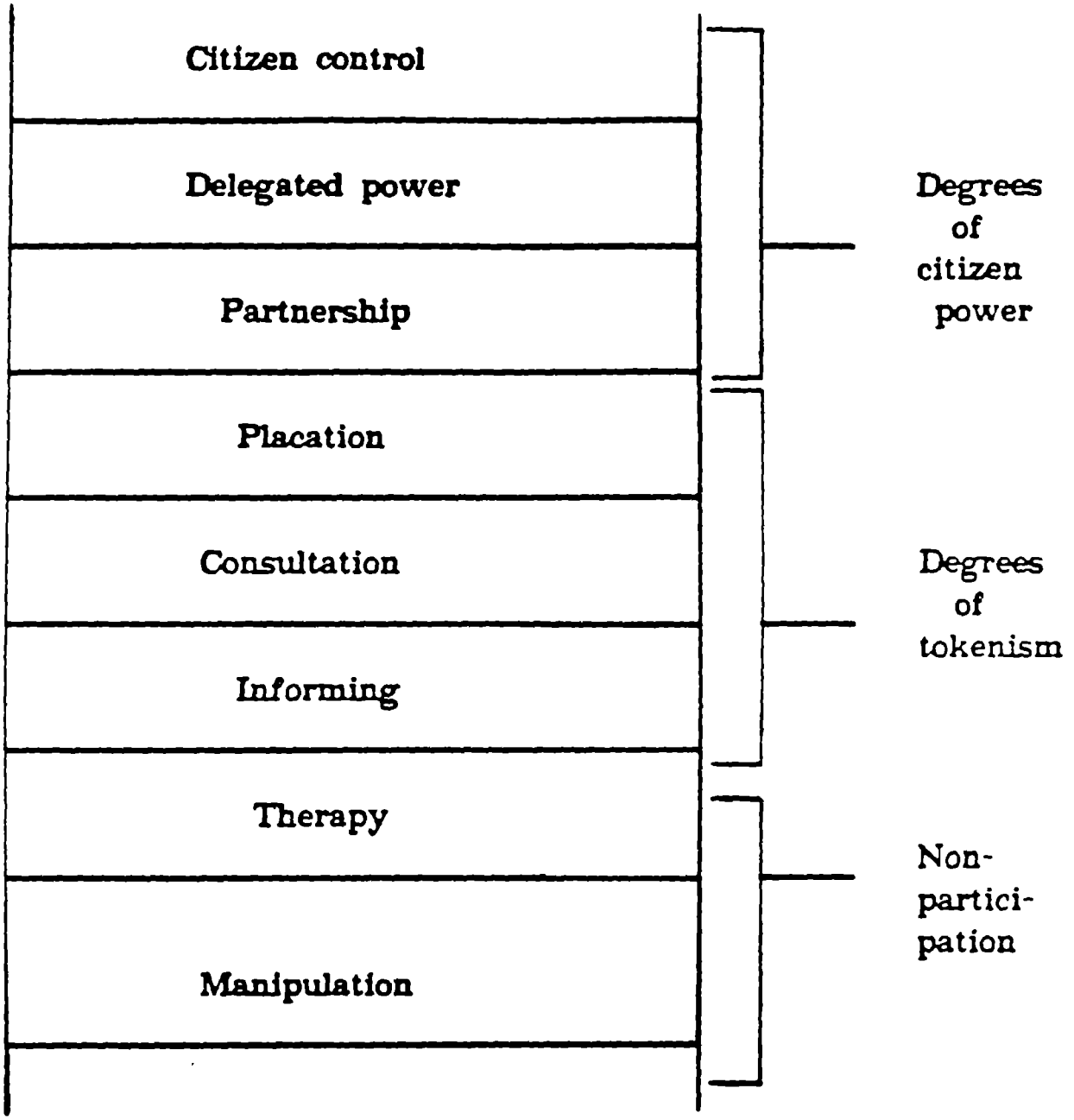
"Context" also includes the project's task environment--specifically the historical, ecological, and societal factors that strongly affect the emerging patterns of participation. Uphoff, Cohen, and Goldsmith refine these dimensions into variables that represent the critical actors and components of participation in a project. These include:

1. participation in decision-making,
2. participation in implementation,
3. participation in benefits, and
4. participation in evaluation.

The relationships among these four kinds of participation constitute a kind of project cycle. (See Figure 2 in Chapter 2.)

FIGURE 5

Rungs on a Ladder of Citizen Participation



Sherry R. Arnstein, "A Ladder of Citizen Participation," American Institute of Planners Journal, 216-224, July 1969.

FIGURE 6

Matrix of Approaches and Issues in Community Participation

ISSUES / APPROACHES	HEALTH SERVICES	PARTICIPATION	THE ROLE OF THE PROFESSIONAL	ROLE AND TRAINING THE CHW	EVALUATION	FINANCE
MEDICAL EXTERNAL APPROACH	Major programme component	For providing better services	Key	Service Extender	Health Status Statistics	From whatever source available
HEALTH PLANNING MULTIPLE APPROACH	Necessary but not sufficient for health improvement	For maximizing resources	Component	Service Extender/ Change Agent	Efficiency/ Effectiveness	From outside working toward self-reliance
COMMUNITY DEVELOPMENT INTERNAL APPROACH	Means for community mobilization	For creating improved social structures	Resource	Change Agent	Educative Process	Self-reliance as primary goal

Susan B. Rifkin. Health Planning and Community Participation (London: Croom Helm, 1985), p. 36.

Examining the participation inherent in a project requires looking at who was involved, how participation occurred, and what happened.

Who participates concerns development agencies and governments because when the "rural poor" are expected to participate, it is often unclear exactly who in this large and heterogenous group should be involved. The general types of participants are:

1. local leaders,
2. local residents,
3. government personnel, and
4. foreign personnel.

The first two types of participants are local people. The last two are, to varying degrees, outsiders.

The how dimension addresses why participation takes place, continues, or declines, and why it has the particular patterns that it does. The how dimension includes:

1. whether the initiative for participation comes mostly from above or below;
2. whether the inducements for participation are more voluntary or coercive;
3. the structure and
4. channels of participation at the individual or collective basis with formal or informal organizations often compared over time;
5. the duration and
6. scope of participation, which may range from a single event to an intermittent or continuous stream of activities; and
7. empowerment of people to get intended results from involvement in decision-making and implementation.

The amount, distribution, and trends of participation can be assessed basically by looking at the who and what dimensions.

APPENDIX B

Villages that Participated in the Study

Togo

VILLAGES (BY TYPE OF PROJECT)

		POPULATION	DIST. FROM VILL TO HEALTH POST	% IMMUNIZED 1ST DPT	2ND DPT	3RD DPT
USAID						
GAME	(Amou)	1272	30+K	100.0	82.8	71.4
AVEDJE	(Amou)	666	7 K	97.7	97.7	27.3
HAHOMEGBE	(Haho)	467	10 K	73.1	30.8	15 4
AKATE-ADAME	(Kloto)	942	1 K	100.0	85.3	55 9
AGBANON	(Kloto)	1524	1 K	100.0	87.9	59.6
MORETAN	(Ogou)	952	0 K	100.0	89.1	67.3
ATIKPAI	(Ogou)	200	0 K	100.0	80.0	57.1
KPALAVE	(Wawa)	565	12 K	100.0	75.5	38 8
OKOU	(Wawa)	1123	0 K	100.0	100.0	100.0
FED						
DEDOME	(Amou)	659	4 K	100.0	83 3	77.8
NYILE	(Amou)	498	15 K	98.2	50.9	27.3
KPELE	(Haho)	2150	10 K	65.6	53.1	46.9
ZOZOKONDJI	(Kloto)	1220	12 K	81.5	63 0	42 6
KETOUKOPE	(Kloto)	738	25 K	88.9	50 0	16.7
BOCCO	(Ogou)	244	0 K	100.0	87.0	81.5
YEBOU-YEBOU	(Ogou)	385	20 K	100.0	47.2	8.3
ANONOE	(Wawa)	2214	3 K	100.0	56.8	32 4
KPEJE-BENA	(Wawa)	1124	0 K	100.0	36.1	25.0
CONTROL						
MAVA	(Amou)	429	6 K	100.0	100.0	68 2
GOLOWOU	(Haho)	890	12 K	64.7	11.8	5.9
TCHOKPOKOPE	(Kloto)	385	4 K	16.2	16.2	13.5
KETEME	(Kloto)	654	3 K	100.0	96 1	60.8
BAVOU	(Ogou)	450	6 K	100.0	86.3	70.6
ALFA KOPE	(Ogou)		6 K	100.0	96.5	71.9
YALLA	(Wawa)	717	0 K	100.0	95.0	86.7
GOUNOUBE	(Wawa)		0 K	100.0	47.6	42.8

ALL VILLAGES (REGARDLESS OF PROJECT)

DISTANCE FROM TO HEALTH POST	% IMMUNIZED 3RD DPT
<10 K	58.7
≥10 K	30.4

Indonesia

VILLAGES (BY TYPE OF PROJECT)

VILLAGE	SUBDISTRICT	1985 POPULATION	DIST. FROM VILL. TO HEALTH POST	1985 % IMMUNIZED 3RD DPT
CARE				
NGAMPRAH/ SUKATANI	Ngamprah	6723	1 K	48.7
KUTAMANAH	Jatiluhur	2067	15 K	42.4
SUKAJADI	Pasawahan	1761	4 K	94.2
WADO	Wado	3783	1 K	97.0
BOJONGLOA	Buadua	3143	1 K	71.0
BANTERUJEG	Bantarujeg	2856	1 K	76.8
CIRANCA	Bantarujeg	3370	6 K	68.7
WANAHAYU	Maja	2488	7 K	40.0
CIGADOG	Wanaraja	2401	12 K	25.0
TEJONAGARA	Wanaraja	2453	10 K	31.6
INPRES				
TANIMULYA	Ngamprah	6408	5 K	45.4
KERTAMANAH	Jatiluhur	1713	17 K	36.7
SALEM	Pasawahan	1124	3 K	91.7
CIPEUNDEUY	Wado	3846	7 K	63.2
NAGRAK	Buadua	2284	5 K	62.3
SALAWANGI	Bantarujeg	3118	6 K	70.2
CIKIDANG	Bantarujeg	2619	4 K	64.2
CIEURIH	Maja	2316	4 K	17.0
SINDANGRATU	Wanaraja	4426	4 K	28.4
SUKARATU	Wanaraja	2489	6 K	7.8
CONTROL				
BEJONGKONENG	Ngamprah	6410	5 K	38.7
SUKAMULYA	Jatiluhur	3165	9 K	30.1
PARAKAN SALAM	Pasawahan	1186	2 K	92.6
KIRISIK	Wado	3463	6 K	70.7
SEKARWANGI	Buadua	2457	7 K	75.0
WERASARI	Bantarujeg	4315	7 K	57.9
BUNINAGARA	Bantarujeg	3722	8 K	47.6
PANIIS	Maja	2989	5 K	40.0
SUKALAKSANA	Wanaraja	2479	5 K	27.6
SINDANGMEKAR	Wanaraja	4249	3 K	9.4

APPENDIX C

Field-Worker Questionnaire

FIELD WORKER **QUESTIONNAIRE**

INDONESIA

TO BE COMPLETED BEFORE THE START OF THE INTERVIEW:

Community ID Number:

Community Name: _____

Field Worker ID Number:

Field Worker Name:

Interview Date:
Month Day Year

Interviewer ID Number:

WASH ACTIVITY #180

SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF NORTH CAROLINA
CHAPEL HILL, NORTH CAROLINA, USA

DR. EUGENIA ENG
DR. JOHN BRISCOE
MS. ANNE CUNNINGHAM

INSTRUCTIONS FOR THE INTERVIEWERS:

Thank you for taking part in this study of community participation in water supply projects. Your careful attention to filling out this questionnaire and the manner in which you conduct the interviews will greatly affect what we can learn from this study. Therefore, we would like you to observe these guidelines as you conduct interviews and complete the questionnaires. Thank you.

1. Make every effort to put the respondent at ease, making sure that he or she is comfortable talking with you. Try to find a place where you both can sit down and talk with few distractions

2. Remember that the questions do not have to be asked exactly as they are written on the questionnaire. Often times it is easier to carry on an informal conversation with the field worker, rather than to read the exact words given in the questionnaire. However, be sure you understand the meaning of the original question [refer to "Descriptions of Questions on the Questionnaire" or your supervisor with any questions].

3. Please circle the correct response for each question. For example:

   Water can be used for the following purposes:

Drinking	YES	NO	DON'T KNOW
Cooking	YES	NO	DON'T KNOW
Bathing	YES	NO	DON'T KNOW
Watering Gardens	YES	NO	DON'T KNOW
Making Bricks	YES	NO	DON'T KNOW

4. This questionnaire asks the field worker to remember what happened in a specific community with which he/she worked during the planning and implementation of a water supply project. When beginning each interview, please make sure that the field worker clearly identifies for you the community about which he/she is talking. After the first interview is completed, move on to discussing another community with which the field worker worked. Continue in this fashion until all the communities have been discussed.

5. If you do not know what to do with a particular answer given by the field worker please write in as much detail as possible on the questionnaire itself, explaining what you did in this particular situation. This will help us know how to interpret your answers.

6. Each question must be answered. When you have finished your interview, ask the field worker to wait while you check over the questionnaire to make sure that you have completed each and every question. If you find an unanswered question, please complete it.

7. Above all, if the instructions are unclear, please ask your supervisor. If your supervisor is unavailable for any reason, do the best job that you can and write down on the questionnaire exactly what you did.

INSTRUCTIONS: For each of the following questions, please circle the response given by the field worker.

1. Please tell me the name of the community with which you worked on a water supply project: _____

2. In which of the following water supply projects did this village participate? (circle all that apply)

   1 CARE Water Supply project

   2 Government water supply project

   3 Another water supply project (please specify): _____
   _____

   4 This community has improved its water supply with no outside assistance

   5 This community has no improved water supply

3. Which community groups exist in this village?

PKK	YES	NO	DON'T KNOW
Family planning group - KB	YES	NO	DON'T KNOW
TK	YES	NO	DON'T KNOW
Karang Balita	YES	NO	DON'T KNOW
Kelompok tani (ag. group)	YES	NO	DON'T KNOW
Risma	YES	NO	DON'T KNOW
Cooperative (KUD)	YES	NO	DON'T KNOW
Kelompok Belajar (PBH)	YES	NO	DON'T KNOW
Other: _____	YES	NO	DON'T KNOW

4. Briefly describe the participation of the community in any projects during the two years before the water project:

	PLANNING & DECISION MAKING			CONSTRUCTION & MAINTENANCE		
a.School Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
b.Clinic Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
c.Bridge Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
d.Road Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
e.Food Growing	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
f.Village Clean-Up	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
g.Water Source Improvement	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
h.Other: _____ _____	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW

5. Briefly describe the participation of the community in any projects during the two years <u>after</u> the water project:

	PLANNING & DECISION MAKING			CONSTRUCTION & MAINTENANCE		
a.School Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
b.Clinic Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
c.Bridge Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
d.Road Construction	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
e.Food Growing	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
h.Village Clean-Up	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
i.Water Source Improvement	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
j.Other: _____	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW

INSTRUCTIONS: PLEASE CIRCLE THE NUMBER IN THE BOXES WHICH INDICATE THE FIELD WORKER'S ANSWER. IF THE FIELD WORKER INDICATES AN "OTHER" RESPONSE, PLEASE WRITE IN THE NAME OF THE OTHER GROUP OR TITLE OF THE INDIVIDUAL IN THE SPACE PROVIDED IN SOME OF THE CHOICES IN THE LEFT-HAND COLUMN.

6. With regard to the improved water source, who were the people responsible for making decisions on:

	Determining Need for Project	Planning Project	Maintaining Well	Building Well
Lurah	32	31	30	29
Dukuh Leader	28	27	26	25
RW Leader	24	23	22	21
RT Leader	20	19	18	17
Other Community Groups	16	15	14	13
CARE Field Staff	12	11	10	9
Other Govt. Worker: _____	8	7	6	5
Other: _____	4	3	2	1

INSTRUCTIONS: PLEASE WRITE THE FIELD WORKER'S ANSWER IN THE SPACES PROVIDED FOLLOWING EACH QUESTION.

7. For the water project, briefly describe:

HOW IT GOT STARTED

HOW A NEED FOR A WELL WAS DETERMINED

HOW IT WAS PLANNED

HOW IT WAS CONSTRUCTED

8. About how long did all that take?

_____ months

9. Which of the following uses of water from the well or tap are permitted in this village?

Drinking	YES	NO	DON'T KNOW
Cooking	YES	NO	DON'T KNOW
Bathing	YES	NO	DON'T KNOW
Washing clothes and utensils	YES	NO	DON'T KNOW
Making Bricks	YES	NO	DON'T KNOW
Watering Gardens	YES	NO	DON'T KNOW
Making candle ice or other commercial uses	YES	NO	DON'T KNOW
For praying	YES	NO	DON'T KNOW
Other: _____ _____	YES	NO	DON'T KNOW

10. Who decided these uses? _____

11. When the community notices that the pump or tap isn't working what does the community do to get the pump repaired?

12. About how long does it usually take to get the system repaired?

weeks

13. If a spare part or money to buy a part is needed to repair the water system, what does the community do?

INSTRUCTIONS: Please write the field worker's answer in the space provided below the question.

14. What is your relationship with this village now?

15. What would be the best way to find out if the community's participation in a water supply project was a success?

16. Using this criterion, how could this village have been involved more effectively in the water supply program?

THANK YOU FOR YOUR HELP!

A copy of the results of this study will be available in the _____ field office.


WASH