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STRATEGIES FOR LINKING WATER  
AND SANITATION PROGRAMS  
TO CHILD SURVIVAL

Technical Report No. 65  
September 1990

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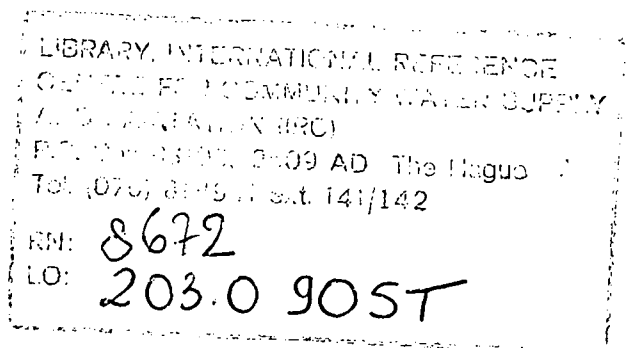
WASH Technical Report No. 65

**STRATEGIES FOR LINKING WATER AND SANITATION PROGRAMS  
TO CHILD SURVIVAL**

Prepared for the Office of Health,  
Bureau for Science and Technology,  
U.S. Agency for International Development  
under WASH Task No. 050

by

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## **PREFACE**

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This paper was conceptualized by Janice Burns based on works of UNICEF and Ray Isely in collaboration with ISTI, PRICOR, PRITECH, HEALTHCOM, and VBC. The background paper was researched and drafted by Emmanuel Joseph. Sarah Fry and Sumana Brahmam integrated the results of the linkages technical meeting which took place June 15-16, 1989.

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## ACRONYMS

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A.I.D.	U.S. Agency for International Development
BCG	<i>Bacillus Calmette-Guérin</i> , a tuberculosis vaccine
CIDA	Canadian International Development Agency
DANIDA	Danish International Development Agency
ECZ	<i>Eglise de Christ du Zaïre</i> , Church of Christ of Zaïre
FONAMES	<i>Fonds National pour l'Assistance Médico-Sanitaire</i> , National Fund for Health and Sanitation, Zaïre
GOBI	Primary health care approach that focuses on growth monitoring, oral rehydration therapy, breastfeeding, and immunization
HEALTHCOM	Communication for Child Survival, an A.I.D. Project
IEOS	<i>Instituto Ecuatoriano de Obras Sanitarias</i> , Ecuadorian Sanitary Works Institute
INNFA	National Institute for the Child and Family, Ecuador
MOH	Ministry of Health
ORS	Oral rehydration solution
ORT	Oral rehydration therapy
PRASAR	Rural Water Supply and Sanitation Project, Honduras
PREMI	<i>Plan de Reducción de Enfermedad y Muerte Infantil</i> , Honduras
PRICOR	Primary Health Care Operations Research, an A.I.D. Project
PRITECH	Technology for Primary Health Care, an A.I.D. Project
PROCOMSI	<i>Proyecto de Comunicación Masiva Aplicada a la Salud Infantil</i> , Project of Mass Communication Applied to Infant Health, Honduras
PVO	Private voluntary organization
SANRU	<i>Projet des Soins de Santé Primaire en Milieu Rural</i> , Rural Health Project, Zaïre
SEDRI	Ecuadorian Secretariat of Integrated Rural Development
SNHR	<i>Service National d'Hydraulique Rural</i> , National Rural Water Service, Zaïre
UNICEF	United Nations Children's Fund
USAID	A.I.D. Mission
WHO	World Health Organization





## EXECUTIVE SUMMARY

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In June 1989, the A.I.D.-funded Water and Sanitation for Health Project (WASH) sponsored a workshop to review the experience of eight projects which have linked water supply and sanitation and child survival. The recommendations reported here are based on the field experiences of the participants. The workshop identified factors that enhance linkage, as well as obstacles to linkage, and recommended some linkage strategies in the areas of national policy, program management, and community participation. These insights and recommendations are intended to inform the debate about linkages by creating an awareness of the broad range of available options and strategies, so that water and sanitation and child survival programs can best meet the needs of the populations they serve.

The linked projects considered at the workshop were of three types, each requiring a different emphasis. Ongoing water and sanitation programs seeking to incorporate elements of child survival must carefully examine the skills of their staff and the readiness of communities; ongoing child survival programs seeking to incorporate water and sanitation programs should pay close attention to cost issues; and programs that include both components from the outset must phase program activities carefully.

At the policy level, attempts at linkage work best in the presence of a strong governmental commitment to primary health care, the existence of explicit national and donor strategies, and realistic, long-term donor commitments. Obstacles to linkage include emphasis on vertical programs, and structural or bureaucratic institutional barriers. Policy strategies recommended at the workshop included creation of a formal coordinating committee involving all relevant sectors and agencies, and appointment of a program director with the requisite qualifications for managing both child survival and water and sanitation activities.

The management of linked programs is enhanced by adequate support structures, flexible management systems, use of existing personnel where possible, and phased introduction of program elements. Such efforts are hampered by unrealistic time frames and work plans, separate monitoring and evaluation of the two components, and narrowly focused programs. Recommended strategies include enhancing overall program management capabilities, developing a program plan with phased activities, establishing supportive personnel policies, decentralizing coordination activities, and actively promoting the involvement of women.

Strategies that support linkage at the community level include conducting surveys to identify community priorities, identifying the appropriate entry points for water-related and health activities, ensuring the participation of women in decision-making and implementation, and developing context-specific educational strategies to explain the interrelationships among clean water, sanitation, hygiene, and child health. Potential obstacles to success include

diffusion of effort into many areas at once, and ineffective secondary levels of support, particularly in technical areas.

Several questions should be considered when evaluating a linkage strategy: Are the institutional arrangements likely to foster linkage? Are sufficient financial and human resources available? Is measurement of the impacts possible? Should it be given priority? Do the proposed project and donor requirements and objectives permit long-term linkage and sustainable programs?

The workshop participants proposed some logical next steps to further examine linkage of child survival and water and sanitation programs. These include testing some of the suggested strategies in pilot projects, conducting research on the impact of combined programs, developing training guides on how to establish linkages, and disseminating information on programs implementing linked activities.

# 1

## INTRODUCTION

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This report provides an overview of the major issues involved in establishing linkages between child survival and water supply and sanitation programs. It identifies factors that enhance linkage and obstacles to linkage, and recommends strategies that facilitate the process of combining activities of these two sectors.

**Water supply and sanitation** have been an integral part of the development agenda in less developed countries since the first donor efforts to help them improve their economic and social conditions. While such efforts principally aim to improve health, they also enhance other development endeavors at the community level. Over the years, a broad consensus has developed behind the proposition that water supply and sanitation facilities must be convenient, reliable, appropriate, affordable, and sustainable. These are the current goals of the water and sanitation sector.

**Child survival** describes a programmatic emphasis in the primary health care sector on reducing morbidity and mortality among young children. Child survival programs provide a package of specific interventions for children under five years of age that may include growth monitoring, oral rehydration therapy (ORT), breastfeeding promotion, and immunization. In some cases, it may also incorporate family planning, nutritional support, and the treatment of acute respiratory infections. Sanitation, particularly safe waste disposal and personal hygiene, may also be a part of the package, but water supply is not generally included.

**Linkage** has become increasingly important in the development community in recent years, as the recognition of the interrelationships among development sectors has grown. In this context, linkage may be defined as the intentional connection of related activities working toward a common goal so as to make all the resulting benefits more effective and enduring.

Linkages may be either formal, as when they are built into a program design from the onset and sanctioned in project documents, or informal, as when they are not part of the initial program design but result from ongoing activities and are later incorporated into projects.

## **THE EVOLUTION OF LINKAGE BETWEEN CHILD SURVIVAL AND WATER AND SANITATION ACTIVITIES**

The 1978 Alma Ata International Conference on Primary Health Care advocated "integrated primary health care" as the most suitable health strategy for the developing world. Integrated primary health care included both water supply and sanitation and child survival activities. In spite of this support for integrated, intersectoral service delivery, child survival and water and sanitation programs have, in general, been administered separately.

However, there have also been growing doubts among the international development and medical communities about the feasibility of such a broad-based approach to primary health care. The often-diluted efforts and the difficulties attending attempts to address too many development problems with limited resources have only encouraged those misgivings. An article by Walsh and Warren in 1979 was pivotal in shifting the emphasis from integrated primary health care to selective primary health care and, then, to child survival, of which ORT (salt, sugar, and water solution for the treatment of dehydration) became a key part.

In the context of selective primary health care, ORT was ideal. It was effective, could be easily administered, freed people of dependence on "health care institutions," and permitted self-empowerment. ORT had another major attraction for development agencies, foreign donors, and some governments—it was inexpensive.

In light of limited financial resources, selective primary health care advocated the concentration of development efforts on ORT and a few other interventions that together form the cornerstone of the GOBI approach—growth monitoring, ORT, breastfeeding, and immunizations. As programs developed in this direction, additional areas requiring special emphasis were identified, such as food supplements, female literacy, and family spacing. The concept of selective primary health care was widely accepted by organizations such as the World Health Organization (WHO), A.I.D., and UNICEF, where it was regarded as the embodiment of the "child survival revolution."

As child survival became the programmatic focus, comprehensive primary health care receded into the background. Water supply and sanitation in some cases were moved from the health portfolio to infrastructure development. The popular notion was that water and sanitation services were costly and difficult to maintain. The direct and indirect health benefits resulting from improvements in this sector tended to be ignored or downgraded. At the programmatic and policy levels, the lack of recognition of the intrinsic value of water supply and sanitation interventions led to reduced resource allocation for this sector.

One of the major assumptions of the Walsh and Warren study was that improvements in water supply and sanitation resulted in only an estimated 5 percent reduction in diarrheal diseases. Recent research has disproved this premise and has quantified both the magnitude of the water- and hygiene-related disease burden and the potential benefits of water and

sanitation. A recent report by UNICEF (1989) estimates that 12.4 million people, many of them children, die every year from water- and hygiene-related diseases. Poor environmental sanitation is often one of the critical factors contributing to the high incidence of diarrheal diseases that claim the lives of so many children in developing countries. In terms of health benefits, a number of studies of the effect of water supply and sanitation improvements on diarrheal disease morbidity and mortality have clearly established the connection to child survival. Esrey et al. (1985) found that reductions in morbidity of 16 to 46 percent occurred, depending on literacy rates and the extent of improvements. They documented reductions in diarrhea of 25 percent for improved water availability, 16 percent for improved water quality, and 37 percent for both; median reduction for improved sanitation was 22 percent; the median reduction in total childhood mortality was 21 percent. Feachem (1984) found that hygiene education alone resulted in reductions in diarrheal cases of 14 to 48 percent. According to Esrey et al. (1985), combining these studies suggests that reductions in diarrheal morbidity of 35 to 50 percent are possible if the projects are well designed and integrate water supply, excreta disposal, and hygiene education.

A review of studies since 1986 (Esrey et al., 1990) also found that water supply and sanitation improvements decrease diarrhea morbidity and childhood mortality. Median reductions in diarrhea morbidity were 36 percent for improved sanitation, 15 percent for improved water quality, 20 percent for increased water quantity, 33 percent for hygiene education interventions, and 26 percent overall. The reduction in total childhood mortality due to improved water supply and sanitation was 55 percent. As noted by Esrey et al., "the literature published since 1986 concurs with the conclusions obtained earlier...and the better studies in the last few years show a higher reduction in disease. This may reflect better studies, but it may also reflect better projects."

Meanwhile, health management and development planners, acknowledging the inability of central governments to provide all possible services, have begun to encourage community-based care, stressing community self-reliance, learning, and a balance between disease prevention and cure. In this regard, water supply and sanitation have a clear and important role to play: They are an excellent focus for mobilizing communities and for providing hygiene education. In addition, as a health intervention they are preventive and long term in nature. Because the provision of water addresses needs at the community level, it frequently offers an ideal means of establishing the local organizations necessary to promote community involvement in other health areas, such as prevention of diarrheal diseases, immunization, and nutrition education. To ensure that improved health results from better facilities, hygiene education, in both the appropriate use of water and the need for improved sanitation facilities and practices, has become an integral part of the water supply development process.

As the International Drinking Water Supply and Sanitation Decade (1981-1990) concludes, it is apparent that much progress has been made toward providing clean water and sanitation services to millions of people worldwide. UNICEF (1988a) reported that over the past nine

years, clean water was made available to an additional 700 million people, and sanitation to another 480 million.

Less expensive and improved technologies have made it possible to provide adequate water supply and sanitation facilities that are easier to maintain at the local level. Involving communities in the planning, development, and maintenance of water and sanitation systems strengthens their local organizations, which could in turn serve as an important resource for other development projects. In addition, over the past decade, there has been much research on the costs and benefits of providing such systems and much sharing of "lessons learned" from experiences in the field. It is now widely accepted that the use of appropriate technology, community participation, and hygiene education all have an impact on the effectiveness of the water and sanitation systems.

The importance of linkages is becoming more widely accepted. In February 1988, UNICEF (1988b) issued a policy statement that emphasized the inherent links between water supply and sanitation and primary health care. The importance of integrating related fields of development, notably water, sanitation, hygiene, and primary health care, within the context of child survival activities was also recognized.

The most recent A.I.D. Child Survival Report to Congress (April 1990) notes the significant impact that water and sanitation can have on diarrheal and other water-borne diseases. Clean water is described as a potential bridge to a full range of child survival activities, and water and sanitation programs are seen as an ideal way to establish community structures that can later take on the planning and management of child survival activities. Thus, the agency supports linkage provided specific strategies are sound and appropriate, and the stage is set for a renewed interest in this cost-effective means of achieving maximum health benefits.

## **THE OPPORTUNITIES FOR AND BENEFITS OF LINKAGE**

One realization that has clearly emerged during the decade since Alma Ata is that child survival activities and improved water supply and sanitation facilities can do more together than separately to prevent childhood death and illness. Many evaluations indicate that water supply programs operating separately, or even with sanitation, have little effect on infectious diseases such as diarrhea without a community understanding of health issues and corresponding changes in health and hygiene behaviors. Similarly, although ORT is an extremely effective method of preventing death from dehydration caused by diarrhea, it is not a primary preventive measure and lacks curative capabilities, which leads many mothers in developing countries to dismiss it as ineffective. Although simple in concept, effective administration of ORT is complex in practice.

Clearly there is a great complementarity between child survival and water and sanitation activities. ORT can produce benefits (e.g., rehydration during illness) that water supply and

sanitation cannot, and water supply and sanitation can produce benefits (e.g., disease prevention) that ORT cannot. Linkage could optimize the impact of both activities.

In addition to direct health benefits, linkage yields indirect benefits in other areas. For example, a community organized through a water supply and sanitation program may be better equipped to participate in other primary health care and social service programs. Thus, the mobilization required for improvements in water, sanitation, child health, and hygiene education would help communities contribute more productively to the development that could sustain social advancement. UNICEF (1988a) cites other examples of synergistic program effects: improved water, sanitation, and hygiene education would reduce the incidence of childhood diarrhea, improve nutritional status, and help curb mortality from childhood diseases; better access to adequate supplies of potable water would give women more time to spend on child care, education, and income-generating activities, such as crafts and home gardens; better education would extend birth spacing, and fewer pregnancies would improve maternal and child health; better health would improve both school attendance and performance; improved schooling would lead to higher incomes, and improved incomes would in turn benefit diet and child health and survival rates; fewer child deaths would help to lower birth rates; and smaller families would mean healthier mothers and children. These multi-dimensional benefits are possible if opportunities for linkage can be identified and implemented.

Most development professionals agree that establishing linkages among different sectors in a country is important. The reemergence of a broad-based approach to primary health care has led to a wider recognition of the complementary nature of longer term preventive actions (e.g., water and sanitation) and short-term preventive and curative interventions used by child survival programs. For example, the 1988 International Conference on ORT addressed the issue of how to consolidate child survival and water and sanitation programs (A.I.D. 1988b-d). Research findings which support linkage are also emerging. In a 1986 study in Malawi, for example, Warner et al. found full immunization coverage to be over 50 percent higher in areas served by a rural piped water project than in areas without such a system. This benefit is attributed to the improved organizational capability of the community.

## **WORKSHOP TO IDENTIFY STRATEGIES TO FACILITATE LINKAGES**

In 1989, WASH commissioned a background paper and sponsored a workshop to explore ways to improve and foster linkages between water supply and sanitation and child health activities. There are three ways in which linkages occur: existing water and sanitation programs that incorporate elements of child survival; existing child survival programs that incorporate water and sanitation programs; and programs that combine water supply, sanitation, and child survival components from the outset (Isley et al., 1985). Morehouse University, a WASH subcontractor, prepared the background paper, which examined the impact of integrated programs and presented examples of countries that had attempted linkage.



WASH hosted a workshop in Washington, D.C. (June 15-16, 1989) to review the background paper and draw upon the expertise of individuals involved in the design, planning, and management of health-related projects in developing countries. UNICEF, Technology for Primary Health Care (PRITECH), Primary Health Care Operations Research (PRICOR), and Communication for Child Survival (HEALTHCOM) participated in the initial design of the meeting. Eighteen participants attended the workshop, including representatives from ministries of health, multilateral and bilateral agencies, PVOs, and USAID health officers from Honduras, Bolivia, and Zaire.

Before the workshop, each participant prepared a description of his or her experience with project-specific linkages between the water sector and child survival activities. This included a brief background of the project, examples of specific linking activities, factors enhancing and impeding such endeavors, and future directions of the project. During the meeting, participants discussed their experiences in linking water supply and sanitation activities to child survival, and identified factors that impede and enhance such bonds at the policy, program management, and community levels. The discussion also touched on reasons why some programs are not sustained, following which participants suggested strategies for future linkage efforts. At the close of the meeting, participants briefed representatives from A.I.D. and other development agencies on the outcome of the workshop.

This report brings together the findings, conclusions, and recommendations of the workshop. Chapter 2 discusses the three types of linkage referred to above, and lists the eight projects considered at the workshop that will be used as illustrative examples throughout the text. Appendix A provides a profile of each project. Chapters 3, 4, and 5 deal with policy issues, management issues, and issues of community involvement, respectively. Each of these chapters discusses factors which enhance or impede linkage. At the end of each chapter is a brief list of recommended strategies. Chapter 6 summarizes the workshop conclusions and discusses future directions in the effort to link water and sanitation and health.

# 2

## MODELS FOR LINKAGE

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A number of projects have combined water and sanitation and child survival components, overcoming obstacles posed by reluctant donors and unfavorable national policies, albeit with varying degrees of success. Workshop participants considered eight of these projects, summaries of which appear in Appendix A. Although none of the eight has achieved full integration of child survival and water supply and sanitation, all have successfully linked some aspects of the two, usually water supply and sanitation and diarrheal disease control. They illustrate both formal and informal linkages and the three types referred to earlier:

- **Adding child survival to an existing water and sanitation program**
  - Bangladesh Rural Water Supply Scheme
  - Malawi Self-Help Rural Water Supply Program
  
- **Adding water and sanitation to an existing child survival program**
  - Zaire Rural Health Zones/SANRU
  
- **Combining water and sanitation and child survival from the outset**
  - Bolivia Rural Child Survival Project
  - Ecuador Rural Water Supply and Sanitation Project
  - Honduras Rural Water Supply and Sanitation Project
  - Nigeria-Imo State Water Supply and Sanitation Project
  - Togo Rural Water Supply and Sanitation Project

## STRATEGIC DIFFERENCES

Although the three types of linkages share many features, they differ in important ways that should be considered when planning a program. The following discussion highlights some of these differences and proposes approaches that experience suggests are particularly appropriate for each type.

## **Adding Child Survival to an Existing Water and Sanitation Program**

Generally speaking, adding child survival to a water and sanitation program is easier because it is not capital-intensive and thus up-front costs will be lower. In addition, because water is usually a priority expressed by the communities themselves, it is an ideal entry point for organizing community participation, an important foundation for future child survival activities. A successful water and sanitation program will have good credibility, and will be an impetus to beneficiaries to participate in additional activities.

Two conditions are essential for successful linkage of this type: the existing water and sanitation program must include an active community extension component, and the participating communities must have functioning community organizations or the potential for developing them. The following strategies can strengthen this type of linkage.

**Conduct Program Staffing Review.** Program managers should find out which current staff skills can be used for implementing child survival activities, and, when necessary, hire additional personnel or have them seconded to the program from other agencies. For instance, the existing water project might be using community extension agents for community participation and hygiene education, but the new child survival component might have an outreach immunization program, requiring trained vaccinators, probably from the health centers.

**Identify Communities Ready to Progress to Child Survival Activities.** Communities have individual characteristics. The pace at which they organize themselves, make decisions, carry out plans, and absorb new ideas may vary considerably from place to place. Extension agents should be encouraged to recognize these differences and to initiate child survival activities only in those communities that are able to take them on. The new activities should nonetheless be conducted through the same community organizations established or activated by the water and sanitation program, adding members (e.g., women) as appropriate.

## **Adding Water and Sanitation to an Existing Child Survival Program**

Adding water and sanitation to a child survival program is a more delicate situation. Child survival program staff are likely to be skeptical about what appears to be a "hardware" intervention, and linkage may require more "marketing" to convince people of its benefits. In addition, start-up costs for water supply can be quite high, and could be seen as unreasonable if the long-term benefits of clean water are not appreciated. Health education and sanitation may prove to be the middle ground.

A cost-recovery strategy can enhance this type of linkage. Persons involved in child survival tend to be put off by what they perceive as the comparatively high cost both to the program and to beneficiaries of constructing and maintaining water and sanitation facilities. In fact, an average per capita cost for construction can be as low as \$25, and the benefits in improved health and time saved are considerable. Nonetheless, arrangements for establishing and managing community accounts to cover maintenance and repair and other recurrent water, sanitation, and child survival costs should be worked out prior to launching the activities. Funds could be raised by charging for water, organizing agricultural or gardening cooperatives, or simply collecting regular contributions. Such cost-recovery (or self-financing) strategies not only offset some of the costs of these endeavors but also promote competent ownership and self-reliance in the participating communities.

### **Combining Water and Sanitation and Child Survival from the Outset**

Combining water and sanitation and child survival from the outset may be the easiest of all because ongoing programs have their own momentum, which the two preceding alternatives (especially the second) are likely to disrupt. Starting a linked program from scratch may also be more efficient because administrative, technical, and material resources can be shared and duplication of effort avoided.

In combined programs it is particularly important to phase program activities and for program planners to decide how to sequence and link the various components over time. A phasing plan should include a start-up period reserved for materials development, training, team building, and social marketing research before any actual services are provided.

Planners do not always have a choice of linkage, which is determined by experiences of success or failure in one or the other domain, funding source requirements, and other factors. Regardless of how linkage is effected, whether through deliberate planning or informal collaboration between programs, the program must be workable, well designed, and well managed from the outset. It is also important to demonstrate early success because that is more likely to lead to later success in the program as a whole.



# 3

## POLICY ISSUES AND LINKAGE

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Whatever the type of linkage envisioned, the policy issues that enhance or inhibit linkage are an outgrowth of actions by donors and national governments. In the long run the policies of the national government may have a greater impact on program direction than those of donors. But obstacles to the formation of formal or informal linkages can arise from both. Thus, an unpopular donor policy, as well as problematic national policies, can create substantial obstacles to cooperation between programs. Policy coordination between donors and national governments is essential to successful linkage.

This chapter discusses policy factors that enhance linkage and policy obstacles to linkage, and recommends some policy strategies.

### POLICY FACTORS THAT ENHANCE LINKAGE

- **Strong Governmental Commitment to Primary Health Care.**  
The type of governmental commitment needed to bring about linkage goes considerably beyond simple endorsement of the Alma Ata Declaration. There must also be a strong political commitment, which is often demonstrated by commitment of funds and a willingness to make substantial administrative changes within the civil services and to promote changes in approach by the medical establishment. High-level governmental commitment to the long-term pursuit of primary health care objectives and to the concept of linkage is essential to initiating the reorganization usually required for large-scale efforts.

The Rural Health Zones/SANRU project in Zaire is an example of strong government commitment to integrated primary health care. The rural health zone strategy required large-scale administrative reorganization, and the central government's support for the integration of services created a climate of interdisciplinary cooperation that facilitated informal linkages between water and sanitation and primary health care at the community level.

Administrative linkages at higher levels are still evolving; however, the ambitious water and sanitation objectives of SANRU II demonstrate

a continued commitment to linkage of health and water and sanitation.

Both the level of support and the scale of the Zaire effort encourage sustainability, since the rural health zones cannot be dismantled easily. Also, national commitment was not conditional on donor involvement, which indicates that integrated primary health care would continue even if donor support was to cease.

Bolivia, on the other hand, was not receptive to restructuring its primary health care delivery system until 1987, and its ability to link programs was limited until that time.

- **Existence of a National Health Strategy.** A coherent national health strategy under a five-year plan or similar program plays an important role in efforts to bring about linkage, especially if it reflects compatible water and sanitation and child survival objectives. Although such plans sometimes set unrealistic goals and overestimate capabilities, they encourage—and may even force—coordination among the many internal agencies, foreign donors, and PVOs. They also strengthen the MOH capacity to assume a leadership role in planning and coordination.

This is especially important in planning for health communication. To coordinate service programs and mass media campaigns, the MOH must clearly establish which services and techniques are to be promoted and when they are to be promoted. For example, decisions must be made about whether to promote oral rehydration salts or a homemade salt and sugar solution for treatment of diarrhea, and village health workers must be trained so that they provide appropriate treatments that correspond to mass media messages.

The Ecuador experience illustrates how the absence of a unified national strategy can thwart efforts to link services. HEALTHCOM was charged with the Rural Water Supply and Sanitation Project's educational component that linked education about ORT, diarrhea prevention, and immunization to the project. Because of a lack of interagency cooperation and competition between the MOH and a quasi-governmental child survival project, the educational messages were "out of sync" with health service capabilities and created program difficulties. A strong national policy that delineated service norms and defined the relationships between programs would have avoided this.

- **Donor Strategy.** The program orientation of donor agencies has a tremendous influence on national policy and, for better or worse, can sometimes shape it entirely. Water, sanitation, and child survival activities are more likely to be linked at the national level if the donor agencies actively promote such linkage and if they collaborate with each other to that end. Linkages will be further facilitated if donor strategies promote community participation, health education, and the inclusion of women.

The Bangladesh Rural Water Supply Scheme illustrates the benefit of donors who actively promote service integration. The project has recently opened up to a number of PVOs operating in the country with the hope of enhancing the health impact of this health, water, and sanitation effort (PVOs include Save the Children Federation and Population Services International). These donor agencies often have closer contact with recipient communities, an ability to outflank centers of influence, and a more open attitude toward offering a range of integrated primary health care services.

- **Realistic, Long-term Donor Commitments.** To encourage linkage and thus make programs more sustainable, additional resources, time, and activities are required to strengthen existing institutions. Donors must recognize this fact and balance their need for measurable program outputs with a realistic long-term outlook and long-term support by designing more 10-year projects, for example, as opposed to the normal five-year projects. This is demonstrated in Zaire, where donors have modified their emphasis on vertical programs and thereby achieved outstanding linkage and impact on primary health care programs. Where donors have not used this approach, they have generally opposed efforts to coordinate their programs.

## **POLICY OBSTACLES TO LINKAGE**

- **Lack of Demonstrated Impact of Linkages.** The strongest rationale for linkages is that they reinforce all the programs involved by increasing initial effectiveness and long-term sustainability. However, the difficulty of demonstrating their impact on health has been an important obstacle at the policy level. Measuring the health impact of linkages is laden with all the problems associated with measuring the impact of any long-term intervention.



To date, experiments with linkages have failed to provide definitive evidence to support an overall change in the status quo, i.e., one in which child survival services are organized vertically, and water and sanitation activities are completely separate.

Some studies have shown that linkage has little or no impact, as in the case of the Malawi Self-Help Rural Water Supply Program. The research of Lindskog et al. (1987, 1988) in West Zomba found neither significant reduction of diarrheal mortality nor improved nutrition with improved water supply. It also showed that little increase in water usage actually occurred with the new water supply (15.5 liters per capita per day versus 12.8 liters). This finding had been noted earlier by Msukwa et al. (1981), who found that even households within three minutes of the tap carried away an average of only 13 liters per person per day, a utilization rate generally considered inadequate to have appreciable health impact. Lindskog et al. also noted that although 70 percent of households had simple pit latrines, young children almost without exception did not use them.

Other studies to document benefits have discovered a great disproportion in benefits among communities. A series of DANIDA-sponsored studies (Briscoe et al., 1986) by the International Center for Diarrhoeal Disease Research/Bangladesh from 1983 to 1985 data showed that many of the benefits were realized only among the better-off villages. Prior studies had reached the same conclusion (Hossain, 1979; Islam, 1979; Rahman et al., 1985).

The failure of these studies to demonstrate the benefits of incorporating water supply and sanitation facilities in community health programs does not of itself prove that linkage is ineffective. It underscores the critical importance of including supportive activities (health/hygiene education, health worker training, etc.) as integral elements of the linkage process, and of targeting them to those groups most in need.

Moreover, although project officials acknowledge the importance of demonstrating health impact, a reluctance to allocate money for evaluation persists. In the Malawi program, the position of senior evaluation specialist was eventually deleted from the project, as were provisions for a training and research unit of the Rural Water Service, although both were thought sufficiently important to be included in the original project design.

In the absence of scientific documentation of the benefits of linkages, integrated services can be promoted by sharing information about the strengths and weaknesses of projects with linkages and providing information about how linkage can be facilitated. Countries currently experimenting with linkages should be encouraged to include a detailed evaluation component.

- **Narrow Organizational Mandates.** In many cases, the agency impeding linkages is a foreign donor intent on achieving its elusive "coverage" and more concerned with its internal political position than with maximum development impact. A 1984 study by Baumslag cited an example from the SINAPS project in Guatemala, which began as an integrated project but ended up as a family planning project because it was funded by A.I.D.'s Family Planning Division. This phenomenon is by no means limited to A.I.D. and is a result of institutional imperatives rather than evil intent or lack of commitment to broad development objectives. Institutional reward systems tend to favor the narrow focus and conventional approach of single program emphases over the more wide-ranging focus and innovative approach implied by linking programs.
- **Emphasis on Vertical Programs.** Vertical programs have their historical foundation in the targeted disease strategies that characterized many of the early successes of the World Health Organization and other agencies in the public health establishment—the smallpox eradication campaign, the elimination of typhus in North America, and the yellow fever and malaria campaigns, for example. In the child survival category, the expanded program of immunization typifies this approach. Control of technology, personnel, monitoring, and impact evaluation are all invariably planned, organized, and managed from a central level.

With vertical programs, linkage even with other elements of child survival programs, such as diarrheal disease control, is often difficult. In many instances, this obstacle is more a consequence of the high level of donor involvement than of any other factor. As noted above, vertical donor programs tend to demand strict accountability and a narrow focus on specific outcomes.

- **Restrictive Donor Definition of Child Survival.** An extension of the problem of vertical programming is the current narrow definition of child survival: ORT, immunization, growth monitoring, and promotion of breastfeeding. Factors that have proven to have an

important impact on child survival, such as prevention of diarrhea through clean water and hygienic practices and mothers' education, are not considered part of the "child survival revolution" and therefore do not figure in child survival programming. The need for linkages among these programs comes from a belief that each of these elements has a role to play and that in combination they would have an impact greater than the sum of their parts.

- **Bureaucratic Resistance to Change.** Bureaucracies by nature are inertial, resisting change in both speed and direction. By contrast, development planners and consultants who promote linkages are advocates of change. Development planners with a mandate to foster linkage too often feel that their mandate must be carried out through major reorganization of one or more ministries, and they are frustrated by bureaucratic resistance to the proposed restructuring and by substantial systemic obstacles to linkage.

What the development planner can sometimes overlook is the magnitude of the risk that host country officials are being asked to take with major restructuring programs. Unlike the planner, whose responsibilities often end with project completion (or a short-term consultancy), the host country officials have to live with the established administrative structures, affected careers, allocated resources, revised budgets, and expended political capital. If the promised results do not follow, they must face the consequences.

Water supply sectors in many countries have a long institutional memory of being used as "social experiments" (sometimes successfully, sometimes not) at the urging of donors or lenders. It is not surprising that they are not eager to reorganize to accommodate the development community's latest trend.

- **Institutional Framework.** As the country experiences mentioned in Chapter 2 indicate, the long history of the institutional separation of water supply from sanitation programs, health programs, or both makes it difficult to link these activities logistically and administratively. In some cases, administrative divisions within the same ministry of health have impeded linkage. Lack of leadership and clear priorities contribute to this fragmentation of efforts.

The Honduran experience exemplifies the difficulties faced by many countries in implementing an integrated project. Although nominally intended to provide integrated services (including a sizable health

education effort), in practice this program provided the three components with little coordination or linkage. The project design assigned each of three agencies a particular project responsibility. Oversight responsibility was lodged in a project committee composed of the three project directors and the A.I.D. project officer. The results were predictable. Each agency pursued its tasks independently, there were few meetings of the project committee, and the health education component was eventually absorbed by the Ministry of Health, never having had its own project director.

Related to the issue of administrative coordination is the problem of territorial control among the different sectors. Linkage among sectors will be resisted if those who control programs and resources perceive that their own prestige and power might be diminished as a result. These attitudes impede cooperation within ministries, donor agencies, and the international scientific community.

This situation is the predictable result of the previously noted emphasis on vertical programs. As noted by Black (in press),

In spite of all the admonitions in favor of multi-sectoral approaches, it is actually very difficult to dovetail the activities of existing sectors, set up to run conceptually quite different services.... Multi-disciplinary approaches and the integration of services are rightly lauded in programs' plans of operation, but except for the formation of cross-sectoral committees at different administrative levels, they remain a theoretical or ancillary feature of most water and sanitation programs, and most other types of programs too.

## **RECOMMENDED POLICY STRATEGIES**

**Promote National Policies in Support of Linkages.** Linkage between water supply and sanitation and child survival is most likely to occur if it is sanctioned by national policy. Such a policy can be promoted by either a ministry's technical program staff or donors interested in funding such linked programs. Part of promoting linkages is to analyze institutional configurations to determine where collaboration might occur and then to encourage institutional flexibility to facilitate it. One selling point of linkage is the enhanced impact of one component when it is combined with another (e.g., reduced childhood diarrhea if potable water is available; better maintenance of water points if beneficiaries appreciate the

importance of clean water for community health and child survival). Another is a more rational use of limited resources. For example, community extension agents can be trained to carry out hygiene education and disease prevention education against diarrhea and malaria and to promote and help organize immunization against childhood diseases. Empirical evidence of enhanced impact should be presented whenever possible.

**Create a Formal Program Coordinating Committee.** Since water supply and sanitation and child survival programs are usually housed in different technical and administrative sectors, it is essential to create a central committee composed of representatives from the ministries, funding agencies, and other organizations involved in similar activities. This will ensure mutual understanding and collaboration and minimize disputes in a linked effort. When adding a component to an existing program, equal representation on such a committee prevents the new activity from being overpowered by the existing one.

Committee members should reach agreement on goals and objectives for the linked endeavor and on strategies for attaining them. They should agree on monitoring and evaluation criteria that are compatible with both efforts and reflect the benefits to be expected from linked activities. Involving top ministerial officials in the committee or in an advisory capacity might help pave the way for adoption of linkage as a national policy, if that is not yet the case, and help ensure crucial government support for a new component. The coordinating committee should also define its own role and the roles of the participating agencies and nominate officers to take charge of its functioning.

**Ensure Program Director Qualifications.** The director of a combined program should be convinced of the power of linkage and have a background of familiarity with both sectors and the skill to communicate with technicians from both sides. Thus, an engineer or doctor would be less appropriate than someone in rural development, for example, who has some knowledge of both sectors. If such a person is not available, a clear policy commitment to linkage and a strong coordinating committee become even more important.

# 4

## MANAGEMENT ISSUES AND LINKAGE

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Once policy obstacles have been overcome, issues related to the management and implementation of linked programs present themselves. A good working relationship between existing and planned programs demands coordination and administrative changes. While program management problems may take time to detect and resolve, they are generally easier to overcome than policy obstacles since they tend to be more practical than political.

### MANAGEMENT FACTORS THAT ENHANCE LINKAGE

- **Effective Support Structures.** To promote linkages beyond simple village-level cooperation among agents and agencies, an effective institutional support structure must exist or be established to coordinate the efforts of all the agencies involved. This support structure should include adequate physical infrastructure, personnel, and administrative capabilities. As illustrations from the eight projects indicate, such a structure can take many forms.

Using existing administrative structures, at least initially, may facilitate linkage by minimizing the upheaval of reorganization and the often-attendant delay and bureaucratic infighting. This is particularly true if simple steps can be taken to strengthen the agency in the short run. Another advantage of using existing administrative structures is that it permits some program management experience to be gained before decisions are made on permanent reorganization. In any event, it helps to have an effective program in either water or health on which to build or model a linked program.

- **Effective and Flexible Project Management Systems.** Ad hoc coordinating committees are one method of providing overall project direction. Such committees appear to be quite effective when, as in the case of Fonds National pour l'Assistance Medico-Sanitaire (FONAMES) in Zaire, they have independent staffs, budgets, and operating capability. This body coordinated the activities of five donors: UNICEF, WHO, OXFAM, the Rockefeller Fund, and the Johns Hopkins Program for International Education in Gynecology

and Obstetrics. Although the final verdict on this administrative arrangement is not yet in, the Zaire experience is an example of an attempt to address the complexity of interdisciplinary cooperation in entrenched ministries even when a strong central mandate exists. It also has shown that integration at community or peripheral levels is insufficient if central support for policy, logistics, or technical assistance is needed.

When coordinating committees do not have some degree of autonomy, as in the case of Bolivia, they have substantially less impact and may become nonfunctional. A national project advisory committee and regional implementation committees used project review workshops to address management problems such as disjointed efforts of professionals from different fields (engineers focused on water, medical people on health), and a lack of MOH awareness and involvement with the project.

Midterm review of the project noted some progress, and called the project an "appreciable success" (Edwards, 1988). However, the formation of project teams was not entirely successful, and efforts to develop work strategies that integrated water and health were generally ineffective. The evaluation noted that "the larger strategy of achieving an integrated approach to health was not really being carried out." Thus, the coordinating bodies lacked the power and autonomy to make a major impact on the program.

New entities sometimes created to operate integrated projects often have great success. In Nigeria, for example, an entity created for the Imo State project has been credited with permitting emphasis on program "software" to a degree that would have been impossible with an existing agency.

In many instances these new entities are placed under direct cabinet supervision or associated with the head of state's office, often in the belief that high visibility will give the program impetus and reduce red tape. However, this approach sometimes leads to opposition by key ministries or players who may resent the new effort.

- **Use of Existing and Adequate Human Resources as Change Agents.** Using an existing cadre of trained workers for additional activities can enhance linkage. In Togo, for example, because field agents were established civil service employees, they helped ensure that investments in training were not lost at the end of the project

and that attrition was minimized because the trainers' employment was already secure. The field agents also had significant prior training upon which the project could build, and, perhaps most important, an orientation toward comprehensive primary health care that made them ideal standard-bearers for the project's broad perspective on health.

Adequate numbers of trained change agents also contribute significantly to successful linkage. Because health education, mobilization, motivation, and promotion take a great deal of time and effort, there must be enough agents to promote change adequately. Overloading the agents with too many communities undercuts their effectiveness. Training must also be a priority in a successful program.

Another critical aspect is the orientation and commitment of the person(s) chosen as program coordinators and managers. They should be selected on the basis of technical training and competence, not political standing.

- **Phased Introduction of Program Elements.** The advantage of introducing program elements gradually and saving the most complex for the last is that it permits the use of experience gained in preceding phases. Managers avoid implementing what may be a totally unsuitable program or intervention on a nationwide basis. Phasing also ensures that adequate time and resources are allocated to community participation and health education. Both of these are cornerstones of successful linkage but require patient and steady endeavor.

Phased implementation permits more ordered development of institutional capabilities and builds program credibility through demonstrated successes.

In Zaire, it was used with great success in water resource development in zones with active primary health care programs. The range of activities envisioned for each health zone included health education, promotion of nutrition and agriculture, under-five's child health care, prenatal health care, maternity services, family planning, vaccinations, control of endemic diseases, water and sanitation, basic curative care, provision of essential supplies, supervision of services, and training and continuing education. A phased approach established and then



expanded each health zone's operations, and later added water and sanitation. Multiphasic, multilateral involvement and concurrent development of other health zones allowed health zones to experiment and share lessons learned. This approach also limits the dominance of any individual donor's philosophy in the overall program.

In Togo, social mobilization conducted for at least six months prior to water and sanitation facility construction produced highly organized and receptive communities.

In Nigeria, the popular and successful Imo model employed a phased approach that unfortunately was subverted when a federal policy ordered services to all states simultaneously, and within them to all local government agencies. It was impossible to carry out the integrated program of health education, promotion, and sanitation to achieve any health impact. The policy was an admirable gesture to equity but compromised effectiveness.

- **High Program Credibility.** Program credibility enhances the likelihood of success of any development effort but is particularly important in linked programs. High credibility in one program will automatically increase that of the other, but the converse is also true: devaluation of one program may quickly impede progress in the other. Maintenance of credibility is thus doubly important.

## MANAGEMENT OBSTACLES

- **Weak Management and Administrative Systems.** Poor management and administrative systems can make program implementation difficult. The complex administrative structure of the Malawi project, described in detail here, is not atypical of linked efforts.

The Malawi program in the water sector, although praised as the "most successful rural water program in all of Africa" (Briscoe et al., 1988), has continually struggled to play administrative catch-up with the achievements in hardware.

By 1979, the effort initiated in the Ministry of Community Development and Social Welfare had grown to involve 13 departments in five ministries. On the recommendation of a World Bank report (Pineo, 1978), the various departments were consolidated in a newly created, engineering-oriented Department of Lands, Valuation, and Water within the Office of the President. In 1984, this department was taken over by the Ministry of Works and Supplies. Over time the program emphasis on health diminished because the community development and health component could not keep pace with the growing engineering component.

The Health Education and Sanitation Promotion component was lodged in the MOH's Environmental Health Division. This was separate from the ministry's Health Education Unit and Primary Health Care Unit, both of which are in the Division of Maternal and Child Health.

At the central level, responsibility was still held by the separate ministries and, within the Ministry of Health, by competing divisions. Within the Ministry of Health, a project Principal Health Coordinator managed sector activities and also coordinated the ministry's activities with the Ministry of Works. A National Action Committee for the Water Decade, established in 1980, was largely inactive because the Malawi government showed little enthusiasm for formal Decade-related activities.

At the regional level, the administrative arrangement is, at least theoretically, more integrated. The District Health Inspector has titular responsibility for all preventive services, including maternal and child health, nutrition, immunization, and environmental health services.

The 1983 A.I.D. project specifically included efforts at institution strengthening and limited emphasis on promoting sector activities. However, only \$305,000 was allocated for monitoring and evaluation and for health education and sanitation activities, while \$5.04 million was allocated for construction.

- **Lack of Appropriate Technical Skills.** Incorporating new activities or emphases into existing programs to achieve linkage may require a larger staff or a different set of abilities. Water projects that have attempted to use sanitarians as agents of health education have

found the additional responsibilities too great a burden for the sanitarians.

Sanitary engineers often do not have the training for health education. For example, in Nigeria, water experts chose to use expensive high-tech drilling rigs that were generally unnecessary, given the shallow water tables. This method offered no opportunity for community participation, reinforced perceptions that the project was an external intervention, and limited the dispersal of technology to peripheral levels. Thus, it was difficult to establish a link with related health activities.

Similarly in Ecuador, IEOS (Ecuadorian Institute of Sanitary Works) was assigned the task of coordinating rural water supply and sanitation. Although a division of basic rural water and sanitation was set up, it did little to redirect organizational thinking toward small-scale rural operations and away from the customary IEOS construction of large piped-water systems. IEOS staunchly opposed the use of "unqualified" paraprofessionals, although, at the field level, evaluators found that some promotores, approached for help by overloaded provincial engineers, were serving precisely that function.

Training of personnel to assume additional responsibilities has tended to be ineffective because of inappropriate methods and lack of follow-up and supervision. Poor staff performance also be explained by the lack of incentives and rewards for performing additional tasks required by linked programs.

Of equal relevance is the failure of many governments to maintain the necessary project staffing once donor aid is withdrawn. Often, there is no abrupt termination of staff, but a steady attrition through late payments, months without salary, resignations, and unfilled vacancies. Activities like health education are given a low priority and are usually the first to be cut.

- **Cost.** Where linkage requires initiating a new activity, cost may be a major obstacle. High initial costs of water supply and sanitation facilities and lack of cost-recovery strategies often combine to discourage child survival programs from adding these facilities. In addition, vertical programming usually means vertical financing, so that one component of the linkage may be prohibited from spending money perceived to belong properly to the other.

The programs reviewed here dealt with financial constraints in various ways. The Zaire project operated at a time of financial instability, when the annual inflation rate was 300 percent and Zaire had trouble meeting counterpart contributions, particularly in dollar procurements. However, the tradition of paying a fee for medical care favored cost recovery and sustainability and contributed to project success.

In Bangladesh, UNICEF established a system of revolving funds at the village level that allowed recycling of revenues from latrine construction activities and rescued the program from the grip of budgetary inertia.

In Togo, a willingness to commit 25 percent of project funding to health education and community organization was a factor of success. Much of this contribution was for salaries and the support of field agents.

- **Short Program Time Frames.** Donors often put a high premium on quick results. The project paper that realistically contemplates no measurable achievements at the end of five years rarely sees the light of day. The time frame of water supply and sanitation interventions seldom meets the demand for short-term, demonstrable health impacts, and the benefits of linking them with child survival efforts may take a considerable time to appear. On the other hand, immunization programs, which once readily allowed just such quick-fix interventions promoted by nationwide campaigns, are rethinking the advisability of this approach. It has become apparent that there is a demonstrable drop in immunization rates once such campaigns are over, and that this type of activity does little to promote institution strengthening, now thought to be a major factor in sustaining immunization efforts (A.I.D., 1988a)
  
- **Separate Monitoring and Evaluation.** In general, child survival and water supply and sanitation are monitored and supervised separately by people using different sets of progress indicators. This serves to reinforce perceptions that these programs are parallel rather than complementary. A common monitoring system sharing the same progress indicators would be a powerful linking mechanism. Similarly, in program evaluations the choice of data can either impede or encourage linkage. Historically, water and sanitation programs have looked at the installation of facilities, whereas child survival programs have looked at vital statistics, such as child morbidity and mortality, as well as such quantifiable items as ORS

packets and vaccines distributed. Linkage will be impeded as long as these programs do not share goals. The shared goals are likely to be in the area of people's knowledge about the health benefits of water, sanitation, ORT, and immunization, and the behaviors related to them.

- **Narrowly Focused Child Survival and Water Supply and Sanitation Programs.** The obstacles created by a lack of common goals merely add to those created by the historical separation of the two programs: separate sciences embodied in separate ministries and agencies, and separate funding sources, executing personnel, and infrastructure. Parallel structures do not encourage programs to see themselves as having broader mandates than the narrow sectoral definition will allow. In addition, the languages spoken by the medical and engineering professionals who usually direct these programs are mutually unintelligible, and communication between the two is frequently fraught with misunderstanding.

## **RECOMMENDED MANAGEMENT STRATEGIES**

**Enhance Program Management Capabilities.** Linking child survival with water and sanitation means active collaboration between separate ministries and agencies and between technical specialists and field staff from very different backgrounds. Good communication and careful management are essential for success. Overall plans for a linked program should include provisions for a project start-up workshop and for periodic workshops for project review. Other mechanisms for team building and improved management should also be employed.

**Establish Supportive Personnel Policies.** Without doubt, a linked program will require program staff to strive to collaborate with an unfamiliar sector. Program managers should be sensitive to increased workloads and provide appropriate incentives. If a new component is being added to an ongoing program, existing personnel are likely to have additional work even if new staff is recruited. For example, community extension agents who have been carrying out hygiene education related to new water sources might be asked to add diarrheal disease prevention and ORT training to their program. The new program environment should recognize this added workload and motivate staff to take it on by increasing certain benefits.

**Decentralize Coordinating Mechanisms.** A coordinating committee at the national level usually includes high-level ministry and donor agency representatives who define and agree on the broad directions of the integrated program and resolve problems that may arise. Establishing regional (or more local) committees of executing technicians and supervisors of

extension staff can ensure that day-to-day coordination and collaboration take place. These decentralized committees should meet frequently to establish a common work plan and resolve problems related to project implementation. Such an arrangement proved successful in the Togo Rural Water Supply and Sanitation Project.

**Establish Realistic Overall Program Plan.** The program plan should spell out the phasing of activities and take into consideration perceived government and community priorities, the workload of extension agents, and the capacity of the communities to assume new responsibilities. The plan should include clearly defined monitoring and evaluation indicators sensitive to both water and sanitation and child survival impacts. In the case of add-on components, the indicators should reflect the previous activities but be designed to demonstrate the success of the combined activities as well. Program objectives and success indicators should be made clear to all program staff. If possible, the program plan should include a pre-operational phase for curriculum development, social marketing strategy design, and team building.

**Promote Involvement of Women.** The program plan should specify the extent of women's involvement in both water and sanitation and child survival after a careful analysis of their current roles and workload. This analysis should prevent overloading women with work yet ensure that they are equal partners in community decision-making and action by such measures as requiring a minimum number of female representatives in community organizations, and a minimum percentage of female participants in training and workshops.

**Develop Collaborative Training Strategy.** A program's training component is particularly suited for linking water supply and sanitation and child survival. Program managers should identify training needs common to both components and endeavor to develop training materials that reflect shared objectives. Personnel from both sectors should be trained together as much as possible and given turns at being each other's trainers where appropriate. A new project component creates additional responsibilities for program staff, who will often need to learn new skills. The training strategy should specify the persons to be trained, training topics, trainers, and timing. Each program phase should begin with the training of those responsible for its implementation.



# 5

## COMMUNITY INVOLVEMENT AND LINKAGE

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### COMMUNITY FACTORS THAT ENHANCE LINKAGE

Training, education, and community mobilization enhance linkage at the community level. As at all other levels, there are significant obstacles to successful interventions in both water supply and sanitation and child survival. The list of issues presented here is not exhaustive, but is based on discussion of the projects considered here and the experience of workshop participants.

- **Active Community Participation.** Linked programs are much likelier to succeed with participation by the entire community, particularly because the community must have a clear picture of the activities being undertaken and how they relate to each other. At the outset of the project in Togo, for example, the staff of the socio-health component spent many months making its objectives clear to the villagers, who conceived and perceived it primarily as a latrine construction project. Community participation in many cases has been effected by arranging village meetings to discuss project objectives and responsibilities, select appropriate committees, and report on project progress. It is extremely helpful to build on existing community structures, such as development committees, cooperatives, and youth or women's groups.
  
- **Potential for Women to Participate.** In most of the developing world, both child survival and water supply are almost exclusively the domain of women. Yet most members of village organizations are men, and women are underrepresented without a special effort to promote their inclusion in program decisions and activities. For a linked program to be successful, women must not only be included, but be seen as the logical entry point for the entire program. However, since women generally are responsible for the entire range of domestic and child-rearing tasks, as well as for food production and marketing, there is a danger of overburdening them with development activities. Program planners and village health committees should consider this when they plan activities.



The Malawi water program provides an example of a missed opportunity to include women in decision-making. At the village level, activities were divided among construction (project committees), maintenance (tap committees), and village health committees. Although women made up 53 percent of overall committee membership, they made up only 8 percent of project committees.

- **Responsiveness to Concerns Expressed by the Community.** In many cases, the impetus for linkage has come from community concerns. Village surveys, needs assessments, and feasibility studies were instrumental to the success of the Togo program, which was developed in response to the priorities expressed by the community. Similarly, in Honduras and Bolivia, the preference for household water connections was noted in the villages. Community perceptions will indicate what mix of elements from child survival and water and sanitation programs is required. If immunization is in strong demand or if neonatal tetanus is a concern, these can be incorporated into the project from the outset. In Nigeria and Togo, Guinea worm disease was included in program objectives because it was a community priority. Successful linkage requires a community conviction—either intuitively or through education—that all the program activities are important and beneficial.

The Togo program is instructive in its willingness to experiment with community organization methods. This project's commitment to human resources development training was reflected in an average of 70 days of training in health education and community development per agent over the life of the project. Also, the educational program was concerned with more than information delivery. Education was defined as a "process enabling behavioral change," which significantly broadened both the scope of the program and the modes it used. Rather than simply concentrating on newer methods of delivering health education messages, the program focused on methods of creative problem-solving. Although disorienting to bureaucratic sensibilities at the start, this approach provided sufficient flexibility for a range of disease prevalence and community priorities in the country's two geographical regions (savannah and plateau) and 760 villages.

- **Focus on Relevant and Appropriate Messages.** Linkage is only as successful as the community education that accompanies it, and a clear focus on relevant and appropriate messages does much to ensure that the educational effort will have the intended impact. The more numerous the objectives of the project, that is, the more linkages that have been established, the more complex the educational task. It is especially important that the content of the message be carefully tailored to fit the situation of each community. There is little point, for example, in promoting the use of sugar-salt solutions for oral rehydration in communities where sugar is a rarity, or in promoting hand-washing in villages where soap is either unavailable or prohibitively expensive. Given the range of behavioral changes required to implement a comprehensive primary health care program, it is imperative that messages be simple, direct, relevant, and effectively delivered. Further research and social marketing may have a lot to offer in the development of such messages.

## COMMUNITY OBSTACLES TO LINKAGE

- **Behavioral Change Overload.** Both water supply and sanitation improvements and classic child survival techniques depend for their ultimate effectiveness on behavioral change at the community level. Although this offers obvious opportunities for linkage, the very fact of the linkage increases the list of behavioral changes that must be addressed and encouraged. Hygiene education resulting in behavioral change is difficult to achieve even with a short agenda; if the agenda becomes too lengthy, the result may well be behavioral change overload and diminished, rather than enhanced, returns.
- **Diffusion of Effort.** If community participation is well established, all projects will reflect the community's needs and sense of priorities. A new emphasis or new activities may thus be met with resistance because the community may perceive them as diverting attention from their most immediate problems. If, for example, the community is mobilized in support of a water system it is eager to have because of added convenience, it may resist expansion of the effort to encompass child survival, suspecting—perhaps rightly—that this will only delay the water system. Similarly, if children are ill with diarrhea and mothers are anxious for immediate help in dealing with it, they may perceive the inclusion of long-term preventive measures as a diversion from the real problem.

- **Ineffective Community Structures.** A prerequisite for a successful, sustainable program is full participation by the community, and for this a representative community organization is needed to manage program activities. Some communities, however, are unable to organize effectively despite all efforts to assist them. Internal fragmentation is too strong for a cohesive unit to exist.

For example, in Bangladesh the tradition of community organization historically is weak. Village organizing can easily be co-opted by local power structures, making it difficult to develop a program that benefits the whole community. The Muslim system of purdah (traditional seclusion of women) and the fact that tubewells were invariably in public places often combined to limit the use of water by women, who were unlikely to linger at standpipes to do laundry or other water-related chores. In this context, culturally appropriate methods are needed to draw the community together.

One result of weak community structure is the inability of program beneficiaries to raise adequate funds to sustain the program independently. Since linked water supply and sanitation and child survival must endure over time for expected health benefits to manifest themselves, ineffective community structures diminish the chances for success.

- **Ineffective Secondary Levels of Support.** The absence of support at the district, regional, and national levels can thwart community efforts. Several of the programs discussed here experienced difficulties because they did not provide a coordinated set of resources, technical assistance, and educational programs to communities.

In Zaire, the community expanded on existing assistance to health zones to introduce simple water and sanitation improvements, such as spring capping, shallow well construction, rainwater catchment, latrine construction, and village sanitation. Village development committees and village health workers, directed by trained rural water coordinators and/or similarly trained Peace Corps volunteers, were the instruments of change. The central or regional government promoted appropriate technologies and provided limited logistical or technical support. Because these measures did not suffice in all circumstances, secondary support, such as adduction systems and drilled wells, and support at a higher level were needed.

In Bolivia, institution strengthening was emphasized but did not extend appreciably beyond the community level. The belief that strong village-level organization could obviate the need for strong secondary levels of support proved naive.

In Ecuador, the community-participation components functioned but were directed more toward immediate priorities of construction than to operation, maintenance, or continuity. Many villagers, unable to complete assigned workloads, lost their right to free house connections, and large areas of some villages were unserved. Latrines were often poorly sited and thus unused even when completed.

The Honduras experience further testifies to the importance of secondary-level support. Village preparation and promotion of community were not coordinated because the agencies responsible for "hardware" seldom advised others of their intent before moving into communities to construct systems. The local communities, which were expected to provide as much as 22 percent of project costs through donations and their labor, were often reluctant to accept this responsibility. Where adequate advance promotion did take place, however, response was enthusiastic—latrine construction was the only activity operating ahead of schedule, and water seal latrines were particularly welcomed.

## **RECOMMENDED COMMUNITY-LEVEL STRATEGIES**

**Agree on Community Entry Points.** This involves a careful assessment and appreciation of the communities' past experiences in water supply, sanitation, and child health, of the existing community structures and organizations, of other programs operating in the proposed zones of action, and of community members who may have received pertinent training in the past. These points may vary widely with each community and require considerable program flexibility to enable extension agents to make use of them.

**Conduct Community Surveys to Identify Priorities.** Regardless of what linking strategy is chosen, community surveys should be carried out with the participation of the relevant community organization. Depending on the program, these surveys should identify what villagers perceive as their most urgent need, be it water supply, sanitation facilities, or their children's health. Sometimes a program is not flexible enough to permit each community to address its own priority, requiring it to proceed first with water, then with sanitation, then with child health activities. In this case, it is important to establish community priorities within the constraints of the program so as not to jeopardize program credibility. For

example, if the child survival component is designed to address multiple child health problems (e.g., need for immunization, diarrhea and dehydration, malaria), then surveys should be carried out to identify what villagers perceive as the most important threats to their children's health and survival, and the program should be able to respond to those concerns.

**Ensure Women's Full Participation.** A policy decision to involve women in program activities does not automatically result in their participation. That requires a commitment by extension personnel, who are often male, to advocate and solicit women's participation. Extension agent supervisors must also be aware of the issue and check whether participation is progressing adequately. If, for example, women's participation in water and sanitation has been meager, few would dispute their critical role in child survival when considering an added child survival component. This should enhance the potential for women's participation. In areas perceived as more technical or mechanical, pressure may be necessary to achieve this result.

**Develop Context-sensitive Education Strategy.** The logical arena for linkage is community education. Once potable water supply and sanitation facilities have been constructed, beneficiaries must learn how to use and maintain them. Child survival programs also require community members to learn a number of preventive health skills. Community education should be designed to help community members make the link in knowledge and practice between clean water, good hygiene practices, their health and well-being, and the survival of their children.

# 6

## CONCLUSION

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This report makes clear that there are more questions than answers about the role of linkage and how to achieve it. Much more thought, planning, implementation, evaluation, and analysis are needed before any definitive guidance can be given on promoting linkages between child survival and water and sanitation programs. An examination of programs in which linkages do exist, however, seems to indicate that combining interventions is a worthwhile goal and should be given priority in the development community. Such an examination also suggests a number of strategies in policy development, management, and community participation that enhance the likelihood of successful linkages, and some clear impediments.

Workshop participants posed a number of questions for consideration when evaluating a strategy for establishing linkages. Though by no means exhaustive, the list does provide a starting point for addressing many of the key issues.

### Key Issues

**How broad a mandate should there be in establishing linkage?** The Alma Ata definition of integrated primary health care includes elements as diverse as food supply and provision of essential drugs. But is this sufficient? Do environmental factors such as overcrowding and poor housing also affect health and child survival? Many planners suggest diarrheal disease control as the most logical link between water supply and sanitation and child survival programs. But that may only be the most obvious. Do other factors (e.g., literacy levels, which are known to be a factor in health and child survival) also have a role to play?

**Should measurement of the impact of linkage be given priority?** Is information based on experience alone adequate for attempting linkage? Given the resources required to measure effects, there should be a clear need for such action before it is attempted, even in cases in which it may be feasible to do so. Widely accepted indicators are used to assess the health benefits of water supply and sanitation interventions. Can similar indicators be developed to demonstrate the impact of linkages? What is a suitable time frame for evaluating the results of a linked program? What is the most logical approach to discern the impact of therapeutic and preventive treatment techniques?

**Can donor requirements for measurable, short-term impacts be reconciled with development needs for long-term linkage and sustainable programs?** Given the political nature of development assistance, is it realistic to expect donors to make long-term commitments? Is it possible for donor agencies or programs facing unfriendly political forces, and perhaps hostile voters, to focus on long-term project objectives? Another facet of this complex problem is that donor funding often shapes program design and may often influence the project emphasis on any given component.

**What institutional arrangements are most likely to foster linkage?** Do institutional arrangements really matter? Will an appropriate incentive system for encouraging linkage promote such activity, even in the least supportive institutional milieu? Most programs have a single mandate with a vertical emphasis; for example, a child survival/ORT focus. In this situation, how can institutional linkages occur between the health ministry and agencies involved in water sector activities?

**What is the role of social marketing in promoting the joint objectives of water supply and sanitation and child survival?** Before attempting to link programs, should more resources be devoted to social marketing efforts to stimulate community demand for integrated services? What are the alternatives if social marketing fails, as it has in many instances in promoting family planning?

**How does the general lack of financial and human resources influence linkage?** How are managers persuaded to move toward linkage when there is an acute lack of financial and other resources? Would adding other program components, such as cost-recovery schemes and hygiene education, only increase the frequently overwhelming workload and responsibilities of project staff, or would it provide an opportunity to coordinate and share scarce resources?

**How much importance should community-level considerations be given in overall program design?** How can projects be suitably phased to match the timetables of communities? Time schedules often vary between communities, even within the same region. For example, the time schedule of a rural community with a production-oriented economy may differ considerably from that of a neighboring peri-urban community. Given the role of donors in shaping development aid programs, how can they be encouraged to be more responsive to concerns expressed at the community level?

## LOGICAL NEXT STEPS

Listed below are suggestions by the workshop for examining further the issue of linking child survival and water and sanitation programs. These suggestions may also present opportunities for more in-depth analyses of the costs and benefits of linked programs.

- Identify new and ongoing integrated water and sanitation and child survival projects to be used as testing labs for implementing the strategies outlined in this report and for keeping track of, and reporting, results. These projects could also be used for operations research studies on appropriate indicators of progress in linked programs.
- Identify one or two successful ongoing water and sanitation projects to which child survival components could be added and vice versa. This would permit an analysis of the problems and advantages and the overall usefulness of both.
- Design and conduct research on the impact of activities to link the two sectors. Currently, many policymakers remain unconvinced of the advantages of linked programs, largely because of inadequate research in this area. Output indicators for linked projects must be identified with care, however, because they may differ from those typically used to evaluate the progress of vertical programs with a single mandate.
- Develop a training guide for project managers to organize regional and country-level workshops to discuss issues related to linking programs. At the workshops, participants could exchange information and identify opportunities for establishing bonds between common programs. Managers could also develop practical proposals for establishing linked programs based on their field experiences.
- Provide technical assistance and training guides for project managers to organize start-up workshops and team-building activities to facilitate linkage between programs.
- Develop a database to track information on projects implementing linked activities, and document and disseminate data on worldwide linkage experiences. The database would also help establish a network between projects involved in similar activities.



Development professionals agree on the importance of intersectoral strategies to enhance program and project impact. As this paper has demonstrated, experience in linking child survival and water supply and sanitation projects offers some guidance to planners, but a number of questions remain. Further examination of these issues is proposed, whether with ongoing or newly designed field projects or through targeted special studies, in order to establish more definitive guidelines for maximizing the health impacts of both child survival and water and sanitation activities through linkage.

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## Appendix **A**

### CASE STUDIES

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#### BUILDING CHILD SURVIVAL INTO WATER SUPPLY AND SANITATION PROJECTS

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##### MALAWI

The Malawi Self-Help Rural Water Supply Program is a long-standing development effort that has achieved impressive results in water and sanitation over its life time and successfully integrated health services on a modest scale. It is an example of a water supply program that subsequently incorporated sanitation and child survival components.

The Malawi water program had its origins in 1968 in a single community project of the Ministry of Community Development and Social Welfare, which provided 35 taps to a community of approximately 5,000 people. In the process, over 25 km of pipe were installed with community self-help labor. This effort was the foundation of a program that would encompass an additional 34 water projects (serving an estimated 750,000 people) between 1969 and 1983, as well as an A.I.D.-funded effort in 1983 to provide water for an additional 460,000 people through 16 area projects. Prior to 1983, a number of donors provided support for the water projects, including OXFAM, UNICEF, the Danish International Development Agency (DANIDA), A.I.D., the Canadian International Development Agency (CIDA), and the Christian Service Committee of the Churches of Malawi.

The accomplishments of the program in the water sector have been exemplary, and it frequently has been praised as the "most successful rural water program in all of Africa" (Briscoe et al. 1988). However, in terms of coordinating the activities of separate ministries of health and works (and their relevant divisions) in the sector, the program has generally struggled to play administrative catch-up with the achievements in hardware.

By 1979, the effort initiated in the Ministry of Community Development and Social Welfare had grown to involve 13 departments in 5 ministries. On the recommendation of a 1978 World Bank report (Pineo 1978), the various departments were consolidated in a newly created, engineering-oriented Department of Lands, Valuation, and Water, directly within the Office of the President; in 1984, the department was taken over by the Ministry of Works and Supplies. As the rate of expansion of projects exceeded the capabilities of both the community development and health ministries and as the engineering component of the ministry grew, the role and visibility of the health component diminished. This continued to the point that a 1984 Government of Malawi-UNICEF-WHO report noted that village health committees were often thought of as little more than "a quick way of mobilizing children for immunization" (cited in Warner et al. 1986).

The responsible project component, the Health Education and Sanitation Promotion component, was lodged in the MOH's Environmental Health Division. This was separate from the ministry's Health Education Unit and Primary Health Care Unit, both of which reside in the Division of Maternal and Child Health.

At the village level, activities were divided among separate water construction committees (project committees), maintenance (tap committees) and village health committees. In practice, over 70 percent of committee members belonged to more than one committee. A large number (32 percent) were also Malawi Congress Party officials. While this had certain advantages in terms of sustainability and effectiveness, it also effectively excluded most women from decision making. Although women made up 53 percent of committee members overall, that figure is misleading because they made up 69 percent of the membership of tap committees but only 8 percent of project committees.

At the central level, responsibility still fell within separate ministries and within the Ministry of Health, within competing divisions. Within the Ministry of Health a project Principal Health Coordinator served two functions—coordinating the ministry's activities with the Ministry of Works and managing sector activities within the Ministry of Health. A National Action Committee for the Water Decade, established in 1980 to coordinate all appropriate ministries in Decade activities, was largely nonfunctional, there being little sentiment within the Malawi government for formally designated Decade-related activities.

At the regional level, the administrative arrangement is, at least theoretically, more integrated. The District Health Inspector has titular responsibility for all preventive services, including maternal and child health, nutrition, immunization, and environmental health services.

Partly as an effort to address institutional and administrative shortcomings, the 1983 A.I.D. project specifically included efforts at institution strengthening and a limited emphasis on promoting sector activities. The effort appears to have been seriously underfunded, however. Only \$305,000 was allocated for generating data for monitoring and evaluation and for

health education and sanitation activities, while \$5.04 million was allocated for construction activities.

Despite periodically approved supplemental funds and health ministry efforts (often successful) to exploit other funding sources on its own, the health component was at best able to cover only a fraction of project areas (13 of 51 areas, 7 of which were A.I.D. funded). Within those areas moreover, only a limited number of "high potential" villages could be targeted at any one time (Warner et al. 1986).

The village health committees had been initiated in the 1970s, largely in response to several cholera epidemics, the stimulus also for much of the water supply initiative. The belated renewal of interest in these bodies as structures for developing community-based health care is probably more a reflection of donor priorities than host country or community priorities, because MOH and community efforts to keep them alive have often far outpaced the material support given.

The critical "change agents" in the program were health surveillance assistants, employees of the Environmental Health Division with responsibility for strengthening village health committees. Ninety-two such workers were engaged, theoretically permitting coverage of 276,000 people (92 x 10 villages each x 300 persons per village). The effectiveness of this coverage has to be questioned in view of an inadequate support structure and lack of funds for specific activities. The value of these workers and the need for developing and strengthening village health committees has, however, been recognized. Increased efforts have been made recently to expand and fund this component adequately, including \$267,000 from UNICEF for training and supporting 50 additional health surveillance assistants. The expansion of the training mandate also resulted in two WASH-sponsored workshops (Liebler 1986; Liebler et al. 1986) to develop training-of-trainer capabilities within the Ministry of Health to support training of health surveillance assistants. Ironically, differences in scheduling of staff development activities prevented participation of the Ministry of Works and Supplies in the second workshop, which partly undermined the increased collaboration that its organizers hoped to achieve.

Without exploring too deeply the question of health impact, studies of the impact of the water projects have influenced not only Malawi's program, but thinking about health effects in general. Significant among these were the studies of Lindskog et al. (1987, 1988) in West Zomba, which did not find either significant reduction of diarrheal mortality or improved nutrition with improved water supply. More significant, they showed that little increase in water usage actually occurred with the new water supply (15.5 liters per capita per day versus 12.8 liters). This finding was noted earlier by Msukwa et al. (1981), who found that even households within 3 minutes of the tap carried away an average of only 13 liters per person per day, a utilization rate generally considered inadequate to have appreciable health impact. Similarly, they also noted that although 70 percent of households had latrines (simple pit), young children almost without exception did not use them.



Although the importance of these findings is readily acknowledged by project officials, a reluctance to allocate money for evaluation persists. The position of senior evaluation specialist was soon deleted from the project, as were provisions for a Training and Research Unit of the Rural Water Service, although both were thought sufficiently important to be included in the original project design.

## **BANGLADESH**

The qualified success of the Bangladesh Rural Water Supply Scheme and its expansion beyond simple provision of water supply provide an instructive model of a water and sanitation project that subsequently incorporated child survival components.

The primary environmental factor affecting water supply in Bangladesh is one of water quality. The ample alternative sources that are available (e.g., ringwells, ponds, rivers) are generally abundant and close at hand. In this setting simple provision of a protected water supply is not likely to have any health impact, particularly if villagers continue to use alternative (contaminated) sources and maintain unhygienic defecation practices. In a population of 90 million, 88 percent of whom are rural dwellers, the magnitude of the problem is almost overwhelming.

The impressive progress in establishing the tubewell program in Bangladesh over the past 30 years is well documented. The more difficult efforts to promote appropriate use of those facilities and to effect changes in excreta disposal and basic health practices are at least as instructive, if not as inspiring, as the sinking of 160,000 tubewells.

UNICEF involvement in Bangladesh began on a modest scale as early as the 1960s, but major involvement came only after the catastrophic 1970 cyclone and the independence of Bangladesh (formerly East Pakistan) in 1971. Involvement with the water program began in 1972, and incorporation of village sanitation came later, in 1978. Although water supply achievements have been impressive (population served per pump dropped from 400 to 135), a UNICEF observer noted: "The health gains so confidently anticipated when program build up began in 1972 have yet to be realized" (Black, in press).

The main characteristics of the health and sanitation activities are familiar:

- Specific health and sanitation strategies trailed the introduction of the water component by some six years.
- A sanitation-for-water quid pro quo was followed; 50 percent of villagers were required to build latrines as a condition for pump provision. Simple water seal latrines of a design developed in Thailand were promoted.

- Utilization rates of latrines were generally discouraging. Less than a third were being used. In general, use was greatest among women, for reasons of privacy; men and children seldom, if ever, used latrines.
- The health education staff of the Directorate of Public Health Engineering, an agency of the Ministry of Local Government, consisted of 9 officers on a staff of about 4,000.
- The Ministry of Health, at least at the central level, displayed little interest in matters of water supply and sanitation, at least with respect to project activities.
- The Muslim system of Purdah (traditional seclusion of women) and the fact that tubewells were invariably in public places often combined to limit the use of water by women, who were unlikely to linger at standpipes to do laundry or engage in other water-related activities.
- Because the country is historically weak in any tradition of community organization, village organizing was invariably co-opted by local power structures. Caretakers or village elite exercised their clout to locate pumps near their household, obtain latrines, and so on.

In the end, the engineering achievements were quite considerable: an estimated 423,000 tubewells of various kinds were sunk and 360,000 latrines were constructed. Even so, assuming a latrine-user rate of six people per unit, latrines were constructed for only about 2.5 percent of Bangladesh's rural population (Black, in press).

In addition, a series of DANIDA-sponsored studies (Briscoe et al. 1986) by the International Center for Diarrhoeal Disease Research/Bangladesh from 1983 to 1985 showed great disproportion in benefits among communities. Many of the benefits were realized only among the better-off villages. Prior studies had reached the same conclusion (Hossain 1979; Islam 1979; Rahman et al. 1985).

The outcome of the Rural Water Supply Scheme as of 1985 was one of little demonstrable health impact despite a considerable intervention. Some significant developments have occurred since then, however.

- The program was opened up to a number of PVOs operating in Bangladesh, including Save the Children Federation and Population Services International. These agencies often had more immediate contact with recipient communities, a greater ability to outflank

existing centers of influence, and a more open attitude toward offering a range of integrated primary health care activities.

- In 1987, UNICEF was able to establish a system of revolving funds at the village level to allow recycling of revenues from latrine construction activities, which rescued the program from the grip of budgetary inertia.
- Village-level health workers, called health assistants, have been used increasingly in both pre- and post-construction activities. They have thus become agents for promotion of a range of health messages and activities, including immunization and family planning, within a number of districts.
- The Chittagong District has since 1986 become one such focus of an integrated approach on a trial basis. Demand for water services has been used as leverage for introducing a range of activities, and a variety of community resources—teachers, village defense workers, mothers' groups, and the like—have been used.

In many respects the experience of the water and sanitation sector reflects that of other endeavors in the social sector. Indeed, as early as 1974 the Compañanaj project (supported by the West German Protestant Central Agency for Development, Christian Aid in Britain, and the Ford Foundation) attempted to provide regionalized integrated health services around rural health centers. Of this effort, McCord (1974) said:

Integration of health services and family planning can be accomplished in Bangladesh but it can't be done throughout the country unless the central administration and particularly the district level administration demonstrates a stronger determination to correct inefficiencies and inequities in the present system. The existence of multiple separate bureaucracies makes it very difficult to do this.

This comment is equally relevant to activities in the water and sanitation sector. The outcome of efforts such as the Chittagong project remains to be determined, as does the prospect of wider adoption of similar efforts.

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## **INTEGRATING WATER SUPPLY AND SANITATION INTO EXISTING CHILD SURVIVAL PROGRAMS**

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### **ZAIRE**

The Rural Health Zones/SANRU project in Zaire is significant because of its size and its role within the larger context of an ambitious countrywide strategy of integrated primary health care delivery. It is a good example of water and sanitation activities being incorporated into an existing child survival program.

Initially conceived as a broad-based primary health care project, with some emphasis on family planning and a stated but ill-defined interest in improving water supply and sanitation, the program eventually developed major strategies for improving community-level water supply and sanitation, as well as improving and incorporating the institutional capabilities of the National Rural Water Authority.

In Zaire, primary health care has clearly been the dominant consideration from the outset. The concept of health care delivery through integrated services in regional "health zones" evolved from a series of national seminars sponsored by Protestant and Catholic churches in 1974 and 1975, but it remained largely dormant because of lack of funds for implementation. A number of pilot programs established from 1975 to 1980 in Kasongo, Kisantu, Vanga, and elsewhere did, however, serve as models for later development of Zaire's rural health zone strategy.

In 1981, Zaire officially endorsed and adopted the Alma-Ata Declaration. The first five-year national health plan was soon developed and subsequently established the current 306 rural health zones, each designed to function independently and to deliver a comprehensive range of basic and preventive health services to a population of 60,000 to 150,000 per zone. The structure of the rural health zone is pyramidal, with tiers of increasing capabilities from village health workers and traditional birth attendants at the village level, to local health centers, larger "referral health centers," and then to the zonal reference hospital.

The range of services and activities envisioned for each health zone's jurisdiction was extensive and included health education, promotion of nutrition and agriculture, under-five's child health care, prenatal health care, maternity services, family planning, vaccinations, control of endemic diseases, water and sanitation, basic curative care, provision of essential supplies, supervision of services, and training and continuing education. A phased approach that first established and then expanded each health zone's functioning was used, under which water and sanitation were included as later interventions.

SANRU (Rural Health) or SANRU-86 (as it was later known) was an A.I.D.-funded attempt to provide some of the infrastructure, training, and organizational support for 50 of the zones through a program administered by the medical office of the Protestant Church of Christ of Zaire (ECZ). SANRU II (initiated in 1985) subsequently extended the program to an additional 50 zones and sought to enhance capabilities and services in the original 50 zones as well as nationally. The initial SANRU-86 estimated budget was \$11.8 million from all sources; an estimated \$63 million is envisioned for SANRU II through 1992.

SANRU did not seek to fulfill all of the health needs of any zone or to establish "SANRU zones" or "ECZ zones." It did, however, serve to coordinate a large number of cooperating agencies and programs within individual zones. Community-level resources were developed through village development committees, village health workers, and traditional birth attendants. The title "development committee" was chosen over "health committee" to emphasize the interdisciplinary responsibility.

Although the commitment to water and sanitation improvement as an integral component of primary health care was firmly entrenched in principle in the rural health zone strategy, the reality of rural water and sanitation was initially fragmented and often impromptu in nature. Governmental and nongovernmental agencies involved in water or sanitation were numerous, but no encompassing strategy or coordination directed their efforts. Reviewing this situation, a WASH evaluation (Warner et al. 1985) made two recommendations: that a national policy and strategy be developed and that implementation in the rural setting be coordinated by the National Rural Water Service (SNHR).

The mechanisms for linking water and sanitation and primary health care strategies in Zaire exist at two levels. At the peripheral or community level, an informal but established tradition of cooperation and diversification already existed. At the ministerial, programmatic, and policymaking level, the situation was more complex: numerous agencies and competing roles and objectives were involved.

At the community level, it was sufficient to expand on existing efforts—to assist health zones to establish an independent capacity for implementing simple water and sanitation interventions, such as spring capping, shallow well construction, rainwater catchment, latrine construction, and village sanitation programs. Village development committees and village health workers were the instruments of this strategy, directed by trained rural water coordinators and/or similarly trained Peace Corps volunteers. Central or regional government support formed the basis of training by promoting appropriate technologies and providing limited logistical or technical support. Because these measures would not suffice for all circumstances, more complex interventions, such as adduction systems and drilled wells, and support capabilities at a higher level were needed. This necessitated expanding the technical and other capabilities of the SNHR (and by extension, those of the Department of Agriculture and Rural Development). Seventeen-member rural water brigades, trained in technical aspects as well as administration and planning, were created at the regional level

to provide the necessary backup. At the ministerial level, oversight of the 306 zones (including the 100 SANRU zones) and the primary health care strategy itself fell within the *5eme Direction—Soins de Santé Primaires*, an agency created in 1982 and lacking much of the institutional strength of older agencies.

Further complicating this picture, but actually intended as a response to the relative weakness of the primary health care agency, was the revitalization in 1986 of a semiautonomous body *FONAMES (Fonds National pour l'Assistance Medico—Sanitaire)*. Although attached to the Ministry of Health, this body had an independent budget and staff and responsibilities for administration and finance, planning, training and supervision, and information and operations research. Among its critical functions was coordination of an enormous number of donors and collaborating agencies, from UNICEF and WHO to OXFAM, the Rockefeller Fund, and the Johns Hopkins Program for International Education in Gynecology and Obstetrics.

The final verdict on this administrative arrangement is not yet in. It has already demonstrated, however, that integrated service delivery and interdisciplinary cooperation are often much simpler at the community level than in entrenched ministries, even when a strong central mandate exists. It also has shown that integration at community or peripheral levels is insufficient if central policy, logistical, or technical support and backup are needed, as they invariably are.

The SNHR component was eventually separated administratively from the ECZ-administered "health component" and is now administered directly by the SNHR. The scope of the effort was certainly a factor in that decision. The range of water and sanitation objectives set by SANRU II reflects the tremendous evolution of this component within the primary health care setting:

- 125 water supply and sanitation coordinators
- 3,000 village development committees
- 3,000 water sources
- 2,000 ventilated improved pit (VIP) latrines
- 1,000 villages complete a sanitation program
- 350,000 served with potable water

**Strengths of SANRU/Rural Health Zone program:**

- Not a demonstration project: Scale of zone activities is identical to those in other zones; therefore, successes can probably be generalized.

- Not a "project" in traditional sense: National commitment to program is not conditional on donor involvement (although success may be).
- Experience with pilot programs in Vanga, Kasongo, Kisantu, and elsewhere helped guide initial planning.
- Strong central government support for concept of integrated primary health care; established (if informal) tradition of interdisciplinary cooperation at peripheral level.
- Infrastructure development and strengthening of institutions: Encourages sustainability; scale of endeavor also makes it unlikely rural health zones can be dismantled easily, even if donor support ceases.
- Multiphasic, multilateral involvement and concurrent development of other health zones: Allows some flexibility of approach and pooling/sharing of lessons learned; may help limit dominance of any individual donor's philosophy (e.g., Catholic-run health institutions' attitude toward family planning).
- Prior existence of public health component: Avoids the pitfalls of "health" being considered as an add-on to water and sanitation hardware.
- Tradition of paying fee for medical care: Favors cost-recovery and sustainability.
- University of Kinshasa School of Public Health, recently established, enables in-country public health training of physicians and others to create a substantial pool of trained and trainable personnel.

**Weaknesses and Obstacles:**

- Financial instability: 300 percent annual inflation; difficulty in meeting counterpart contributions, particularly in dollar procurements. Country is currently adhering to a World Bank-imposed stabilization program.
- Administrative weaknesses: Two main implementing agencies of government (Primary Health Care Division and FONAMES) are both young and evolving; personnel changes, frequent administrative

reorganizations, and shortage of qualified personnel impede continuity but are often unavoidable.



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## DEVELOPING CONCURRENT WATER SUPPLY AND SANITATION AND CHILD SURVIVAL PROGRAMS

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### BOLIVIA

Another instructive effort to integrate child survival and water supply and sanitation is the Bolivia Rural Child Survival Project, a \$5 million, A.I.D.-assisted program implemented by CARE Bolivia. This project combined water and sanitation and child survival from the outset.

The project was initiated in August 1986 and aimed to promote integrated primary health care by concurrently developing community-level capabilities in three spheres: health inputs (health and hygiene education, immunization, ORT and diarrheal disease prevention, and nutrition); village-level water supply and sanitation (latrines); and community development and institution building, to sustain and maintain health and water services.

Project activities included a baseline health survey, social surveys by health promoters (*promotores*), formation of water supply and sanitation committees and mothers' groups, selection and training of 200 health volunteers, initiation of health promotion activities, latrine construction, and then water system construction. Water supply provision was to be conditional on 25 percent of households agreeing to construct latrines. The health promotion component, meanwhile, would have been initiated six months earlier, to provide instruction in ORT, establishment of a cold chain and immunization program, and nutrition education (including breastfeeding, weaning, and growth monitoring).

Although the project was designed to build on the experience gained by CARE Bolivia in a previous disaster-relief potable water supply program, it was soon evident that translating the achievements of the prior effort to 28 centers and 200 villages in 5 regions was not simply a matter of multiplying the scale or dollar value of the smaller effort. Major problems beset the project virtually from its inception. The institution strengthening contemplated was actually very limited in scope and did not extend appreciably beyond the community level. The belief that strong village-level organization could obviate the need for strong secondary levels of support proved naive.

By June 1987, the project was far behind schedule and beset by staffing problems and major organizational issues: A.I.D. and CARE had different ideas on how to manage the project; linkages with cooperating institutions were not functional; supervisory and management personnel were not experienced in meeting the management demands of the project; the information system was inadequate for measuring the desired results; and the role of local supporting institutions was unclear.

Program review found that the project had a disjointed quality: engineers focused on water, medical people on health. Ministry of Health officials had very little idea of the project and not been involved in selecting the target communities. Representatives of the local development corporations saw it solely as a water project. The theme of integration was mostly lost among implementing staff.

A project review workshop (Edwards 1987), convened with A.I.D./WASH assistance in October 1987 and involving all concerned parties, addressed most of these issues and made substantial recommendations. It concluded that many of the problems were probably the result of an inadequate design and stressed the need for any future programming to coordinate its effort closely with national Ministry of Health planning. A recommendation for strategies and specific planning at all levels (village, regional, district, and national) was finally accepted by all parties. This became the basis for a systematic evaluation and identification of the roles, responsibilities, and expectations of each party at all levels: A.I.D., CARE national, CARE regional, the Ministry of Health, and the local development corporations. A national-level project advisory committee and regional implementation committees were to keep lines of communication open among all participants at the respective levels and help in resolving problems and jurisdictional conflicts. Finally, a number of specific technical and personnel issues were addressed concurrently, and recommendations were made regarding recruitment of local physicians, sharing support vehicles, and other matters.

Midterm review of the project in 1988 (again accomplished through a workshop) concluded that the project had been "completely turned around" and was now an appreciable success (Edwards 1988). It reported "improved satisfaction with the project structure at the technical assistant level (but probably not at the regional administrator level)" and modestly improved communication between CARE and counterparts. Project teams had been formed with varying levels of success, however, and mechanisms to develop unified work strategies (instead of separate water and health and gardening programs) were generally unsuccessful. The evaluation noted that "the larger strategy of achieving an integrated approach to health (with all components working together and being understood as such by the community) was not really being carried out."

As of FY 1989, 73 water systems were complete and 38 were under construction; 1,318 latrines were reported under construction. Immunization coverage was 24 percent of children with a complete series, including BCG, and an estimated 57 percent with BCG excluded. A family garden component was scheduled to be phased out. The project's long-term chances may stand to benefit from institution strengthening provisions included in the 1988-92 A.I.D./Government of Bolivia Community and Child Health Project.

## ECUADOR

The Rural Water Supply and Sanitation Project in Ecuador began in 1981 as a \$13.8 million A.I.D.-supported rural water program that was to be a "replicable model" of integrated rural development in three regions of Ecuador. The program was initiated with both water and sanitation and child survival included.

In 1982, an additional \$2.6 million was approved to extend water and sanitation activities to six additional provinces. The project had several objectives: improve health services delivery within an integrated primary health care model; promote coordination of health services institutions within the geographical area; facilitate extension of rural water and sanitation services through appropriate low-cost technologies; incorporate "nutrition concerns" into health program designs; and decentralize decision making. The implementation of this effort was to be the role of several separate ministries or ministerial agencies, notably the Ecuadorian Institute of Sanitary Works (IEOS) and the Ministry of Health; coordination responsibilities fell primarily to the Secretariat of Integrated Rural Development (SEDRI).

To carry out its function of coordinating rural water supply and sanitation, IEOS set up an entire division—the National Division of Basic Rural Water and Sanitation. This gave great stature to the area of rural water, but it did little to redirect organizational thinking toward small-scale rural operations rather than the customary IEOS role of constructing large piped-water systems. IEOS staunchly opposed the use of "unqualified" paraprofessionals, although, at the field level, evaluators found that some *promotores*, approached for help by overloaded provincial engineers, were serving precisely that function.

In the meantime, the community-participation components were functioning, but they were directed more toward immediate priorities of construction than to operation, maintenance, or continuity. Many villagers, unable to complete assigned workloads, lost their right to free house connections, and significant proportions of some villages were unserved. Latrines were often poorly sited and thus unused even when completed.

Health education and social marketing activities and outputs, the HEALTHCOM contribution, covered promotional and educational materials (print and radio) that prominently targeted ORT promotion and diarrheal disease prevention initially and immunization and infant feeding at later stages. The program and materials were designed on the basis of results from formative research (started in November 1982) and tested, revised, and implemented according to the model developed in Honduras (see case study for Honduras).

HEALTHCOM's institutional relationships with the Ministry of Health were not totally harmonious, however, and its efforts became operationally divorced from the Ministry of Health in 1985 with the establishment of a national child survival program—PREMI (Plan for the Reduction of Infant Morbidity and Mortality)—with its own direct donor linkages and

apparatus. PREMI had closer links to the quasi-governmental, independent National Institute for the Child and Family (INNFA) than to the MOH bureaucracy. The two parties—MOH and PREMI/INNFA, in fact, appeared to be more competitors than collaborators. This also created some program difficulties, because increased demand created by the communication unit's promotional activities was sometimes "out of synch" with health services' capabilities. For whatever reasons, MOH "ownership" of the project was never achieved, and no institutional transfer of the project was foreseen (at least with respect to the MOH) at project's end.

## HONDURAS

The Rural Water Supply and Sanitation Project (PRASAR) in Honduras provides another example of the complex interagency relationships that must be addressed at national and regional levels before successful integration of water supply and sanitation and health care services can be achieved. This project included both child survival and water and sanitation components at the outset, but in execution, it was less comprehensive.

Although nominally intended to provide integrated services (including a sizable health education effort), this program was very much a straightforward exercise in providing hardware from its inception. The project design essentially appropriated to each of three agencies a particular project responsibility. Oversight responsibility was lodged in a project committee composed of the three project directors and the A.I.D. project officer. The results were perhaps predictable: Each agency pursued its individual tasks independently, there were few meetings of the project committee, and the health education component was eventually subverted into the Ministry of Health's portfolio, never having its own project director. Village preparation and promotion of community were not coordinated because the agencies responsible for "hardware" seldom advised others of their intent before moving into communities to construct systems.

The local communities, which were expected to provide as much as 22 percent of project costs through donations and their labor, were often reluctant to accept their sudden responsibility. Where adequate advance promotion did take place, however, response was enthusiastic—latrine construction was the only activity operating ahead of schedule, and water seal latrines were particularly welcomed.

The educative component and training eventually became largely the role of the Academy for Educational Development under the Mass Media and Health Practices Project, later to become HEALTHCOM. The PRASAR project itself achieved much of its goal with respect to provision of hardware. On the other hand, the health education component (through HEALTHCOM) probably achieved more (at least in the short term) acting independently of the other agencies than it could as an integrated but inferior partner.

The HEALTHCOM Honduras project, established under the Office of Health Education, Ministry of Health, eventually became the main implementing agency for a \$1 million grant for health communication included in the PRASAR agreement. The communication strategy essentially focused on applying established mass marketing techniques to health outputs. A concurrent promotional campaign for ORT and diarrheal disease prevention (PROCOMSI I), although also developed by HEALTHCOM, was not implemented initially in the PRASAR zones of activity, but as a pilot program in one region during its first year. Beginning in 1982 the Ministry of Health gradually expanded its operation to all regions. A second effort, PROCOMSI II, was started in 1983. It expanded the coverage of the ORT campaign and added program components in malaria control, tuberculosis control, and immunization, developed within the same methodological model used for the ORT and water and sanitation campaigns.

To the degree that the ORT campaign's objectives and the PRASAR project's goals concur in principle or coexisted in time, the efforts might be considered integrated; but in terms of programmatic linkages or operational integration, the connections between the two were few. Accordingly, they would have to be considered an example of informal linkage between a water supply and sanitation project and a child survival program.

## **NIGERIA**

The Imo State Water and Sanitation Project was launched in 1981 as a pilot project under UNICEF sponsorship (and with considerable UNICEF "ownership"). It was an attempt by UNICEF to present a rational alternative to high-tech water supply strategies to an establishment that remained highly skeptical. Its success has led to replication in 5 of 20 other Nigerian states since then, but its shortcomings are also instructive. This project, at least nominally, included both water and sanitation and child survival components at the outset.

In the face of a general lack of official enthusiasm, the pilot project became a new departure in the accustomed mode of operation. The administrative authority set up to run the project, although nominally within the jurisdiction of the Ministry of Community Development, had its own staff, agenda, and operational capacity. Imo State contributed \$429,000 to meet the salaries of seconded staff and some recurrent expenditures; UNICEF's input totaled \$3 million by the end of 1982.

The model implemented had few revolutionary ideas, except in terms of application. The main features included community motivation, education, and organization to enable both project participation and necessary behavioral change; mobilization of community steering committees to select village health workers; selection and training of village-based workers (VBWs; at least two women from each community) in breastfeeding, nutrition, and immunization as well as water supply and sanitation; a hardware component with latrine construction as a quid pro quo for water supply; and software teams responsible for pump

maintenance and upkeep but also dedicated to sanitation, health education, guinea worm prevention, and ORT.

Several shortcomings and limitations of the approach emerged:

- Expensive high-tech drilling rigs were used unnecessarily in most circumstances, given shallow water tables. Their use, and attendant technical teams, reinforced the external nature of the intervention and limited the capability to disperse technology to peripheral levels.
- Assorted hardware problems, including deterioration in areas of high acidity, cost, and maintenance, marred progress.
- There was a high dropout rate among VBWs. Lack of remuneration was a disincentive (particularly among male VBWs) as was the cost of the long training period. The VBWs were not recognized by the health establishment, and many VBWs perceived training as a "passport to a job." Further, most village steering committees were dissolved after selecting the VBWs, and no significant community input was given thereafter.
- The lack of project "ownership," which was a logical consequence of the effort to run the project autonomously, became painfully evident when the Imo project was turned over to the state Ministry of Local Government in 1985. Recurrent expenditures were reduced to 15 percent of the level of previous years, the project was badly understaffed, and outputs dropped appreciably, both in numbers of boreholes completed and VBWs trained. In response, a reorganization was accomplished that repositioned the project within the state cabinet office, under direct control of the secretary to the military governor. The long-term implications of this move for program sustainability are untested.

The successes of the Imo State project were significant, nonetheless, and several Nigerian states requested replication of the model. In 1986, the federal government established the new Directorate for Food, Roads and Rural Infrastructure and gave the body a specific mandate for rural water supply. The new directorate, in turn, endorsed and adopted the Imo State model as the preferred national strategy for rural water supply and sanitation. By 1987, funding of rural water and sanitation (internal and external sources) rose from almost nothing to \$50 million a year.

With the adoption of the Imo model, however, came a very significant change: The federal policy provided for the provision of services to all states simultaneously, and within them to

all local government agencies, thereby subverting the concept of phased introduction and making it impossible to carry out the integrated program of health education, promotion, and sanitation activities necessary for achieving any health impact. The policy was an admirable commitment to equity, but perhaps an unfortunate compromise of effectiveness.

One final point should be noted from the Nigerian experience. With respect to the training of VBWs, the Nigerian experience with broad training over a wide range of child survival topics is what many consider an ideal model—the multifunctional village health worker. In the Imo project, however, organizers found this model unworkable and expensive, and later training was deliberately narrowed to water and sanitation issues and diarrheal disease control.

## **TOGO**

The Togo Rural Water Supply and Sanitation Project is an example of a program established from the outset with water and sanitation and child survival components. It has justifiably been heralded as a remarkably successful effort. Although it was not without problems, it is instructive as an example of actual implementation of several concepts.

Initiated to provide potable water to 350 villages, the project was expanded and eventually provided 760 villages with 1,050 boreholes (100 percent of target), 473 completed latrines (4.5 percent of original target), 3 developed springs (30 percent of target), and 59 completed cistern systems for rainwater collection (17 percent of target). In addition, training was provided for 1,118 female pump caretakers and 3,361 female ORT demonstrators. A total of 864 village committees were established. Health education, which centered around nine themes (e.g., guinea worm, latrine use, and oral rehydration therapy), was the subject of organized educational campaigns in the villages.

The Togo project ultimately involved the cooperative efforts of the Ministry of Public Works, two divisions of the Ministry of Health and Social Affairs (Division of Social Affairs and Division of Sanitation), and four external donor agencies (A.I.D., French Fund for Aid and Cooperation, the European Development Fund, and the U.S. Peace Corps). It cost an estimated \$16.7 million over seven years and reached a population of 600,000.

The social component of the project included training, community organization and mobilization, identification of community health problems, and community-level actions to address health problems. The component was under the jurisdiction of two A.I.D. health educators and 120 Togolese social affairs and sanitation field agents.

Several factors account for the successes of the Togo project. First, there was a willingness to commit funding to health education and community organization; fully 25 percent of all project funds went to community organization and health education, a majority of which was

government contributions of salaries and support of field agents. Second, an existing cadre of salaried field agents, already established within an organizational structure in the Ministry of Health and Social Affairs, was available for long-term commitment to program objectives (eventually seven years) and a continued process of both formal and experiential/practical training.

Third, a concrete effort was made in the training objectives (and practice) to give ample attention to social skills in addition to technical skills. This commitment to human resources development training was reflected in an average of 70 days of training in health education and community development per agent (over the life of the project) versus 16.5 days of technical training; an additional 72 days were utilized in planning and evaluation workshops. Fourth, there was donor commitment to an integrated approach to health care. The A.I.D. representative personally supported the evolution of the educational and community components of what was initially a relatively narrow-focused project without very clearly defined educative or community components beyond the now obligatory program to train villagers in pump repair. External project reviews also endorsed the approach (Isley 1983). This external impetus undoubtedly helped to direct and sustain the project until sufficient results were produced to convince rival ministries of the validity of the approach and the need for coordination.

Finally, the educational program represented more than "information delivery." This strategy defined education as a "process enabling behavioral change" and significantly broadened both the scope of inquiry and modes of educational efforts rather than simply concentrating on newer methods of delivering health education "messages." Although an extremely difficult strategy to sell initially, because it focused on methods of problem resolution instead of definable, established solutions, its greatest selling point was its successes. Although the method was (initially) disorienting to bureaucratic sensibilities, it provided sufficient flexibility to adapt to a range of varying circumstances of disease prevalence and community priorities in the country's two geographical regions (savannah and plateau) and 760 villages.

Although the Togo project has achieved appreciable gains in approaching health care concerns within a water and sanitation project on a significantly broader basis than the usual add-ons of latrine use and hand-washing, it does not really represent a full integration of child survival strategies, even within the project's jurisdiction. Immunization efforts are still very much a vertical program; promotion of vaccination efforts within the program's mandate was therefore limited by hesitancy to create demands that could not be adequately and readily fulfilled. In addition, the broad scope of the ultimate education strategy may not have been adopted had original plans for construction of 10,000 latrines been implemented. The selection of a prohibitively expensive design provoked a drastic cut in the planned number of latrines (from 10,000 to 612), which in turn necessitated a reevaluation of the health education component. The use of 120 field agents and \$7 million to promote appropriate latrine usage becomes a rather questionable activity when there are only 600 latrines. In



fact, hygiene education efforts were complicated at first by misrepresentation of the project as solely one of latrine construction.

A number of additional shortcomings in the project should be noted. Most important, the claimed coverage of 760 villages and 600,000 people served is misleading. Village populations invariably exceeded pump capacities, which led to long queues and frequent use of alternative (i.e., contaminated) sources. This defused and defeated much of the instruction on safe water usage. Although interim evaluations noted this and recommended equipping fewer villages with more pumps, this was not done. The political advantage of the latter course unfortunately undermines the chances for significant health benefit. Further, the involvement of women was less than desired, particularly in decision making; there was poor coordination among participating agencies; major upper-level personnel changes occurred; conflicts over site selection were frequent, and conflicts over project goals, objectives, and strategies plagued the project for most of its first three years.

Despite these shortcomings, the project achieved considerable success in breaking new ground. Although predictions of sustainability may be premature, the significant investments in training field agents and the establishment of interministerial and interdisciplinary cooperation should provide a good basis for future cooperation.

# Appendix B

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## THE WASH PROJECT

With the launching of the United Nations International Drinking Water Supply and Sanitation Decade in 1979, the United States Agency for International Development (A.I.D.) decided to augment and streamline its technical assistance capability in water and sanitation and, in 1980, funded the Water and Sanitation for Health Project (WASH). The funding mechanism was a multi-year, multi-million dollar contract, secured through competitive bidding. The first WASH contract was awarded to a consortium of organizations headed by Camp Dresser & McKee International Inc. (CDM), an international consulting firm specializing in environmental engineering services. Through two other bid proceedings since then, CDM has continued as the prime contractor.

Working under the close direction of A.I.D.'s Bureau for Science and Technology, Office of Health, the WASH Project provides technical assistance to A.I.D. missions or bureaus, other U.S. agencies (such as the Peace Corps), host governments, and non-governmental organizations to provide a wide range of technical assistance that includes the design, implementation, and evaluation of water and sanitation projects, to troubleshoot on-going projects, and to assist in disaster relief operations. WASH technical assistance is multi-disciplinary, drawing on experts in public health, training, financing, epidemiology, anthropology, management, engineering, community organization, environmental protection, and other subspecialties.

The WASH Information Center serves as a clearinghouse in water and sanitation, providing networking on guinea worm disease, rainwater harvesting, and peri-urban issues as well as technical information backstopping for most WASH assignments.

The WASH Project issues about thirty or forty reports a year. WASH *Field Reports* relate to specific assignments in specific countries; they articulate the findings of the consultancy. The more widely applicable *Technical Reports* consist of guidelines or "how-to" manuals on topics such as pump selection, detailed training workshop designs, and state-of-the-art information on finance, community organization, and many other topics of vital interest to the water and sanitation sector. In addition, WASH occasionally publishes special reports to synthesize the lessons it has learned from its wide field experience.

For more information about the WASH Project or to request a WASH report, contact the WASH Operations Center at the above address.