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RURAL WATER SUPPLY: A Studies Division Workplan

Rural water supply represents both an obligation and an opportunity for AID. The obligation has been imposed by the commitment of the United States to the Second Water Decade. The opportunity is to work in an area where the need is unquestioned, the money has been assured, and the technologies are well-known and tested. In addition, improving the availability and the quality of water can improve the health and quality of life in rural areas as few other changes can. Under these set of circumstances, why then should AID not have on the shelf projects that would meet or exceed the willingness of the Congress to finance further interventions? In part, it is a realization that the previous interventions have not all been successful, they have been expensive to put in place, and the benefits have been diffuse and difficult to demonstrate.

A PROGRAM FOR AID

Rural water supply is a micro-scale undertaking that must be responsive to the needs of the community that it is planned to serve. Everyone already has a source of water supply. Unless a planned new source meets the local needs better than the source that it is intended to displace, it will not be used.

Meeting the needs of the local population requires an understanding of the social, political, and ecological functions of the community. It also requires pumps that work, tanks that hold water and when, as inevitably happens, pumps break and tanks leak, it requires the resources to repair them expeditiously.

Both the social understanding and the technological problems can be solved. Participation, training, micro-scale research, availability of spare parts and other inputs can provide the potential users with a source of water that meets their needs, one which they can maintain, and which will produce the projected benefits.

To be able to respond to the rural water supply challenge and to do so at the projected levels over the decade will require a greatly increased number of those micro-scale projects based on knowledge of local conditions. This is the very type of project that large agencies have thusfar usually done poorly. To increase AID effectiveness in the provision of rural water supply, new approaches must be formulated, tested, evaluated, and improved.[1/] This paper presents a format for AID to pursue as it becomes increasingly involved in rural water supply.

TYPOLOGY OF RURAL SYSTEMS

Rural water supply systems can be either simple or quite complex. At the lowest level, an individual handpump or local source without a distributional

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1/ See Hoben, "Small Farmers and Big Agencies: The Relevance of Micro-Studies to Policy Planning and Program Implementation."

component can represent an improved rural water system. At the opposite end of the rural water scale are village water systems in which treated water is distributed to standpipes, patio connections, and individual housing units.

To talk meaningfully about the problem, the present collective term rural water supply must be disagregated. Donaldson proposes three categories on the basis of the technology best suited to supply water.

1. Dispersed communities most appropriately served by a source of water with no distribution system.

2. Small villages that would include a source and a minimal distribution system.

3. Villages with concentrated populations where single or multiple sources of supply are treated and distributed to public fountains, patios, and individual households.[2/]

Population concentration is an important consideration because it is an indication of the level of technology appropriate for specific communities. Where the technology selected exceeds the ability of the community to operate and maintain the system, the system inevitably fails. The maintenance of sophisticated systems require full-time well-trained persons. Communities which are not large or wealthy enough to generate funds for maintenance of complex systems, or where the source of spare parts is remote, would be better served by simpler technologies. The categories

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2/ Los Programas De Abastecimiento Rural De Agua De America Latina David Donaldson, Oficina Sanitaria Panamericana, Vol. LXXVI, No. 4, 1974

suggested are proto-types. Actual conditions may vary and in some circumstances communities might be best served by a higher or lower technology than might be warranted solely on the basis of population concentration.

Appropriate water supply and distribution systems may require other inputs for the community to realize the potential benefits. These might be in the form of projects relating to excreta disposal or of training in hygiene or in the operation and maintenance of the system hardware.

FINANCIAL SUPPORT

Water systems require financial support to assure continued operation even if its original capital contributions are written off. The financial support for the system would vary with the means of the community and of the individuals being served. In principle, no one should be deprived access to water because of inability to pay, but even in the poorest community, contributions of labor for installation should be required as an indication of the commitment of the community to improved water supply. On the other hand, the complex village system could and should support recurrent expenses and make some contribution to the capital costs of the project.

PROJECT PERIODS

Water supply projects have three distinct periods. To be effective, any project must have adequate plans for all three. The separate periods are:

1. Planning
2. Implementation (Construction)
3. Post-Construction

The program content, complexity, and time required will vary with the density of the population served (dispersed, semi-concentrated, concentrated), and with each phase of the project. AID's concentration has in the past focused on the construction period. If a project is carefully designed, it can serve as a vehicle for a long-term intervention which involves not only planning, and construction of the system, but in addition, instruction in the operation, maintenance and use which will assure its long-term functioning and its contribution to community well-being.

Project planning should recognize the distinction between communities and should provide appropriate support for the effort from the time before any construction until some time after the project is completed.

Planning

The planning period has two purposes that are inter-related: an engineering and technical survey to establish what options are available and an involvement with the community that on the one hand informs them of the choices and on the other seeks guidance on that option which would best serve their needs.

During the planning period in communities where there is no local institution for managing the water supply, one should be formed by the local

community. This water administration institution would then become the coordinator of local efforts. Its responsibility would range from managing labor contributions to the project to the ongoing operation and maintenance of the system--be that system a single well or spring or a complex multi-tap distribution system.

Implementation

During the implementation period, the project with all its components is set in place. The obvious focus of this period is the construction phase in which the selected hardware is installed. It, however, is not limited to the physical water system, but may begin with the actions of the local community committee in digging pit laterines, the assessment and collection of water fees, or the initiations of courses in water and health. As with the other phases of the project, the components of the programs for specific communities will vary with the type of community being served.

As part of the implementation period, the present performance of the programs should be evaluated. Hardware and software that is not working should be modified or replaced at this state. Longer term evaluation should also begin during the period that will meet the requirements of the Agency.

Post-Construction

The post construction period begins when the systems implemented as part of the water project have been installed and there is assurance that they

are operating satisfactorily. The evaluation system set in place should now provide the information that can be used to ensure continued operation. Social and financial programs that had been planned as part of the project should be monitored--and modified if they are not effective. Materials that prove inappropriate should be identified and replaced as soon as there is any indication of their successive failure under the operating conditions of the system. The required inventory of spare parts should be determined and provided to ensure continued operation of the system.

The post-construction phase should monitor and evaluate the functioning of the various inputs to the project. It should last long enough to ensure that the project is sustainable. During the period, a complete evaluation designed to modify the functioning of future projects would be conducted. The evaluation should include both social, physical and institutional aspects of the plan.

ROLE OF THE STUDIES DIVISION

The Studies Division will provide PPC with the background necessary to articulate a clear policy on rural water supply and to suggest a coordinated program that could effectively and efficiently use the estimated budget projected for the period. To do this, the Studies Division is developing a workplan with four components:

1. Inventory of AID projects using project documents and evaluations that will examine in detail the physical, social, economic, institutional, environmental, and financial aspects.

2. Indentification of issues affecting what works and what does not work in rural water supply projects.

3. Assessment of the adequacy of the data for determination of the future project planning and determination of suitable studies and evaluations where necessary.

4. Presentation of the findings from present data and from studies and evaluations to provide guidance for project formulation.

5. Formulate appropriate design and evaluation packages as guidance for rural water supply projects in different settings.

INVENTORY PROCEDURES

The first step on the planned activities is an inventory of recent and on-going AID-funded projects. Data on the projects are being gathered and existing evaluations will be used to determine if there are any patterns of successful and unsuccessful projects. A list by country and region of relevant projects and existing data on those projects is included with the other material for the conference.

ISSUES IDENTIFICATION

A set of issues relevant to rural water supply will be drawn from three sources. First an issues paper is being prepared by Ian Burton. Secondly, the experience of AID, the Pan American Health Organization, the Inter-American Bank, and the World Bank are being surveyed. This survey includes

both the extensive literature and the opinions of individuals in the respective organizations. Finally, issues may arise from the inventory of AID projects. Issues papers from Burton, from the literature, from the AID inventory will be circulated in October in preparation for a committee meeting on November 16.

WHAT WORKS AND WHAT DOES NOT

A survey of a number of countries and settings will be used to confirm the validity of the issues. Where there are gaps in knowledge, the Rural Water Reference Center in the Hague and WHO in Geneva will be consulted to confirm the research needs. Appropriate studies will be undertaken where necessary.

REPLICABILITY

At present, each rural water project is unique. To avoid the need for handcrafting, a series of packages will be formulated. A continual exchange will be sought with persons in the Agency to assure that the packages meet the needs of those concerned and to foster use once they are formulated.

These will be loose conceptual formulations of hardware and software. Much of the material exists within AID or is available from other active in the field. The material includes manuals, training films, evaluation methods, pumps, questionnaires, and U.S. engineers and social scientists with a knowledge of the various host country communities and languages.

The packages will not automatically ensure project success, but they will provide the missions with a set of inputs that can be tailored for the country. These inputs will need an institutional setting at national and regional levels. This would be the responsibility of the mission. What is important is that the present handcrafted approach to rural water systems that resulted in an expenditure of approximately $50 million in FY 79 can, through its use of standardized packages, be expanded to meet the congressional mandate.