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RURAL WATER-SUPPLY AND SANITATION PLANNING: THE USE OF SOCIOECONOMIC PRECONDITIONS IN PROJECT IDENTIFICATION

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ABSTRACT

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Recognition of the socioeconomic preconditions for successful rural water-supply and sanitation projects in developing countries is the key to identifying a new project. Preconditions are the social, economic and technical characteristics defining the project environment. There are two basic types of preconditions: those existing at the time of the initial investigation and those induced by subsequent project activities. Successful project identification is dependent upon an accurate recognition of existing constraints and a carefully tailored package of complementary investments intended to overcome the constraints. This paper discusses the socioeconomic aspects of preconditions in the context of a five-step procedure for project identification. The procedure includes: (1) problem identification; (2) determination of socioeconomic status; (3) technology selection; (4) utilization of support conditions; and (5) benefit estimation. Although the establishment of specific preconditions should be based upon the types of projects likely to be implemented, the paper outlines a number of general relationships regarding favourable preconditions in water and sanitation planning. These relationships are used within the above five-step procedure to develop a set of general guidelines for the application of preconditions in the identification of rural water-supply and sanitation projects.

DEDICATION — IN MEMORY OF PROFESSOR VEN TE CHOW

I came to know Professor Ven Te Chow while an undergraduate/graduate student at the University of Illinois over 1960–1964. At first, he was the eminent professor who taught graduate courses in hydrology, open-channel hydraulics and groundwater. Just being in his classes was an honor to an impressionistic student. As time went on, however, Professor Chow became less of a figure to be revered at a distance for his reknowned accomplishments and more of a man to be admired and loved for his human qualities. I remember his patience and encouragement in class, his enthusiasm in the laboratory, his accessibility and genuine concern in his office, and his hospitality at his home. During my years at Illinois, Professor Chow provided the

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model for many of the academic characteristics I later tried to emulate during my own teaching career.

I am especially grateful to Professor Chow for helping me to realize that my work as a student had worth and importance. One final memory sums up my regard for him. Upon returning from two years in Africa with the Peace Corps, I visited the University of Illinois and, quite unannounced, stopped by Professor Chow's office. He greeted me warmly, stopped whatever else he was doing, and took me to the hydraulics lab for a tour of his latest rainfall simulation investigations. In doing this, he made me feel that I was an honoured member of a close-knit professional community. This, then, was his finest quality: he helped you to believe in yourself both as an engineer and as an individual.

INTRODUCTION

Successful water-supply and sanitation projects in developing countries are usually the result of favorable preconditions in the project environment. Such preconditions are the social, economic and technical characteristics defining existing conditions and constraints as well as new conditions induced by subsequent project activities. The identification of potentially successful projects in the preliminary planning stage is dependent upon an accurate recognition of limiting conditions and a carefully tailored package of corresponding complementary investments necessary to overcome them. By understanding the influence of preconditions on the project development process, a planner can better identify and select sound projects for implementation.

This paper will discuss the role of preconditions in the identification of rural water-supply and sanitation projects and will suggest a set of guidelines for the initial stage of project planning. Although a broad procedure for project identification will be described, emphasis will be placed on the specific use of socioeconomic preconditions.

SOCIOECONOMIC ELEMENTS OF THE DEVELOPMENT PROCESS

Recent work in the area of social analyses has provided many new insights into the project development process. One area is the identification and assessment of basic human needs, which has great consequences for project selection. The World Bank (1980), for example, currently emphasizes a core set of needs which include health, education, shelter, and water and sanitation. The primary operational effect of a basic needs policy is the allocation of resources to the poorer countries and to the poorer areas of these countries. Correspondingly, project identification in these countries will reflect the basic needs objectives of such organizations.

Social analyses have resulted in a number of mechanisms for measuring developmental conditions. Indicators provide a rapid means of assessing the relative conditions of different countries or regions. Measures have been developed for population growth, life expectancy, infant mortality, calorie and protein intake, literacy, school attendance, income, employment, agricultural production, land ownership, access to water supply, and many others. By giving each indicator an objective scale, more powerful quantitative measures can be developed which allow multivariable comparisons of countries. The physical quality of life index (PQLI) which measures infant mortality, life expectancy and literacy, is the best example of a procedure for assessing and ranking different areas on the basis of a number of key indicators (Morris, 1979).

Checklists are another mechanism for assessing developmental conditions. They do not provide a rigorous means of measurement, but by their unconstrained nature they can be used to ensure that most relevant issues are considered and to encourage the planner to look into issues that may be too complex to predict in advance. Checklists have become increasingly popular among most development organizations. The World Health Organization, for example, has developed an extensive checklist for assessing the social and economic potential for community education and participation in water and sanitation projects (Whyte, 1980). An equally extensive checklist for the technical and economic appraisal of water and sanitation projects has been used by the World Bank since 1978 (World Bank, 1978). Guidelines recently prepared for the U.S. Agency for International Development have recommended the use of formal checksheets in project planning (Goff and Burke, 1980).

Methods of social soundness analyses generally attempt to incorporate the above mechanisms into an overall procedure for program or project assessment. Thus, the concepts of basic needs, indicator measures, indexing and checklists are used to measure the necessary preconditions of motivation, local decision-making and community participation. Where necessary, these mechanisms are also used to measure accessibility, utilization, and other direct consequences of water and sanitation projects.

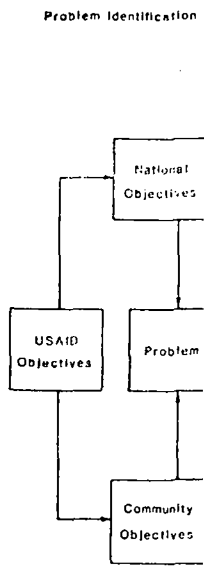
The social soundness literature points out a number of conditions essential for project success. Elmendorf and Buckles (1978) have stressed that true community participation must be based on local practices and that water and sanitation problems have to be perceived by the community itself. Dajani (1978) has emphasized that willingness to pay for the system and an awareness of hygiene are crucial for system utilization, which, in turn, is a precondition for socioeconomic benefits. Self (1979) has stated that benefits are dependent upon a package of complementary inputs consisting of hygiene education, sanitation, community involvement, and system maintenance. In his view, projects are more likely to succeed if the community is fully aware of system alternatives, benefits, tariffs and implementation needs, and fully participates in project planning, selection, training and rate collection.

Socioeconomic status refers to the social and economic environment of a community. It influences the type and extent of water and sanitation projects the community can successfully adopt. On the basis of national data for access to piped water, adult literacy and life expectancy, Shuval et al. (1981) have stated that there is a relationship between sanitation level, socioeconomic status (SES) and health status. Their work supports the view that there is an optimum mix of pre-existing socioeconomic conditions within which improvements in water supply and sanitation can lead to major improvements in health and other benefits.

In addition, the type of technology chosen for a project must be appropriate for the socioeconomic status of the community. Some of the important technological characteristics are system design, levels of service, costs and maintenance needs. System design and levels of service often can be ranked in terms of variables of water quantity, walking distance, cost, and methods of waste transport and disposal. According to White et al. (1972), the success of any community water design is dependent upon the choice and perceptions of the users. In the choice of sanitation technology, Kalbermatten et al. (1980) have stressed the importance of climatic and site conditions, sociocultural factors, and the institutional framework within which projects must function. Thus, the basic choice of technology must be appropriate to the existing socioeconomic, environmental and institutional setting, but the ultimate success of any water or sanitation system probably will be dependent upon non-technical issues.

Preconditions also include a variety of complementary investments, conditions and project outputs. Complementary investments may include components of a water and sanitation plan as well as elements of a completely independent, but supportive, plan. Complementary conditions are the pre-existing institutional and behavioral conditions necessary to support a new intervention. And lastly, complementary project outputs are the project-induced changes in support conditions necessary to bring about the next stage of project impacts. Examples of complementary investments include maintenance training programs, market roads, and hygiene education, while complementary (or pre-existing) conditions include the availability of land, the existence of constraints on labor and the knowledge of opportunities. Similarly, examples of complementary project outputs are released labor, improved labor quality, better water quality, greater supply reliability and increased water consumption.

Both Carruthers (1973) and Feacham et al. (1978) have stressed the complexity of complementary conditions and inputs. They have called for water and sanitation to be part of an overall integrated rural development program rather than a single input. Carruthers has urged that the water planner identify the needed complementary facilities. Feacham et al. have recommended that the planner explicitly state the desired benefits and then follow a "chain of decision-making" involving the coordination of complementary measures, the identification of local institutions, and the selection of an appropriate technology as part of an integrated rural development plan.



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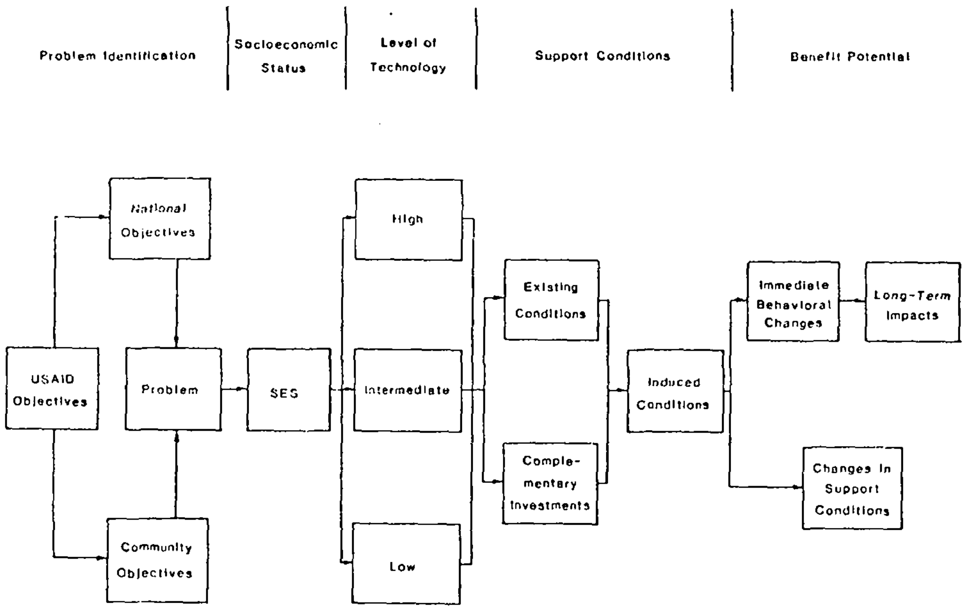


Fig. 1. Model of social and economic preconditions in program development.

PRECONDITIONS IN PROJECT IDENTIFICATION

There are five general categories of preconditions that form the basis of successful project identification. As shown in Fig. 1, which illustrates the sequential nature of the categories, they are:

(1) *Problem identification:* the water-supply problems and corresponding community needs that can be addressed within the context of relevant national, community, and agency goals and objectives.

(2) *Socioeconomic status:* the social and economic attributes of people within the project communities.

(3) *Level of technology:* the hierarchies of technological choices which are suitable in the project communities.

(4) *Support conditions:* the types of existing conditions, complementary investments and project-induced conditions that are necessary to support the selected intervention.

(5) *Benefit potential:* the anticipated outcomes of a project in terms of immediate benefits, long-term benefits and changes in support conditions.

Problems and needs

Before all else, the planning of community water-supply and sanitation programs must begin with a problem. Thus, the identification of problems, the assessment of needs, and the verification that there exists a desire for change are essential preconditions for initiating any further actions.

Problems, in general, must be defined in terms of relevant development goals and objectives. In water and sanitation development, the goals of the national government, the affected communities, and the sponsoring development organization are all relevant in the establishment of programs. These goals, however, are rarely similar in application. National goals tend to be concerned with the contribution of the separate parts to be the whole; community goals are focused on local needs, and organization goals are tied to the specific aims of the institution. To the extent that these different institutions maintain dissimilar goals for water and sanitation development, the potential range of successful projects will be correspondingly reduced. In such cases, the planner must work harder to identify projects acceptable to all parties.

Once problems have been identified, the assessment of needs immediately follows. For example, the problem may be polluted water supplies; the corresponding need will be for higher-quality water. Needs refer to the desired relief or change but not necessarily to the means of solution. Thus, whether higher-quality water should be provided through treatment of existing supplies or the provision of new supplies cannot be decided at this point. Such decisions can be properly made only after considering various intermediate preconditions.

A final aspect of needs involves the degree to which there is a desire within the national government, the community and the development organization to improve the water and sanitation problem. As before, the views of all three institutions are important, but those of the affected communities carry the greatest weight. Communities anxious for improvement and impatient with delay provide favorable preconditions for ultimate project success.

Socioeconomic status

Problems and their corresponding solutions can be defined accurately only within the context of the communities in which they occur. What to one community is a severe shortage of water is to another an abundant surplus. Thus, before any attempts are made at formulating solutions, it is necessary to identify the background conditions of the communities and the people who live in them. Ideally, a thorough analysis of these conditions should be made to provide a baseline against which all possible project interventions could be assessed. In practice, it is more reasonable to look for a minimum core of easily measurable indicators having strong links to a smaller, but highly likely, set of project interventions and expected benefits.

This core set of indicators should show the social and economic attributes of populations on the one hand, and the status of the existing water and sanitation facilities on the other. The basic problem with all social indicators, however, is the lack of data at the project level. Occasionally statistics for one or more indicators can be found in earlier studies, project reports, and so forth. In some cases, socioeconomic indicators can be crudely estimated in the field through various combinations of informal sampling, interviews, and observation. These include percent of population under age 15, calorie intakes, school enrollment ratios, adult literacy rates, and employment ratios. The adult literacy index in the physical quality of life index (PQLI) is the easiest of its three indices to estimate. Moreover, since adults are the active members of the community, adult literacy may be the most relevant single indicator of the capacity of a community to benefit from a water and sanitation project.

To strengthen the above indicators, it may be necessary to develop a new social wealth index that can be quickly constructed on the basis of field visits and what is likely to be minimally available data. The aspects of this index could be housing, farming equipment, personal transport, community institutions and health status. Housing could include quality of buildings, types of furnishing and room occupancy rates. Farming equipment could include the tools and equipment available to and used by farmers. Personal transport, as measured by motor vehicles, boats, bicycles, donkeys, etc., refers to the opportunities for physical mobility under the control of the people themselves. Community institutions, such as clubs, committees and self-help groups, are a measure of the social mobility of the populations. Health is a complex aspect and difficult to define, but crude operational field measures probably can be developed for diarrhea, skin diseases and basic nutrition.

The second component of the desired core set of indicators is the status of the existing water and sanitation facilities. Experience has shown that the dimensions of quantity, quality, accessibility and reliability can be used to adequately describe water and sanitation conditions. These dimensions could be applied in the form of numerical scales, such as number of liters per capita per day or number of minutes spent collecting water per day, or in ordinal categories, such as high, medium and low ratings per capita daily water used and efforts expended in collecting water.

Thus, overall socioeconomic status is the baseline picture of the targeted community. For practical purposes, it might be a composite of socioeconomic indicators drawn from the PQLI, field estimates, and a crude social wealth index. In addition, this baseline picture should reflect the status of existing water and sanitation facilities in terms of the dimensions of accessibility, quantity, quality and reliability. Since socioeconomic status consists of many variables, it should not be reduced to a single index value but should be retained in a condensed multivariable form for use in selecting the appropriate levels of technology

Level of technology

Both the type of problem and the socioeconomic status of the community are determinants of the choice of an appropriate range of technologies. This range will be greater or smaller depending upon the support conditions present in the community. At this point in the assessment, it should be possible to define a range of potentially successful technologies, thereby eliminating those technical interventions which either do not adequately solve the water and sanitation problems or are not suitable for the social and economic characteristics of the affected populations. There is need for a simpler hierarchy of technologies that can be quickly applied during field reconnaissance and yet are broadly inclusive to allow considerable design flexibility at later stages. Just as simple indicators and indices can be developed for socioeconomic conditions, so also can broad indices be established for technologies.

In water and sanitation interventions, the concept of level of service provides a simple, yet reasonably inclusive, measure of levels of technologies. Water systems can be classified into the following levels:

Level 1: Non-piped water systems (low technology) — wells with or without handpumps, reservoirs, ponds.

Level 2: Piped communal water systems (medium technology) — water piped to communal taps in the village.

Level 3: Piped house connections (high technology) — water piped into individual houses.

These classifications also could be termed low, medium and high levels of technology. They generally assume increasing inputs of cost, design sophistication and maintenance requirements, as well as increasing outputs of water delivered to the users, overall time savings, and ultimate health, social and economic benefits.

A similar hierarchy can be established for sanitation facilities, as follows:

Level 1: Basic pit latrines (low technology).

Level 2: Water seal (pour flush) latrines with on-site disposal (medium technology).

Level 3: Flush toilets with off-site disposal (high technology).

Again, each higher level of sanitation reflects increasing costs, design sophistication and maintenance requirements. And similar to the case of water supplies, the hierarchy generally corresponds to increasing ultimate benefits for the users.

It is crucial to remember that potential technologies identified during field reconnaissance must be within the absorptive capacity of the community. Water and sanitation interventions, therefore, should be identified on the basis of existing social and economic conditions. Such interventions are usually intended to change behavioral patterns, but in the process many of the initial social and economic conditions also are changed. These changes constitute the socioeconomic impacts of the intervention.

Support conditions

Support conditions include the technical, institutional, administrative and infrastructural factors needed to nourish and sustain a project. During both the implementation and operational phases, water and sanitation projects require support geared to the range of technologies tentatively chosen earlier. For example, a deep-well drilling project will require roads capable of handling heavy vehicles, whereas a spring capping project in a mountainous area may be sufficiently accessible by footpaths. The selection of an appropriate technology, therefore, is not only dependent upon the water and sanitation need and the socioeconomic background of the affected community but also upon the types of support conditions that are available to maintain that level. In this manner, the level of technology is determined primarily by socioeconomic status, which is a measure of community acceptability, and by support conditions, which is a measure of resource availability.

Support conditions can be classified into three main groups. The first consists of the existing conditions, which can be viewed as an initial baseline of available resources. The second group includes the additional inputs and complementary investments necessary to generate specific supporting conditions. And lastly, the third group contains anticipated short-term changes in support conditions likely to result from complementary investments.

The existing conditions consist of the available human, institutional and material resources essential for project support. For water and sanitation investments, this may include, among other things, skilled and unskilled manpower required for project construction and operation, organizations capable of encouraging community support and accepting responsibility for the administration of completed projects, and community residents eager for improved water and sanitation facilities. Other important resources include local willingness to contribute time and money to the project, the availability of finance, materials and tools, and the presence of essential infra-structure, such as roads, government supply offices and electricity. A key aspect of existing conditions is the basic environmental suitability of the project site; in other words, can the selected level of technology be supported by existing groundwater conditions, soil characteristics, rainfall amounts, etc?

Complementary investments refer to any inputs, other than the basic water and sanitation facilities themselves, necessary to insure project success. Such investments may be directed at modifying the socioeconomic status of the community, but their primary purpose is to correct the resource deficiencies found in the existing support conditions. In general, complementary inputs can be funded by two different sources. They can be an integral part of the water and sanitation project, such as a health education component of a pump maintenance training course, or they can be part of a separate development effort, such as the construction of a new access road or the establishment of a water-using industry. The lack of key complementary inputs can be devastating. In Tunisia, for example, a program for the renovation of 300 existing wells and springs was marked by the absence of local participation as well as ineffective maintenance and insufficient health education. As a result, the water supplies were not consistently potable, the water-use pattern did not change, and health benefits were minimal (Bigelow and Chiles, 1980).

To the extent that complementary inputs are associated with development activities beyond the control of the water and sanitation project, there will be increased problems of planning and coordination. Some of the more common complementary investments in water and sanitation programs are health and hygiene education, manpower development, community institutional development, health and water quality surveillance, and operation and maintenance (W.H.O., 1980).

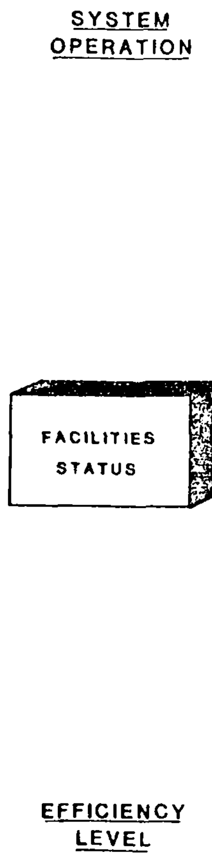
The third group of support conditions consists of the changes that are expected to occur in the initial existing conditions as a result of the project or any of its complementary investments. These changes may be thought of as induced conditions. They are the immediate short-term reactions induced in support conditions by activities associated with the water and sanitation project. For example, suppose a potential project is constrained by the lack of skilled artisans in the community. Complementary investments involving training in plumbing, masonry and carpentry may eliminate the manpower constraint and thereby change the resources available to the project. In other words, the project itself will induce new support conditions necessary to carry out the plan.

Benefit potential

The ultimate step in the assessment of preconditions is the prediction of benefits. This should be preceded by a review of the initial needs of the community, its socioeconomic status, the likely level of technology to be chosen, and the degree to which essential support conditions will be present. The planner then should determine the short- and long-term consequences of the water and sanitation intervention which was initially conceived during the consideration of levels of technology and further defined during the assessment of support conditions. In reality, the process will rarely be this simple, since the main benefits probably will have already been considered during the initial stages of problem identification.

Surprisingly, benefit estimation is rarely carried out in a detailed manner by project planners. Because of the difficulty of linking project inputs with eventual project benefits, planners are more likely to justify projects on the basis of input relationships, such as costs, number of projects built, amount of water produced, and so forth. Occasionally, lip service is given to basic development goals, such as improved health and greater social well-being, but rarely are these "benefits" stated in any but the most general terms.

When projects are planned primarily on the basis of inputs, their eventual achievements tend to be assessed in terms of input measures. This, of course, is a fundamental weakness in project planning. Water and sanitation projects are not implemented primarily for the purpose of laying pipes or pouring concrete or even producing clean water. They are built to improve people's health, to relieve them of the debilitating effects of excessive water hauling, and to improve the overall quality of life. Without a clear sense of the type



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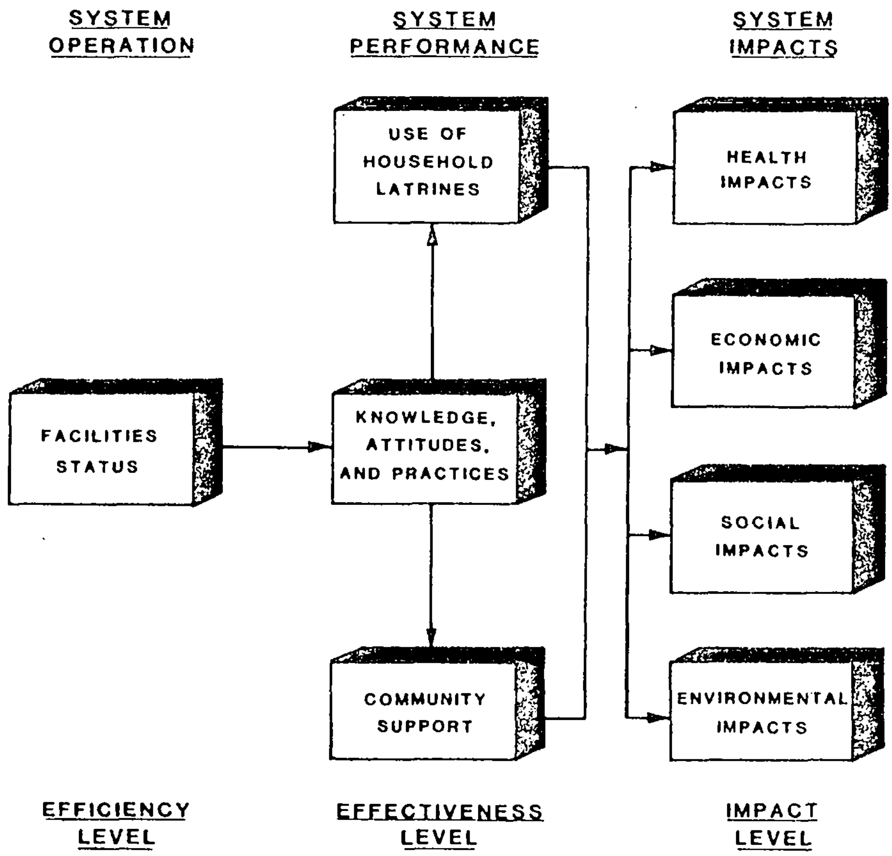

Fig. 2. Assessment model for water and sanitation impacts.

and magnitude of benefits a given project can produce, the planner is unable to say with confidence that a proposed project has a high potential for success.

Inputs, of course, should lead to outputs. Unfortunately, the procedures for the prediction of ultimate impacts are still imprecise and subject to a great deal of uncertainty. Our understanding of project consequences is greatest when the initial inputs are closely related to outputs, but it becomes progressively weaker as the linkages lead away to second- and third-order consequences. The approach, therefore, is to concentrate assessment efforts on those consequences directly linked to project inputs and to make cautious estimates about the less direct and more distant outcomes. The impact assessment model shown in Fig. 2 can be used to identify potential project consequences. Although the ultimate system impacts are the most important consequences, the most readily measurable, and therefore most relevant, outcomes are found at the system operation and system performance levels.

There are two groups of potential benefits that should be assessed. The first consists of the immediate behavioral and institutional changes associated with the project plus the long-term impacts that are the primary objectives of project development. The second group consists of the long-term changes in support conditions that add to the stock of available resources for future development efforts.

It is assumed that the initial dimensions of accessibility, quantity, quality and reliability, which are the measures of system operation, were assessed at the time that the socioeconomic status of the community was determined. In any event, these dimensions can be viewed as technical inputs into the development process; they are not the benefits of the process. It is the short-term behavioral and institutional changes, which are measures of system performance, that need to be estimated. These changes include the likely use of water and sanitation facilities, the degree of adoption of improved hygiene practices, and the extent of community support for system operation and maintenance.

The true benefits of the project, however, are the anticipated health, social well-being, economic and environmental quality changes which are measures of ultimate system impacts. Health impacts include reductions in the endemicity of water and sanitation-related diseases and changes in the geographical pattern of these diseases. Social well-being impacts include greater convenience and more leisure time, improved social status, and a greater willingness to undertake other projects for social improvement. The economic impacts resulting from water and sanitation interventions may consist of lower direct monetary costs for water supply, decreased health care costs, and greater economic output resulting from improved health and time savings. Environmental quality impacts include, among other things, improved drainage, groundwater protection and vector control.

The second group of potential benefits are the long-term changes induced in support conditions. When the implementation of a water and sanitation project leads to the training of a cadre of skilled artisans or the formation of a community based water committee, the total stock of development resources available for other projects in the community is increased. These resources have a broader value beyond their intended use in project construction or operation. Although the strengthening of these supporting resources is not likely to be the primary objective of a water and sanitation project, the resulting changes nonetheless lead towards the achievement of overall development goals and, therefore, should be included in the assessment of preconditions. Some of the long-term improvements in support conditions that may occur are an increase in trained manpower, the growth of experienced community institutions, and an acceptance of community participation as a means of achieving local goals.

GUIDELINES FOR DETERMINING SOCIOECONOMIC PRECONDITIONS

The establishment of general preconditions for project identification should be based on the types of projects likely to be implemented. In the category of level of technology, for example, a proposal for a piped water system with delivery via communal standposts should be assessed in terms of population density, walking distances, and alternative sources of water. The water system must have sufficient users to justify its existence in the community and the choice of technology it represents. Moreover, the technical sophistication of the system should be within the general understanding and level of expectation of the users. Otherwise, they are not likely to accept it and use it properly. The precondition of system acceptability should have been assessed as part of the socioeconomic status of the community. Other key preconditions for this proposal could be similarly identified. The number of such preconditions and the amount of detail required of each would depend upon the importance of the overall proposal and resources available for the assessment.

A few general relationships regarding the choice of preconditions for specific situations can be highlighted:

(1) Problem identification:

(a) Water and sanitation problems that are mutually recognized by the national government, the local community and the development organization should have highest priority.

(b) Water and sanitation needs should lead to the eventual solution.

(c) The above needs should be "felt" and expressed by the affected population.

(2) Socioeconomic status:

(a) Demographic statistics are more important in densely populated communities than in sparsely populated ones.

(b) A social wealth index is useful in assessing both the technological sophistication of the community and its ability to pay for water and sanitation improvements.

(c) The status of existing water and sanitation facilities, as measured by accessibility, quantity, quality and reliability, is important for all types of proposed facilities.

(3) Level of technology:

(a) For sanitation systems, increasing the level of service generally implies higher costs, greater design sophistication, greater maintenance needs lower reliability, and more ultimate health, social and economic benefits.

(b) For water-supply systems, increasing the level of service generally implies all of the above factors plus greater time savings.

(c) High levels of technology are generally more acceptable in communities with high socioeconomic status.

(4) Support conditions:

(a) Support conditions become more essential as water and sanitation systems become more sophisticated.

(b) The key aspects of existing conditions are the availability of project inputs (labor, equipment, materials, finance), community organizations, community concern, development infrastructure (roads, schools, communications), and environmental conditions (rainfall, groundwater, soils).

(c) There will be a need for complementary investments in water and sanitation projects to the extent that existing conditions are unable to properly support the chosen technology.

(d) Induced conditions will generally occur faster in infrastructural factors, such as roads, workshops and fuel supplies, and slower in human resource factors, such as manpower training and organizational development.

(5) Benefit potential:

(a) Priority should be given to predicting short-term behavioral and institutional changes.

(b) For the prediction of health benefits, the most important behavioral changes involve water-use and sanitation practices, while the most important institutional changes involve community based organizations and maintenance programs.

(c) Long-term health, social well-being, economic, and environmental quality impacts should be related to initial program needs and should logically follow the occurrence of short-term behavioral and institutional changes; however, no attempts should be made to quantitatively predict these impacts.

(d) In general, the most important changes in support conditions are those involving personnel skills, local institutions, and community motivation.

GUIDELINES FOR PROJECT IDENTIFICATION

Project success is the result of fulfilling a need and receiving sufficient support. Projects must satisfy community needs and be capable of obtaining the necessary human, material and institutional support to fulfill these needs. The preconditions selected for project identification should clearly define the relationship of the project to the community and the program and show the extent to which the necessary support will be available.

The following general guidelines are provided as an example of the use of pre-conditions in project identification. Final details for field applications should be developed on the basis of specific project experience.

Problems and needs

(1) Identify the current problems and needs of the community. This may be done in the following manner:

(a) Define the range of relevant water and sanitation problems.

(b) Estimate the relative urgency of the various problems.

(c) Collect sufficient information to accurately define the major problems and their corresponding needs. This information may be drawn from statistics, meetings, reports and files, statements of officials, statements of villagers, and/or personal observation.

(2) Define an objective for dealing with the problems that is consistent with community preferences, host government goals, and the policies of the development organization.

Socioeconomic status

(1) Develop a social wealth index based upon housing, farming equipment, personal transport, community institutions and health status. Use the index to assess the community and compare with national norms, if possible.

(2) Develop a water-supply and sanitation index based upon the dimensions of accessibility, quantity, quality and reliability. Use the index to assess the water and sanitation facilities in the community and compare with national norms, if possible.

Level of technology

(1) Identify succcessful examples of water and sanitation technologies in the community.

(2) Identify water and sanitation systems preferred by people in the community.

(3) Define a hierarchy of socially feasible technologies based upon level of service.

(4) Select appropriate technologies from the range of socially feasible technologies.

Support conditions

(1) Identify the existing conditions and available project resources in the community necessary to support the selected technologies. These may include:

(a) Community institutions, such as a village council, water committee, or women's club.

(b) Manpower — both skilled and unskilled.

(c) Local contributions in the form of tools, building materials, labor and money.

(d) Community infrastructure, such as roads, public buildings, health services, electricity supply, etc.

(e) Environmental suitability, with particular reference to water sources, soil characteristics, groundwater quality, seasonal temperature variations, rainfall frequencies, etc.

(2) Determine the major complementary investments needed to correct any resource deficiencies noted above. Identify whether these investments can be made part of the proposed project or whether they must be part of a separate development activity. Indicate whether any essential complementary investment can be found in any current or proposed separate activities. Complementary investments within water and sanitation projects often include health education and operator training, while those in separate development activities often include general technical training and infrastructure development.

(3) Predict the induced changes that will occur in the resource base [(1) above] as a result of the project or any of its complementary investments. These changes may include more skilled manpower, strengthened community institutions, and new infrastructure.

Benefit potential

(1) Estimate the short-term behavioral and institutional changes that will occur. (Be sure to indicate what is likely, not what is desired.) Be as specific as possible.

(a) Behavioral changes may include greater water usage, modified latrine usage, new personal hygiene practices, participation in community-wide water and sanitation activities, etc.

(b) Institutional changes may include the formation of a water committee, acceptance of maintenance responsibilities, collection of water rates, etc.

(2) Qualitatively estimate the long-term health, social well-being, economic, and environmental quality impacts. Show that these impacts are within the project objective defined in (2) of Problems and needs.

(3) Estimate the likely long-term changes in support conditions. These may include improvements in the areas of trained manpower, community institutions, local willingness to participate in other development activities, and infrastructure development.

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