6

Objectives of the Project

Clearly defined objectives are an essential precondition for:

- Determining which studies and Project Support Measures must be carried out during the planning and implementation of a project;

- Ensuring that all involved parties have a common understanding of the project;

- Allowing the appraisal of the proposal for the project's funding; and

- Laying the ground for subsequent evaluation.

Thus, the setting of objectives is not merely the identification of needs; rather, it involves consideration of the many constraints which the project will face in the light of its technical, social, economic and financial, institutional and managerial circumstances.

6.1 Japanese Experience

"Some for All rather than More for Some".

Projects should contribute to integrated water resources development and to the achievement of overall development goals.

A project design matrix is prepared as an instrument for appraisal and evaluation, and as a means of communication among all parties involved in the project.

In a short summary, the experience of Japanese ODA is as follows:

6.1.1 Some for All rather than More for Some

Before and during the International Decade, the objectives of Japanese ODA loans were still focused on the criteria of financial feasibility, although, gradually, other objectives were added, i.e. social impact and sustainability. This approach gave priority to environmental sanitation in urban and, in some cases, semi-urban areas. In its Technical Cooperation, Japan has focused on advice in technical matters, training and institution-building, research into low-cost technology, and information and health education — all of which were relevant to urban and rural populations.

The Approach for the Future outlined in Chapter 4 implies that, in the future, projects should benefit all people rather than only a few — even if this will call for more modest levels of service — on a step-by-step basis. This approach is in line with the common understanding among the donors that some improvements must be achieved for all, giving priority to the underserved low-income populations. Accordingly, the objectives of future projects will be focused strongly on the semi-, peri-urban and rural areas. However, this will not prevent projects from also providing "More for Some" in higher-income areas — so long as the people there will support full cost recovery, without causing any detriment to the funding of systems for low-income target groups.

6.1.2 Widening Objectives

In the Approach for the Future, the objective of future projects is not limited to the improvement of environmental sanitation alone. Projects for the development of water resources and sanitation projects are closely linked; i.e. they share the resource water and both are part and parcel of the human environment. Thus, the rational development of a country's or region's water resources has become an additional objective.

By the same token, the objectives of future projects for environmental sanitation should be compatible with and contribute to the achievement of the overall development goals established for the country or region. In many cases, these include: poverty alleviation, empowerment, women in development and protection of the environment.

6.1.3 Project Design Matrix

A Project Design Matrix for the use of Consultants is under preparation for projects for environmental sanitation, especially at the rural and community level (see Table 6.1). The matrix is compatible with the formats used by some of the other organizations, and will be discussed in more detail in Chapter 6.3.

Table 6.1 Project Design Matrix for a Project in Ethiopia

Project Design Matrix for a Project in Ethiopia			
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal —Service of water supply is improved. —Water/borne diseases are subdued	—By year 2010, water is served to the target coverage with amount of more than 70% of the water demand without interruption more than two weeks a year —By year 2010, diseases are reduced by 20%	—WSS operation record —Records in medical institutions	—WSS management is stabilized —Medical institutions are involved
Project Purpose —Water service coverage is improved with required water demand —Sanitary facilities are improved	—By year 2005, water is served to the target coverage with amount of more than 50% of the water demand —Toilet coverage is increased by 30% —Drainage coverage is increased by 40%.	—WSS operation record —Municipality records or sampling survey	—Electricity is not interrupted —Trained technicians continue working —Population growth meets that projected —Number of hotels/ restaurants is not increased rapidly
Outputs —New wells are constructed with new distribution system —Aged facilities are renewed —System failure is reduced —WSS account is improved —Public fountain is managed by community —Toilets can be serviced —Stagnant water reduced	—Complaints against WSS are reduced —No. of interruptions reduced by 50% —The account becomes black —Toilet coverage is improved by 20% —Toilet coverage is improved by 20% —Drainage coverage is improved by 30%	—Complaints records or sampling interviewed —WSS operation record —Accounting book —Municipality records or sampling survey	—Fuel or electricity driving the system fully supplied —Trained technicians continue working —Population growth meets that projected

Activities
—Construct newly required facilities
—Rehabilitate and/or replace aged facilities
—Introduce new O&M system
—Train mechanics
—Introduce new tariff/ accounting system
—Make arrangement for community participation
—Make arrangements for toilet-construction subsidy
—Construct public toilets as required
—Construct and/or renovate drainage system
	Inputs
	Construction equipment and machinery
	
	Materials
	  Submergible pump
	  Generator
	  Casing
	  Distribution pipes & connections
	  Concrete materials
	
	□ Details are described in each center's report
			—Materials, equipment and machinery are made in time
			
			—Land acquisition is made in time
			
			Precondition
			
			—Residents don't object to the Project

Source: Project Cycle Management for Development Cooperation, Foundations for Advanced Studies on International Development (FASID), 1994, Tokyo

The matrix serves several purposes, i.e.:

■   It is a tool for the appraisal and subsequent evaluation of the project.

■   It enables a common understanding among all parties participating in the project, and facilitates the "handover" of the project to the recipient and the potential funding agency or agencies.

■   It serves as a permanent record and, thus, also helps to assure continuity whenever someone joins the planning or implementation process, e.g. newly assigned government officials, Consultants, and/or funding institutions.

6.2   Summary of the Experience of Other Aid Organizations

In many of the other organizations, new types of objectives are emerging in addition to the traditional objective of increasing the number (or percentage) of people with access to adequate sanitation.

> Sanitation projects have multiple objectives. They must tally with overall developments goals and contribute to their achievement.
>
> Sector objectives are also undergoing change.
>
> The challenge ahead is to prepare projects in line with these new requirements.

6.2.1   Sanitation Has Multiple Objectives

The other aid organizations have concluded that projects for environmental sanitation should attain objectives at several levels. At the highest level, the projects would contribute to the achievement of the overall development goals of the country and/or area, at the lowest, the purpose of the project may be to build a treatment plant or a system for the disposal of graywater and nightsoil from a public housing estate. At intermediate levels, the improvement of public health, or the reuse of waste water, may be the essential objectives. Each case will be different. The Consultants are responsible for spelling out their hierarchy of objectives in a specified format, e.g. the "logical framework", or adapted versions such as the ZOPP of the GTZ of Germany. Details will be discussed in Chapter 6.3.

Most of the organizations have adapted the following overall development goals and have issued policy statements to that effect (although not uniformly in this order): the alleviation

of poverty, empowerment, women and development, human rights and governance, better and increasingly business-like management, and environment. There is agreement that environmental sanitation can make an important contribution to advancing these goals, e.g.:

■ Sanitation partially alleviates poverty.

■ Participatory sanitation has the potential to promote empowerment and depends on empowerment, especially in peri-urban and rural areas.

■ Sanitation will always improve conditions for women.

■ It requires good government and decentralization.

■ In many cases, sanitation can be managed in a business-like manner if properly planned.

■ It will contribute to protecting the environment.

However, many of the other organizations are still grappling with the implications of the points made above.

6.2.2 Sectoral Objectives Are Changing

Traditionally, the over-riding and often only sectoral objective was to increase "coverage", i.e. the number of people or the percentage of people served. This objective is still valid, of course, but has been supplemented during and after the International Decade. Today, the sectoral objectives are multiple:

■ Covering all people with the basic sanitation they need while aiming at further improvements whenever income levels and institutional conditions allow.

■ Integrating water development, i.e. emphasizing water and sanitation, health and environment.

■ Building partnership between the beneficiaries and the implementing agency or organization.

■ Mobilizing community management and resources.

Some of the other organizations have issued policies to articulate the new sectoral objectives. The Technical Cooperation organizations and UNICEF move rapidly towards the implementation of the policies; the lending institutions proceed prudently because they must carefully adapt their appraisal procedures to the implications of these changing policies.

6.3 Discussion

> The logical framework is the appropriate method to develop, present and analyze the objectives of a sanitation project.
>
> Sanitation projects never have only one objective.
>
> Measuring the achievement of a project's objective may be one of the most difficult problems in using the logical framework.
>
> The information needed to use the logical framework results from the Consultants' studies and investigations.
>
> A log-frame matrix should be proposed for every project.

6.3.1 The Logical Framework

The Logical Framework is a suitable method for developing, presenting and analyzing the objectives of the project. For easy understanding, a diagrammatic presentation is contained in Figure 6.1. Rationalizing the objectives can be carried out downwards from the top and/or upwards from the bottom, or probably both; it should always be kept in mind that planning is a back-and-forth process.

The most important features of the format are:

■   As regards column 1 (Intervention), and beginning at the bottom, the *activities* of the project are the discrete tasks or components executed as part of the project, and depend on physical and non-physical means to undertake them. An activity may be the construction of a sewer line or of a sewage-treatment facility, but it can also be the establishment of tariffs or a public relation campaign for explaining the tariffs to the beneficiaries. In fact, a project may be composed of many and very different activities which the Consultants identifies and designs.

■   Through the activities, output — or results — are produced, e.g. (to follow the example) that sewage will be conveyed from point A to point B, or that it will be treated, or that tariffs will be instituted, or that the beneficiaries will accept the tariffs.

Figure 6.1 — The Logical Framework

|	INTERVENTION	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	ASSUMPTIONS
GOALS ON OVERAL OBJECTIVES				
SECTORAL OBJECTIVES				
RESULTS				
ACTIVITIES				
				PRECONDITIONS

Source: Project Study for Preparation of Guideline for Social Analyses for Development Studies, International Development Center of Japan (IDCJ), 1992, Tokyo

■ The next step is to rationalize how the results will lead to the achievement of the *project's sectoral objectives* and, in turn, how this ultimately leads to the achievement of the *overall objectives or goals* of the project. For instance, the sectoral objective of the project may be to sewer a town or a part of the town; the overall goal may be the improvement of living conditions or the reduction of public health risks. Obviously, there may be multiple sectoral objectives as well as goals, especially the latter (e.g. environmental protection, slum clearance, *etc.*). In practice, and if the goal(s) and objective(s) of the project have been properly identified, the process of rationalizing the system should start at the top and proceed downwards;

■ Assumptions have to be made in the log-frame analysis regarding external factors which may or may not contribute at all levels to the success of the total plan. For instance, assumptions have to be made regarding the achievement of the activities. If the assumptions were correct, the expected results will then be achieved, *etc.*

■ Figure 6.2 shows that the logical framework is equally valid for the analysis of a programme, a project or a project component. For instance, in Chapter 8.3, Project Support Measures (PSMs) will be discussed; they can be considered a project

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component in light of Figure 6.2, and accordingly, planned as if they were a project themselves.

Figure 6.2 — The Logical Framework for Different levels of Intervention
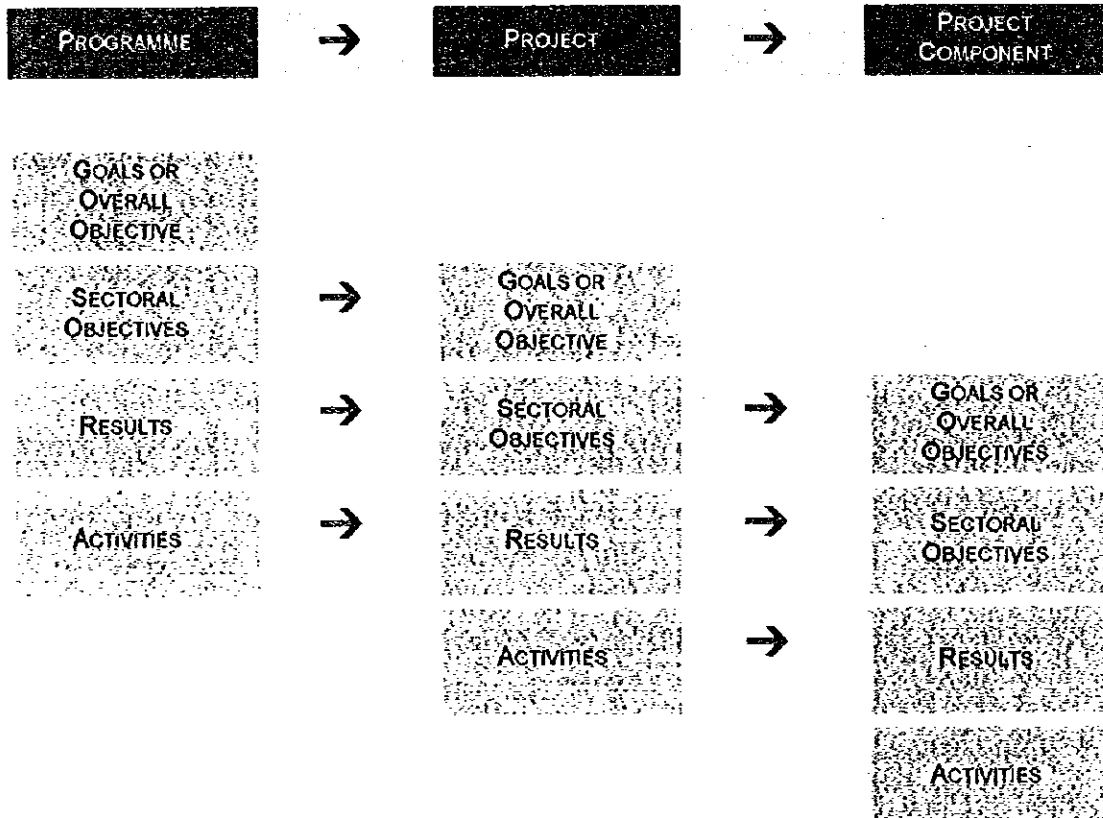
It may be difficult sometimes to decide whether to present an item as an activity, a result, or a sectoral objective. For instance, if a project includes health education of the public with the aim of creating a better understanding of the health problems associated with poor sanitation, the intention was certainly to motivate the beneficiaries to assume responsibility for the maintenance of their latrines or to accept the necessity of contributing money to help fund a low-cost sewerage system for their neighborhood. In this case, health education will be the activity, and the result will be that the people will understand and accept, respectively, keeping their latrines in good condition, or else contributing money to the project.

These results would contribute to achieving the objectives either of sustainable operation and maintenance, or of cost recovery. However, adopting another point of view, the results could

be presented as, respectively, sustainable operation and maintenance, or as cost recovery — both of which would serve the objective of effectiveness. In choosing between the two options for the presentation of the analysis, the planner decides in which way his proposals will be more "logical" and more convincing, and, in making this decision, he will rationalize and plan the measures which he will ultimately propose as components of the total project.

Under the heading that follows, goals and sectoral objectives — and the expected results of projects for environmental sanitation — are presented in a manner which corresponds to the Approach for the Future of Chapter 4, and to the principal experiences of the other aid organizations. However, the presentation should not be considered a strict model, since every project will be different and require adaptation.

6.3.2 Never Only One Objective

The extension of coverage is not the only objective of projects for environmental sanitation, although it may be the bottom line.

An important lesson of the International Decade was that projects for environmental sanitation never have only one objective. Often in the past, the one and only objective was simply to build a sanitation system. This has led to a whole series of problems, e.g.:

■ Planning was not properly targeted and, accordingly, the money was not spent according to the most pressing needs.

■ Projects did not make the most of the possible contributions to the country's or region's development.

■ Evaluation of the project's effectiveness and developmental impact was not possible.

Some of the reasons:

■ Projects were often not planned in the general development context, or in response to the most pressing health needs, nor in line with the sectoral development framework. In many cases, they were isolated activities, and often identified without adequate prior research.

■ Benefits for other sectors or projects were not considered adequately during the planning, nor how the projects could have benefitted from other development activities.

There is a large measure of agreement between the Approach for the Future to environmental sanitation in the programme of JICA and the experience of the other aid organizations, which may be generalized as follows without prejudice to the individual project:

Frequent Overall Goals:	Poverty alleviation
	Health
	Empowerment
	Women in Development
	Governance
	Good management
	Infrastructure (including sanitation)
	Private sector and market economy
	Integrated development
	Environment
Frequent Sector Objectives:	"Some for All"
	Extension of coverage
	Needs of special target groups
	Specific health improvements
	Safeguarding water resources
	Protection of drinking water sources
	Wastewater reuse
	Sustainable operation and maintenance
	Sustainable finance
	Community management
	Intersectoral coordination
Typical Results:	Physical facilities built
	Sustainable technology identified
	Operation and maintenance assured
	Willingness to pay and/or cost recovery in place
	Gender issues considered
	Participation assured
	Sanitary behavior changed
	Community organization built
	Local production in place
	Many others, depending on circumstances

6.3.3 The Problem of Measurement

An essential part of the logical framework is a Log-Frame Matrix, as shown in Table 6.2. This matrix is a tool for exhibiting the objectives of a project and measuring their achievement. The Consultants engaged by some — though not all — of the other organizations are responsible for preparing such a matrix in the course of their feasibility studies. The Design Matrix presented in Table 6.1 is still based on a rather traditional approach; the Overall Goal is mainly sectoral. The Log-Frame Matrix of Table 6.2 is more up-to-date, and stipulates increased foreign exchange earnings through expanding tourism, as an overall goal of a project for environmental sanitation.

Table 6.2 A Log-Frame Matrix for a Project in Jamaica

A Log-Frame Matrix for a Project in Jamaica			
	Intervention Logic	Objectively verifiable indicators	Source of verification	Assumptions
Overall Objective	Increased foreign exchange earnings through expanding tourism	Increasing tourist arrivals, length of stay and expenditures	Tourist Board statistics	
Project Purpose Sustainable benefits for target groups	Protected health of residents, tourists, marine and river environment	—No outbreaks of water-related diseases from sewerage discharge —Quality of sea, river waters within government standards —Reduced sewerage-related deterioration of coral reefs	Ministry of Health statistics Twelve months environmental monitoring programme	Social stability No prolonged recession in tourist industry Continued govt. commitment to tourism development
Results	—Reduced pollution from sewerage. —Improved operation and maintenance of sewerage systems —VIP latrines introduced to Negr II —Increased environmental awareness by public achieved	—24 km of trunk/ interceptor sewerage, 18 lift stations —4.5 km of pumping main —2 sewerage treatment plants —1 river outfall, 1 sea outfall and VIP latrines constructed —40 personnel trained —Spare parts supplied	Supervising engineers reports Final handover of operating facilities NWC records on connections	NWC undertakes reform and maintains affordable tariffs Consumers connect and pay tariffs NWC collects adequate revenue to operate and maintain plant

A Log-Frame Matrix for a Project in Jamaica			
	Intervention Logic	Objectively verifiable indicators	Source of Verification	Assumptions
Activities	—Construct and supervise sewers, pumping stations, pumping mains and sewage treatment works —Hand over to NWC the existing facilities —Retire or incorporate existing facilities —Introduce VIP latrines (Negril) —Train personnel, supply spare parts —Use media to inform public of connection possibilities and encourage participation —Obtain statutory approvals —Carry out environmental monitoring		ECU (000)	—Adequate perfor-mance of engineers, contractors and suppliers —Govt. secures public participation, consumer connections and statutory approvals for environmental standards —Ground conditions no worse than foreseen.
		Construction (including training, supplies, spare parts, boundary connection, environmental monitoring, access to treatment sites	19,855	
		Supervision	1,100	
		Contingencies	4,045	**Preconditions** Government has budget to purchase land and grants right-of-way
		Total	25,000	

Source: European Union

How is the achievement of a project's objectives to be measured in light of the new developments described above? As long as coverage was the over-riding objective, the measurement was accomplished by maintaining statistical information on the number of people in the community, and the number of people served. This type of measurement is still undertaken today, and allows some evaluation of progress, at the level of the traditional sectoral objectives. But how to measure the contribution of environmental sanitation to the achievement of overall development goals and some of the new sector objectives referred to above? The answer is not easy and can only be given in the context of a specific project.

In Table 6.3, possible indicators are listed for the measurement and evaluation of some randomly selected expected results, project purposes (or objectives) and goals. There is no intention to imply that these indicators or the intervention will fit any specific project; they are listed by way of example. The Consultants charged with the planning and design of a project,

together with the implementing agency and the beneficiaries, must identify both the intervention and the indicators best suited to measuring the achievement of the specifically expected results, project purposes and goals. In many ways, the identification of these variables is the bottom line of project planning and design, and will be the basis for the preparation of the project for subsequent funding, which will be discussed in Chapter 8.

Table 6.3: Possible Indicators for Measuring the Achievement of Expected Results, Project Purposes (or Objectives), and Goals

Possible Indicators for Measuring the Achievement of Expected Results, Project Purposes, or Objectives and Goals		
	Intervention Logic	Objectively Verifiable Indicators
Overall Goals	Poverty	Employment opportunities created by the project Local production resulting from the project
	Health	Problems identified and standards and indicators established Integration of sanitation into water supply and health education Extension of coverage Monitoring data and assessment Compliance with standards
	Empowerment	Local institutions strengthened and/or created to assume functions for identification of target group, resource mobilization and O&M for sanitation, e.g. village committees Ratio between local and central/external resources for the project Sanitation as part of capacity building Community ownership of systems Access to information, e.g. technology, health implications Participatory Rural Analysis (PRA)
	WID	Women as players and actors
	Governance	Policy, e.g. funding, the distribution of responsibilities, empowerment, cost recovery, and O&M for sanitation District level support to sanitation projects at the level of the community Participation of the private sector and NGOs Accountability of the service organization (if any) to the community Monitoring of programmes for sanitation
	Infrastructure Development (including the extension of coverage of sanitation	Environmental sanitation as component of infrastructure programmes Degree of integration of sanitation with other infrastructure development projects Targets established/reached Impact of sanitation on the overall management and finances of infrastructure development

Plans for Environmental Sanitation

Possible Indicators for Measuring the Achievement of Expected Results, Project Purposes, or Objectives and Goals		
	Intervention Logic	**Objectively Verifiable Indicators**
Project Purposes or Objectives	Integrated Development	Integrated programmes, e.g. water/sanitation/health/education/nutrition Coordination mechanisms include environmental sanitation Data and information links include environmental sanitation
	Environment	Sanitation as part of strategies for sustainable development Sanitation as part of the health policy Standards for sanitation as part of environmental standards Contribution of sanitation to the protection of the environment
	"Some for All"	Distribution of resources allocated among population groups Distribution of the coverage and service levels achieved
	Extension of Coverage	Targets established and progress achieved
	Needs of Special Groups	Groups and their needs identified Special targets established and progress achieved Share of resources allocated to special groups Special: software programmes and results achieved
	Safeguarding Water Resources	Problems identified and standards and indicators established Monitoring data and assessments Compliance with standards
	Protection of Drinking Water	Number of drinking water sources affected and percentage protected Monitoring data and assessment
	O&M	Institutional and managerial improvements made O&M capacity Operational defects reported
Results	Extension of Coverage	Information on coverage
	Technology Identified	Standardization of equipment and material Acceptance
	Cost Recovery	Accounts of self sufficiency Degree of cost sharing by the beneficiaries Ownership
	Participation	Are there any self evaluations Advocacy materials and programmes Community-based O&M Expressions of public awareness Educational programmes for women and children

Possible Indicators for Measuring the Achievement of Expected Results, Project Purposes, or Objectives and Goals		
	Intervention Logic	Objectively Verifiable Indicators
	Changes in Sanitary Behaviour	Budget for health education, and programmes delivered Links with primary health care Old tabus overcome Changes at the level of the family Use of public latrines

Four comments must be added at this stage with respect to both the intervention and the indicators:

■ They may be quantitative or qualitative, depending on the case.

■ They may relate to hardware or software.

■ The intervention may be stated simply as major categories (as in Table 6.3), or may be spelled out in specifics. By the same token, there may be just one indicator for each intervention, or several.

■ There is nothing sacrosanct as to what is an intervention and what is an indicator, nor also as to whether an intervention pursues the achievement of a goal, or project purposes or objectives, or simply a result. For instance, the "extension of coverage" has been listed as a project purpose/objective in Chapter 6.3.3. But the extension of coverage may also be the goal under certain circumstances, or considered as a result. Yet, the extension of coverage can also be taken as an indicator, for instance, if the purpose/objective is "Some for All". The logical framework, as do all methods of systems analysis, gives freedom to the analyst to decide how to conceptualize the system for its subsequent planning and design.

The four comments underline the statement made above that the Consultants must in each case propose a log-frame matrix which, according to their best judgement, will (i) respond to the circumstances and objectives of the project, and (ii) satisfy the requirements of the prospective funding agency or agencies when they undertake the appraisal of the project proposed.

6.3.4 Risk Assessment

Risks of projects for environmental sanitation should also be assessed using the Logical Framework on the basis of information obtained during the preparation of projects for subsequent funding. They may involve (see Chapter 8.3):

■   Technology not suitable;

■   Planning and design errors, cost overruns;

■   Delays in the implementation schedule;

■   Shortfall in expected cost recovery;

■   Inadequate operation and maintenance;

■   Over-estimates of the ability and/or willingness of the beneficiaries to pay;

■   Developmental impact; and

■   Environmental impact and other undesirable side effects.

6.3.5 A Logframe Matrix Should Be Prepared for Every Project

In Chapter 8.3, it is suggested that every project proposal be accompanied by a log-frame matrix. Obviously, the matrix must be prepared by the Consultants. Guidance may be derived from the Approach for the Future in Chapter 4 and the SOW for the specific project, but the full Log-frame Analysis can only be undertaken by the Consultants on the basis of the studies and investigations that form part of the Project Study.

The Consultants should also exhibit the sources of information and data for the verification of the log-frame presentation. If such information and data are not yet available, the Consultants may make proposals for activities to create them, either during the implementation of the project or as part of preparatory activities or Project Support Measures (see Chapter 8.3).

7

What Makes a Project Successful?

The ultimate test for the success of a project is its development impact. To make this impact, the project must be effective and sustainable.

- Effectiveness: planning, design and the operation of the project must ensure that its broad and sectoral objectives can and will be fully achieved.

- Sustainability: the operation of the project is assured in the long term, without additional foreign aid after its completion.

Chapter 7 will focus on What is needed to make a project for environmental sanitation successful, whereas Chapter 8 will deal with the How.

7.1 Japanese Experience

The conventional and efficiency-oriented approach used in the industrial countries fails to make projects for environmental sanitation in the developing countries effective and sustainable.

Based on new experience, the planning of projects includes consideration of participation, of health education and of the socio-cultural factors involved in the choice of technology (see text box in Chapter 7.1.2).

7.1.1 Traditional Approach

The conventional approach taken in Japan and many other countries was to plan projects on the basis of good engineering. This implied that the projects would be designed to dispose of a certain amount of waste water, estimated for a period of, say, 15 years. Good engineering also assumed that the least-cost solution was the best, and applied proven criteria for materials and materials' strength and life, hydraulic performance, good construction and protecting surface or groundwater.

By the same token, conventional projects relied on management, operation and maintenance to be performed by the institutions of government, although often centralized and far removed from the users.

Accordingly, the training of the human resources required for the planning and management of projects focused on engineers of different levels of qualification. Responsibility for management of the facilities was often vested in engineers who were trained for the specific tasks involved.

This conventional approach has produced acceptable results in the industrial countries whenever off-site sanitation was involved. But in the developing countries, the situation is different; i.e., the financial constraints are overwhelming, so that the institutions cannot cope with the magnitude of the problem, and are unable to manage, operate and maintain the facilities. The situation is further complicated by the use of on-site technology which may be the only possible alternative, and in itself poses many challenges, e.g. users' involvement, and the need to mobilize innovative types of funding. Some of these challenges are discussed in Chapter 4.

In summary, the conventional approach to environmental sanitation in the developing countries has not been very successful.

7.1.2 New Experience

The changing approach in Japanese ODA is to plan projects for environmental sanitation with due consideration of the socio-cultural, socio-economic, financial, managerial and funding conditions prevailing in the developing countries. How is this done?

■ Technology is chosen through social, cultural, managerial and institutional analysis in addition to technical criteria. The aim is to gear it to the preferences of the target group and its potential to raise funds for the project. Gender issues and the participation of the beneficiaries (especially women) are considered, as is the ability of the beneficiaries to operate and maintain the system after completion.

■ There is increasing emphasis on participation — consistent with Japan's own history. Environmental sanitation was successfully promoted in Japan through a participatory approach, which depended on prudent liaison and cooperation between Government and the local community, in the programme named, "Combat against flies and mosquitos". The programme was a national campaign in the 1960s to promote community participation to clean up and reduce the breeding places of flies and mosquitos. Particular attention was given to communications between users and providers, the clear identification of goals and objectives, the demonstration of the expected benefits and the allocation of responsibilities to the beneficiaries.

Methods of Social Analysis for Environmental Sanitation Used by JICA

There are several methods of social analysis that are recommended by JICA, for example:

- Group Meetings
- Rapid Rural Appraisal
- Social Investigations (after Rapid Appraisal)
- Social Preparation
- Social Analysis using Project Cycle Management (PCM)

JICA started to recommend these approaches recently. Social analysis cannot resolve all problems of development, but it is indispensable for every project preparation.

Group Meeting

Group Meetings are held to communicate the basic information to the beneficiaries, e.g. accessibility to facilities, sanitary consciousness, needs, priority of projects and gender/cultural background.

Rapid Rural Appraisal

Rapid Rural Appraisal is undertaken at an early stage of project preparation. It requires about three to five weeks, and aims at grasping the general situation of habitats and predicting the impact to be made by the project. It also identifies the points to be covered in detailed social investigations afterward. Rapid Rural Appraisal provides information about social structure (economic stratum, mix of different social groups), socio-economic and cultural impact needed to be made by the project, demographic information, institutions, customs, and the classification of the target group in the project area. It is possible to predict the impact and level of satisfaction of needs for each group in the project area.

Social Investigations (after Rapid Rural Appraisal, if necessary)

Social Investigations of specific issues are undertaken. They aim at the maximization of the social effects of the project, formulation of a strategy for the implementation of the project, confirmation of the appropriateness of the project, and at the evaluation of the risk of implementing the project.

Social Preparation

Social Preparation is a method of organizing the community, with the view of increasing the receptivity of each group. The preparation may take from three months to one year and is carried out just before the initiation of the project. Consequently, this approach is not related to the choice of technology. Social Preparation usually follows these steps: (1) specification of target group, (2) organization of target group, (3) capacity building of community organization, and (4) formation of umbrella structure of community organizations.

Social Analysis using Project Cycle Management

In some cases, JICA used PCM as a tool of investigation of rural situations, e.g. in preliminary studies and Development Studies. The beneficiaries learn to understand problems in their community through participatory discussion.

This approach is now widely promoted in Japanese ODA, especially through meetings with the beneficiaries, by the organization of Sanitation Committees in the project area, and by informing and educating the beneficiaries, i.e.:

■ Awareness raising and health education was introduced into Japanese Technical Cooperation for environmental sanitation. It is accomplished through audio-visual distribution of information material, street theaters, and cooperation with mothers, health workers and doctors at all levels. Special attention is given to sanitary behavior.

■ Sustainable operation and maintenance is supported through human resources development, emphasizing that training should not be confined merely to local engineers and managerial staff of the provider. A project for water supply from boreholes is currently being implemented in Uganda in liaison with UNICEF; it includes components for the training of villagers (often women) who will be assigned to operation and maintenance on a full-time basis. Further, spare parts are provided for several years after the project's completion, and liaison is established with O&M systems in the vicinity, with the aim of providing ongoing technical and managerial support to the project.

7.2 Selected Experience of Other Aid Organizations

All organizations agree that, in addition to good engineering, many other factors must be considered to make a project successful.

Some interesting examples demonstrate the intricate web of interactions that must take place.

7.2.1 Many Factors Must Be Considered

In the preparation and appraisal of projects for environmental sanitation, all of the other organizations apply very different yardsticks today than they did only a few years ago. Some may have developed innovative methodologies, but all still struggle with the implications of changing policies and the need to make projects more effective and sustainable. Consequently, the planning of projects involves different studies and activities than were undertaken in the past.

As in Japanese ODA, the other aid organizations emphasize consideration of a mix of the technical, socio-economic and socio-cultural, financial and budgetary, management, and institutional circumstances of the projects. The number of sanitation projects supported is

already large, larger than in Japanese ODA, and the effect of translating changing policies into actual project design is already discernable. Yet, it is also acknowledged that more research is needed to develop methodologies and indicators for the study and analysis of a project's development impact and of the socio-cultural and socio-economic factors involved, especially as regards the willingness of the beneficiaries to pay for environmental sanitation, the funding of on-site sanitation, and the best approach to cost recovery and operation and maintenance.

No guidelines have yet been issued by the other organizations in light of the above. But operational experience is already available. Implications of this experience relate to:

■ The content of feasibility studies.

■ The consideration of software factors.

■ Sustainable management and finance (including cost recovery).

■ The choice of technology.

Details are examined in Chapter 8.2.

7.2.2 Some Examples

In the following paragraphs, a number of examples are presented describing some of the approaches used to make projects for environmental sanitation successful.
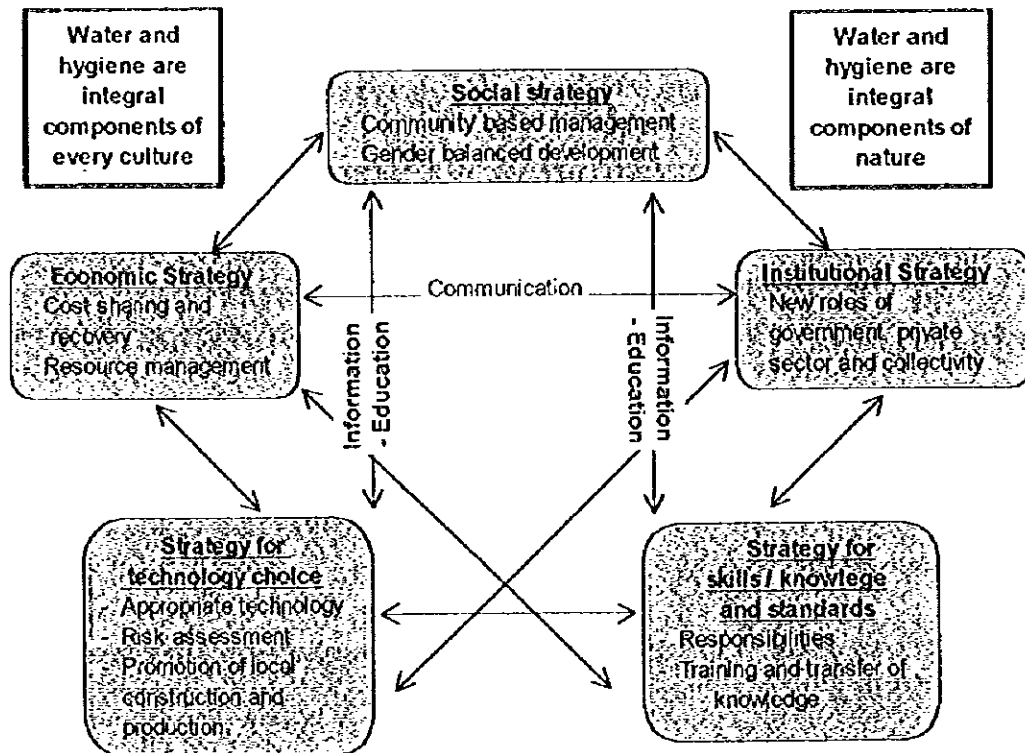

Swiss Development Cooperation (SDC)

In a model developed and used by the Swiss Development Cooperation, a multi-facetted strategy recognizes water supply and environmental sanitation as integral components of every culture, and requires that planning and project design follow five interdependent approaches. This involves a broad flow of information for education and communication between users, providers and planners (see Figure 7.1):

■ The use of an appropriate and affordable technology, promotion of local construction, and the avoidance of different types of risks that are not normally encountered in the industrial countries.

■ Providing beneficiaries with tangible and visible benefits from projects in an effort to promote cost recovery for long-term, realistic sharing of costs — based on users' full understanding of the interdependence of costs and service levels.

■ The motivation and participation of both providers and users in local structures for community-based operation and maintenance.

Figure 7.1 — Strategy of Balanced Development

Source: Swiss Development Cooperation (SDC)

■ Institutional development aiming at efficiency and transparency, and the strengthening of institutions, within national, sector and overall development polices.

■ Ensuring that sustainability is the ultimate requirement, and acknowledging that its success is dependent on the ability to plan, to solve problems in the socio-cultural environment of the project, and to make knowledge and information available through education and communication among all involved parties.

UNICEF and the United States Agency for International Development (USAID)

Based on a review of 38 evaluation reports covering 54 sanitation projects sponsored by UNICEF and USAID's Environmental Health Project, Draft Guidelines were developed for sustainable environmental sanitation programmes. Guiding principles are, among other things:

■ The choice of programmes should be guided by the criterion of sustainability — not merely by technological merit. Programmes should permit the expansion of coverage without risking effectiveness, efficiency and sustainability.

■   Long-term self-reliance and cost-effectiveness are essential; investment should seek to deliver the greatest (visible) health and other benefits to the greatest number of consumers at the lowest cost.

■   To achieve the above, the following is required:

    ▶   Maximum degree of participation of the beneficiaries so as to (i) estimate demand, (ii) raise funds for project activities, (iii) design programme strategies and plans, (iv) stimulate behavioral change, and (v) develop operation and maintenance.

    ▶   Selection of technology based on (i) local preferences, (ii) differences in the ability and willingness of different community groups to pay, (iii) capital and recurrent cost tradeoffs, and (iv) operation and maintenance requirements.

    ▶   Identification of a strong (often central) agency that would eventually change from being a direct provider to taking responsibility for promotion, regulation, training, advocacy, and facilitation.

    ▶   Support to a cadre of sanitation workers.

    ▶   Promotion of financial sustainability through cost-effective technologies, community management, cost-sharing, standardization, private sector participation, and monitoring and evaluation.

UNICEF has since revised its strategies for water and environmental sanitation. Most of the above have become integral parts of the strategies.

Directorate-General for International Cooperation of the Netherlands (DGIS)

Projects supported by the Directorate-General for International Development of the Netherlands are screened carefully to determine whether they meet the criteria of effectiveness and sustainability. Therefore, in designing projects, attention is focused on:

■   Contribution to the country's priority goals for development, i.e. poverty alleviation, women in development, environmental protection, and institutional development (including capacity building, and training); also, the project must fit into an established national or regional plan, and into a thematic and/or sectoral policy or plan.

■   Sustainability must be assured in terms of economics and finance, institutions and business-like management.

Swedish International Development Agency (SIDA)

The Swedish International Development Authority (SIDA) gives special attention to Africa and, in its programme for environmental hygiene (sanitation), focuses on rural areas; in the future, it will include the urban fringe. SIDA stresses the basic principles of sustainability, affordability and replicability as criteria for a successful project. It gives additional attention to environmental aspects so as to minimize negative ecological consequences of water projects in fragile areas. In its strategy for environmental hygiene, the following are essential requirements for making a project successful.

■ Problem identification and planning based on a comprehensive description and analysis of target groups, and on a firm understanding of local problems and potentials — as they are perceived by the local people themselves.

■ Consideration of national as well as local resource potentials and capabilities.

■ Technologies must be chosen which will be accepted by the local people, affordable by the target group, and sustainable through local resources.

■ Education and information for the beneficiaries, to stimulate their participation and appreciation of the wide range of alternatives and their implications, so as to determine the technologies that will be appropriate.

■ Participation of the people to ensure a process of sustained development and for their acceptance of new technologies and methods. This should involve all groups, include both women and men, and should assure a leading role of the community in controlling the facilities, and in the planning, implementation, operation, maintenance, monitoring and evaluation of the programmes.

■ Manpower training must be an essential component of all programmes and projects, and must include social and behavioral aspects — not merely technical ones. It must be provided to field workers and craftsmen, who are crucial manpower resources at the local community level, and should focus on construction, operation and maintenance at the village level.

■ Health education is required in support of health-related behavioral change. Objectives for health education and practical strategies must be developed carefully in order to ensure real integration into water supply and environmental sanitation activities. Target groups should include both women and men, and the role of local leaders, both formal and informal, should also be investigated.

Research Organizations

Based on their research, the International Water and Sanitation Centre (IRC) in the Netherlands and the International Development Research Centre (IDRC) in Canada have

contributed a wealth of methodological information and guidelines for planning successful projects for environmental sanitation which fall into line with the above experience and with the guidelines of other organizations. This information stresses that, in order to make a project successful, its effectiveness and sustainability must be enhanced through more software-oriented approaches in project planning and design; above all, the choice of technology must be based on consumer demand, on the community's ability and willingness to pay, on its capacity for operation and maintenance, on gender issues, and on participation.

7.3 Discussion

> Software can "make or break" a project and should be a genuine part of every project.
>
> There is a large degree of agreement between Japanese and other organizations' experience. Four basic lessons can be learned and should guide the preparation of projects for subsequent funding.
>
> It should be standard practice to develop projects on the basis of studies and investigation of the technical and sociocultural and socio-economic, institutional and organizational aspects of the project, operation and maintenance, users' participation and cost recovery.

7.3.1 The Preparation of Projects for Environmental Sanitation Must Change

Unfortunately, in the past many projects for environmental sanitation failed to make the developmental impact expected. Several factors were responsible for the poor performance of the projects, e.g.:

■   A large part of the population was not reached.

■   There was inadequate or scarcely any operation and maintenance.

■   There was a persistent lack of money to pay for operation, repairs and the replacement of parts.

■   Systems were improperly used, e.g. sewers filled with garbage, and treatment facilities neglected and out of operation.

Some of the reasons were:

■ Technology, managerial approaches, financing schemes and the role of the beneficiaries were transferred from the industrial countries without adaptation to the conditions and needs of the developing-country recipients. Generally, the preference of the planners was for water-borne, off-site disposal, which is the technology used in the industrial countries.

■ Project objectives were defined in limited technical terms only (e.g. to build a sewerage system) rather than perceived as development goals (e.g. to clean up the living environment or to reduce infant mortality in the project area), and, therefore, developmental impact and effectiveness were not explicit considerations in the planning and design of the project. The planner aimed at a technical solution, at efficiency in the use of investment funds and at strict adherence to the implementation schedule.

■ In light of the above, many projects were "hardware solutions", and did not include supporting measures — without which the hardware cannot perform in developing countries.

■ Projects were focused on off-site sanitation in central areas, with their specific infrastructural requirements, management capabilities and ability to pay. This left without sanitation the lower-income people in peri- and semi-urban areas, and also the rural areas — precisely those who are most at risk if environmental sanitation is inadequate.

■ Planners did not consult the beneficiaries as to their expectations and potential participation, especially in the funding of schemes. In consequence, the beneficiaries were ill-informed about projects and could not appreciate the interrelations between technology, levels of service, costs and funding, and the requirements of operation and maintenance.

■ Accordingly, many project planners ignored the need for financial sustainability; the projects were financially unsound and unable to raise the money required to pay for operation and maintenance, let alone that needed to pay amortization and interest on loans, nor accumulate the reserves needed for renewals and further extensions.

As has been clearly exhibited in Chapters 7.1 and 7.2, the situation described in the preceding paragraphs must be addressed in the preparation of projects for environmental sanitation. The crux of the matter is:

It should be standard procedure to develop projects on the basis of studies and investigations of not only the technical but also the sociocultural and socio-economic, institutional and organizational aspects of the project, as well as operation and maintenance, users' participation and cost recovery.

What does this imply?

1.　　The objectives of the projects must be defined in light of the discussion in Chapter 6 rather than "as usual".

2.　　The approach to the preparation of projects for environmental sanitation must indeed change. This will be the subject of discussion in Chapter 8.

7.3.2 Software Can "Make or Break" a Project

Projects consisting of "hardware" alone will not be successful. Hardware may include sewer pipes, tanks and ponds for the treatment of wastewater, septic tanks and latrines — depending on the technology chosen. As the experience discussed in Chapter 7.1 and 7.2 demonstrates, the hardware component of a project must be supported by additional measures that will make it successful. Since investment projects are mainly hardware, it has become customary to call the supporting measures "software". Hardware is needed to collect, transport and dispose of wastewater, whereas software addresses the "environment" of the project, e.g. policy, regulations and standards, institutional development, operation and maintenance, participation, capacity building, and measures to assure cost recovery. The planning of this software will be discussed in Chapter 8.3.4. Suffice it to say at this stage that every project must include software, and that this software must be planned and implemented together with the hardware, as it exhibited in Figure 8.4.

Planning for software will require special studies, investigations and funding, and the timing and length of the implementation phase are critical factors in the development of a project. If the project is financed through an ODA loan, some of the software might be funded as part of that loan. But as shown in Figure 8.3, some — if not most — of the software requires Grant Aid, and/or may best be implemented through prior Technical Cooperation.

There is no general rule as to how much money must be spent to plan and implement the software of a project. For off-site sanitation projects, this may be on the order of several percent of the total cost — say, between 5 and 10%. For on-site sanitation, it may be much higher, especially for latrine programmes, which may involve a large measure of funding by the beneficiaries themselves.

7.3.3 Four Lessons

The four lessons learned through experience are:

■　　The success of a project is determined by the ways in which it is prepared. A new approach to project preparation calls for a broad gamut of studies and investigations and the active participation of the beneficiaries.

■   The experiences of the industrial countries must not be transferred to the developing countries without major adaptations to the conditions, the needs and the capacity of the recipients and the target group. This is of particular importance with respect to the choice of technology, funding, cost recovery, management, operation and maintenance, roles of recipient and beneficiaries, and the place of the project within the country's development context.

■   Projects must include hardware and software. Both need careful planning on the basis of in-depth studies and investigation. The allocation of time and money for the software should be considered at the stage of project formation (when the SOW is negotiated), and during the monitoring and evaluation of the project.

■   Software, sustainable management and finance (including cost recovery), and the choice of technology should be part of every project Development Study, and also be addressed in the appraisal of every project submitted for funding.

It is very important that the message conveyed by these lessons be translated into practical measures during the planning, design and implementation of the project. Chapter 8 will provide information as to how this may be done.