CHAPTER 2

Community Participation in WSS

Learning Points

- Concept and Definition of Community Participation
- Necessity of Community Participation
- Forms of Community Participation
- Consultation with Community
- People's Participation: Bangladesh Context

Introduction

People's participation in decision making and building ownership results in effective and sustainable development process. This belief has played a central part in the shift in institutional strategies from supply-driven to demand-driven approaches, which respond to the felt needs and aspirations of users, especially the poor. However, quantitative evidence of the efficacy of participation in determining project effectiveness, relative to other factors, has been missing.

In most developing countries, public sector agencies provide rural infrastructure. Poor performance of public sector has led to a widespread search for institutional alternatives and means to increase the accountability of the public sector. In the rural water supply and sanitation sector, the search has been for strategies to increase users' "exit" and "voice" options and to restructure the sector so that suppliers have incentives to match the demand of users.

The problematic issue therefore is not technology and construction but rules and regulations around institutions and organisations. The first challenge for agencies is to create an incentive for staff to work in partnership with hundreds of communities. The second task for agency staff is to enable communities to make informed choices, manage and choose from a range of water supply options (technology and management) that the agency offers.

Although the agencies tasks have changed dramatically over the years, but the fact has seldom been recognised or acknowledged by the agencies themselves. Hence, the agencies and their competency, organisational structure, and management style have remained largely the same. The mismatch between the mandate and full-scale competence of the agencies has resulted in many unsuccessful government attempts to induce participation. The key question, then, is: How can organisations change to induce participation in collective actions?

Concept and Definition of Community Participation

Beneficiary participation can be brought about in several ways: directly, through participation in decision making; indirectly, through leaders; or through representation of committees or boards. Participation of beneficiaries can be facilitated through extension workers, local government units, non-governmental organisations (NGOs), and the private sector. Many factors influence beneficiary participation, including the immediate and broader policy context; client characteristics (including felt need); and agency characteristics, such as flexibility, responsiveness to clients, and willingness to invest through community-based organisations. In this regard, the following questions are to be addressed:

- Does people's participation contribute to project effectiveness?
- How important is this contribution, relative to other factors?
- What factors and strategies influence participation in collective actions?
- What are the lessons for the design of large-scale project?
- What are the implications for policy reform?

What is participation?

Participation is a process through which stakeholders influence and share control over development initiatives, decisions and resources etc. which affect them. Participation is also a voluntary process by which people, including the disadvantaged (in income, gender, ethnicity, or education), influence or control the decisions that affect them. The essence of participation is exercising respective voice and choice.

Definition of Community Participation

How community participation is defined will depend upon on the objectives and the needs and possibilities for participation. No matter whether a maximum or minimum

community involvement is developed, some central questions will have to be answered and tested in the field: who participates in which phases and decisions, how and to what degree, and what effects are desired for the programme and the community? These questions are not yet generally considered by the agencies solely responsible for the planning and implementation of water supply and sanitation programmes.

Some of the international organizations have taken the working definition of community participation from three dimensions. These are involvement of all those affected in decision making about what should be done and how; Mass contribution to the development effort, i.e. to the implementation of the decisions; and Sharing in the benefits of the programes. Since equitable share of benefits is essential, community participation can be defined by involvement of the local population actively in the decision-making concerning development projects or in their implementation.

Involvement of population in the physical works of implementation of project is also sometimes treated as participation. This kind of involvement prescribed passive acceptance of services and provision of supports in cash or kind, in giving money for a pump, digging a well for a water supply, or laying bricks for a health center. The dynamics of changing society, however, demand much more than mere acceptance, allegiance, and unpaid labour. The new type of involvement requires identification with the movement, which grows only out of involvement in thinking, planning, deciding.

This conception does not assume that there is an ideal level of participation varies, but over the long run sustainability will depend on minimising transaction costs in horizontal and vertical interactions. Participation is viewed as a means to defined ends, not as an end in it; the goal therefore is to optimise participation to achieve the desired project goals, not simply to maximise participation. The desired goals in rural water supply projects include achieving improved water supply systems and developing the human, organisational, and management capacity to solve problems as they arise in order to sustain the improvements.

The principle underlying participation- to give people a voice- is constant, yet the choices that people make vary infinitely. Thus, a community may decide to subcontract maintenance to an independent mechanic rather than to undergo training and take turns doing the work. A water users' group may choose to dissolve the organisation or to define new goals after the first ones have been met. For example, when construction is complete, a water committee may transform itself to undertake sanitation construction, to build a football field, or to branch into children's education, depending on the community group may divide into smaller, functional subgroups, with the larger group meeting only occasionally. Alternatively, people may informally nominate leaders to represent their interests.

Necessity of Community Participation

The reasons that advanced the concept of and necessity of community participation in all the development interventions including water supply and sanitation (WSS) are shown in the Box 2.1.

Box: 2.1: The Reasons for Community Participation

With participation, more will be accomplished
With participation, services can be provided more cheaply
Participation has an intrinsic value for participants
Participation is a catalyst for further development
Participation encourages a sense of responsibility
Participation guarantees that a felt need is involved
Participation ensures things are done the right way
Participation uses valuable indigenous knowledge
Participation frees people from dependence on other's skills
Participation makes people more conscious of the cause of their poverty & what they can do.

Forms of Community Participation

The forms of community participation are shown in Box 2.2.

Box 2.2: Forms of Community Participation

Consultation
A Financial Contribution by the Community
Self-help Projects by Groups of Beneficiaries
Self-help Projects by Involving the Whole Community
Community Specialized Workers
Mass Action
Collective Commitment to Behaviour Change
Endogenous Development
Autonomous Community Projects
Approaches to Self-sufficiency

Consultation with Community

Consultation with the community is the basic means of giving the community some voice and involving it in decision-making. Main rationale is to ensure that the project or programme introduced by the outside agency is adapted to meet the needs of community members, and to avoid difficulties in implementation. It may involve:

a. Consultation with community representatives or leaders only. It may well be considered that such consultation does not amount to real community participation unless the community is one where the decisions formally made by representatives or leaders are the result of wider consultation and consensus within the community, and unless the community is thereby involved in decision-making on significant aspects of the project which is being introduced.

b. Consultation with all sections of the community. This is primarily a matter of ascertaining the views of those sections of the community, which may normally be excluded from decision-making (women, certain ethnic minorities or low caste groups, the poorer sections), whose interests may not be genuinely represented in the existing processes of decision-making in the community. The rationale: to ensure that the project meets their needs also. This is not always easy, and there are differing views on the emphasis, w an or need be given to it.

Table 2.1 shows the requirements of the community against objective requirements for health in respect of water use. The community requirements can be understood incorporated in water supply through consultation.

Table 2.1: Sample Checklist of Uses for Water and Relevant Requirements

Use of Water (Not exhaustive)	Objective requirements for health (minimal)	Requirements for Convenience (Community preference etc.)
1. Drinking by babies, sick people	Assured purity (boiling may be specified)	Practical/ Customary constraint: is water boiled or only heated?
2. Drinking by healthy children and adults	Purity	Taste: will boiled or deep well water be rejected?
3. Rinsing mouth, cleaning teeth	Purity (perhaps less stringent)	Is there a custom of using surface water, which is suspected?
4. Food preparation-uncooked food	As above	Is there a custom of using surface water, which is suspected?
5. Dishwashing	As above	Preference for running water?
6. Cooking		Taste, colour and clarity
7. Personal hygiene (washing body without immersion)	Abundance. Use with soap or heated	
8. Bathing, swimming (immersion)	No schistosome organisms (cercadiae)	Seclusion (for women)
9. Washing cloths	As above	Softness (economy of soap)? Preference for running water? For sociability?

Use of Water (Not exhaustive)	Objective requirements for health (minimal)	Requirements for Convenience (Community preference etc.)
10.Watering of domestic animals	No schistosome organisms	Requirements of each type of animal: dispersion of sources to avoid overgrazing?
11.Vegetables gardens	Sullage acceptable but sewage only after some treatment	Space near house? Damage by animals?
12.Irrigation of food crops	Care to avoid contamination of food, schistosomisasis: sewage only after treatment	Equitable share of water as major resource
13.Other irrigation or fish culture (including irrigation of pastures, tree crops. non food crops)	Care if sewage is used (e.g. to cook fish or meat well); protection against parasites while working in water	

This checklist is only a sample and will be needed to be modifying in local circumstances. In the third column, many more concerns will certainly be apparent in each community. The suggested requirements for health are not to be taken as authoritative but only as a sample list of concerns.

A Financial Contribution by the Community

Cash collections made by and within the community, generally prior to or at the time of implementation of a project, usually as a contribution to capital construction.

Self- help Projects by Groups of Beneficiaries

In these projects a specific group of local inhabitants contribute their labour (and perhaps other inputs) to its implementation, while there is also the assistance of an external agency. Reduced fees for the services they receive, while non-members pay more will recompense those who contribute.

Self- help Projects Involving the Whole Community

Projects in which every family in the community is expected to make a contribution (usually in labour), while there is also input from an external agency. Food-for-work projects may perhaps be included here, though the element of community participation may be considered slight if it consists only of labour, which is paid in cash or kind.

Community Specialised Workers

The training and appointment of one or a few community members to perform specialised tasks (e.g. as community health worker, or operator of a community water supply system). The training and technical supervision are carried out by an external agency, but some form of community authority is usually also exercised over the specialised workers.

Mass Action

Collective work in the absence of a major input from an external agency. Often such actions are directed at environmental improvements (e.g. to drain wastewater).

Collective Commitment to Behaviour Change

Cases where a community makes a collective decision to change customs or personal habits, and collective social pressure is exercised for the realisation such changes. Examples range from penning of domestic animals to construction and use of latrines, or to the reduction of excessive expenditures in connection with weddings, funerals, etc. While changes of behaviour may of course occur in other ways, community participation is involved when an explicit decision is collectively taken.

Endogenous Development

Case in which there is an autonomous generation within the community of ideas and movements for the improvement of living conditions – as opposed to stimulation by outside agents. The community may, however, have recourse to external agencies to help with implementation, or indeed press for such help. On the other hand, where this is simply pressure for services to be provided, it hardly qualifies for the term "community participation", though in a wider sense this is an example of political participation.

Autonomous Community Projects

The ambiguous "self-reliance" is often understood in this sense: projects where any external resources are paid for by the community with funds raised internally, including the hiring of any outside expertise or professional staff. Such projects are therefore under community control.

Approaches to Self-sufficiency

Projects in which the objective is to satisfy local needs as far as possible by using local materials and manpower directly, not by purchasing goods and services from outside. "Self-reliance" is also sometimes understood in these terms.

People's Participation: Bangladesh Context

Involvement of the stakeholders in project planning and implementation has been practised in Bangladesh since 1960s with the rural development movement. However, immediate after liberation in 1973, national NGOs promoted the issue and showed the alternative of project implementation process. BRAC, Grameen Bank, Proshika (MUK), ASA, FIVDB, VERC, CCDB, GK are the pioneers in this regard. The Government of Bangladesh has also incorporated the concept in 80s decade and mostly projects wise.

Only in mid 1995, the GOB has endorsed a new dimension in planning of PPP (Perspective Planning Process) covering 15 years time period (1995-2010). Six different documents have been prepared based on the consultation meetings at district level and sector specific review by the ministries and departments. Stating about the PPP in the volume I it states ".... A planning process is genuinely replacing the traditional central planning exercise whose centrepiece is the local level participatory planning. Planning would be conceived at the local level for the local people by the local people. Sectoral programmes may receive only indicative allocations depending on projections for various scenarios within a general resource envelope."

The Perspective planning was a felt need since late 70s at the highest planning body of the Government. The Planning Commission issued a paper entitled "Preliminary thoughts on a perspective plan of Bangladesh, 1980-2000" and later in 1983 another paper named "Thoughts About Perspective Plan". As the mechanism of making the perspective plan a participatory one, attempt was taken to involve the stakeholder or beneficiaries where people at large, especially in the vast rural areas, would provide inputs to the future planning process of the country. People at the grassroots level must be allowed to speak out, they should have opportunity to give vent to their needs and problems and above all they should have a feeling of being associated, through their elected local bodies, in the process of integrating the local needs and priorities with that of the overall planning exercise of the country.

A number of selected teams composed of the officials of the Planning Commission, some research organisations have visited 64 districts, consulted the local representative bodies, community leaders, doctors, technicians, occupational groups and other professional groups about the local needs and priorities. At the same time the Planning Commission had listed the issues and problems and prospects of different areas forwarded by different ministries and departments. This was a step by step process and finally been produced as 64 separate documents for 64 districts (all the documents have not yet been published).

Three distinct elements separated the process from the traditional way of planning procedure. These are:

- participatory bottom up approach involving the local people in plan formulation;
- emphasis on augmentation of investments by the Govt. and private sector to attain the sustainable economic growth and reduction of poverty;
- an institutional framework at district level for implementation of the programs;

Despite all the limitations of the PPP, the documents prepared are of great importance to the future planning agenda to the planners, decision-makers as well as the population.

The Government, in collaboration with the leading NGOs and their national and local forums/ chapters, has been experiencing the unique result of participatory development practices. NEMAP (National Environmental Action Plan) is the example of such an attempt.

The Ministry of Water Resources (MoWR) has been in the same process in many projects such as Compartmentalization Pilot Project (CPP), System Rehabilitation Project (SIP), Chandpur Irrigation Project (CIP) since late 80s and has already formulated and approved the People's Participation Guidelines (PPG). The LGED and the DPHE also practice the same in many projects in the field of infrastructure development and WatSan.

Conclusion

People's participation is necessary if one aims at sustainable development. Because it involves a major change compared with present practice, it will require both top level policy support as well as adjustments to the planning process, team composition, team management, budgets and time schedules.

CHAPTER 12

Gender Aspect in WSS

Learning Points

- Some Gender Related Terminology
- Gender Roles
- Gender Needs and Preferences
- Women's Roles in Water Supply and Sanitation
- Problems of Women in Collection, Transport and Use of Water
- Constraints in Women Participation
- Gender-Sensitive Approach

Introduction

Gender refers to women's and men's roles and responsibilities that are socially determined. Gender is related to how we are perceived and expected to think and act as women and men because of the way society is organized, not because of our biological differences. The gender based development approach is distinct in that it focuses on women and men, rather than considering women in isolation. A balanced attention to both male and female are needed for optimizing social and economic development and reducing conflicts over water.

The gender issue in water supply means participation of men's and women's in sharing water related work at household level, decision making process, site and technology

selection, O&M and repairing of water supply facilities at individual as well as at community level. Gender approach pays attention to minimize the differences between women's interests and men's interests, where men usually dominate women.

The gender analysis in water supply development and management are to know how men and women are using resources for installation and management of water supply facilities, who makes the decisions at various levels and who get training for skill development.

Some Gender Related Terminology

Women and Gender

The issue is thus not how to integrate women, but how to transform the system so that dominant social and economic structures promote and secure women's basic human rights, including their economic rights. Instead of convincing women as a static, homogeneous,

Gender and Development (GAD)

A GAD approach focuses on social, economic, political, and cultural forces that determine how men and women participate in, benefit from, and control project resources and activities. It highlights women and men's often-differing needs and preferences. This approach shifts the focus from women as a group to the socially determined relations between women and men.

Gender Analysis

Gender Analysis examines the access and control men and women have over resources. This includes analysing the sexual division of labour, and the control women and men have over the inputs required for their labour and the outputs (benefits) of their labour. It also refers to a systematic way of determining men and women's often differing development needs and preferences and the different impacts of development on women and men. Gender Analysis takes into account how factors of class, race, ethnicity or other factors interact with gender to produce discriminatory results.

Gender Roles

In most societies, low-income women have a triple role: women undertake reproductive, productive and community managing activities, while men primarily undertake productive and community politics activities.

Reproductive Role

Child-bearing/ rearing responsibilities and domestic tasks done by women required to guarantee the maintenance and reproduction of the labour force. It includes not only biological reproduction but also the care and maintenance of the workforce (male partner and working children) and the future workforce (infants and school-going children).

Productive role

Work done by both women and men for pay in cash or kind. It includes both market production with an exchange value, and subsistence/home production with actual use value and also potential exchange value. For women in agricultural production, this includes work as independent farmers, peasant wives and wageworkers.

Community managing role

Activities undertaken primarily by women at the community level, as an extension of their reproductive role, to ensure the provision and maintenance of scarce resources of collective consumption, such as water, health care and education. This is voluntary unpaid work, either directly or indirectly, through status or power.

Community politics role

Activities undertaken primarily by men at the community level, organising at the formal political level, often within the framework of national politics. This is usually paid work, either directly or indirectly, through status or power.

Gender Needs and Preferences

Since men and women have different gender roles, do different types of work, have different degrees of access to services and resources, the needs and preferences of men and women may be different. Practical gender needs are the needs women identify in their socially accepted roles in society. They do not challenge, although they arise out of, gender divisions of labour and women's subordinate position in society. Strategic gender needs are the needs those women identify because of their subordinate position in society. They vary according to particular contexts; are related to gender divisions of labour, power and control; and may include such issues as legal rights, domestic violence, equal wages, and women's control over their bodies.

Women's Roles in Water Supply and Sanitation

In all developing countries, the women used to collect, preserve and use water mostly for domestic purposes. They are entrusted with taking care of all the household activities related to water supply and sanitation. Their involvement in proper use of water as well as in health and hygiene related activities is essential. Use of safe water in all purposes and other hygienic behaviour ensure the health condition of their own families and thereby whole community. Women as main carriers and users of water, can reduce wastage of water, ensure proper operation and maintenance of the facilities and thereby reduce the running cost of the same. They can improve personal and domestic hygiene, and promote behavioural change in the family.

On an average, rural women work for 14-18 hours a day of which, about half of the time is spent to water and sanitation related work like, washing clothes and utensils, bathing herself and children, cleaning excreta, cooking and serving food to family, cleaning

household, tending animals etc. In many places of the country, women have to collect water from distant places from their households. Now-a-days, any development programme in water supply and sanitation sector admits the role of women and consider the necessity of women participation in WSS activities.

Status of Women in Family

Within the family, cultural factors, such as seclusion, household composition and division of labour influence the division of water collection work. Girls are involved in this activity at an early age, depending on the workload and mobility of their mothers. In polygamous households, the more strenuous tasks tend to be delegated to younger women. This is also the case in extended families, where heaviest workload falls to the daughter-in-laws.

In poor families, both men and women have to work together. In these cases their children also fetch water. In many areas, poor women work outside most of the day as paid labour in agricultural field or household work in rich families and thus have less time for water collection for their own families. In middle and higher-class households in rural areas, the men work to earn the family's income, while their wives stay at home. However, often these women work for longer hours in undertaking all domestic work including cleaning, washing, cooking, child rearing and animal feeding. In most cases women either face time constraints for collecting water or use unsafe water for the domestic purposes.

Problems of Women in Collection, Transport and Use of Water

Bangladesh achieved a remarkable success in rural water supply. Even though, about 12 million people living in coastal area and offshore islands are suffering from salinity problem in ground water. Main sources of drinking water in coastal belt are manually operated hand tubewell. In those areas, the population coverage is about 216 persons per tubewell against 79 persons per tubewell in shallow watertable areas. In some parts of the country, watertable goes down and huge number of no. 6 hand tubewells become in-operational for 3-5 months during dry seasons. In these areas, Tara tubewells are adopted to serve throughout the year. Therefore, women in these areas have to fetch drinking water from very long distance or extract water from non-friendly Tara pumps.

Collection of water from distant places needs a huge amount of time and hard labor. The economic value of their time has never been considered. If the women could use this time and effort to any other productive activities, that could contribute some money to their families.

Hard work in carrying water from long distances has significant impacts on nutrition and productivity. Health problems are often observed due to carrying water from distant sources. There are cases of miscarriages due to carrying water from distant sources. Women often suffer from back pain and other problems due to lifting of filled pitcher and transferring it into another jar. These types of heavy work during pregnancy and after

delivery cause other health problems to the women. In LWT areas, huge numbers of Tara tubewells are in operational, which are the only sources of drinking water during dry seasons. But, Tara tubewell has not yet been proved to be user friendly. Tara, being a direct action pump requires more force even at low head. When water table is being lowered, much effort is needed to extract water. In many cases, Tara pumps are not operating smoothly and women have to put much effort to get water. In those cases, women complaint about pain in abdomen and chest due to pumping operation.

Women, the main users and managers of water suffer much from getting safe water during floods, droughts as well as during other disasters like cyclones, tornado etc. During flood, the male members help the women in rowing boats to collect drinking water from distant places. But in most cases, women collect drinking water from distant places with wet cloths and take the major responsibility for preservation and use of water. Therefore, the women suffer from fever, cold and cough. They also suffer from skin diseases and eye infections due to using polluted water in different household purposes.

Access to water supply facilities is another problem for women. Sometimes, the tubewell might be installed within the houses of elite people in the village and they may not have easy access there. Sometimes, due to social conflicts, woman may not use the tubewell in the neighbor's household.

Women have traditionally played a central role in the field of water and sanitation. Hence, they are important actors and a mainstream interest group within the sector. Without their active involvement and participation Water and Sanitation Project (hereafter referred to as the Project) risk being inappropriate and failing. Women also have the main responsibility for disposing of household waste, maintaining sanitation facilities and educating and training children in hygiene. Women and children are likely to be the most frequent users of the new or improved water systems, and women may well be the main disseminators of the new hygiene practices.

Constraints in Women Participation

- Women are usually informed and influenced by their husbands and therefore, they get either distorted or wrong information. Communication and information dissemination towards women are poor.
- Women have less influence and opportunities in decision making process in the household as well as in the community level.
- Lack of technical and management skill of women for installation, O&M, repairing of water supply facilities.
- Lack of women user friendly water supply technologies.
- Lack of hygiene education.
- Attitude towards women.

Gender-Sensitive Approach

Unequal gender relations prevent equitable development and full participation of women. The constraints may be overcome when gender strategies are adopted for creating an 'enabling environment' for new forms of water supply management.

Information Dissemination

It is essential to make sure that effective communications are made so that both male and female have access to information regardless of age and socio-economic status.

For more balanced participation of men and women in WatSan meetings and decision-making bodies, the awareness and support of village leaders are primary conditions. Women as well as men need to be informed and encouraged to attend WatSan meetings using communication channels typical for either group, such as women's organizations and networks and community authorities. Reaching the men is important to ensure that women have the freedom to attend.

Separate meeting with local women, for more detailed discussion of planning issues related to their responsibilities and knowledge, has been found to be effective. Another method used effectively is to contact women at their places of work. This was practiced especially if they did not have time to meet elsewhere. In cases of women confined within the family, home visit works effectively. The use of gender approaches as part of regular procedures makes it possible to get gender-specific results without significant costs.

Facilitating women's participation in meetings by choosing appropriate time and place suitable for women and, informing and encouraging them beforehand are needed.

WatSan Meetings

It is often difficult for women to attend meetings due to lack of time and freedom of movement. Even during attending meeting, women do not often raise their problems and feel restrained by their lack of education and cultural barriers. At meetings, the accepted role of women is often to listen to the men talk, she is not expected to express herself.

To enable women to attend WatSan meetings, practical gender needs are met when the meetings are held at suitable times and places for women. Special effort must be made to involve poor women, who are often not represented in women's organizations. At the meetings, use of local languages or dialect and gender-appropriate seating arrangements enable women to hear and understand what are being discussed. Participatory tools and techniques may be used during the meetings. Local educated women, such as midwives, health workers, teachers have been found suitable intermediaries for the women. Their professional status makes their involvement more acceptable to the societies irrespective of male and female.

Decision Making

Usually women have fewer opportunities than men to participate in discussion and decisions, in spite of their essential roles as users and managers of water, protectors of family health and educators of the new generation. For example, a young daughter-in-law usually has less influence, but do more work than her mother-in-law, who has more influence in the household to make the decision. In many places where women contribute labour during installation phase. In some cases, men do the digging and, women and children carry materials and cater support services. But women's share in physical work does not necessarily imply that they have an equitable share in decision making.

Therefore, the actual users should be involved in decision making process for site selection, choice of technology, installation, O&M and repairing of the water supply facility.

Training

Developing technical and management skill of women along with men in O&M, repairing of water supply facilities by providing training is essential. In many cases, women need special training, particularly in leadership skills, confidence building and communication. Similar training to be given to the men to prevent them from feeling passed by.

Women can even perform better maintenance and repair work than men. The reasons behind that are direct concern and personal interest of women in their water supply facilities. Therefore gender-specific training on preventive maintenance, repairing and users education are necessary.

User Friendly Technologies

Technologies for water supply in rural areas are limited. There are still scopes for developing new technologies as well as improving existing technologies to be user friendly. The facilities must be simple to operate, maintain and repair by women easily. For, example improvement of Tara hand tubewell might be very useful for women to use and repair.

Hygiene Education

Although women may not be the heads of the families, but they are primarily responsible for maintaining good health of all the members. Women should be focused as the key information media for providing hygiene education and bringing behavioral changes among the families. Thus involvement of women for hygiene education and changing agent for hygiene behavior along with men are required. Female health workers have easy access to household and they can easily educated and motivate the women and children for hygiene practice. Male members also need to be motivated for behavioral change to promote hygiene practice together within the family.

Change of Attitude

Changing attitude of the community towards women through mass media and creating awareness for recognizing the contribution of women in the society is essential. Creating gender awareness is the first step for men and women to appreciate each other's value. Special efforts have to be made to build skills and confidence among women, as well as men to support and value women's contributions.

CHAPTER 13

Cost Recovery and Sustainability

Learning Points

- Cost Recovery for Sustainability
- Sustainability of WSS Systems
- Estimated Investments for WSS Facilities
- Operation and Maintenance Cost

Introduction

The main source of drinking water supply in Bangladesh is groundwater. Different kinds of tubewells and some other technologies are available for extracting water. Drinking water supply normally consists of handpump tubewells (HTWs) and piped water supply system. HTWs are aimed for the poor people living in the rural areas and urban fringes. Piped water supply system is constructed for both poor and rich people living in the core areas of urban centres. Characteristics of the two systems are different particularly in terms of investment, operation and maintenance costs.

The defecation practices in our country are still traditional and unhygienic. About 38% of the rural population use sanitary latrines including home-made latrines. Overall urban sanitation coverage is 42%. This includes different types of latrines. Solid waste management is still not a problem in the rural areas, but it is becoming a great environmental threat to urban centres, especially in big cities.

The cost of investment for HTWs is relatively less than that of piped water supply system. The per capita investment cost for shallow, deep and TARA varies from Tk. 50 to 80, Tk. 500 to 600 and Tk. 100 to 150 respectively. On the other hand, per capita investment cost varies from Tk.15, 000 to 40,000 for having water supply system with production wells, pipe lines, overhead tanks, iron removal plant etc. It has also been observed that in many towns, the current demand for new house connections is very limited. The cost for sanitary latrines also varies widely depending on the type.

Facilities Providers and Users

The value of investment on fixed assets was never accounted for and no provision for depreciation was made. The hardware for water supply were mainly installed by Department of Public Health and Engineering (DPHE) under different projects financed by the Government or donors with the understanding that Pourashava or the users will take over the responsibility of O&M of the system. In practice, no Pourashava actually takes the responsibility of O&M. But as an utility service, the pumps are kept running by DPHE without taking into account the O&M cost recovery.

Shallow handpump tubewells are already popular in high watertable areas and being installed and maintained by local mechanics in the private sector. But Deep HTWs and TARA are still financed by the public sector including maintenance.

Cost Recovery for Sustainability

With these backgrounds, emphasis has been given on cost recovery for sustainability of water supply. Therefore, Pourashava Water Supply Section (PWSS) must be organized in all towns and accounting system should be implemented. At the same time, performance of the PWSS needs to be increased to reach the sustainable level.

In the beginning, most of the facilities were provided by the government and donors free of cost. But availability of facilities did not ensure utilization and proper maintenance of these facilities. It had been seen that once the facility went out of order, it remained out of order. There was no fund for repair and maintenance of the same. That resulted needs for rehabilitation and caused more scarcity. The facilities must be constructed and optimally used before it is replaced.

Sustainability of WSS Systems

Sustainability of water supply and sanitation system must be considered for achieving good health for all and keep the environment healthy. With the increase in population, we are facing extreme crisis of all resources including water. With the passage of time, drinking water is becoming scarce and environmental pollution is increasing.

The water supply and sanitation system will be called sustainable when the users can have guaranteed supply of safe water and adequate sanitation facilities according to the demand. The main parameters for sustainable WSS system are considered as:

- Recovery of investment cost from the users as depreciation that is required for meeting future demand and replacement of the facilities.
- Recovery of operation and maintenance cost to keep the facilities in serviceable condition.
- Community participation in sharing the cost and undertaking operation and maintenance.
- Community mobilization for use of safe water and sanitary facilities.
- Participation of women in decision making, operation, maintenance and repairing.

Sustainability may be defined as the ability to meet the required operation and maintenance cost and to generate small surplus money to undertake replacement and extension work for improving service delivery. For sustainability, at least some percentage of depreciation cost should be added with the tariff that would be required for replacement of major components, emergency maintenance and small extension work.

Estimated Investments for WSS Facilities

The estimated Investment and monthly operation and maintenance cost of different kinds of facilities are shown in Table 13.1.

Table 13.1: Estimated Investment and Monthly O & M Cost of different WSS Facilities

Items	Estimated Cost per Unit in Taka	
	Investment Cost	O&M Cost/Month
Hand Tubewells:		
Deep Hand Tubewell	35,000 to 45,000	50-75
Shallow Tubewell	5,000 to 8,000	50-75
TARA Tubewell	10,000 to 20,000	50-100
Pond Sand Filter (PSF)	20,000 to 30,000	100-500
Shrouded Tubewell	10,000 to 20,000	100-500
Iron Removal Unit (IRU)	5,000 to 10,000	100-200
Piped Water Supply:		
Pipe line / km	8,00,000 to 12,00,000	5,000-6,000
Production well	15,00,000 to 20,00,000	15,000-20,000
Treatment plant	100,00,000 to 150,00,000	20,000-30,000
Overhead tank	60,00,000 to 100,00,000	1,000-1,500
House connections	3,000	200-300
Street Hydrants	3,000	200-300
Sanitation Facilities:		
Homemade Latrine	100 to 200	20-30
Single Pit (1 ring + 1 slab)	225 to 300	20-30
Single Pit (5 ring + 1 slab)	1200 to 1500	20-30
Double pit (10 ring + 1 slab)	2500 to 3000	30-50
Full Sanitary Latrines	20000 to 50000	100-200

The estimated cost shows the importance of cost recovery. For any facilities, someone should bear the cost for installation as well as operation and maintenance. There is no way to treat the investment as free of cost. Similarly if the facilities are to be optimally used it must be maintained properly. In the urban centres, the poorer people should also be served with the pipe water supply and sanitation facilities. The key point is to share the cost by the users. Community participation and skill development is very important.

Operation and Maintenance Cost

The main items of operation and maintenance cost of water supply are:

- Electricity bill
- Salary of staff
- Repair and Maintenance
- Office expenses

There is no operation cost for HTW but incur small amount of maintenance cost. The piped water supply system incur large amount of operation cost such as electricity bills, salaries of staff as well as maintenance costs such as repair and replacement of parts, components. Because of differences in the total investment cost the depreciation cost also vary widely between the HTW and piped water supply system.

The number of house connections and the corresponding water tariff are not enough to generate sufficient revenue for meeting the O&M costs. For many towns it would not be possible for payment of the electricity bill which is about Tk. 10,000 per month per pump for 12 hours operation in a day and the salaries amount to Tk. 15000 to 25000 per month depending on the number of staff.

Most of the facilities failed to serve the purpose because of poor maintenance. If the users are trained for minor operation and maintenance of the facilities then they can keep it in good order by themselves. The installation, utilization and O&M are to be linked together to achieve sustainable WSS system.

The relationship between installation, utilization, repair, rehabilitation and maintenance are shown in Figure 13.1.

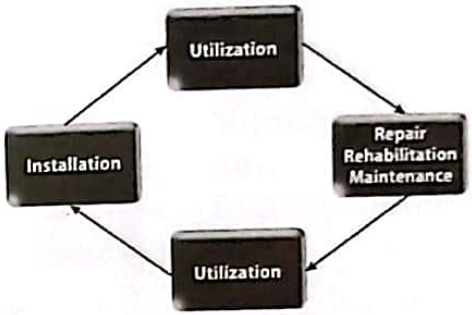

Figure 13.1: Relationship between Installation, Utilization and Maintenance

The monthly operation and maintenance cost for small pipe water supply system amounts to several lacs of taka. For HTWs and other technologies, the charge would be at lesser rate. This amounts to be realized from the users if the Pourashava or the agencies provide the maintenance. In other case the users may pay to the caretaker for buying and fixing the materials for HTWs. In case of pipe water supply, they can generate fund for payment of water bills. Thus the key to sustainable water supply and sanitation system is full involvement of the users in the system.

The linkage between the users, the water supply and sanitation facilities and sustainability is shown in Figure 13.2.

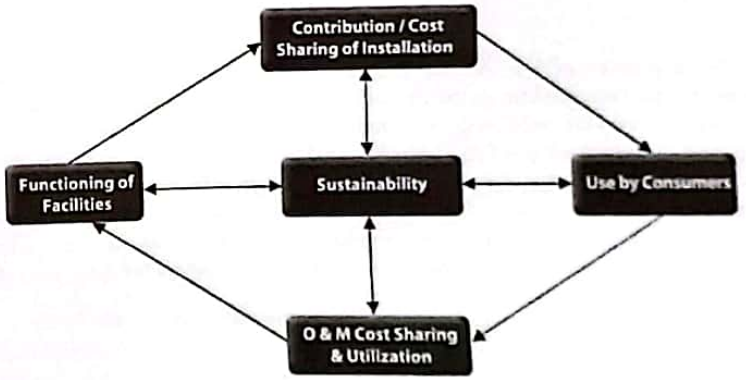

Figure 13.2: Linkages between Users, WSS Facilities and Sustainability