

NATIONAL POLICY

**DEVELOPMENT OF COMMUNITY MANAGED
WATER SUPPLY AND ENVIRONMENTAL
SANITATION FACILITIES AND SERVICES**

**Ministry of Settlement and Regional Infrastructure
Ministry of Health
Ministry of Home Affairs
Ministry of Finance
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PREFACE

Since Repelita I (1969/70 -1974/75), attempts to develop water supply and environmental sanitation (WSES) sector in Indonesia were made primarily by the government, with the support of various groups such as the community, non-governmental organizations (NGOs), and multi various agencies. Although significant progress has been achieved, other aspects must still be further developed, notably the sustainability of the implemented WSES systems.

In-line with the decentralization and regional autonomy policies, the central government is responsible for facilitating the local governments in implementing rural areas development. This WSES policy will supposedly assist local governments to carry out more effectively their perspective WSES development plans and programs.

This policy essentially highlights the need for a paradigm change in the established WSES development, focusing mainly in the sustainability and effective use of WSES facilities and services. The policy addresses several implementation strategies that emphasize the demand-responsive approach, human resource capacity-building, community campaign awareness, environmental management promotion, institution development, and monitoring and evaluation system focus in all phases of the WSES development and implementation process.

This policy framework is the result of a concerted effort of inter-agency collaboration involving the Ministry of Home Affairs, the Ministry of Settlement and Regional Infrastructure, the Ministry of Health, and the Ministry of Finance, under the coordination of BAPPENAS. The policy has also integrated the objectives of those actively participated in the WSES development sector, such as the bi-lateral or multi-lateral donor agencies and NGOs.

It is hoped that this policy framework will be used as basic guidelines for the local governments and other relevant parties to develop a sound and viable WSES sector .

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LIST OF ABBREVIATIONS AND ACRONYMS

ABPL	Clean Water Supply and Environmental Sanitation	PABPL	Provision of Water Supply and Environmental Sanitation
BAB	Defecation	PAM	Water Supply Company
BAPPENAS	National Development Planning Agency	PDAL	State Owned Waste water Company
DIP	Government Development Budget Allocation	PDAM	State Owned Water Supply Company
DRA	Demand Responsive Approach	PERPAMSI	Indonesian Association of Water Supply Company
FLAWS	Flores Water Supply Project	PHBS	Health and Hygiene Behavior Education
IKK	Kecamatan Capital Program	PPLP	Environmental Sanitation Project
INPRES	Presidential Mandate	PPSAB	Water Supply Development Project
IPLBM	Community-based Wastewater Treatment Installation/Facility	UNDP	United Nations Development Programme
KIP	Kampung Improvement Project	UNICEF	United Nations International Children Fund
LSM	Non-Governmental Organization (NGO)	UPS	Facility and Service Management Unit
MCK	Public Bathing, Washing, and Latrine Facility	WASPOLA	Water Supply and Sanitation Policy Formulation and Action Planning
P3AB	Water Supply Facility Provision Project	WHO	World Health Organization
P3DT	Integrated Village Infrastructure Development Project	WSES	Clean Water Supply and Environmental Sanitation
P3KT	Integrated Urban Infrastructure Development Project	WSP	Water Supply and Sanitation Program
		WSSLIC	Water Supply and Sanitation for Low Income Communities

DEFINITION OF TERMINOLOGY USED

- **Clean Water** is water used for daily activities that has met water quality standards and is of drinking water quality after being boiled.
- **Drinking Water** is water that has satisfactorily met water quality standards and is readily drinkable.

- **Demand vs. Wish**

Demand is the user's readiness to obtain WSES services and facilities based on the available options and local conditions accompanied by a willingness to sacrifice something to sacrifice for the intended goods or services (willingness to pay).

Wish is the user's desire to obtain WSES services and facilities with influence by external parties.

- **Demand-Responsive Approach (DRA)** is an approach where the decision on an investment is based on the demand of the community.
- **User Community** is the person(s) within the community who uses WSES facilities and services.
- **Sustainability** is a continuous service of, by, and for the user in a self-reliant manner, taking into account the technical, financial, social, institutional, and environmental aspects.
- **Equity** is the equal access of all community members to use provided facilities and services.
- **Effective Use** is the convenient access to and use of WSES services and facilities by the user community in a fair, appropriate, and healthy way.
- **Participatory Approach** is an approach that uses one or several methods to actively involve relevant parties in strengthening:
 - a. Expression of knowledge and ideas, and decisions to choose a service; and
 - b. Initiative to identify and solve problems, make decisions, and work together.
- **Environmental sanitation** is the effort to prevent the spread of diseases through management of domestic wastewater, drainage, and solid waste.
- **Empowerment** is the effort performed by an individual or group of individuals to build and strengthen a community's independence and self-reliance/confidence by stimulating the community's own initiative and creative potential.

I. Introduction

1.1 Background of the need for Water Supply and Environmental Sanitation (WSES) sector policy reform

At least 100 million people in Indonesia today do not have reliable service and access to clean water supplies, nor to adequate sanitation facilities. Recent trends indicate that this number is increasing. It is mostly the poor and rural residents who lack access to these basic services.

The initial capital required to address these shortcomings are at least US\$3 billion while a minimum recurring cost of US\$1 billion will be needed across the sector each year to keep the services in operation. With its limited resources and capital, the current government will not be able to support funding of this magnitude. Therefore, a new paradigm is necessary to bring out the hidden potential from the users of clean water supply and environmental sanitation (also referred to as WSES) facilities to contribute and thus provide funding. To optimize such new funding mechanism and to ensure its continued existence, a sustainable WSES system will be crucial.

The existing policy and its mechanism to provide WSES facilities and services, and the current institutional framework which support them, have not optimally functioned to bring out this hidden potential. Policy and institutional reforms are therefore vital to elicit such potential.

This document sets out the national policy framework and the reforms, which define the new paradigm based on the evaluation of existing WSES program implementation and include the dynamics of user communities, notably autonomy, self-reliance, decentralization, and democracy.

1.2 History of Water Supply and Sanitation Programs (PABPL) in Indonesia

1.2.1 Decade 1970 - 1980

During Pelita I (1969-1974) and Pelita II (1974-1979), national development programs focused mainly on agriculture and irrigation in an effort to maintain food supply, while other public utility development programs, including clean water supply and environmental sanitation, were very low in the national priority list. Since WSES resources were limited, WSES service coverage remained minimal and its development was unable to cope with the population increase.

In rural regions and small-town communities, water was commonly collected from traditional sources, such as wells, rivers, etc. Undertaken by the Ministry of Health through projects aided by NGOs and UNICEF, the development of small scale water supply facilities in these regions was provided with technical assistance from WHO and UNDP. However, the construction of these water supply facilities was frequently intended to test the application of an appropriate technology at the field level and to experiment with the application of

human resources program, namely the active role of the community and the establishment of water management institutions. The size of these projects and the area of coverage were usually too small to cast a noticeable impact in rural regions and to note the sustainability of the constructed facilities.

Fueled by the economic and population growth, the rapid expansion of urban areas during Pelita II was accompanied with an increased demand for clean water. To meet this increasing demand, the central government modified its development policy by raising clean water supply investments in urban areas, establishing water management institutions, and developing human resources programs.

In urban communities, residents who could not afford to purchase and construct latrines typically defecated in traditional sanitation sites, like rivers or open fields, all of which were conducive to the spread of contagious diseases. The central government, in its attempt to solve the sanitation problem and to change such unhygienic behavior, provided public or communal washing, bathing, and toilet (MCK) facilities in densely populated urban areas. However, the use of these facilities in the targeted communities remained low; the failure was primarily attributed to the lack of community involvement and active participation in the awareness and decision-making process of MCK facility development.

1.2.2 Decade 1980 - 1990

The International Water and Sanitation Decade (1981-1989) was declared.

During Pelita III (1979-84) and Pelita IV (1984-89), investment for public utilities in large and small cities, and in smaller, rural towns had increased. The Ministry of Public Works (PU), functioning as the technical advisory department, was responsible for the development of water programs and the construction of water supply facilities; State Owned water Supply Company (PDAMs) were responsible for the O&M of the facilities.

In rural regions and smaller towns, the planning and implementation of WSES facilities and services were developed by the Ministry of Health with assistance from the Ministry of Internal Affairs and the PU. At this time, funding from bilateral and international multi-lateral donor agencies had also increased in Indonesia. The Pelita IV era marked the beginning of NGO involvement and community participation in government projects. Community ownership and demand-responsive approach concepts were also introduced. Development of water supply programs was now targeted for those communities in need and was coupled with the use of locally-specific and appropriate technologies, such as hand pumps, cord pumps, and hydraulic rams.

To encourage the involvement of regional/local governments in rural clean water supply and environmental sanitation provisions, a new funding mechanism was established. Based on the central government budget model, this mechanism allowed regional/local governments to establish a payment system for managing WSES development.

Unfortunately by the end of the decade, the size of water service and sound environmental sanitation coverage in urban and rural areas fell short of projected figures and the quality of constructed WSES facilities were mostly below standard. Particularly in rural areas, the lack of targeted community involvement in WSES development programs resulted in many unused and poorly maintained facilities.

1.2.3 Decade 1990 - 2000

In this decade, the importance of water and the relevant processes needed to provide water and adequate environmental management were realized, largely due to the worldwide establishment of the Rio-Dublin principles of water use.

In its effort to increase the quality of life, the central government began to prioritize WSES as a primary component of its development activities. In particular, special attention was now focused on the poor communities. Concurrent with the shift towards decentralization and regional autonomy, the central government authorized regional/local governments to allow communities in implementing their own water supply and adequate environmental sanitation activities; with respect to WSES development, the central government served only to provide technical assistance.

The central government at this time also pushed the private sector to invest in the development of public utilities. But, due to the profit-oriented nature of the private sector, investments for water supply were primarily funneled for large urban area projects. In reaction, the central government encouraged rural communities to develop their own clean water supply systems that are not within the local PDAM distribution network. Consequently, small-scale investments in clean water supply systems sprouted throughout several rural regions.

The economic crisis of 1997 and the subsequent political turmoil of 1998 reduced private sector investments for the financing of utilities development and decreased community involvement in water supply provision programs.

Some environmental improvement and wastewater development projects in large urban areas were nevertheless completed, but management problems remained. These problems were attributes of the existing community's perspective which deprioritized domestic wastewater management. As a result, the user community's willingness to pay in money or in kind for wastewater management remained inadequate. Constructed wastewater treatment facilities continued to be subsidized by the central government.

In its intent to create synergy, the central government then incorporated MCK construction and stimulant latrine distribution as part of WSES development in urban and rural areas. However, such effort had not

yielded fruitful results, namely due to the lack of available WSES technology options and the improper selection of locally-specific and appropriate technology for the targeted communities.

Other persistent problems encountered in this decade were inadequate solid waste management and ineffective drainage control. The population boom in urban areas increased solid waste generation; the existing waste management resources, including available waste disposal areas, were unable to manage such rapid increases. As a result, drainage systems were used as solid waste disposal sites. Drainage control and development remained unmanageable and were not implemented systematically. In addition, drainage network systems in urban areas were not improved due to the lack of resources and funding.

1.3 Lessons Learned from PABPL

1.3.1 International Lessons Learned Relevant to Indonesia

Historically, investments in WSES development had fallen short of expectation; WSES facilities were poorly built and sustained WSES service was largely ignored by the community. Sustainability is the key concept that should be emphasized for the provision of future WSES development programs in urban, rural, and small town areas. The Rio-Dublin Principles highlighted in Box 1 should be used as the guiding principles for future WSES development efforts.

Box 1

Dublin-Rio Principles

Developed during international conferences in the two aforementioned cities, the Dublin-Rio Principles contain the following components:

- Water is an essential yet limited resource to life and should be managed with a holistic approach amongst all its uses;
- The development and management of water resources should be based on a participatory approach, where decisions are made at the lowest possible level of the community;
- Women should have a central role in the decision-making process of water supply development mainly because they have a great influence in effective and efficient water consumption;
- Water does not only have a social value, but it also has an economic value.

Within the context of WSES development in Indonesia, the principles imply that “successful development must consider and integrate all the different, but equally important, aspects, notably gender equity and social, technical, financial, institutional, and environmental factors.”

- Water cannot be treated as a free and valueless commodity; water service can be sustained only if the costs associated with use are equal, according to the users, with the value of the water.
- Final decisions must be made through the participation of all the users, without exception. The development approach must change from the typical government-based assistance (supply driven) to

the community need-based assistance (demand driven). The government is responsible for disseminating informed clean water technology choices to the community to raise awareness.

- Sustainability is better assured when women actively participate in the decision-making process of WSES development programs. Women are the prime managers of water use within households; they are responsible for family hygiene.

Resources, including government funding, are generally always limited; demand, however, is generally infinite. The existing government lacks the resources to meet the demand of WSES development in all communities. With respect to the limited government resources, three main issues must therefore be realized to facilitate the implementation of WSES development programs:

- The institutional and legal framework of the WSES sector should enable and support the above principles, and thus the existing framework requires fundamental reform.
- To fully cover the construction, operation and maintenance costs of WSES facilities and services, the necessary financial resources must be raised from other sources, including the private sector and the user communities themselves.
- The capabilities and empowerment potentials of all stakeholders must be strengthened.

In the past, a number of myths hindered the implementation of participatory approaches in WSES development. However, experiences extracted from a World Bank study¹ disproved several of these myths. The following are several of the study's findings:

- Poor community members pay for their water supply often much more than the wealthier members of the community; poor families will pay if they get a good service.
- If communities do not receive what they expect, they will not use the facility nor pay for the associated costs charged to them.
- Standardization and generalization established too early in the implementation procedure usually leads to failure.
- Community participation may neither be developed nor ignored by an outside party; participatory process is the relinquishment of the reins into the hands of the community.
- If the project is responsive to the needs of the communities, it will stimulate communities to act and organize themselves quickly to accommodate project activities.
- Community participation can be replicated; participatory concepts can be readily applied and measured.

1.3.2 Lessons Learned Specific to Indonesia

Several conclusions drawn from the implementation of foreign-funded WSES programs² are, among others, the following:

¹ The Contribution of People's Participation – Evidence from 121 Rural Water Supply Projects, Deepa Narayan, the World Bank, 1995.

- The development of water supply facilities and services that meet the demand of the community shows a high rate of effectiveness and sustainability.
- Participatory management involving all segments of the user community, both in the institution and in the decision-making process, will result in a higher degree of O&M participation.
- The active involvement of women in decision-making, operation and maintenance will result in higher effective use and sustainability of WSES facilities and services.
- Easy access to clean water services and facilities will result in their higher effective use and better sustainability.
- The approach for environmental sanitation should be distinguished from that for clean water.
- The more the service technology options are offered to the communities and the bigger their roles are established in the decision-making, the bigger the potential for the WSES facilities in fulfilling their demands; hence the facilities will be used in an effective and sustainable manner.
- Effective use and sustainability can be achieved if the service technology options and their financial implications are determined at the household level and the organization of the service management unit is formulated in a democratic manner; contributions from the community are decided based on the type of service offered.
- Users are concerned with the quality of WSES service; they are typically willing to pay more provided that the service meet their expectations.

Some constraints that should be recognized in the application of the Demand Responsive Approach (DRA) are as follows:

- Lack of mutually-agreed policy framework by the parties involved, including the central and the regional governments, the recipient and donor agencies, and the NGOs, in applying the DRA;
- Some direct and indirect resistance between various levels of the government and their departments, between the recipient and the donor agencies, and even within the community itself;
- Lack of knowledge, information, and technical know-how as well as funds in all levels of the government and amongst the NGOs;
- Slow bureaucratic process and rigid procedures for disbursement of funds and the lack of proper hiring of the required manpower to support the activities;
- The necessary time period for effective implementation of the DRA principles and consequently the need for sufficient funding, especially when efforts to stimulate the community's willingness to contribute are involved.

The required steps that must be performed to implement effective DRA principles are as follows:

- **Policy aspects:** To institutionalize the DRA into the regional development mechanisms and at the same time improve the capabilities of the kabupaten (district) and city governments in applying DRA.

² Projects such as WSSLIC I (Water Supply and Sanitation for Low Income Communities - I), FLOWS (Flores Water Supply) and UNICEF-assisted WSES development programs

- **Financial Aspects**, among others are: To prepare a legal framework to urge all agencies involved to participate in the budget and financial management, and to develop a mechanism that would support the capability of the communities to manage and control their own financial resources.

1.3.3 Requirements for a Successful WSES Program

There are several preconditions for a successful future WSES facilities and services development program:

- Commitment by all stakeholders to reform and improve WSES policy framework.
- Commitment by all stakeholders to reform and improve WSES development approach.
- The framework and approach should be flexible enough to anticipate and to accommodate the dynamics of technical and non-technical changes, such as traditional, political, economic, and social conditions.
- For the framework and approach to be effectively implemented into real action, an operational program that reflects the commitment of all stakeholders must be established.
- Commitment by all stakeholders to realize that successful results of active target community participation achieved from the operational program will take time.

1.4 Scope and Setting

Water supply and environmental sanitation are not only fundamentally inherent components of **residential communities** but they are also part of the entire **water resource system**. Policies of both sectors therefore have significant impacts on the policy framework of clean water supply and environmental sanitation.

With respect to quantity, water for domestic, commercial, and industrial consumption is minute relative to the water consumption for irrigation; based on available data, even in the populous and more developed areas of Java, the proportion of domestic water use is roughly ten percent. However, this does not translate to the abundance of clean water supply and environmental sanitation in Java or in all of Indonesia; the overall water quality for domestic usage remains very poor and susceptible to changes in the environment.

Until now, approaches to WSES facilities and services in Indonesia have been based on administrative boundaries while in reality clean water supply and adequate environmental sanitation do not follow administrative boundaries, nor do they fit easily within such boundaries. Such boundaries are evident in the current planning and management of WSES facilities.

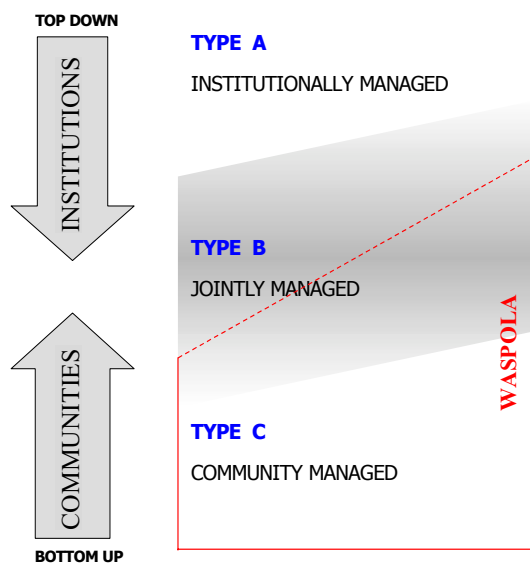
As a result of the administrative boundaries established to differentiate cities and districts, and as such their distinct planning and management authorities, institutions established to manage WSES facilities and services also fall within such boundaries. WSES management bodies in cities are relatively smaller than

those set in districts, but by no means do they encounter less complex problems than those faced in the districts.

WSES management institutions in cities, while generally more focused, typically provide adequate service coverage and abide by a clearer rule of conduct and law. In contrast, WSES service coverage in districts are limited mostly to the district and sub-district capitals while coverage in rural areas remain minimal; shortage of WSES services in rural regions is commonly resolved locally within the community. In spite of the administrative boundary predicament, joint efforts by the community and various legal entities have in effect established WSES planning and management institutions in several cities and districts.

With respect to the management conditions of WSES facilities and services presented above, three types of methods can be derived as shown in Figure 1. The primary distinction is between management by an institution and management by the community. However, there is also a category in between these two which allows for shared arrangements. In this context, a 'community' is defined as a socially cohesive group, whose main currency for transactions between them is trust; an 'institution' is a formal organization outside any community group, whose main currency for transactions is money. An institution could be a publicly- or privately-owned company, or it could be a properly constituted cooperative, or an NGO. This new framework is illustrated in Figure 1, in which the three categories are called Types A, B and C, and which are described in more detail in the following.

Figure 1



Type A: Management by an Institution

The decision-maker in this management arrangement is a formal institution, as defined above. This institution has the ultimate responsibility for planning, design, construction, operation and maintenance, and

management of the WSES facilities and services. There may be a different institution responsible for one or more of the aspects. The institution may or may not consult with its customers (the end users) and the relationship between them is a purely commercial one: the customer pays fees for connection to the service and regular charges for the services rendered. The typical examples of Type A in Indonesia are the PDAMs, PDKs, and PDALs in several cities.

Type B: Joint Management by an Institution and the Community

Informal examples of the Type B arrangement exist commonly in densely-populated urban areas, such as groups of water users operating public taps and making payments to water utilities; these groups have no formal agreements nor recognition, and are generally not sustained. This category recognizes that there are practical limits to the pure institutionally-managed and community-managed approaches. A Type B approach allows the possibility of a hybrid in which some elements are managed by the institution and some by the community; the relationship between them is purely a commercial one, although how that works within the community is up to the community to decide. An example is having an institution managing a bulk water supply service to an offtake; downstream of the offtake a community group is responsible for all aspects of distribution and management, including making payments to the bulk supplier. The tariffs and charges for such a bulk supply are mutually and formally agreed between the parties; they are typically lower than 'full service' tariffs and charges, since final distribution and management costs are the responsibility of the community.

Type C: Management by the Community

The defining characteristic of Type C arrangements is that the community is the ultimate decision-maker for all factors related to WSES development and establishment, from the initial determination of WSES needs, decisions on WSES levels of service, technical design and planning, WSES system implementation, and finally to the long-term operation and management of the WSES facilities and services. The community may be facilitated in one or more phases of the process, for example through the provisions of technical options information and external assistance (such as a consultant, contractor, tradesperson or professional worker), but the final responsibility for all decisions remains with the community. Physical facilities typical for Type C include non-piped water supply facilities such as wells, hand pumps and rainwater collection, and simple gravity-flow piped distribution systems. Many sanitation interventions are initiated as Type C approaches. Many NGO programs have also applied variations of the Type C approach. The arrangement remained uncommon for government and donor programs until the government's recent realization that the Type C approach produces more sustainable results relative to the other types.

There are several other policy initiatives that should be focused on the institutionally-managed end of the spectrum, especially the reform of PDAMs and their ownership and partnership arrangements. This document does not specifically address these Type A arrangements. The initial focus of this policy discussion is on community-managed water supply and environmental sanitation services (Type C). However, the scope of the policy extends into the Type B joint management between communities and institutions, and specifically enables the formal recognition of such arrangements and definition of the

relationships between the parties. Thus, the scope of this policy document covers, as illustrated in Figure 1, all of Type C and extends to Type B approaches.

1.5 Objectives and Purpose

The objectives and purpose of this policy document are to:

- Produce a national level policy document on WSES which is acceptable literally across the different line of agencies, from the national level down to the regional government, NGOs, the representatives of the beneficiaries as well as the donor agencies;
- Identify the priorities and the strategies in the existing national policy on WSES facilities and service;
- With respect to the decentralization agenda, arrange the order of priorities for a 5-year, central government implementation program in the development sector, especially with regard to WSES facilities and services.

II. Community Empowerment-based Development Policy for Water Supply and Environmental Sanitation

This chapter describes the objectives and principles of policy making, and the general policy for the community-based WSES program. Past experiences of WSES development serve as the basis of the new WSES framework paradigm based on community empowerment.

2.1 Policy objective

The aim of the WSES program, as set forth in the GBHN 1999-2004, is to improve and maintain public utility installations and services, including clean water supply and environmental sanitation in residential communities. This is especially important in stimulating equity in development, satisfying the demands of the community, and improving the quality of human and environmental resources in a health-related approach. To reach a long-term WSES program goal, it is crucial that the following aspects, listed in the order of priorities, are established:

a. Sustainability

Sustainability refers to the ability of WSES provision programs to produce a continuing benefit in favor of the community. Sustainability must take into account the planning, implementation, operation and maintenance, and management of the WSES facilities and services. When measuring the success of the WSES program, the ability of an activity to result in sustainable community behavioral changes is equally important as the implementation of the program itself. Several aspects should be considered in sustaining WSES activities, namely:

- Sustainability of financing
- Sustainability of technical know-how
- Sustainability of environmental management
- Sustainability of infrastructure management organization
- Sustainability of social interaction

b Effective use

Use of WSES facilities and services is considered effective when the available facilities are appropriately placed and soundly constructed with respect to technical, health, institutional, operational, and behavioral (change of behavior) aspects. Effective use of WSES facilities and services includes two facets: (a) ease of access and (b) equity.

The availability of adequately constructed facilities does not necessarily and immediately improve health conditions nor other welfare benefits, unless it is followed with improved awareness and change of behavior within the community. The community however benefits from the processes implemented to establish community empowerment in WSES development.

□ **Ease of Access**

Effective use is directly linked with the accessibility of the WSES facilities and services to the community; the facilities and services should therefore be readily accessible for either individual households or the general public, properly constructed with appropriate and available technology, easily operated and maintained, and conveniently located near daily activities.

□ **Equity**

Equity refers to the use and availability of WSES facilities and services to every community member without gender, religious, age, racial, and social class preferences. Through the concept of equity, it is anticipated that the community considers and involves its poor constituents and women in developing the WSES programs; they are the target recipients of these development programs.

2.2 Main Policy Guidelines

The clean water supply and environmental sanitation policy framework in Indonesia are based on several precedent national-level policies:

➤ **Constitution 45 Art. 33 Para 3:**

"Earth, water and the wealth contained therein is under the state possession and shall be used to the utmost benefit of all the people".

➤ **GBHN 1999-2004 (Tap No.IV/MPR/1999), Art. B. Economy, Para 17**

"Improve the development and maintenance of public facilities and infrastructure, including transportation, telecommunication, power and electricity, and water supply, to enhance the equity in development, to provide public service at a reasonable price, and to reach the isolated and remote areas."

➤ **GBHN 1999-2004 (Tap No.IV/MPR/1999), Art. F. Social Culture, Para 1.a.**

"Improve the quality of human resources and the environment, both of which are mutually supporting, under the health paradigm approach, with priorities to be placed on the efforts to ameliorate health condition, contamination preventive measures, recovery, and rehabilitation early on, from the human conception stage up to the old age."

➤ **Law No. 22/1999 Para 4**

"Province, District, and city have a right to manage and take care local community business based on initiative and community aspiration".

➤ **Law No. 23/1997 Para 3**

"Enable sustainable development based on the environment for all individual and communities in Indonesia".

➤ **PROPENAS 2000-2004 (Law No. 25 year 2000), Chapter IX Art. C, Para 2.6:**

"Focus on (1) improvement in the quality of service and management of housing infrastructure including water supply, drainage, waste water, garbage, flood control, local access roads, public transportation terminals, markets, schools, villages, etc.; (2) improvement in the quality of operation and maintenance of housing facilities".

➤ **PROPENAS 2000-2004 (Law No. 25 year 2000), Chapter VIII Social and Culture Development Art. C. Program II Development Para. b. Hygiene Behavior and Community Empowerment**

"Focus specifically on (1) improved effectiveness of behavioral change in the life of community; (2) improved community support network, so that the community demand on public service is ultimately increased".

2.3 General Policy

In principle, the aim of the WSES program is to improve the quality of life of the community. It is expected that through the improvement in the services of WSES infrastructure and facilities, the health condition, and subsequently the productivity and the quality of life of the community, could be improved as well.

To achieve this goal, the following profound changes to the deeply-rooted WSES development paradigm should be implemented:

a. Water as an Economic and Public Good

Until now, most communities perceive water as a public good to be obtained and used at no cost. This belief has led to the lack of the community's attention to the sustainability of water resources, both quantitatively and qualitatively, resulting in the excessive exploitation and use of water resources capacity.

An example is the current water resource exploitation in the Bandung basin area, which is due to suffer water shortages if the pattern continues. According to several studies, most of the water sources for urban Bandung are already contaminated biologically and chemically; water is unsuitable for use and will require expensive and advanced water treatment processes to improve its quality.

Public campaign efforts to change the misconception of water being a public good should emphasize to all communities that water is in fact not an everlasting public good, but it is also an economic good that requires payment, either with time or money, for collection and use. When water is recognized as the source of life and is viewed as a highly valuable good, behavior of the user will directly or indirectly shift toward positive practices, namely to use water most effectively and efficiently and to recognize willingness to pay with time and money in accordance with the value of water. This change in the water management paradigm is essential.

The principle of WSES service as an economic good is that the user pays for that service. The old belief that water is God given and therefore requires no payment is invalidated; what the user has to pay is the

value of the convenience he or she receives. It is also inclusive in this principle that the user's willingness to pay is the backbone of sustainable WSES facilities and services.

b. Informed Choice as the Basis for Demand-Responsive Approach

The demand-responsive approach places the community as the decision-makers. To increase the effectiveness of this approach, the community should be provided with informed choices to develop and construct sound WSES facilities and services with respect to the local financial, technical, and institutional aspects.

c. Environmental-Friendly Development

Sustained, environmental-friendly development is a consciously, well-planned development effort integrating the environmental aspect, namely water resources, into the process to ensure the capability, welfare, and the quality of life of present and future generations.

Development of WSES facilities and services must consider this environmental aspect so that efforts to increase WSES service, and thus the quality of life, go concurrently with efforts to improve the environment.

d. Hygiene Education

To achieve sound WSES management, the WSES development program, as a comprehensive process, must be capable of stimulating change in community hygiene behavior to result in the adoption of better hygiene practices. Historically, many WSES development projects have acknowledged the importance of hygiene and healthy living education programs, but such focus on health and hygiene is typically considered supplementary to the overall WSES facility and service implementation; such projects have not produced significant positive changes in hygiene behavior and consequently WSES service development remains short-lived. Operational efforts should therefore be implemented to stress hygiene and healthy living education as a compulsory and principal component of future WSES development projects.

e. Poverty Focus

In principle, every individual in Indonesia has equal rights to receive adequate and sustained WSES services. Results of various WSES development projects indicate otherwise; such rights within the poor communities remain short of expectations. Most projects have succeeded in completing WSES facilities and services implementation on time and within budget, but they typically fall short in contributing to the poor communities who are targeted in the first place.

A main reason for this flaw is the "top-down" approach implemented by all levels of government. Provision of WSES facilities and services are often based on the perceptions of government officials instead of on the needs of the community.

Future WSES development, especially the Type C arrangement, must therefore stress a more demand-responsive approach prioritizing the poor communities. Such approach will ensure that the demand of clean water supply and environmental sanitation be fulfilled fairly and properly.

f. Women's Role in Decision-Making

In rural areas, women typically search, collect, and use water for daily activities. Being directly involved with the use of WSES facilities and services, women are more familiar with convenient access design and ease of use; they have a prominent role in the development of WSES facilities and services.

According to UNICEF and World Bank studies on WSES projects in Indonesia, women's involvement in the development process of WSES systems, including planning, implementation, and management roles, evidently increases the sustainability of the systems. Women's involvement encompasses active participation in determining problems, identifying underlying causes, recommending possible solutions, and ultimately making decisions to solve the problems.

g. Accountability of the Planning Process

In the past, the WSES project initiator, or the government, performed all developmental phases (including planning, implementation, and management) and seldom involved the user's involvement; this process put the users as the beneficiary objects instead of as the project actors. As a result, user communities lack the sense of ownership for WSES facilities and services, and tend to neglect their maintenance and management; they believe that the facilities are built by and for the government, rather than by and for the community.

The above opinions, both the government's conviction that the community would maintain WSES facilities and services and the community's view that the government would bear all associated responsibilities, must be changed. It is a known fact that the government's limited financial resource restricts its ability to fully finance WSES development activities, and that the community evidently has a hidden potential to finance its own WSES development planning and implementation.

A new approach should therefore highlight transparency and openness, and provide an opportunity for all stakeholders to contribute and communicate in planning of WSES development projects based on available resources. All stakeholders must remain committed and open to effectively implement this approach.

h. Government's Role as Facilitator for Empowerment

Empowerment is defined as an effort of an individual or group of individuals to build a community's self reliance by stimulating internal potential and creativity. In UU No 22/1999 art. 92 para 2, empowerment is understood as an effort to improve community participation in planning, implementation, and ownership of infrastructure facilities. In an effort to improve the community's quality of life, the government positions itself as the facilitator in the community empowerment.

As such, the government should not monopolize empowerment activities, but instead should facilitate them to enhance the role and innovation of other competent institutions in developing WSES programs. Current empowerment activities, which are commonly undertaken by the community itself, universities, NGOs, and other external agencies, must be supported and enhanced.

i. Active Community Participation

The points discussed above must integrate active community participation at every phase of the WSES development process. A community's lack of involvement causes damaging disparities in common goals and commitments, and consequently complicates the implementation of effective and efficient development concepts.

Active community participation is fundamental in all the phases of WSES development. Realizing the difficulties in collecting all community members at once, the participation process must integrate a democratic system that will represent the needs and demands of the community's majority.

The role of the government, especially at the regional district and city level, remains essential in facilitating WSES development activities. Facilitation does not necessarily denote physical infrastructure construction or monetary subsidy; it should instead reflect continuous technical assistance or other non-technical advisory services. In principle, the government's assistance must help empower the community and facilitate the community's participation in planning, implementing, and managing WSES facilities and services.

j. Optimal and Target-Oriented Service

Development of WSES facilities and services must properly target the right recipients at a suitable timeframe and with appropriate objectives. The development program must prioritize communities that lack financial resources, but have the willingness to pay in other forms for WSES facilities and services. With target-oriented service, the community will tend to optimally use and properly maintain the implemented facilities and services.

k. Improved Monitoring and Evaluation Program

Current available data on "the coverage of clean water supply and environmental sanitation" are gathered through census by the Central Bureau of Statistics, through the routine monitoring by the Ministry of Health and Ministry of Settlement and Regional Infrastructure, and by independent associations like PERPAMSI. Field experience however indicates that very often these data are not representative of actual WSES service coverage; the data are neither accurate nor consistent. Reference to existing data for policy evaluation of WSES programs should be done with caution.

In general, WSES development is currently inadequately monitored and evaluated. Routine monitoring and evaluation activities are commonly carried out only to check on the amount of funds disbursed and the number of physical facilities completed; the underlying process of how the funds are used or how the facilities are implemented are neither monitored nor assessed.

With the shift in the WSES development process to the community-based program, an improved monitoring and evaluation system that could measure accurately the degree of program achievement should be established. Improvements to the program monitoring and evaluation system should be implemented both at the government- and the community-level.

The monitoring and evaluation system should not only include normal methodologies in assessing WSES development, but also should integrate a participatory approach, which expands the scope of monitoring

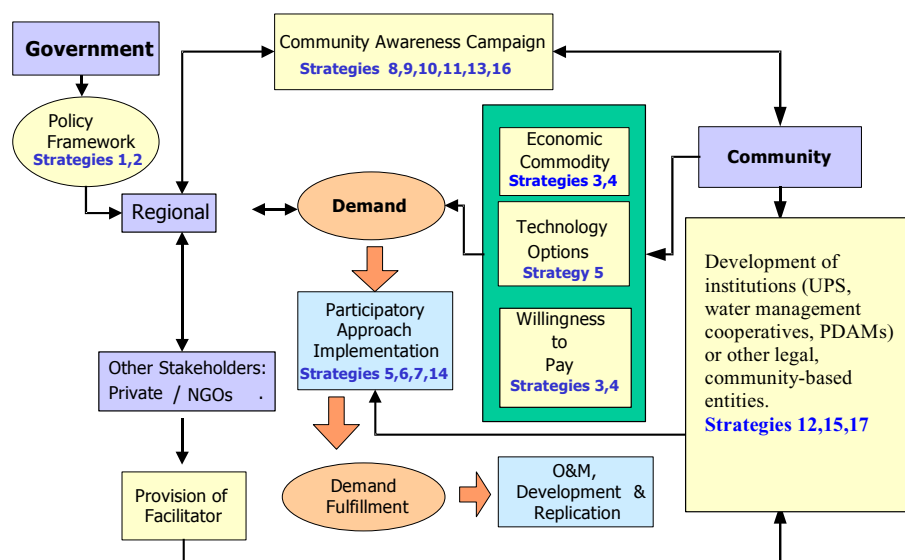
and evaluation. The design of the monitoring and evaluation framework should be flexible and should be prepared jointly by all parties involved, namely the government and the community. The user community's involvement should be staged at the planning phase, data collection, and monitoring and evaluation phase, as means to extract feedback for the WSES development. This process allows corrective measures to be decided and implemented right at the community level.

Aside from ensuring that objectives of the WSES program are met as initially designed, participatory monitoring and evaluation approach will help improve the decision-making process of community members and the implementation of community-based WSES programs.

III. IMPLEMENTATION STRATEGY

The WSES implementation strategies discussed in this chapter are derived from the general strategies and policies mentioned in Chapter 2. These strategies provide the general framework for ensuring sustained and effective use of WSES facilities and services, both of which will contribute to the community's improved quality of life. Based on the demand-responsive principles shown in Figure 2 below, these inter-related strategies form a comprehensive approach to the implementation of the policy and the achievement of the objectives.

Figure 2
Clean Water Supply and Environmental Sanitation Implementation Strategy



Strategy 1

Develop a legal framework that enforces active community participation in the planning, implementation, ownership, and management of WSES facilities and services

Sustainability and effective use of a WSES system can only be verified once the system is already in place and in operation for some time. But, the concept of system sustainability cannot be put into effect only after the system implementation. Instead, system sustainability must be ascertained early in the planning phase, monitored and evaluated during the implementation stage, and further strengthened at the post-construction phase.

For the objectives of WSES development to become a practical reality, it is vital that a legal framework be established to enable and enforce the effective use and the sustainability of a WSES system with respect to financial, technical, institutional (management), social, and environmental aspects. Such legal framework is equally essential in increasing and ensuring active community participation during all the WSES development stages, including planning, implementation, ownership, and post-construction management.

The government will take the necessary steps through deregulation and reregulation to accommodate WSES development programs that are based on both the demand-responsive approach and community empowerment. Principles of good governance, such as accountability, transparency, non-discrimination, and open competition, will be used as the foundation for the legal framework.

Ideally, all program stakeholders should commit to WSES development prior to its planning phase; the planning phase should merely serve to define the results of the stakeholders' commitment in technical design, construction, financing, and implementation of WSES facilities and services. Noting that past WSES development programs have commonly ignored community empowerment and realizing that community empowerment must not be bounded by time restrictions, the new legal framework should accommodate active community participation and contribution with approaches different from the normal protocol. In addition, such framework should be fully capable of instituting a legal rule of law for WSES development, namely between the government and the community, among all community members, between the community and the funding agencies, between the community and the local organizations or NGOs, and others.

The establishment of a legal framework should stimulate the entrepreneurial spirit in the clean water supply and environmental improvement sector and thus alleviate the government's burden in improving the community's WSES facilities and services.

Strategy 2

Increase investment in the user community's human resource capacity

The constraint encountered during the implementation and management of WSES development programs is the limited availability of human resource, particularly of the user community. As such, it is crucial that investment in the user community's human resource capacity is increased to include technical assistance, informed choices, and facilitation of the WSES facilities and services development process. Technical assistance must integrate the respective benefits and risks of each informed WSES choice with respect to financial, institutional, social, and environmental aspects.

The demand-responsive approach requires the user communities to realize the benefits resulting from WSES facilities and services developed for them. By acknowledging the value-added advantages of WSES facilities and services, the user communities are anticipated to initiate demand and, consequently, to develop the willingness to pay or contribute for such facilities and services based on their respective financial conditions.

Strategy 3

Apply the cost-recovery principle to ensure that the WSES facilities and services are fully and financially self-sustaining

The present central and regional governments lack sufficient funds and capacity to build and completely manage all WSES facilities and services; the imbedded notion that government subsidies will always be available and adequate must be changed.

The application of the cost-recovery principle to future WSES facilities and services development must be imposed to allow long-term financial sustainability. The principle enforces the pay-for-service

concept, which emphasizes that users pay accordingly for the services they receive and that service providers furnish service equivalent to the payment they collect. At minimum, the payment should be established to cover all expenses associated with provision of adequate service and operations, maintenance, and management of the WSES facilities; the payment should also extend to capital and replacement costs, including for any upgrading or short-term expansion of facilities and services.

Strategy 4

Encourage different funding options for the development and management of WSES facilities and services

With reference to the principle that the user community pay the full costs for the facilities and services, the user community also should be made aware that they must bear the costs for WSES development, from the construction to its operation and management. However, the government usually carries the financial burden in meeting the community's WSES needs by providing funding in the form of subsidies. As a result, the user community usually perceive development and management of WSES facilities and services as part of the government's responsibility instead of their own.

Since the government's current capacity to fund for WSES facilities and services is limited, the user community must be provided with alternative funding options that suit their financial conditions. The roles of the external agencies (namely government, donor agencies, private sector) will remain essential to enable as many funding options as possible and to facilitate the selection of the best available funding alternative by the user communities.

Strategy 5

Enable the user community's decision-making in all aspects of WSES development and management

In rural regions and small towns, decisions for WSES development and management must be made at the lowest level of the community, specifically the user community. The user community themselves should determine the level of service, the type of technology used, the different funding options available, and the management system for WSES facilities and service.

The user community's capacity to make decisions must be further strengthened through participatory community empowerment approach. This demand-responsive approach requires that the user community understand and are encouraged to express their own demands based on their technical or managerial capacities. Ultimately, the decision made by the user community reflects a decision that has undergone careful scrutiny of the associated benefits and risks.

Strategy 6

Improve the community's overall technical, financial, institutional, and managerial capacities of WSES facilities and services development programs

Positioning the user community as the main responsible actors in WSES service development and management must be followed with tools to build their overall technical, financial, institutional, and managerial capacities.

Technical capacity-building must involve the user community to comprehend the implications of viable technology options according to local conditions and to understand WSES facility operations and maintenance methods according to established technical standards. Technical assistance should be provided through local or central governments, universities, NGOs, or private sector entities.

Financial capacity-building must incorporate training for the user community to manage administrative bookkeeping of both government and non-government funding, such as grants and loans from multi-national donor agencies, NGOs, and universities. Such bookkeeping must ensure the transparency of funding disbursement and use among all contributors. The training process may be performed through multi-organization joint efforts, comparison studies, and job-training.

Institutional capacity-building must integrate adequate dissemination of information essential to sound organizational structure and management practices of WSES facilities and services to the user community. In particular, knowledge of an organization's function, the organization's relationship with other similar institutions and stakeholders, and its ability to accumulate funds and prepare transparent and accountable financial reports, must be furnished.

To ensure that the aspects discussed above are effectively implemented, it is essential that a guideline be formulated to state clearly the responsibilities and the rights of managers and users of WSES facilities and services. These responsibilities and rights must be developed by the user community and the managers themselves. The government's role is only to enable the development of such guidelines and to facilitate the subsequent dissemination of guideline information to all communities.

Strategy 7

Prepare guidelines to improve the development of WSES facilities and services at the planning, implementation, operation, maintenance, and management levels

Sound planning, implementation, operation, and management are vital in increasing the effectiveness of community-empowered WSES programs. Application of the community participatory approach is therefore crucial to ameliorate the effectiveness of WSES programs. Adequate provision of reliable technical assistance, or help-desk, at the regional district, sub-district, and community levels must be set up so that the user community can readily consult on technical issues of WSES development programs; the development of guidelines will be useful for the user community. The guidelines should be inclusive of clean water supply and environmental sanitation focus and should be designed to incorporate simple language and informative pictorials commonly understood.

Existing methodologies and techniques that have been employed in several projects, notably Participatory Rural Appraisal (PRA), Participatory Hygiene and Sanitation Transformation (PHAST), Community Management Approach (CMA), and the Methodology for Participatory Assessment (MPA), should be further developed and disseminated for broader application. It is also important to realize that the difficulty of community empowerment-based program implementation does not lie in the absence of the methodologies, but in the faulty perception that community participatory approaches are lengthy and time-consuming while WSES improvement projects are typically time-constrained. The participatory approach fundamentally does not require excessive funding; the approach can be readily implemented by the community, NGOs, government, and funding agencies.

Strategy 8

Support the consolidation of research, development and dissemination of WSES technology options to better informed choices by the user community

To this date, many field trials have been conducted to apply appropriate, community-based WSES technology options; the strengths and weaknesses of each option have yet to be compiled and inventorized properly. In accordance with the informed choice principle, such compilation must be implemented so that the user community can readily use it as a reference for future WSES facilities and services development.

Research and development of community-based WSES technology options must be further enhanced. Equally essential is the sharing of research and trial results between the central and regional governments, and the user community, through institutions that have the capacity and resources in research and development, to ensure that both have similar perceptions and consistent information of the each technology option's viability and feasibility.

Strategy 9

Raise the community's awareness of the environmental aspects of WSES through formal and informal education

WSES development is basically a part of the government's effort to improve the community's health and welfare. Additional efforts to induce the change of behavior toward better hygiene and healthy living practices remain essential; improved hygiene and healthy living are vital to the success of WSES development, specifically environmental sanitation.

The underlying community demand for clean water varies from that for environmental sanitation. Healthy environmental practices and hygienic behavior are more individualistic; changes in behavior therefore occur at the individual or at the household level. The time period elapsed to note the effects of improved environmental sanitation may be considerably longer than that for clean water. The success of hygiene and healthy living practices resulting from environmental sanitation efforts should be measured by the extent of hygiene behavior change rather than the quantity of physical structures built. Measuring the level of successful environmental sanitation is therefore more difficult than clean water.

Efforts to enhance hygiene behavior and healthy living can be implemented with various methods, namely through community outreach programs, school education, and participatory approaches involving households and the entire community. Improvement of environmental sanitation is fundamentally "software intensive"; more focus is placed in identifying and stimulating change in hygiene behavior rather than the physical construction of facilities.

The participatory approach is proven effective in increasing community awareness and motivating behavioral changes. Community outreach programs are different from programs that instruct or direct the community, but instead they function more to disseminate and share information to all community members. To be effective, such programs must be designed on a case-by-case basis to meet specific requirements or to target a specific audience.

Education of school children about the importance of clean water and environmental sanitation is an essential precursor in increasing community awareness. School children must be introduced to examples of hygiene and healthy living practices through educational resources, such as magazines and newsletters developed to inform water and sanitation topics and to stimulate imagination, and through group discussions facilitated by trained school teachers. Each student should bring the educational resources home to induce family discussion of clean water and environmental sanitation.

Strategy 10

Emphasize environmental conservation and management, especially in the water resources sector

To ensure sustainable WSES facilities and service, focus on water resources conservation, namely surface water, groundwater (shallow and deep), and water springs must be emphasized during the development of WSES policy, strategy, and program. Environmental conservation and management must also be emphasized to highlight the environment's limited capacity; such conservation policies must be supported by strict regulations that are enforced to the fullest.

Environmental degradation is often coupled with the qualitative and quantitative degradation of water resources. Macro-scale strategies must therefore be applied to maintain the usefulness and quality of environmental (and water) resources, such as the protection, maintenance, and rehabilitation of watershed areas, reduction of excessive groundwater use, and increase of wastewater treatment.

The focus on domestic wastewater treatment at the household level must be intensified primarily because wastewater treatment capacity at such micro level is limited while the population continues to grow. The current practice of relocating household wastes away from home without further treatment is inadequate and must be changed. Site-specific, environmental-friendly treatment technologies that are easy to implement should be used instead.

In the effort to establish environmental conservation and management policies, incentive- and disincentive-based structures for potential actors of environmental pollution, especially of water resources, must be established.

Strategy 11

Promote the change of WSES development approach from administrative-based to a community-based system

Considering the limited water resource, the current approach of WSES development, which depends on administrative boundaries (urban and rural), must be changed to improve the effectiveness and efficiency of WSES service distribution. Narrow-minded and egoistic notions imbedded in regional governments, and their improper use of decentralization and regional autonomy policies, are the main obstructions to sound WSES service. As a result, the user community's involvement remains limited and WSES service remains inadequate.

With respect to the administrative boundaries, numerous urban settlement areas that are characteristically rural (such as those found along the city's edges or in pockets within the city's center), but are still within the city boundary, currently do not receive adequate WSES service typical of urban areas. In rural areas, there are also expansive residential areas that are too large to manage by the

local community, but remain too small to manage by urban institutions (like the PDAMs). The new approach must define and consider such “gray areas” and focus on WSES service management by the community, formal institution (like PDAM), or jointly by both, as fully explained in Section 1.4.

Strategy 12

Improve the user community’s management of WSES facilities and services

The management of WSES facilities and services by the user community is typically done through the Unit Pengelola Sarana (UPS), or the facility management body. The name of the UPS varies according to each community. Responsible for the long-term sustainability of community-managed WSES facilities and services, the UPS and its associated materials and human resources play a significant role in WSES development.

To improve the quality of WSES facilities and services management by the user community, the functions of the UPS must be reinforced to include additional assistance, notably in resolving technical and administrative issues, building human resource capacity, and developing effective communication strategies with the community.

Strategy 13

Increase the user community’s awareness

When WSES facilities and services are easy to operate and maintain, and in tune with the equity principle, the potential for the user community to effectively use them will be greater. This calls for an improved awareness of the user communities. Efforts to increase the user community’s awareness are thus necessary by involving the community’s active participation in the WSES development planning, implementation, and management phases. The user community’s active involvement is crucial not only to enhance facility ownership sentiments, but also to initiate positive changes of behavior.

The user community must be made aware that investments in WSES facilities are meaningless if the facilities and their services are not used effectively and maintained properly. Effective use can only be attained if the WSES development program employs demand-responsive approaches offering as many informed choices as possible, therefore prompting the users to make their own decisions in selecting the most viable and feasible options that are consistent with their needs.

Strategy 14

Apply specific efforts to target the disadvantaged people, particularly women and the poor, to achieve equity of WSES service

The provision of improved WSES facilities and services is fundamentally a non-discriminative service. All community members have the right to receive adequate WSES service. Discrimination of WSES service provision however usually arises from the disparity in service needs and ability to pay. The inability to pay for service is typically resolved by providing subsidies to the disadvantaged people, namely women and the poor. In reality however, the disparity does not result from the inability of the disadvantaged people to pay, but instead from their lack of active participation in the WSES development process.

To ensure sustainable WSES service, this disparity must be erased in all WSES development phases. Specific efforts that promote self-confidence building, such as socio-cultural approaches, must be implemented to motivate the disadvantaged people to actively participate and to voice their ideas and opinions during all the development stages.

Strategy 15

Develop a sound monitoring and evaluation model oriented toward meeting the set goals and objectives of WSES facilities and services development programs

Existing monitoring and evaluation models of WSES development programs that are geared toward accomplishing set goals and objectives frequently provide misrepresentative information of WSES levels of service actually received by the user community. These models usually focus more on target-oriented issues, such as constructing facilities per proposed design, meeting the appropriated budget for construction and implementation, and completing projects within the established timeframe; the models tend to neglect the effective use and service provision aspects of the WSES facilities by the user community. In addition, the existing models are based on supply-driven approaches established by the central government with the assumption that all communities, though different, generally need improved WSES facilities and service.

In-line with the democratic process, efforts performed to meet the goals and objectives of the WSES development program must be implemented through the strengthening of the WSES development process itself, starting from the planning phase, implementation, management, and ultimately monitoring and evaluation to measure the success of the programs. All these phases must be viewed as a collective process so that the program's objectives and goals are successfully met. Therefore, the new monitoring and evaluation method must build upon past models to orient more toward measuring the achievements of set goals and objectives of WSES facilities and services development.

Strategy 16

Develop and disseminate performance indicators of the WSES facilities and services development

Following the need for improved monitoring and evaluation model, the next requirement is the means to develop and disseminate performance indicators for the WSES facilities and services development. The indicators are necessary to monitor continuously the performance of each WSES development phase and to ensure that the results are in-line with targeted goals and objectives. At the national level, such indicators must be developed generically and with flexibility to accommodate additional inputs from local areas and their respective conditions.

Examples of WSES development performance indicators:

1. Technical aspect:
 - a. WSES system components function in accordance with the demand
 - b. WSES facilities function at the targeted levels of service
2. Funding aspect:
 - a. Existence of willingness to contribute for the operation, maintenance, and development costs of WSES facilities
 - b. Existence of a money-management scheme
3. Institutional aspect:
 - a. Presence of a WSES management system or institution

- b. Existence of regulations of the user's and the provider's rights and responsibilities
- 4. Social aspect:
 - a. Existence of a mechanism to resolve disputes among users and providers of WSES facilities and services
 - b. Maintenance of the user-provider relationship
- 5. Environmental aspect:
 - a. Maintenance of environmental quality without decreasing or depleting the natural carrying capacity of environmental resources, namely water sources

Examples of effective use indicators :

1. WSES facilities are functioning properly and are used in accordance with the community demand in a way that maximizes the associated benefits
2. WSES service reaches the poor families and women play an active role in all stages of the WSES development
3. WSES facilities and service are easily accessible by all

Strategy 17

Develop monitoring and evaluation activities at three levels:

1. Monitoring and evaluation at the user community

2. Monitoring and evaluation at the district level

3. Monitoring and evaluation at the province level

4. Monitoring and evaluation at the central government

The monitoring and evaluation activity is essentially an information exchange process to verify that field activities are performed accordingly as developed by the program initiator, either at the central or local/regional government level. In practice however, the program initiator seldom conducts the exchange flow process; consequently, the follow-up measure to compare activities with the initial program objective rarely takes place.

Several reasons are attributed to this flow interruption, namely the lack of commitment and awareness for the need of monitoring and evaluation activities, the lack of software and hardware resources to support the information flow, and the common inter-institution conflicts and disagreements.

In order to resolve such issues, a bottom-up approach for sound monitoring and evaluation of WSES development must be established. This approach applies monitoring and evaluation at the lowest level, the user community, and progresses from local/regional government to ultimately the central government.

1. Monitoring and Evaluation at the User Community Level

Different from the typical community approach, the participatory approach opens opportunities for the user community to be actively involved in the monitoring and evaluation activities, starting from data collection, problem-solving, selection of available technology options, and WSES facilities and service planning, implementation and management. By design, this approach helps enhance the user community's capacity in decision-making.

The key principle is that findings from the monitoring and evaluation activities are used by the community to decide corrective measures for ultimately meeting the community's own targeted goals. The attributes of WSES development programs is different from one community to the other; therefore, the performance indicators must be decided and agreed by the respective community. The role of the outside institutions, namely the local government, in the monitoring and evaluation activities is strictly to facilitate or guide the process. Finally, an important component of the monitoring and evaluation

activity that must be emphasized is the need for sound data management, including a clear identification of who is responsible for the data management, and a mechanism to disseminate the data to all involved parties.

2. Monitoring and Evaluation at the District Level

In general, the central government provides support for the application of monitoring and evaluation techniques and the establishment of indicators; this allows the national aggregate to readily develop the WSES policy framework at the central government level. However, local/regional governments (including districts and cities) must be entitled to modify the techniques and indicators to match the conditions of their respective regions. At the same time, local/regional government representatives must be proactive in collecting the monitoring and evaluation results from the user community and report them to the upper government level (central level represented by the provincial government), pursuant to Law No.22/1999 on the Regional Government.

3. Monitoring and Evaluation at the Province Level

As the representative for the central government, the provincial government should be responsible for coordinating and documenting the results of monitoring and evaluation programs implemented by its district and city level governments.

4. Monitoring and Evaluation at the Central Government Level

Monitoring and evaluation process at the central government level must be designed to ensure that the established WSES policy is rational, operational, and demand-driven as voiced by the user community. Because the process is dynamic by nature, the development of sound national WSES policy must be equally flexible to accommodate respective local conditions. In addition, findings and data collected at the provincial, regional, and community levels will require clarification and validation to note changes that may have occurred at the community level.

APPENDIX A

Past Experience

This chapter will briefly highlight the history of development of water supply facilities and environmental sanitation over the past 30 years, which will be divided into 3 decades: i.e. 1970-1980, 1980-1990 and the decade 1990-2000.

Decade 1970-1980

General

It can be seen that during Pelita I (1969-74) and Pelita II (1974-79) the development of water supply facilities was placed very low in the priority list, together with the development of other public utilities, such as communication, transportation, electricity and environmental sanitation. The national development focus was, at that time, placed on the agriculture and irrigation sectors, in an effort to maintain food security. At the same time, manufacturing industry had not developed beyond

the initial stage, and the majority of the production components, such as machinery, equipment and pipes still had to be imported from abroad.

In Pelita II the demand for water supply in the urban areas increased sharply, partly because of the population migration from the villages into towns and cities. The urbanization happened because many investors, taking advantage of the increase of oil prices in the world market, invested in industrial development. The economic growth in the urban areas attracted a large labor force from rural areas to move into towns, thus the urban population grew rapidly, and consequently also the demand for infrastructure facilities, namely roads, clean water supply and environmental sanitation, energy, communication, and etc.

Urban Water Supply

During Pelita I and Pelita II the development of water supply facilities was very limited, only as far as the major cities on Java where the rate of population growth was highest. The service coverage was very low and its growth was unable to cope with the population increase. Investments for clean water supply facilities and services, and their operation and maintenance (O&M), was undertaken by PU (Ministry of Public Works).

The limited amount of funds for the construction was made available through national and regional government budgets (APBN, APBD), bilateral, and multilateral funding mechanisms (like the World Bank or the Asian Development Bank). Except for some small components linked to certain projects such as the Kampung Improvement Project I (KIP I) in Pelita II, multilateral funding mechanisms, particularly for water supplies, were not yet available.

Rural and Small Town Water Supply

During Pelita I and Pelita II water supply facilities did not impact on life in villages and small towns (population less than 50,000). In general the rural community obtained water from traditional sources, such as wells, rivers, etc.

At that time, the development of water supply was undertaken by The Ministry of Health. In addition, there were also facilities constructed through projects assisted by NGO's, UNICEF and technical assistance from WHO and UNDP. Often, the construction of water supply facilities was intended to test the application of an appropriate technology at field level, e.g. hand pumps, or as a trial for the application of software such as the active role of the community and the establishment of management institutions. The size of project was usually too small to provide a noticeable impact and the area of coverage was also very small. Often, the effort in establishing the water supply system was considered a failure or short-lived, because the facilities were not properly maintained.

Environmental Sanitation

During Pelita I and Pelita II the development of environmental sanitation system was given very low priority, both for rural and urban communities. Topics concerning wastes were limited to discussion only; no attempts were made to translate them into physical construction. At that time, integrated human waste management still did not exist. There were latrines at the household level, mostly with septic tanks. The community members who could not afford to have a latrine, continued to use traditional places for defecation, like the river, pond, garden, rice field, etc.

Within the urban slum areas, the government constructed communal bathing, washing and toilet (MCK) facilities. However, the communities were reluctant to use these facilities, and besides, their coverage was limited and almost no effort was made to provide for their maintenance.

Decade 1980-1990

General

During Pelita III (1979-84) and Pelita IV (1984-89) there was a considerable increase in the investment in public utilities. The International Water Decade had been declared over the same period of time (1981-89). The manufacturing and the technology resources industries grew rapidly.

It was planned that by the end of Pelita III the provision of water supply facilities would grow by 20-30% and by the end of Pelita IV the water supply systems would serve 55% of the rural population.

Urban Water Supply

In Pelita III the government started big investments in the construction of water supplies for the urban areas. Efforts to improve the planning and managerial capabilities of government employees were also undertaken. Since that time the international donor agencies started funneling funds to the government, especially for urban water supply construction, including the multilateral funding. Development approach model and technical standard were formulated at the central government level, including those for the smaller scale facilities, e.g. the IKK program at the sub-district (kecamatan) level.

During that time PU was the responsible agency for the construction, which was focused on large cities in Java and Sumatra, where the rate of population growth was highest. The development approach was strictly technical and planning was based on international standards. The service coverage remained relatively low and could not cope with the high rate of the population growth.

Rural and Small Town Water Supply

In small towns (population < 50,000), construction of clean water supply facilities was implemented by the PU while water utilities (PAMs) were nominated as the responsible agency for O&M. In villages, on the other hand, it was the Directorate Generals (DG) for water and sanitation (PPM and PLP) of Ministry of Health, assisted by DG village community Development (PMD) of Ministry of Home Affairs. The planning and implementing patterns were strictly central government oriented, handled by central government employees assigned in the regions: provincial, kabupaten or kecamatan level.

During this time the government to government (G to G) assistance for water and sanitation projects in villages and small towns started flowing. Financial assistance continued growing, among others from WHO, UNICEF, UNDP, etc. At this time also bilaterally funded water supply development project started. Although small in size, NGO's also started to take part in the field of WSS using funding assistance from various donor agencies, sometimes also in collaboration with the government. In line with the growing autonomy and decentralization policies, the government also created an extra funding mechanism called INPRES to stimulate regional governments in the development of water supply facilities and services; it uses the normal government budget (DIP) system based on plans developed from the village level to the kecamatan, kabupaten, provincial up to the national level. The funding was based on the activities planned by the regional governments through a bottom-up process starting from programs like rembug desa, UDKP, Rakorbang I, Rakorbang II, and Rakornas.

At that time the development of water supply system was linked to the selection of the right recipients and the application of the appropriate technology; a favorite technology was hand pumps. At the same time, NGOs also continued to introduce other kinds of appropriate technologies; the most popular at that time were hydraulic rams, cord pumps, etc.

Despite of the fact that the service coverage figures indicate a significant increase over the period, in reality many of the facilities were not functioning satisfactorily. Even though user communities had been trained in the related O&M, either by the government or by the NGO, the end result showed that many of the systems failed to continue functioning because they were not taken care of properly. This was due in part to misapplication of the proper method in training.

Environmental Sanitation

- **Human Waste**

Often the technology selected for the human waste management was experimental. Big sewerage began to be constructed in several big cities, for which PU was the responsible agency. The expensive and highly technical O&M methods of these facilities prompted the central government to initially undertake the O&M responsibility; however, it slowly relinquished the O&M process to the local/regional governments.

On site waste management and communal washing, bathing and toilet facilities (MCK) also continued to be promoted. The promotion activities were undertaken in big cities, small towns and villages. MCK projects met with unfortunate failure, as the communities were reluctant to use them. In densely populated urban areas, the government and the community generally collaborated in constructing many private PLP facilities equipped with septic tanks; stimulant funding was initially provided by the government, and the community then constructed the facilities by themselves. This activity was not related in any way with the promoted program.

Latrine construction projects in the rural areas, where all the construction materials were decided from "the top" met with unsatisfactory results. Based on the formal assumption the service coverage increased significantly, especially in urban areas but such an assumption is hard to believe because of the lack of reliable data. The fact is, the majority of the population still defecated in the traditional place.

- **Other Environmental Sanitation Conditions**

The basic concept of environmental sanitation includes solid waste management and drainage, including runoff. However, in reality the management of solid waste in the urban areas is often neglected. Solid waste management began to be systematically implemented by the government in early 1980s. The technologies used were often not environmental-friendly, thus they caused other consequent damage to the environment. Since new, innovative, and environmental-friendly technologies were usually too expensive to operate, construct, and maintain, the government neglected their applications.

Integrated wastewater and storm water runoff drainage systems were not implemented systematically. At this time, the government did not approach flooding problems in residential areas with a comprehensive method. In urban areas, the lack of a proper drainage system would result in the relief of a one flooded area while causing flooding in another. Persistent flooding problems were also attributed to the weak and irresponsible institutions responsible for drainage systems and the lack of sufficient funding.

Decade 1990-2000

General

Pelita V (1989-94) and Pelita VI (1994-99) can be considered as the era of globalization, especially in the economic sector. Control from the central level was eased as a result of autonomy and decentralization policies, hence uncertainty was increased and the situation became more volatile. At the same time, the Dublin-Rio Principles were declared to apply internationally. Private investments in the industrial sector increased sharply, and even though at a lesser degree, began to venture into the development of public utilities in the urban areas. The private investment varied greatly, but in proportion there was a decrease in the development of water supply and environmental sanitation.

In Repelita VI, development of water supply facilities was planned to cover 60% of the rural and 80% of the urban communities. The economic crisis which arose from August 1997 followed by the political crisis, caused a drop in the rupiah exchange rate, high inflation rate, and the departure of domestic capital out of the country. Since government's foreign exchange was so limited, there was not enough funds to continue financing the development of utilities. To minimize the negative effect of the economic crisis upon the community, the government designed a program called the Social Safety Net.

Decentralization, or the transfer of authority to the local governments at kabupaten/city level, was much talked about but the real implementation could not take place before the year 2000.

Urban Water Supply

Investments from the private sector and multilateral funding were channeled through notable projects such as P3KT (IUIDP), which integrated urban infrastructure needs as one system. The PU played a major role in establishing the P3KT concept and subsequently released part of its authority to the provincial level (theoretically the Kabupaten level) governments. Many infrastructure facilities constructed in residential areas were of poor quality due to the excessive

amount of projects and the lack of adequate human resources to implement them; the lack of resources resulted in the lack of quality control, inadequate supervision of construction activities, and flawed technical design of the facilities.

Gradually a particular "IKK" approach was introduced to service medium scale towns. The objective was still to increase the size of the service coverage, therefore the major activities were focused on the construction of new facilities, while the rehabilitation of the old ones was falling behind.

In relation to O&M, it was noted that only a few water enterprises (PDAMs) were performing well; i.e. providing good water quality that meets technical standards and consumer-oriented management. The weak organizational structure of PDAMs, namely the management by bureaucrats instead of adept professionals, restricted proper tariff rates, increased the costs of new investments, and limited human resources. In addition, the inadequate environmental management also contributed to the depleting natural water resources. As a result, the majority of PDAMs were reliant on the central government subsidy to survive, especially in small towns where there were only a few active consumers, or even none at all.

By the 1998 it was finally realized that PDAM management needed profound changes. It was determined that the private sector should be more involved and more competent professionals should be utilized in shifting the existing PDAM management into one that is more profit-oriented and less bureaucratic.

Rural and Small Town Water Supply

Pelita IV marked the beginning of community participation and NGO's involvement at the regional and national levels in carrying out government projects that were funded by international funding agencies. Community ownership and Demand Responsive Approach concepts began to gain acceptance, although their implementation in practice was still limited.

Public utilities development project (P3KT, P3DT) including components of water supply and environmental sanitation accepted as an option for alternative development, with varied levels of success. It is interesting to note that there was an imaginative change in approach for channeling of development funds, which was intended to solve the chronic problems in the flow of development funds. Despite all the above, the size of service coverage did not come close to the planned figures, and many of the WSS facilities were not functioning. The recurring dilemma of ineffective and non-optimal use of clean water supply facilities and services was attributed to the inability of the community to operate and maintain the facilities.

Environmental Sanitation

• Human Waste

Historically, the community awareness for domestic wastewater management remained small compared to the importance of clean water; many households were consequently not connected to already built sewerage system. The minimal connections were far short of projection and, as a result, inadequate funds were generated to cover the O&M costs let alone the an increase of the sewerage network. Many institutions, at the central and regional levels, thus tended to ignore adequate management of domestic wastewater.

In some locations, the neighborhood agreed with each other to implement a community-based waste management system. It consists of shallow sewer to carry the sewage from the households into a large size communal septic tank and then into an open pond (as in Malang), or through the assistance of an NGO the community was motivated to agree on making connection to the existing sewerage installation (as in Cirebon).

In the public utilities development projects (P3DT, etc) the MCK concept was still applied, though once constructed many of the facilities were not functioning. In each large scale water supply and sanitation project, latrine construction was always included as one component. A stimulant program by way of giving out materials that were decided from "the top" was continued, though generally were less successful, but in some cases there were also good results. Successful programs were attributed to the effective and sustained use of the facilities by the community.

Because of funding limitation, projects that offered only limited technology option remained frequent. Once again, the ineffective use of clean water supply facilities and services was caused by the inability of the community to operate and maintain the facilities.

• Other Environmental Sanitation Conditions

Bappedal, as an agency responsible for the environment was established, but its operational interest was focused more on large issues rather than with environmental problems at household level. Consequently, there was no focus of environmental sanitation, especially of trash and drainage, at the national level. Within the institution, the technical

department was responsible for trash and drainage matters. However, these problems were not strictly technical, but they also involved management, human resource, and institutional aspects.

While the P3KT projects were somewhat effective in resolving urban infrastructure issues in a comprehensive manner, they also erased some of the sector-based resolution capacities. Since the P3KT projects had limited funds and resources to fulfill all the infrastructure improvement demands in various urban sectors, many modifications and revisions within the different sectors, namely trash and drainage, were implemented. As a result, urban infrastructure problems became partialized and non-systematic.

Such conditions, accompanied by the "project-oriented" approach as opposed to "program-oriented" by the technical institutions involved, resulted in the development of facilities and services that did not match the needs of the community; many facilities were therefore neglected and poorly maintained. Overall, infrastructure problems persisted and means to solve them were funded by loans, as evident in the trash and drainage management. Investments to construct drainage networks and trash collection systems had been large, but the end results proved otherwise with trash and drainage problems still existing in urban areas today.

APPENDIX B

Lessons Learned

There are many lessons learned from the implementation of the water supply and environmental sanitation program, both general and project specific. The following selected lessons were extracted from various sources, mostly from those who were directly involved in the process of development of the WSS services.

The present chapter is divided into 2 major groups, firstly being experiences that are common to water supply and environmental sanitation projects internationally in various countries, and secondly country specific experiences from Indonesia.

International Lessons Relevant to Indonesia

The focus of interest is placed on the sustainability of water supply and environmental sanitation facilities that are beneficial to the users and which are built in accordance with the design. The experience of the past is that a very large amount of money has been invested in the development of water supply and environmental sanitation, but the end result fell short of expectation, the facilities function only for a short period after they are inaugurated.

Box 1

Dublin-Rio Principles

The Dublin-Rio Principles that we were agreed upon in the International Conferences held in the two cities contain the following components:

- Water is a limited resource and is important to life; it should be managed holistically amongst all its uses;
- The development and management of water resources should be based on a participatory approach, where decisions should be made at the lowest possible level of the community;
- Women should have a central role in the decision making on water supply development because they have influence on the effectiveness of water consumption;
- Water does not only have social value but it also has economic value.

Based on the above-mentioned experience it is deemed necessary to make a change in development focus. This implies that all of the various aspects, beginning from the setting of targets to how the final evaluation is to be made, especially on the development of an implementation approach that would stimulate a sustainable service, need be changed. An international conference held 1992 and attended by experts on water supply produced an agreement to implement the Dublin-Rio Principles as the guiding principles for development efforts related to water supply. (Box 1)

In the context of the development of water supply and environmental sanitation in Indonesia, the above mentioned principles mean:

- It is necessary to emphasize that water supply and environmental sanitation is necessary to human life. Besides, it also needs emphasis that the technical aspects and the social aspects are different but equally important.
- Water cannot be treated as a commodity given by God, King or other authority for free, or be considered as valueless. It is quite clear that water has some value and one should pay if one wants to use it. Besides, there are other costs that one must pay for in order to get a sustained service of water supply, i.e. the costs for the O&M of the facilities. Sustained service can be obtained only if the costs the user pays (either in cash or in kind), the value of water in the eyes of the user, and the costs of providing the service, are equal. Another implication is that water must be valued according to its quality, and depending upon the benefit derived from it.
- Planning, construction, operation and management of water supply facilities have wide ranging implications. Therefore, final decisions should be made through the participation of all the users, without exception. There is a need for a change from the usual assistance based on the government planning (supply driven) to assistance based on the needs of the

community (informed choice). In addition, to lay the basic foundation of demand responsiveness, it is necessary to provide the community with a range of options of the types of service, and have the user community well informed about the options, each with its related implications. The responsibility for the development of options and conveying the message to the communities lies with the government institution. Therefore, the related government institution must have the capability to communicate so that the people are well informed.

- The more the involvement of women in the decision making, the better is the assurance of its sustainability. Women are the prime managers of water use within households; they are the ones responsible for family hygiene. Women have the highest interest in the availability of water, they will suffer the most if the water supply facility does not function, and consequently they will decide whether to use or not to use the facility if the service of the facility does not meet expectations.

All the resources available to government; water or others, will never be enough to meet the need for the development of water supply and environmental sanitation for all. In that connection, there are two important issues that should be borne in mind:

- Financial: it is necessary to create alternative mechanisms to meet the need for construction costs, O&M costs, etc.
- Human resources: it is necessary to strengthen human resources capabilities at all levels.

On the other hand, efforts should be directed to assisting the community or the well-to-do families assume the responsibilities for improving the services of water supply and environmental sanitation. It is important to facilitate within these communities a demand for a healthy life, and for that purpose they may optimize the benefits of WSS facilities. Since the motivations for environmental sanitation are quite different and more complex than those for water supply, it is necessary to stimulate interest in hygiene at individual as well as at family level. There is, however, no single method, which is applicable and guarantees success for all situations. Any single case is always accompanied with a complex set of problems of its own. Their solution should be made through learning approaches where every lesson learned may be reviewed and considered as an input for improvement in the development process.

Beside the above mentioned international conference, a World Bank study of 121 village level water supply projects around the world, conducted by various foundations and organizations, concluded that active participation of the community in decision making and project implementation will result in effective WSS facilities and sustainable services¹. The experiences extracted from the study disproves several myths that influenced former water supply development thinking:

- **Myth** says that poor community is not willing and unable to pay for water supply services; therefore the government should provide such services for them. The *reality* proves that poor community members pay for their water supply, often much more than wealthier members of the community. Poor families will pay if they get a good service.
- **Myth** says that poor people are unable to solve or manage technical problems; they do not know what is best for them. *Reality* proves that communities have creativity; they are capable of designing a system and regulating natural resources management.
- **Myth** says that to create an equitable and evenly distributed service it is enough to provide a community with a facility with a minimum level of service so that the limited water resources could be spread to a wider area. *Reality* indicates that if the community do not get what they expect, they will not utilize the facility nor pay for the costs billed to them.
- **Myth** says that if the community has been involved in decision-making, the interests of women as the prime manager of water use in the household has been satisfied. *Reality* says that due to socio-cultural factors, the interests of women will never be satisfied except when they are specifically invited to be involved through a strategy for strengthening the position of women.
- **Myth** says that the responsibility for construction of WSS facilities should rest with a technical agency, because it they're main duty to have the facilities constructed and the performance indicator is the completion of construction. *Reality* proves a technical agency can achieve success through monitoring and providing technical assistance to other parties, NGOs, private sector, as well as other non-technical agencies. Its main duty is to improve the capability of the community in the management of the facilities and the sustainability of services.

¹ The contribution of People's Participation - Evidence from 121 Rural Water Supply Projects, Deepa Narayan, The World Bank, 1995

- **Myth** says that prior to the implementation of a project it is necessary to have a general plan and a uniform approach based on a complete set of data. *Reality* proves that standardization in an overall plan hinders the participatory development process; it is not really necessary to have complete data collection prior to implementation, what is needed is only the specific data that are really important, much of it maybe collected continuously while the project is on-going. Standardization too early in the implementation procedure usually leads to failure.
- **Myth** says that decision-making by the user community is an important matter, but the control of a program implementation must always rest with the project manager. *Reality* says that the essence of a participatory process is to provide options and opportunities to the community to express their aspirations. Community participation may not be created or destroyed by an outside party; participatory process is the relinquishment of the reins into the hands of the community.
- **Myth** says that participatory approaches need a long time to succeed, and are applicable only on small-scale projects. *Reality* says that if the project is responsive to their needs, the community can act fast and organize themselves quickly.
- **Myth** says that participatory approaches are difficult to replicate on large scale works, because they need a charismatic leader, NGO, or other talented individual. *Reality* proves that community participation can be replicated. Charismatic leaders play their role in the initiating process; later any leader in a general sense can keep the process going. NGOs are mostly very good at applying the community strengthening strategy and are excellent mediators. Like other technical skills the improvement of capability in designing and implementing participatory program is a learning-by doing process.
- **Myth** says that participatory approaches are an uncertain process, therefore they are difficult to define and measure. The objective in human resources development by way of participatory decision-making is important but impractical. *Reality* says that participatory concepts can be applied and measured easily. Measuring, monitoring and evaluating through community participation will make it easier for government agencies to fulfill their responsibilities in their mission to support human resources development.

The analysis made upon all the water supply projects concludes that 20 out of the 121 projects were considered very effective. The indicators of success vary from project to project, but in general they can be grouped under the following criteria:

- The user communities are satisfied with the quality and the quantity of the water.
- No facilities are overlooked; design and construction quality meets the demands of the community.
- Most of the installations are still functioning 10 years after completion of the construction.
- The community undertakes sustainable operation and management of the installations.
- The community indicates a strong sense of ownership and responsibility towards their facility and is capable of sustaining it.
- Women get direct benefit from the service because it is more convenient and saves their time in getting water for the family, and further produces an economic benefit such as more time for child care, tending the garden, or for handicraft activities.
- Reduced occurrence of water borne diseases.
- Increased rate of latrine usage.
- The community makes contribution to cover the costs of construction.
- Strengthening the community institution in the management of facilities, including the participation of women in any activity, though still less so in realm of decision-making.
- Establishment of good cooperation with the local government.

Out of the 20 highly effective projects, 2 are in Indonesia, the rest are scattered in various countries, such as Swaziland, Ethiopia, Panama, Ecuador, India, Kenya, Malawi, Togo, Mali, Haiti, Yemen Arab Republic, Rwanda, and Peru.

Indonesian Lessons

The successes and shortcomings in the implementation of WSS during the last 30 years in Indonesia could be used as the basic considerations in the formulation of the new policy. Some of the lessons are as follows:

- The implementation of the 2 water supply projects in Indonesia out of the 20 projects of the same kind which the World Bank considered as successful were undertaken by an NGO, with involvement of the user community at every phase of the development. The development strategy consisted of the establishment of an institution involving all segments of the community; using participatory approaches in problem-solving; conducting training in management, design, construction, O&M, and hygiene awareness. This means that the development approach that has been followed by the government agencies should be changed. The development of public utilities are essentially for the benefit of the communities; without their significant participation the acceptability and sustainability of the development result is difficult to obtain. The indicators of success for the two projects are as follows:
 - Effective design, acceptable to all segments of the community including women; the system is simple yet reliable.
 - The project is acceptable to the community and capable of motivating them to actively participate, including financially.
 - The communities are motivated and are capable of undertaking O&M.
 - The users pay a fee for the service of water supply at the rate as agreed.
 - Women are involved at every phase of the development, though still less in the decision-making.
 - Time saving for women, allowing them to do other activities.
 - Women become active members of the water users group.
 - The community members build latrines for themselves; the rate of latrine usage is high.
 - Women become active members of the health awareness group.
- A study on the relationship between participation, gender, and demand responsiveness with the impact and sustainability of WSS facilities in the implementation of WSSLIC (Water Supply and Sanitation for Low Income Communities) and FLOWS (Flores Water Supply)² projects made the following conclusion:
 - The development of water supply facilities that meet the demand of the community show a high rate of effectiveness and sustainability.
 - The availability of more realistic O&M costs will result in a better sustainability.
 - The better the organization of the O&M management, the more funds flowing in from the users, hence creating better sustainability.
 - Participatory management involving all segments of the user community, both in the institution and in decision-making, will result in a higher degree of participation in O&M.
 - The active involvement of women in decision-making, operation and maintenance will result in high effective use and sustainability.
 - Equality of both poor and rich people in decision-making will result in better sustainability.
 - The ease of access water supply services will result in higher effectiveness and better sustainability.
 - The availability of alternative water sources and the more complicated in using the facilities developed by the project, the more users will withdraw and return to their alternative sources.

² Participation, Gender & Demand Responsiveness: Making the Link with Impact and Sustainability of Water Supply & Sanitation Investments, Institute for research of University of Indonesia in partnership with UNDP/World Bank Water and Sanitation Program and IRC-International Water and Sanitation Center, 1999.

- The approach for environment sanitation development should be distinguished from that for water supply. The essential aspect in the environment sanitation program is to make the community realize that the disposal of excrement in the open is not only harmful to one's own and one's family's health, but also to the community at large.
 - The benefit that is not directly felt by users relative to the amount of construction costs, the rate of latrine usage tends to drop.
- The lessons learned from UNICEF funded water supply and environmental sanitation projects during Pelita V are as follows³:
- The effectiveness of usage and sustainability of WSS facilities can be achieved by involving the community as early and as effectively as possible; by doing so the community will get the WSS services they want. The more the service options offered to the community and the bigger their role in the decision making, the bigger will be the possibility for the facilities fulfilling their demands; hence the facilities will be used in an effective and sustainable manner.
 - The effective use and sustainability of WSS facilities cannot be achieved simply by promoting community participation in O&M, without prior application of demand responsive approaches. In a situation like this the users will be only moderately motivated to organize themselves in the operation, but they do not feel responsible to maintain the facilities.
 - The community participation that can influence program implementation towards the effective use and sustainability can be achieved if the service options and their financial implications are determined by the community at the household level; contributions from the community are decided based on the type of service offered; and the organization of the management unit is formulated in a democratic manner.
 - The user community should reserve the authority to control the use of funds derived from the community contribution, and the quality as well as the schedule of the ongoing construction.
 - WSS users are deeply concerned with the quality of the facilities and are willing to pay more provided the service meets their expectations. The decision to select an option up to a certain limit of costs and minimizing the level of service will result in a facility that produces an unsatisfactory service; the community will be discouraged and not be motivated to sustain it. With an effort that is more responsive to the demands of the user community, WSS projects could increase financial contributions to guarantee effective funding and sustainability of investments.

WSSLIC (Water Supply And Sanitation For Low Income Communities Project)

The objective of the project is to develop water supply and environmental sanitation that are safe, available in sufficient quantity, easily accessible and also promote education on hygiene/health of the poor communities in the villages where such services have not reached them and the poor communities in the thickly populated areas through the principles of sustainability and community based management.

It is expected that this project could serve 2 million people in selected areas of Central Java, and 5 provinces in the eastern part of Indonesia (Sulawesi Tenggara, Sulawesi Tengah, Sulawesi Utara, Maluku, and Nusa Tenggara Timur) where poverty rate is still high. The villages are selected based on several criteria, such as the poverty level, occurrence of water borne diseases, water scarcity, infant mortality, and the willingness to pay O&M fees. This project has 6 components, namely water supply, environmental sanitation, hygiene promotion, community development, technical assistance and project management.

With the improvement of the environment and hygiene promotion, this project was expected to produce a positive impact on the community health and productivity, especially for women and children.

- In the application of demand responsive approach (DRA) there are some constraints as follows:
- There is no policy framework mutually agreed amongst the agencies involved, including the central and the regional governments, the recipient and donor agencies, and NGOs, in applying DRA.
 - There is some direct and indirect resistance from various levels of the government and between agencies, the recipient and donor agencies, and even also within the community itself.

³ Study of Community-based approaches utilized in UNICEF's Water and Environmental Sanitation (WES) Program in Indonesia, UNDP-World Bank Water and Sanitation Program, 1999.

- Lack of knowledge, information and technical know how as well as funds in all levels of the government and amongst NGOs.
 - Slow bureaucratic process and rigid procedures for disbursement of funds and hiring the required manpower to support the activities.
 - To be effective, DRA principles need a long time for implementation, and must be supported with sufficient funds, more so if this is linked to community willingness to contribute.
- In an effort to implement a project under the guiding theme “Moving from Policy to Practice” we might anticipate the emergence of some constraints, and to face them we need to apply some steps of DRA. The steps are classified into two categories, namely policy aspects and financial aspects.

Policy Aspects

The steps are as follows:

- To clarify and create a strategy and mechanism for applying DRA that are mutually agreed upon amongst the agencies involved. It is hoped that this document will clarify the PABPLP-SKM strategy, and will be applicable throughout Indonesia;
- To make a campaign on the agreed strategy, and make efforts to institutionalize DRA as the development approach to be applied at kabupaten/city level;
- To institutionalize DRA into the regional development mechanisms and at the same time improve the capabilities of the kabupaten and city governments in applying DRA

Financial Aspects

The steps are as follows:

- To develop a budget mechanism that stimulates fund raising. Through WSSLIC, Indonesia has created an incentive method of fund raising from the community to finance a development project. This must be retained, evaluated and refined for replication in future WSS projects.
- To develop a mechanism that would support the capability of the community to manage and control their own financial resources. The village infrastructure project (P3DT) has made several innovations in the development of control mechanisms and financial management by the community. Although it was not intended apply for fund raising, new breakthroughs in the channeling of development funds from the government directly to the community might be considered as a model for future projects.
- To harmonize the model of financial management between the donor and the government with the development approach of the related sector. Many countries as well as donor agencies do not have flexible mechanisms to allow channeling of funds directly to the government; frequently this might disturb the overall DRA process.
- To develop the legal framework to urge all agencies involved to participate in the budget and financial management.

Requirements for Success

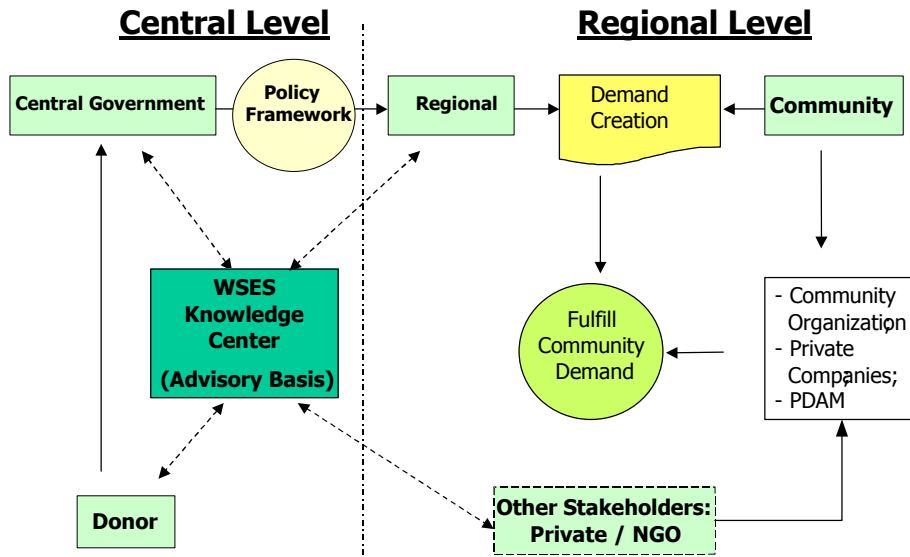
There are at least six requirements for a successful water supply and environment sanitation program:

- An honest admission that the development approach as applied in the past needs improvement.
- Various approaches that were studied should be considered as input for the development of the new improved policy.
- There is willingness and support from all parties concerned to implement the policies and regulations in the manner so as to reach an effective result.
- Commitment to change and to translate the policy into real action must be reflected in the process of agreement formation through honest participation and the spirit of cooperation for change.
- The creation of ownership sentiments and commitment from the participation of all parties concerned will take *time*.
- The policy framework should be sufficiently flexible to allow adjustments to changes in the conditions and sector needs, but also sensitive enough to allow incorporation of new experience.

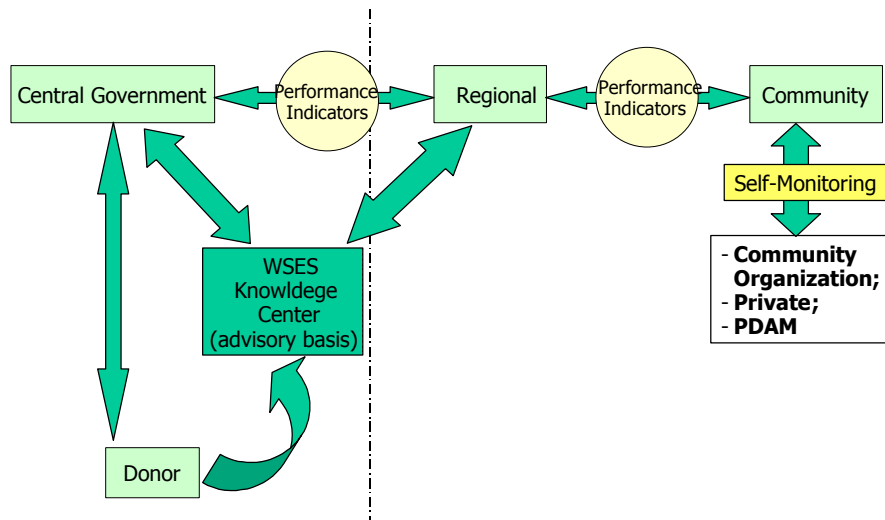
Appendix C

Strategy Implementation Diagram

1. Institutional Relationship: "Emphasizing Empowerment, Not Direction"



2. Strengthening of Monitoring and Evaluation Process



Appendix D

Manual and Guidelines for WSES Development based on Community Empowerment

Helping Communities Achieve More Sustainable and Equitable Services

Methodology for Participatory Assessments* (MPA) that was developed to conduct the assessments is proving to be a valuable tool by which policy makers, program managers, and the local people themselves can monitor the sustainability of their services and take actions to enhance it. The methodology reveals how equitably poor households and women participate in, and benefit from the services, as compared to the better-off and men. It makes visible the key factors for attaining success in community water-sanitation projects, while simultaneously allowing quantitative aggregation of village-level participatory monitoring data for use at program and policy levels.

Methodology for Participatory Assessments (MPA):

What is new about the MPA?

The MPA draws upon participatory approaches such as PRA¹ and SARAR² for tools and methods that have proven effective in involving communities over the years. It adds important new features:

- The MPA is a methodology aimed at helping both project agencies and communities achieve more equitable and sustainable services. It is designed to involve all major stakeholders and analyze the community situation with four major user groups-poor men, poor women, better-off men, better-off women. In doing so, it operationalizes a gender and poverty analysis framework for assessing sustainability of water and sanitation services.
- The MPA uses a set of sector-specific indicators for sustainability, demand, gender, poverty-sensitivity. It measures them using a sequence of participatory tools with communities, project agencies, and policy makers. After assessments in the community, the results are used by representatives of users and agencies in “stakeholder meetings”, to jointly evaluate institutional factors that are affecting the project’s impact and sustainability at the community level. Results of institutional assessments are then used to review policies at the program or country level.
- The MPA generates large amounts of village-level qualitative data, some of which is quantified using an ordinal scoring system, by villagers themselves.

* Rekha Dayal, Christine van Wijk, and Nilanjana Mukherjee. *Methodology for Participatory Assessments with Communities, Institutions, and Policy Makers*. Water and Sanitation Program, March 2000. The MPA was developed and tested in 15 countries and 88 communities by the Water and Sanitation Program in collaboration with the IRC International Water and Sanitation Center (Delft) during 1988-2000.

¹ Participatory Rural Appraisal

² Self esteem, Associate strength, Resourcefulness, Action Planning, Responsibility

The quantitative data that results can be statistically analyzed. This feature enables analysis across communities, projects and time, and at the program level so the MPA can be used to generate management information for large-scale projects and data suitable for program analysis.

Who can use the MPA ? For what?

The MPA lends itself to many potential uses. The quantitative information generated visually at community level allows easy conversion to both numeric processes as well as graphic representations. Community level graphics are produced immediately following applications of participatory tools with women and men, both poor and the better-off groups, allowing for presentation to and verification of results with the rest of the community. Consolidation of the same information across time and communities helps project implementers and managers see trends and analyze causes. Assessments from several projects can be quickly consolidated at program or country level for policy analysis.

Who can use the MPA?

Community Members and Community Organizations

For what?

- To elicit and express demands for service from all segments of the community
- To identify actions for enhancing sustainability
- To reduce gender and poverty inequities
- For planning, self-monitoring and assessment
- To collect baseline data on existing services, the socio-economic make-up of a community and an indication of existing demand for services
- For assessments from the user's perspective at all project stages

Project Managers and Project Staff

- To compare communities for sustainability and equity
- To assess progress, specially on qualitative aspects of project implementation (e.g., capacity building) which are more difficult to measure.
- To identify and assess institutional factors influencing project sustainability

Government planners, External Support Agencies

- To plan for sustainability³
- To design equitable (gender- and poverty-sensitive) and sustainable projects designers
- To monitor sustainability of services and impact

³ These applications are currently being developed in collaboration with interested government and donor partners in new projects in the design phase.

What does it take to use the MPA?

The MPA is designed to be an integral part of a project, not an add-on or a stand-alone. Using the MPA thus requires either a funding agency committed to designing a new project or an on-going participatory project wishing to undertake participatory assessments.

While many countries have pools of facilitators experienced in using participatory methods, specific training in the MPA is essential because the MPA comprises a lot more than a set of participatory tools. Firstly, the MPA adds an analytical framework that drives towards sustainability and permits participatory data to be coded quantitatively for the analysis of sustainability. Secondly, because it is participatory throughout, it encourages learning on the part of participants. Skilled facilitators sensitive to gender and poverty issues are key to fostering the cycle of learning and action, at the community, stakeholder meeting, and policy levels.

A comprehensive training program that combines workshop learning with supervised field experience is essential to build the necessary skills.

What do MPA assessments cost?

Typically, using the MPA for a sustainability assessment requires two facilitators that spend a minimum of five days in a village, and at least one day in a stakeholder meeting at the district or province level. This does not include time for planning, data analysis, and reporting, which would vary with the size of the project, objectives of assessments and therefore the required sample. Generally, MPA assessments for project design may require a sample of only a few communities which together represent the major design-influencing variables for a new project, e.g. geo-hydrological conditions or relative poverty and diarrhea morbidity rates. Using the MPA micro-planning community interventions implies assessments in every project community, and their costs should be built into routine project implementation procedures. Monitoring and evaluation applications are likely to use stratified or purposive sampling of 5-10% communities at similar points in the project cycle.

Following the global assessments, the MPA is now being applied on a larger scale. Budgets prepared for its application for planning and monitoring in a large-scale project in Indonesia suggest that costs of the MPA can be comparable to those of other community-based approaches, when MPA is integrated in project implementation. MPA seems to best fit projects aiming at community-driven development, which typically allocate between 20 - 30% of total project cost to software investments.

The framework for sustained and equitable services

The findings from the 88 communities suggest strongly that demand-responsive approaches that integrate gender and poverty are the route to sustainability of community-managed water supply and sanitation services. Also, effective use the services, which is necessary for improved community health, is linked significantly to effectively sustained services, rather than to any other

independent variable. The following framework for sustained and equitable services emerges from the findings. The MPA, with its emphasis on helping disadvantaged groups - in particular women and the poor - obtain access to services, is a powerful tool that communities and helping agencies can use to achieve greater equity and higher quality of life, for all.

Key Characteristics of a Project-Level MPA Training Course

Source of trainees	Existing project staff, or persons being recruited for a planned project
Type of trainees	Equal numbers of technical (engineering) and social (including hygiene and sanitation) staff, preferably gender balanced; interested in learning or already experienced in applying participatory methods. Up to 16 trainees per batch.
Nature and duration of training	1) 14 days in combination workshop and community-level practice 2) 5 days conducting an actual MPA assessment and two days conducting a stakeholder meeting, under supervision.
Trainers	National level MPA trainers, with support from the international MPA core team.
Follow-up	Periodic support from national-level MPA trainers to the trained staff, to assure quality and continue the learning process.
Costs	Trainee's staff time, per diem, travel, etc., but this will vary from country to country. Cost

Water Quality Standards

DEPARTMENT OF HEALTH, REPUBLIC OF INDONESIA

NUMBER: 416/MENKES/PER/IX/1990

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LIST OF CLEAN WATER QUALITY CRITERIA

No	Parameter	Unit	Maximum Allowable Limit	Explanation
A. PHYSICAL				
1.	Odor	—	—	No Odor
2.	Total Dissolved Solids (TDS)	mg/L	1,500	
3.	Turbidity	NTU	25	
4.	Taste	—	—	No Taste
5.	Temperature	0-C	Air temp \pm 3° C	
6.	Color	TCU	50	
B. CHEMICAL				
<u>a. Inorganic</u>				
1.	Mercury	mg/L	0,001	
2.	Arsenic	mg/L	0,05	
3.	Iron	mg/L	1,0	
4.	Fluoride	mg/L	1,5	
5.	Cadmium	mg/L	0,005	
6.	Dissolved CaCO ₃	mg/L	500	
7.	Chloride	mg/L	600	
8.	Chromium +6	mg/L	0,05	
9.	Manganese	mg/L	0,5	
10.	Nitrate, as Nitrogen	mg/L	10	
11.	Nitrite, as Nitrogen	mg/L	1,0	
12.	pH	—	6,5 – 9,0	Min and Max levels; max rainwater pH: 5.5
13.	Selenium	mg/L	0,01	
14.	Zinc	mg/L	15	
15.	Cyanide	mg/L	0,1	
16.	Sulfate	mg/L	400	
17.	Lead	mg/L	0,05	

No	Parameter	Unit	Maximum Allowable Limit	Explanation
b. Organic				
1.	Aldrin dan Dieldrin	mg/L	0,0007	
2.	Benzene	mg/L	0,01	
3.	Benzo (a) pyrene	mg/L	0,00001	
4.	Chlordane (total isomer)	mg/L	0,007	
5.	Chloroform	mg/L	0,03	
6.	2,4 – D	mg/L	0,10	
7.	DDT	mg/L	0,03	
8.	Detergent	mg/L	0,5	
9.	1,2 Dichloroethane	mg/L	0,01	
10.	1,1 Dichloroethane	mg/L	0,0003	
11.	Heptachlor dan heptachlor epoxide	mg/L	0,003	
12.	Hexachlorbenzene	mg/L	0,00001	
13.	Gamma-HCH (Lindane)	mg/L	0,004	
14.	Methoxychlor	mg/L	0,10	
15.	Pentachlorophenol	mg/L	0,01	
16.	Total Pesticides	mg/L	0,10	
17.	3,4,6 – Trichlore phenol	mg/L	0,01	
18.	Potassium Permanganate	mg/L	10	
C. MICROBIOLOGY				
1.	Total Coliform (MPN)	# per 100 ml	50	Non-piped water
		# per 100 ml	10	Piped water
D. RADIOACTIVITY				
1.	Alpha (Gross Alpha Activity)	Bq/l	0,1	
2.	Beta (Gross Beta Activity)	Bq/L	1,0	

Legend:

mg:	milligram	NTU:	Nepnelometrik Turbidity Unit
ml:	milliliter	TCU:	True Color Unit
L:	liter		
Bq:	Bequerel		

APPENDIX E

Strategy Implementation Indicators

Strategy 1

Develop a legal framework that enforces active community participation in the planning, implementation, ownership, and management of WSES facilities and services

Indicator:

- Regulations of active community participation in the planning, implementation, ownership, and management of WSES facilities and services at both the central and regional government levels

Strategy 2

Increase investment in the user community's human resource capacity

Indicator:

- Increased investment allocated to enhance human resource capacity-building at both the central and regional government levels

Strategy 3

Apply the cost-recovery principle to ensure that the WSES facilities and services are fully and financially self-sustaining

Indicator:

- WSES projects designed with cost-recovery principles

Strategy 4

Encourage different funding options for the development and management of WSES facilities and services

Indicator:

- Admission by all stakeholders that government resources for WSES investment are limited
- Regulations protecting funding sources of WSES facilities and services
- Incentives for funding of WSES development (e.g. tax reduction for companies that provide WSES facilities and services at their locations)

Strategy 5

Enable the user community's decision-making in all aspects of WSES development and management

Indicator:

- WSES programs designed per demand-responsive principles
- Training of facilitators at the regional government level

Strategy 6

Improve the community's overall technical, financial, institutional, and managerial capacities of WSES facilities and services development programs

Indicator:

- Training of user communities
- Accessible WSES service at the regional government level

Strategy 7

Prepare guidelines to improve the development of WSES facilities and services at the planning, implementation, operation, maintenance, and management levels

Indicator:

- Establishment of standards and guidelines for WSES facilities and services

Strategy 8

Support the consolidation of research, development and dissemination of WSES technology options to better informed choices by the user community

Indicator:

- Establishment of institutions responsible for compiling and maintaining WSES development and research results
- Use of the media to disseminate WSES development and research results
- Readily available access to WSES development and research results

Strategy 9

Raise the community's awareness of the environmental aspects of WSES through formal and informal education

Indicator:

- Integration of hygiene and healthy living programs into grade school curriculum
- Implementation of hygiene and healthy living campaign awareness programs

Strategy 10

Emphasize environmental conservation and management, especially in the water resources sector

Indicator:

- Efforts to protect water sources
- Efforts to manage and treat wastewater prior to discharge into water bodies

Strategy 11

Promote the change of WSES development approach from administrative-based to a community-based system

Indicator:

- Opportunity for the user community to manage WSES in urban areas
- Opportunity for non-community institutions to manage WSES in rural areas

Strategy 12

Improve the user community's management of WSES facilities and services

Indicator:

- Technical assistance for the user community in technical, administrative, and human resource capacity-building sectors

Strategy 13

Increase the user community's awareness

Indicator:

- Noticeable changes in behavior of WSES facilities usage
- Effective use and maintenance of WSES facilities and services by the user community

Strategy 14

Apply specific efforts to target the disadvantaged people, particularly women and the poor, to achieve equity of WSES service

Indicator:

- Active participation of the poor and women in WSES development

Strategy 15

Develop a sound monitoring and evaluation model oriented toward meeting the set goals and objectives of WSES facilities and services development programs

Indicator:

- Establishment of monitoring dan evaluation models geared toward accomplishing goals

Strategy 16

Develop and disseminate performance indicators of the WSES facilities and services development

Indicator:

- Creation of sample indicators for WSES development
- Efforts to disseminate and widely apply indicators

Strategy 17

Develop monitoring and evaluation activities at three levels:

- 1. Monitoring and evaluation at the user community**
- 2. Monitoring and evaluation at the district level**
- 3. Monitoring and evaluation at the propince level**
- 4. Monitoring and evaluation at the central government**

Indicator:

- Realization by all stakeholders of the importance of monitoring and evaluation processes
- Establishment of a monitoring dan evaluation system agreed by all stakeholders
- Delegation of rights and responsibilities at all levels
- Clear information exchange flow at all levels
- Usage of tools and methods in the monitoring dan evaluation system