

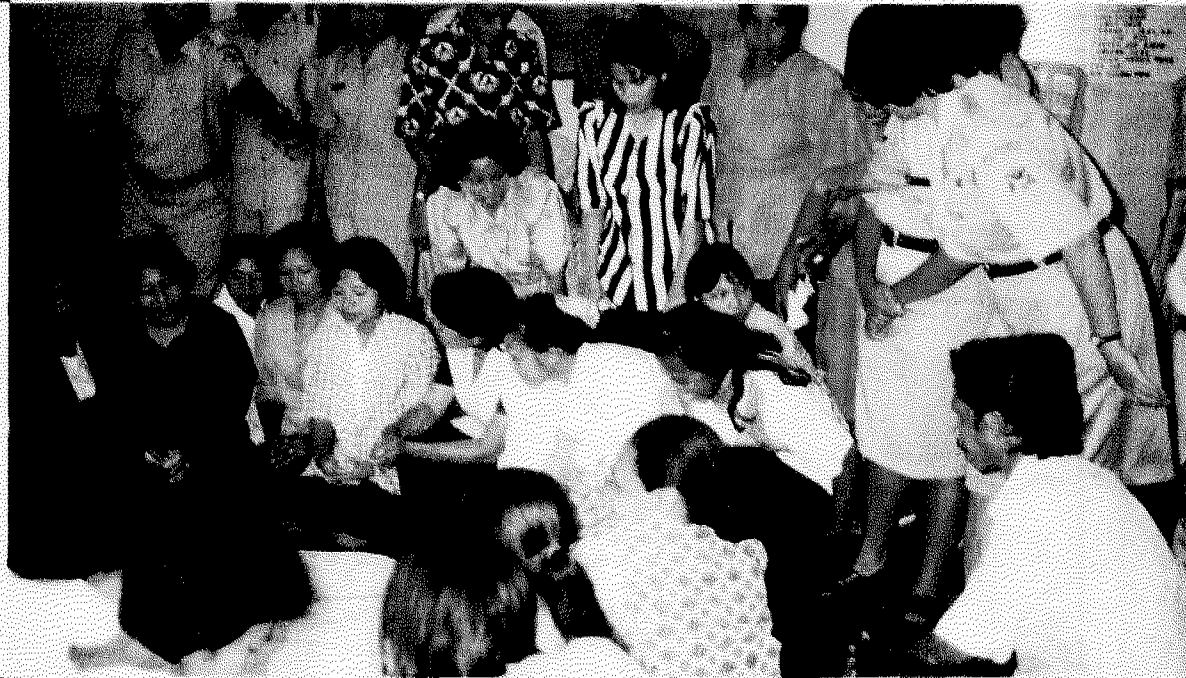
REPUBLIC OF INDONESIA

**Development Policy
for Small and Medium Scale
Water Supply and Environmental Sanitation
in Indonesia**

DRAFT

October 2000

(English version February 2001)



**This document was prepared
by the WASPOLA Working Group,
comprised of cross-sectoral agency staff coordinated
by the National Development Planning Agency
(BAPPENAS)**

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ABBREVIATIONS and ACRONYMNS

ABPLP	Water Supply and Environmental Sanitation	PDAL	Waste Water Supply Management Enterprise (Public Company, Regional Government)
BAB	Buang Air Besar		
DIP	Government Development Budget Allocation	PDAM	Water Supply Management Enterprise (Public Company, Regional Government)
DRA	Demand Responsive Approach	PHBS	Hygiene Behavior
FLAWS	Flores Water Supply Project	PMD	Pembangunan Masyarakat Desa
IKK	Kecamatan Capital Town	PPLP	Proyek Penyehatan Lingkungan Pemukiman
INPRES	Presidential Instruction		
IPLBM	Instalasi Pengolah Limbah Berbasis Masyarakat	PPSAB	Proyek Peningkatan Sarana Air Bersih
KIP	Kampung Improvement Project	P U	Departemen Pekerjaan Umum (Ministry of Public Works). Now replaced by Departemen Kimpraswil - Ministry of Humman Settlements and Regional Infrastructure)
LSM	Non Government Organization		
MCK	Communal Bathing, Washing and Latrine facility		
P3AB	Proyek Penyediaan dan Pengelolaan Air Bersih	UNDP	United Nations Development Programme
P3DT	Integrated Village Infrastructure Development Project	UNICEF	United Nations International Children Fund
P3KT	Integrated Town Infrastructure Development Project	UPS	Unit Pengelola Sarana
PTK	Pendekatan Tanggap Kebutuhan	WASPOLA	Water and Sanitation Policy Formulation and Action Planning Project
PABPLP	Water Supply and Environmental Sanitation Development Program	WHO	World Health Organization
PABPLP-SKM	Small and Medium Scale Water Supply and Environmental Sanitation Development	WSP	Water and Sanitation Program
		WSS	Water Supply Environmental Sanitation
PAM	Water Supply Management Enterprise (Public Company)	WSSLIC	Water Supply and Sanitation for Low Income Communities Project

DEFINITION OF TERMINOLOGY USED

Demand vs Need

Demand is the desire of the user which is accompanied by a willingness to sacrifice something for the sake of the intended goods/ services, based on the options available under the prevailing condition of the locality, and is part of the market mechanism which can only be decided by the user.

Need is the desire of the user that is not accompanied by a willingness to sacrifice anything for the sake of the goods/services, and can be decided by outside party.

Demand Responsive Approach (DRA) is an approach wherein the decision on an investment is based on the demand of the user community.

Sustainability is a continuing satisfactory services rendered from, by and for the user community in a self reliant manner, taking into account the technical, financial, social, institutional and environmental aspects.

Effective use is the convenient access of service that can be enjoyed indiscriminately by the majority of the user community.

Participatory approaches are approaches using one or several methods that actively involve the related parties in the strengthening process, for:

- expressing knowledge, ideas, and decisions to choose a service;
- taking initiative in identifying and solving problems, decision-making and performing collective action.

Environmental sanitation is an effort to manage the human waste, drainage and solid waste. In this document environmental sanitation refers only to the human waste.

FOREWORD to ENGLISH VERSION

This document has been translated from the original, which was written in Bahasa Indonesia. While every effort has been made to convey as accurately as possible the meaning of the original, there have been obvious difficulties in doing so. Should the reader require clarification of any aspect, queries may be referred to the Bahasa Indonesia original, or to the WASPOLA Secretariat.

I. INTRODUCTION

1.1 Background

The development of facilities for water supply and the environmental sanitation of the rural and small urban areas in Indonesia has been undertaken in line with the long term development plan phase I which started since the first five year plan in 1969. During the past 30 years of implementation a considerable result has been achieved, including the extensification of the coverage area, an improvement of the capabilities of the government, non-government organizations (NGO's), and community members in the management of water supply and environmental sanitation, as well as improvement of the government and the community understanding of the importance of water supply and environmental sanitation for human life.

In spite of the successes, there are a number of shortcomings that need serious attention and review in the year 2000 especially in the light of policy development in water supply and environmental sanitation. These include the slow rate of behavioral change in the part of the community members in the management of water and environmental sanitation, the low rate of sustainability of the facilities already in place, weak coordination in the management of the different projects, and the weakness of funding support both from the community and from the government.

There are still many things to be done in improving the performance of the program for Water Supply and Environmental Sanitation at Small and Medium Scale (Indonesian acronym PABPLP-SKM), among other things building up a uniform perception at every level of the government administration and amongst communities on what must be done to make the program effective and sustainable. The purpose of

this paper is to facilitate the framework of the national level macro policy on human settlement sector with detailed principles of national policy specifically on PABPLP-SKM.

1.2 Objective and Purpose

This paper intends to:

- produce a national level policy document on PABPLP-SKM which is acceptable laterally across the different line agencies from the national level down to the regional government, the non-government organizations, the representatives of the beneficiaries as well as the donor agencies.
- identify the priorities in the national policy and the strategy on the PABPLP-SKM for the new millennium.
- arrange the order of priorities for 5 year implementation program for the national level government taking into consideration the agenda of decentralization in development activities, especially with regard the PABPLP-SKM.

1.3 Scope

- The discussion in this document will be focused on issues of water supply and environmental sanitation, including the related components, such as the aspects of community health, environmental protection, sociology of the communities etc., all of which are inter-related and mutually supporting.
- Actually water supply facilities and the sanitation of environment are not limited by administrative boundaries (village or town), because the services provided by a single system may extend beyond the administrative boundary of one region. For

this reason, the scope of discussion in this document is placed on small and medium scale water and environmental sanitation systems that are directly manageable by the community, or by a local business enterprise to serve the community, which are beyond the capacities of the local PDAM or PDAL to serve.

- The discussion of environmental sanitation here is initially focused on the management of human

waste and its related aspects, such as privately or communally managed installations and systems developed and run by a local enterprise. It is well understood that environmental management is an unending chain of system therefore it is necessary to also make a thorough study on other elements of environment like the drainage system and solid waste, eventually to be integrated into one policy document.



II. 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.

2.1 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 water supply.

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. During that time the construction of the facilities was undertaken by PU (Ministry of Public Works) and after completion they were handed over to another agency for their operation and maintenance (O&M), which was a different agency in each case.

The limited amount of funds for the construction was made available through national and regional government budgets (APBN, APBD) and bilateral funding mechanisms. 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 20,000). 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 project 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.

2.2 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 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. The agency responsible for the O&M was still on a case to case basis.

Rural and Small Town Water Supply

In towns and cities the water supply facilities were constructed 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 addition to the existing funds for development, the government created an extra funding mechanism called INPRES; 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.

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. One of the most 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.

In spite 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 O&M were determined on a case by case basis.

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, many private PLP facilities complete with septic tanks were constructed by self-help. 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

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. Officially, this was the responsibility of the projects such as P3KT, but was very seldom implemented. In towns and cities the drainage was limited to the areas around the housing and along the main roads. The kabupaten/city government was given the responsibility to take care of the O&M of the environmental sanitation facilities, but this responsibility was not sufficiently supported with the required resources.

2.3 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, hence uncertainty was increased and the situation 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 projects such as P3KT (IUIDP), where water supply and environmental sanitation were the major components. In the field of construction PU was still playing the leading role,

but the implementation management was now handled by the provincial level (theoretically the Kabupaten level) through implementing staff assigned to the regions, i.e. PPSAB, P3AB and Dinas PU Propinsi.

Contracts for the execution of the construction was granted to medium and small size contractors. Related to this aspect, the control from the central PU was loosened, and consequently the quality of the construction dropped.

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 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. The private sector was still playing a very limited role in water supply.

Rural and Small Town Water Supply

Coordination of the water supply and environmental sanitation program was made through a team consisting of several DG-level agencies (Deputies for Regional and human resources development from Bappenas, DG Cipta Karya of PU, DG's Bangda and PMD from Home Affairs, DG for Budget from Min. Finance, DG's PPM and PLP from Min. of Health); while at the field level the implementing agency was

decided on a case-by-case basis for each project. In small towns the role of PU was gradually reducing, but it was not yet decided which agency would replace it. Funding assistance from donor agencies continued to flow, including assistance for large-scale projects such as WSSLIC from the World Bank and RWSS from ADB.

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.

Environmental Sanitation

Human Waste

Since the number of households that were connected to conventional sewerage systems in large towns was very few, these large scale installations were not viable. Although many suggested that PDAMs be the responsible agency for sewerage, it was a difficult concept to implement in the field. At the kabupaten/city level normally the Dinas Kebersihan assumed responsibility for the disposal of human waste from individual septic tanks into the sewerage system. The same agency is also responsible for solid waste and drainage.

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.

Because of funding limitation, the projects offered only limited technology options. Usually, each project offered very limited options, and in most cases there was only one option. The choice of option determined the amount of subsidy. In general, the size of service coverage remained unchanged, though in some cases particularly in the heavily populated urban areas there was an increasing trend. In the rural areas and small towns the coverage tended to decrease.

Other Environmental Sanitation

Bappedal, as an agency responsible for the environment was established, but its operational interest was focussed more on large issues rather than with environmental problems at household level. In some P3KT projects the development of solid waste management and drainage was weighted heavily on setting up of new facilities, and the construction was done by the representatives from central level under the sanitation "project" (PPLP).

The quality of drainage was deteriorating because; water consumption was increasing; the drainage systems were used both for liquid and solid wastes; they lacked of proper maintenance. The disposal of solid waste was limited to certain public facilities, such

as at the market place; for residential areas it is usually done by private (individual) collector, and disposed of in dumping places in an inadequate manner. In village level projects, solid waste and drainage components tended to be neglected.



III. 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.

3.1 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.

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)

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.

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 optimise 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.

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

- *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.
- *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.

3.2 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 follow:

- 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

^{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.

in the implementation of WSSLIC (Water Supply and Sanitation for Low Income Communities) and FLOWS (Flores Water Supply)¹ 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.
- 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 follows^{3/}:
- 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 on-going 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

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.

^{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.

financial contributions to guarantee effective funding and sustainability of investments.

□ 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.
- Lack of knowledge, information and technical knowhow 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.

3.3 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 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.



IV. Basic Policy for Water Supply and Environmental Sanitation for Small and Medium Scale (PABPLP-SKM) in Indonesia

This chapter describes the objectives and principles of policy making, and the general policy of small and medium scale WSS (PABPLP-SKM). It is hoped that out of the lessons learned from WSS projects in the past, a new and more suitable community oriented development paradigm could be created.

4.1 PABPLP-SKM Program Objective

The aim of PABPLP-SKM as set forth in the GBHN 1999-2004 is to improve and maintain public utility installations including water supply. 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 health a related approach. To reach the long term goal of the PABPLP-SKM it is necessary to set several intermediate outcomes in the form of outputs that must be produced by each activity. The outputs are given below in the order of priorities:

Sustainability

Sustainability can be interpreted as meaning that each WSS activity produces a continuing benefit in favor of the community. Sustainability is often misinterpreted in the narrow sense, as successful completion of in the construction of infrastructure. The sustainability of the activity that leads to behavioral change is no less important means for measuring the achievement of the WSS program. There are several aspects that should be borne in mind in PABPLP sustainability as intermediate objectives:

- Sustainability in post construction financing.
- Sustainability in infrastructure management organization.

- Sustainability in technical aspects.
- Sustainability in environmental management.
- Sustainability in the related activity, such as community health education, etc.
- Sustainability of replication

Effective Use of WSS Facilities

Effective use means the facilities available to the community can be used to good effect, taking into account other aspects such as health, knowledge, and behavioral change towards hygiene awareness. Another aspect of no less importance is that the use of WSS facilities can improve people's welfare and quality of life. It is understood that the availability of sufficiently good WSS facilities does not immediately improve health conditions nor other welfare benefits, but if WSS facilities are managed properly, they will improve awareness and behavioral change in the community. Effective use of WSS facilities includes two additional concepts, namely ease of access and equity.

Ease of Access

The concept of effective use is closely related to how easy it is for the community to access the benefits of WSS facilities. It is expected that the facilities can be accessed easily; they are located near the users' daily activity, either near individual household or convenient for communal access.

Equity

Equity means the distribution of benefit of WSS to every member of the community. It is expected that with this concept all the poor members of the community, especially women, can receive the benefit of the facilities constructed.

Coverage

Coverage is ordinarily translated as the proportion of the population of a particular area who receive the benefit of WSS facilities. It is normally expressed as a percentage of the total population. All this time program achievements are measured by the quantity of facilities constructed, but this method is not good enough for measuring the overall performance of the WSS program. That is why coverage is no longer useful as an overall objective of the policy of WSS program. However, data on coverage are recorded as a part of the effective use.

4.2 Main Policy Guidelines

In policy making for small and medium scale WSS in Indonesia, several macro policies from the national level government are used for reference.

➤ *Constitution 45 Art. 33 Para 3:*

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

➤ *GBHN (Guidelines of State Policy 1999-2004) 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 of development, public service at a reasonable price, and open the isolated and remote areas."

➤ *GBHN 1999-2004, Art. 33. Para 3:*

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

4.3 General Policy

Based on the above mentioned policies and the result of various studies it is deemed necessary to review the objectives of the water supply and environmental sanitation program, because the deviations that occurred unintentionally during implementation have neglected some of the essential elements that should have been produced.

Pursuant to the stipulations of the Constitution and the GBHN 1999 the general target of the WSS program is to improve the welfare of the communities through the adoption of hygiene awareness. It is understood that the WSS program is not the only means to achieve this objective, but it is expected that the WSS program could be integrated with other programs to improved welfare through the adoption of hygiene awareness. To achieve the objective it is necessary to make profound changes to the deeply rooted WSS development paradigm, amongst others with the following:

❑ Water as an economic good

Up to this time many community members unconsciously believe that water, as a public good is valueless and can be obtained at no cost. This belief has led to the lack of the community's attention to the sustainability of water resources, quantitatively as well as qualitatively, and further led to the excessive exploitation of ground and surface water in urban and rural areas for household and industrial purposes. For example, the Bandung basin area will suffer water shortages if the present exploitation pattern does not change. From several studies it was revealed that most of water sources for the communities are contaminated biologically as well as chemically, which means the water is not suitable for use and needs pretreatment with expensive technology.

In response to the negative trends in water exploitation, it is deemed necessary to educate the people that water does not only have a social value; they have to realize that water is also an economic good and they have to pay something, time or money, in order to have water.

If it is recognized that water is the source of life and is highly valuable, it is expected they would manage it as effectively and efficiently as possible with the least costs in proportion to the increasing value of water.

The change in water management paradigm becomes very important if water is recognized as a highly valuable good, the behavior of the community, rich or poor, will directly or indirectly change towards managing and using water for healthy living.

Balance between Water Supply and Environmental Sanitation

In reference to the healthy living paradigm as stipulated in the GBHN, the management of water supply cannot be separated from that of environmental sanitation, individually or communally. To reach the adoption of hygiene awareness, the water supply facilities should not overlook the importance of water quality. Although a good water supply has been made available, environmental deterioration can still happen through contamination with human waste, the use of water may contaminate the environment, eventually decreasing the health condition of the community. This indicates the importance for the government to have an appropriate balance between the size of investment for water supply and that for environmental sanitation.

With a balanced water supply and environmental sanitation management it is expected the community become healthier and in turn they will feel responsible for the sustainability of the environment.

Hygiene Education as a Main Component

For good environmental sanitation management it is not enough to think that the development of physical facilities will produce a changing the behavior and adoption of hygiene practices. Many WSS projects have long acknowledged the importance of education program, but this component was

considered more as supplementary; its importance was often minimized in the rush of the physical development of WSS facilities.

Therefore, is important to realize that hygiene education is not only a supporting component, but rather should be one of the compulsory main components for all WSS projects in the future.

Poverty Focus

In principle, the whole Indonesian community has equal rights in relation to WSS services. With reference to experiences gathered from various community development projects it was revealed that the achievement of objectives with regard the poor community members was short of expectation, although the final reports always mention that the assistance has improved or has provided the poor communities with access to improvement of their living conditions. One of the causes of the discrepancy was the "top down" approaches from the government, both the kabupaten (often represented by kecamatan official) and also the village level government where the investment decisions were made by the village elite, not directly by the community, much less the poor families.

Future WSS development should be changed to a more demand-responsive approach, with priority placed on the poor communities, from the villages to small towns. The communities could in turn cooperate with NGOs, small business enterprises or cooperative organizations to build their WSS facilities.

In this way, it is expected the poor communities could satisfy their demands for water supply and environmental sanitation with their own efforts.

Active Participation by the Community

The above mentioned aspects are inseparable from the active participation of the community at every

phase of the development process. If the community are involved and they do not have a common commitment, it is hardly possible to apply the WSS program concepts effectively and efficiently. The majority that constitutes the community, men and women, rich and poor, must be invited to participate. The WSS program should recognize the gender dimension in every phase of the development process; beginnings from need identification, program planning, implementation, through to the monitoring and evaluation of the program.

The old paradigm saying that WSS facilities are the sole responsibility of the government must be changed, so that the application of the concepts: water is an economic good; balanced investment between water supply and environmental sanitation; health education as a priority, well understood and accepted by the community.

The role of the government, especially at the kabupaten and city level, is very important in facilitating the community. Facilitation does not always mean physical infrastructure development or subsidy in the form of cash, but rather as technical or non-technical advisory services to improve the community's capabilities planning and managing WSS facilities and related support activities.

The involvement of all agencies in all aspects and in all phases of the development process can minimize the possibility of unsuitable designs, unused facilities, or facilities not cared for, i.e. sustained and effectively used.

Improved Monitoring and Evaluation

Up to now, the only data available are either those gathered through census by the Central Bureau of Statistics or the routine recording by the Ministry of Health and Ministry of Public Works; they are data on "the coverage of water supply and environmental sanitation". Experience from the field reveals that very often these data are not reliable enough in terms

of accuracy and consistency, so as it is not advisable to use them as reference for policy evaluation of WSS program.

In general it is possible to say that the development of water supply and environmental sanitation that has been growing rapidly since Pelita III has not been monitored properly. Routine monitoring was carried out on the amount of funds disbursed and the quantitative number of facilities constructed.

With the change in the development paradigm it is deemed necessary to have an improved monitoring and evaluation system which can measure accurately the degree of achievement. These improvements to the system which must be done at the community level as well as at the government level, will consistently rely on participatory methods, ensuring the involvement of the community in support of the implementation of the WSS program.

The participatory approach to development expands the scope of monitoring and evaluation. The design of the monitoring and evaluation framework should be flexible and be prepared collaboratively by the involved agencies, the government and the community. The user community's involvement begins from designing, collection of data and evaluating them, and continues in planning of follow-up action. In this way, corrective measures can be decided and implemented right at the community level.

Participatory monitoring and evaluation does not negate the possibility of foreign technical assistance; there is a role as facilitator in bridging the cooperation between the community and the government agencies. Aside from the purpose of achieving the objective of the WSS program as initially intended, participatory monitoring and evaluation is expected to improve the capabilities of human resources in the decision-making and implementation of community based WSS program.

V. Implementation Strategy

It is very important for the implementation strategy of PABPLP-SKM program to look closely into the relationship between two interests, which are; strengthening of the community vs. development of infrastructure and monitoring and evaluation.

5.1 Community Development vs Construction of Facilities ("software" vs "hardware")

The development of "software" has to be considered the inseparable twin of "hardware" development. Human resources development should be conducted at all levels whether it is the community, government, NGO or private sector. The outcome will go parallel with the change in approach, i.e. from "top-down" planning and supply driven development assistance to "bottom-up" planning and demand driven development assistance, and the change in development priority from solely physical infrastructure development to a development that includes improvement in capability in operation, maintenance and management. Therefore, in the future the attention given to software development must be equal to that for development in the form of physical construction.

There are three important requirements that will facilitate the above-mentioned concept in becoming a reality:

- Availability of sufficient funds, both for the construction and for human resources development;
- Structural change in human resources development, focussing more towards users and always trying to satisfy the demand of the community, especially at the grassroots level;
- Modification of key indicators for monitoring and evaluation of the outcomes, for use to measure sustainability objectives through human resources development and strengthening efforts, not merely through the physical construction.

The change in approach has, of course, some implications for the implementing agencies (the government, NGOs, private sector, donor agencies), although the changes are more internal in nature.

□ The Application of Demand Responsive Approaches (DRA): *"Moving from Policy to Action"*

Strategy 1

Government functions as facilitator to the community, especially in relation to formulating policy, strategy and clear legal framework to create conducive conditions which enable communities and other development actors to participate actively.

As a direct explanation of the policy "water as an economic good" and the experience collected in the 1990s, it is necessary to continue the application of DRA in the coming years. The emphasis on DRA application in various projects must be consistently implemented at the central as well regional government and not only as a topic of discussion in many fora. Central Government will develop policy framework, guidance and standards, and also knowledge base as information centre for stakeholders in water supply and sanitation programs, while Local Government will act as facilitator in the planning, implementation, and post construction phase. And in compliance with the DRA principles, the small and medium scale WSS program must be truly a program "from, by and for the community".

Considering the sacrifices the community has to make in satisfying their demand for water, the linkage of "water as an economic good" with the DRA principles is very relevant. Consequently it is necessary to have an approach that can express the demand of the community and the approach is what is referred to here as the DRA.

Strategy 2

Facilitate the community on their own initiative to select, based on informed choices, how the services they want will be provided.

DRA can be describe as to a community strengthening approach that stresses the community self reliance to take initiatives, beginning from identification and choosing the activity, making choices of options, and implementation of small and medium scale WSS facilities according to their demand and capability to manage constructed facilities, with support from government, other development actors and internally from the community itself. During the decade 1990-2000 the DRA has developed into an innovative approach to help the community in the rehabilitation of WSS facilities.

Strategy 3

Motivate community members to contribute to the investments, to have ownership and exercise strong control in the management of the funds

The funds that are in government possession, now or in the foreseeable future, will never be enough to build all the required WSS facilities. Consequently, the development of WSS facilities can only take place if there is a mobilization of funds from the users and the private sector. For this to happen it needs a conducive atmosphere that stimulates the development, such as policy, and legal framework, and transparency.

Strategy 4

Stimulate the community or legal entity within the community to own and be responsible for the sustainability of the completed facility

In general, the practice in the application of DRA takes the form of uncovering the potential within the community to accept the responsibility for identifying and responding to the problems related to WSS facilities in self reliant manner. The approach also ahs the potential to improve the level of ownership and satisfaction of the community, and to mobilize the available resources to ensure the sustainability of the constructed facilities. This can only happen if the government as the supplier of the facilities has changed its orientation/paradigm and respond favorably to the demands, self-reliance and capabilities of the community in improving the service of their WSS facilities.

Strategy 5

Improve the capability and awareness of the community to gradually enable them make innovation and increase their demand for water supply and environmental sanitation

It is realized that the community has only limited capacity, and that it needs clear rules of the game in creating incentives for the community to develop effective and sustainable WSS services.

Human Resources Development

Strategy 6

Increase the intensity of efforts on community strengthening through the application of participatory methodologies

In the efforts to improve basic capabilities, participatory training methods have proven more effective than conventional methods. The passive and didactic conventional training is not effective for use in adult education. Participative techniques are more effective, especially for audiences with low formal education.

The strengthening efforts must be intensified to the "most needy" amongst community, and gradually move to the upper level of the community.

Participatory training methods need more time than conventional training. Therefore, the training needs must be carefully calculated. The calculation of training needs should start with the demands of the end users, then move to the officials of the implementing agencies (who will be involved in the community strengthening efforts, and will facilitate them).

Institutional Development

From the experiences of the past, the institutions in water supply seem to be divided into two categories: urban and rural. In towns and cities, those mostly responsible for managing the facilities is BPAM, or presently PDAM or PAM. Environmental sanitation services are only in urban areas, with comparable institutions like PDPAL in DKI Jakarta or PDAM in

Cirebon and several other cities. In East Java the water supply facilities are managed wholly by the communities, though the selection of the institution is done by the HIPPAM (Water Supply Management Association), which is considered as the embryo of PDAM. The distinction of institution for urban and for rural sometimes causes discrepancies and is incompatible with the characteristics of the location. There are areas that are administratively classified as villages but they have the characteristics of a town, or the opposite. An institution which is established based on the administrative definition confines the management from making the necessary improvisation: there are places that hardly classify as a town but they are not villages either. For such areas we need to reconsider the management institution that is best for them. The description below will illustrate the concept of considering three types of management model

Strategy 7

Categorize the management WSS systems as three types:

- Management by institution (Type A)
- Joint management by the institution and the community (Type B)
- Management by the community (Type C)

Type A: Management by an Institution

The decision-maker in this type of management is the formal institution, covering all aspects of planning, construction, operation and maintenance. In Indonesia, it is the central level government agency that handles the whole process until completion of construction, to later transfer the facility to PDAM for its operation and maintenance.

However, this category is not limited to the government agency only, there are also cases where the private sector takes part in the responsibility. The relationship between the institution with the community members in this case is "management-consumer" or "supplier-consumer", where the cost for the service is decided by the supplier to be paid

by the consumer. The example of Type A is the water supplies in towns and cities all over the country, which were developed by PU (now Kimpraswil) and managed by PDAM. The sustainability depends on the technical, financial and managerial capacities, and the institutional efficiency and effectively in planning, design and O&M.

Type B : Joint Management by the Institution and the Community

The institution is responsible in making available the "bulk supplies" for use by the community of a given locality. Each user community is responsible for all aspects of distribution, including O&M and the technical and financial management within its area.

The size of the communities may vary, but usually they are relatively small. The community pays the water supply based on the limit decided for them and the contribution from each member is agreed upon internally to an able them to pay the compulsory amount to the institution. The "bulk supplies" tariff is calculated by the institution, but for the sake of cooperation it is brought down to a level "lower than the full service" considering the institution is not responsible for distribution, operation, maintenance and management of the facilities to household level.

Strategy 8

Transfer the non-productive PDAM assets to local government

Up to this time the responsible institution for water supply for large cities down to the kecamatan capitals is the PDAM. To enable the PDAM to function professionally it should be freed from the burden of any social obligation. This can be done by referring the unproductive assets to the regional government. This means that the burden of subsidy in the implementation of the cooperation with the community is borne by the local government. The community can, in turn, build cooperation with an NGO, local enterprise, or cooperative organization for managing their water supplies.

Contributions from the community in the form of funds, land, material in-kind, labor, and managerial capacity must be identified and acknowledged, and be optimally combined with the external contributions (i.e. from government institutions). Within certain limits the complexity level of the community capability in planning, construction, operation and maintenance of their own facilities can be identified, though in some cases as a result of proper facilitation the level may be higher than originally perceived.

At the same time, it should be acknowledged that the technical and managerial capabilities to handle complex systems is often available only within institutions, either in the government or the private sector. There are also a number of cases where the sustainability of development depends on the close cooperation between communities and institutions.

Type C : Management by the Community

The main characteristics in defining this type is that community members (through proper facilitation) manage all the aspects of their own water supply system, from planning and construction to operation, maintenance and effective use, without the involvement of an institution. This category has a wide range of coverage, and generally includes a number of options for water supply and environmental sanitation that are frequently described as the "appropriate technology" because all the community members feel fully responsible for all the decisions made by the community. Examples include the use and management of non-piped water source such as wells, rain water collection, public tanks, hand pumps, up to simple gravity flow piped distribution systems.

Strategy 9

The status of water supply facilities as community assets must be transparent to all.

The communities as a group are the decision-makers in all respects. For planning, design and construction, this group might need facilitation or support from local NGOs, even maybe assistance from outside (such as a consultant, contractor, tradesmen or professional worker) without involving them in the decision-making. For long term management of the facilities, the group itself collects contributions for O&M, and in this way the funding sustainability of the system is assured. But this sustainability can only happen if the status of the facility as an asset of the community is made clear to all.

Strategy 10

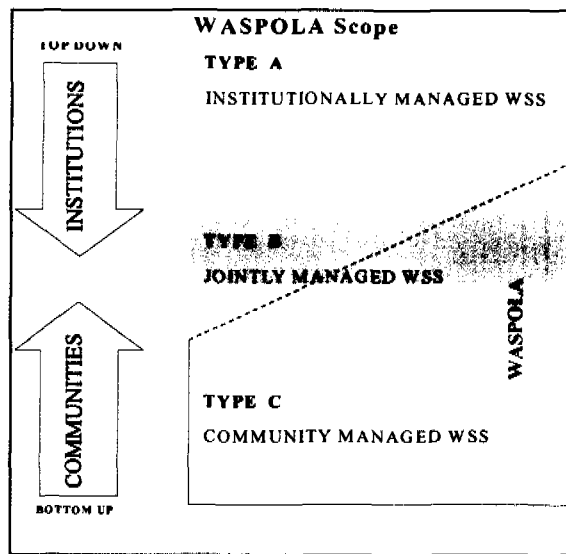
Establishment of Facility Management Units among users at the community level.

A Facility Management Unit, which may have its own name under different projects, is the most important institution in a community-managed WSS facility. Therefore, this unit needs to be strengthened so that it can assess the community's actual demand for water, which is derived from the true information gathered from all members of the community. The management units may be provided with technical assistance for facilitating the establishment of water users' committees, strengthening the unit personnel, and implementing the management of the water supply facilities.

To provide the right technical assistance, special expertise is needed. Other parties also need institutional development for strengthening the public service sector and the NGOs, so that they are able to facilitate the management units towards better performance.

The functional relationship among the 3 categories are illustrated in Figure 1.

FIGURE 1



Community Awareness Campaign

Strategy 11

Development of communication media to provide a wider coverage and innovation in designing, preparing and transmitting of messages.

As for direct community participation methodologies, improved community awareness has proven effective in increasing the benefit of sectoral activities. In this case, providing information of the community must be distinguished from those activities that provide directives or indoctrination to the community. The messages must be designed in such a way so as to satisfy some specific requirements or targeted to a specific audience. For example, training or extension materials which very effective for West Java are not necessarily applicable for NTT or Papua communities.

Strengthening Environmental Sanitation

Strategy 12

Conduct hygiene education as a main component of environmental sanitation

The development of water supply is a necessary, but not sufficient condition to improve the health a

nd welfare of the community. This means, that an investment for the development of water supply for the purpose of improvement in health condition of the community is inadequate. Beside the above effort, it is still necessary to make an additional investment in environmental sanitation, especially those that lead to a process of change towards the adoption of hygienic behaviors and protection.

The motivation behind the demand for water supply is different from that for environmental sanitation. The latter may not include the desire for improvements in community health. Sanitation practices and hygiene behavior is more individual, therefore the changes may occur at the individual or family level.

The time required for changes in environmental sanitation is much longer than that for the development of water supply facilities and improvements in its effective use. If all the phases are included in the calculation, improvements in environmental sanitation. (including drainage improvement, human waste management, and toilets) it will take a long time. Activities may begin from latrine construction, then encourage the community to start using them. The next may focus on solid waste management at family level, finally deciding on improvement of the drainage system. To complete the whole process usually requires longer time that the duration of a single project. The success of health improvement and environmental sanitation activities is measured in terms of the extent of change towards hygiene behavior and practices, and not in total numbers of physical construction. That is why the measurement of the level of success for this case is more difficult than that for water supply development. The efforts in improvement towards the adoption of hygiene behavior and practices may be undertaken through several methods; for example community extension, through school education, and through participatory training involving families and the community.

With regard the extension activity, the focus of community awareness cannot be generalized. In the case of hygiene behavior and practices, experience indicates that the best result is obtained from intervention focused on one or two key habits only, for instance "wash your hands before and after doing something". On the other hand, the most effective latrine program is one which offers many options to families (including the poor families), so that they are willing to pay for the latrine facility according to what they use. The latrine programs that offer only one choice, and no alternative, even though the choice is subsidized, show high rates of failure.

From the above illustration it may be concluded that principally the efforts in improving environmental sanitation are "software intensive". This means that the greater portions of the funds are used for the procurement of non-physical services; more weight is placed on the software that it is on hardware.

5.2 Monitoring and Evaluation

In an effort to achieve the objectives of the WSS program so that the community could obtain sustainable benefits from the constructed facilities, it needs a different monitoring and evaluation system than the system in use up to this time, a system that involves all the agencies linked to the WSS program, i.e. the user community and the various government agencies. Monitoring and evaluation becomes more important in the participatory approach than it is under conventional methodologies.

The change in the development paradigm, where participatory approaches are given more weight, will involve consequences in monitoring and evaluation, in terms of the purpose and the use of the monitoring and evaluation result, the indicators to be used, the implementation technique, and the implementing agencies.

Sustainability and effective use have been set as the objectives of the WSS program, and are measurable over a period of time. Therefore achievement indicators are, to be developed for these two objectives.

As it is with any program or development project, the identification of the right indicator becomes very important so as to enable measurement of the outcome correctly and realistically.

Strategy 1

Identify the main indicators for the two main objectives, i.e. sustainability and effective use of WSS facilities

Sustainability and effective use have a wide range of implications. The main indicator of each objective may vary widely, depending upon the context. As an example, full contribution by the community becomes the main indicator in a given location, while in another the maintenance system is the main indicator in measuring sustainability.

Strategy 2

Expansion of each main indicator into measurable sub-indicators

As an example, to measure the effective use in relation to hygiene behavior and practices, the level of use as the main indicator is broken down into measurable sub-indicators such as water quality, means of transportation and storage, effort in improvement of water quality, hygiene practices.

Strategy 3

Divide the monitoring and evaluation activities into 3 levels:

- Monitoring and evaluation at the user level
- Monitoring and evaluation at kabupaten level
- Monitoring at the national level

□ Monitoring and evaluation at community level

The participatory approach, as distinguished from the system currently in practice, provides opportunity to the user community to be actively involved in the monitoring and evaluation beginning from data collection, evaluation of the data, and planning for follow up action. In this way, the corrective measures can be decided immediately in the field, and this process helps in strengthening the capability of the community in decision-making. The most important principle in monitoring and evaluation is that the finding at every level is used for corrective measures towards the initial objectives.

The demands of one community from the other with regard the WSS program may be different and consequently so are the indicators of achievement; each may decide and agree on a different indicator in measuring their own project. In the monitoring and evaluation activities at the community level, the government plays the role of facilitator or process guide, and the community is not obliged to submit reports of its findings to any of the officials like the kelurahan or kecamatan; however, a systematic recording must be kept in order to be accessed at any time by the relevant agencies. If the user community has a direct role in the management of the project, they could become the source of information on the problem and the progress of the project.

□ Monitoring and evaluation at Kabupaten level

The indicators and monitoring and evaluation

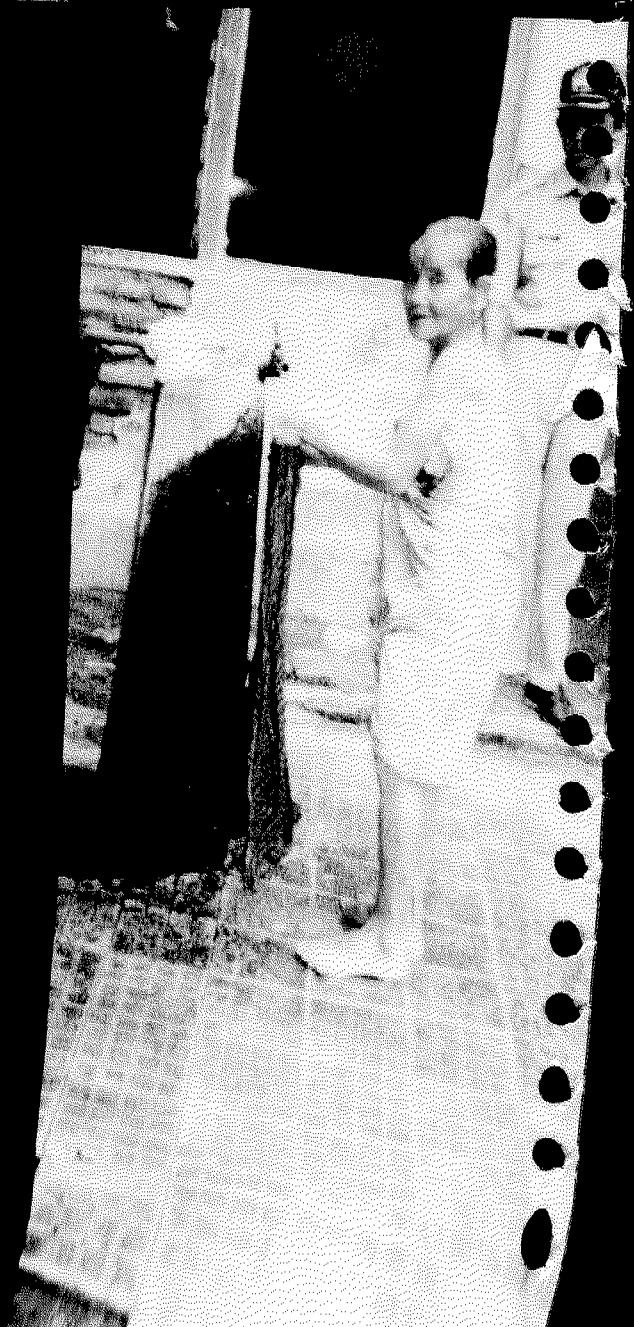
technique for the purpose of the local government is developed by the Kabupaten. The government employees must be proactive in collecting information from the user communities and submit the report to the higher level government in conformance with Law No. 22 on Local Government. With regard the achievement of objectives, one of the roles of the local government is to facilitate the user community in conducting monitoring and evaluation. If the decision-making was formerly made at the office of the local government agency, now the process is completed at the field level. The application of participatory approaches has made it possible for the "authority" of the government agency in making the program planning be relinquished to the user community. The related agency will only relay the community decisions and facilitate their implementation process.

□ Monitoring at National level

Participatory monitoring and evaluation is a collaborative process in problem solving, a process that leads to corrective measures involving the related agencies at all levels in mutually agreed decisions. The basic principle of participatory monitoring and evaluation is the discretion for using the findings in different ways. For the purposes of monitoring and evaluation at the national government level the assistance from the related institution of the provincial government in connecting the Kabupaten to the national level is of the utmost importance. The related agency involved in water supply and environmental sanitation program could cooperate with the Central Bureau of Statistics to decide and apply the monitoring and evaluation indicators.

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