



International
Drinking Water Supply
and Sanitation Decade

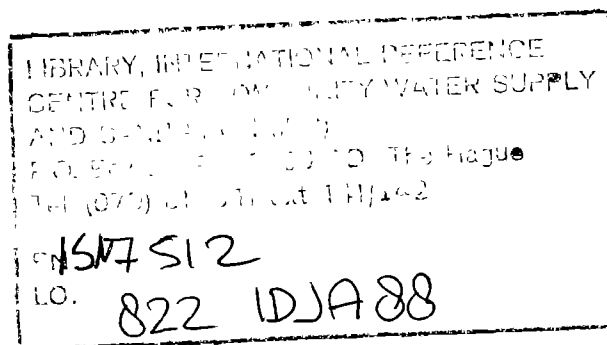


The Public Standpost Water Supplies
Project in Indonesia

An Overview

with special emphasis on the methodology
applied at the local demonstration schemes

Mary Boesveld



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Institute of Human Settlements
Bandung



IRC
The Hague







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LIST OF ABBREVIATIONS

DJ Cipta Karya	Directorate General of Human Settlements
IHS	Institute for Human Settlements
IKK	(Ibu Kota Kecamatan) Administrative town at the district level
IRC	International Reference Centre for Community Water Supply and Sanitation
LKMD	(Lembaga Kemajuan Masyarakat Desa) Village community development organization
PAB	(Proyek Air Bersih) Water supply project offices under Cipta Karya, located in the provinces
PDAM	(Perusahaan Daerah Air Minum) Local water supply company
PKK	(Pembinaan Kesejahteraan Keluarga) National women's development organization
PSWS	Public Standpost Water Supplies (project)
Rp	Indonesian Rupiah (1 US\$ = approximately Rp 1.650 (June 1987))
RW	(Rukan Warga) Village head of about 3 - 5 neighbourhood groups

Acknowledgements

This overview of the IRC supported Public Standpost Water Supply (PSWS) project in Indonesia has been written during my stay in Bandung from 5-22 September 1986. It is based on written material produced by the project team and on extensive discussions with the Project Manager Ir. S.M. Ritonga, the Project Officer Mr.A. Parwoto, local officials in the project areas, and the project team. This document would not have come about without their contributions and their help. This is the more obvious considering the very short duration of my visit and my newness to the project in Indonesia.

I would like to express my gratitude particularly to Mr. Parwoto. Through his knowledge and valuable guidance I was able to gain insights into the work and the methodology of the project. Also I wish to thank Mr. Buce for accompanying me on a field trip and giving important information on the project areas. Mrs. Nurhasana and Mrs. Ratnaningsih have helped reviewing the first draft of the overview and adding lists of team members, references and information about the demonstration schemes.

Ms. Yvette van Dok has contributed the data from her research in the villages where the project has been implemented. Other team members, including Messrs. Pong, Tibin and Atang have contributed importantly toward discussions.

Nevertheless this overview has to be taken as my own account of what I observed and what the project team told me about the project. Any mistakes and omissions are therefore mine alone.

Mary Boesveld



1. INTRODUCTION

In the PSWS project in Indonesia workable methods have been developed and demonstrated by Indonesian project staff for planning and implementing public standpost water supply with participation of the communities concerned.

This overview aims in the first place at showing the results of the application of this methodology in the four villages which were selected as demonstration areas for the project. Particularly in the two smaller villages (Kaliwon and Sukamulia) the project has brought about a general feeling of well being in the communities. Not only did clean water become available at a short distance from most of the houses, but it was also possible for inhabitants to increase their income through use of the waste water in fish ponds and for gardening. Through the collection of funds for operation and maintenance of the schemes, the communities became aware of possibilities of co-operative funding for development projects in their village. Next to these unmistakable successes there have been some problems. This paper therefore also discusses improvements as planned by the project team in Bandung.

Right from the beginning the ideas developed in the project have been spread among quite a large group of people in Indonesia: experts, national and local authorities. The project methodology is increasingly recognized as a potentially useful tool in policies for community based water supply and possibly also in other development activities aimed at improving the living conditions of small communities in Indonesia. As such, these methods may interest policy workers and experts in other countries as well. Hopefully this document may help to familiarize others with the work, the successes and the ideas developed in the PSWS project in Indonesia.



2. BACKGROUND

2.1 General framework

The Indonesian Government in its Fourth 5 Year National Development Plan (1983-1988) supports strongly the development of adequate water supply for the whole population. Water supply and sanitation is considered an integral part of the overall development of health and housing for the people.

At the same time community participation at all stages of development is encouraged and strategies toward this end are being devised. To stimulate the achievement of these goals a demonstration project was set up by the Indonesian Government, represented by the Director General of Human Settlements (Cipta Karya), Ministry of Public Works, and the International Reference Centre for Community Water Supply and Sanitation (IRC). An agreement to this end was signed in 1982.

2.2 General aims of the project

- a) To set up demonstration projects for public standpost water supply, based on participation of the communities concerned;
- b) to develop a method of integrated planning of public standpost water supply, covering all vertical stages of the project from the initial stage to operation and maintenance, and related horizontal aspects of water supply such as health and hygiene education and sanitation;
- c) to develop a model for establishing participatory projects which provides for bottom-up planning;
- d) to disseminate this know-how in the form of recommendations, guidelines and manuals;
- e) to promote the application on a larger scale of the strategies, methods and techniques developed;
- f) to contribute to the international exchange of information on various aspects of public standpost water supply systems.

2.3 Organisation of the project

To ensure the integration of approaches and to provide general policy guidelines, a Project Management Committee has been established at the national level, consisting of representatives of the Ministry of Public Works, the Ministry of Health and the Ministry of Home Affairs. The Project Management Committee assembles on an average twice a year; it is chaired by the Director General of Human Settlements (Cipta Karya), Ministry of Public Works.

The Institute for Human Settlements in Bandung (IHS), under the Directorate General for Research and Development of the Ministry of Public Works, has been appointed as the project co-ordinating institution, to co-ordinate and supervise all project activities. The Director of IHS acts as formal Project Manager. In the execution of project activities he is assisted by a Project Officer and a team, consisting of:

- Representatives of the Directorate for Water Supply, Ministry of Public Works
- Representatives of the Directorate for Water Hygiene, Ministry of Health
- Representatives of Public Health Education, Ministry of Health
- Members of the IHS staff
- Representatives of the Division of Public Works of the Provincial Government of West-Java, Directorate of Public Works
- Representatives of the Division of Hygiene and Health Education, of the Provincial Government of West-Java.

A list of all the members and their functions in the team is added as Appendix I.

3. PRELIMINARY ACTIVITIES

3.1 National Seminar

In March 1983 a National Seminar on Potable Water Supply through Public Taps was held in Jakarta, with representatives of:

- the 3 ministries involved in the project
- various agencies concerned with water supply projects and programmes in Java
- the Indonesian Council of Science
- the Technical Faculty of the University of Indonesia
- IRC

During this meeting general guiding principles and recommendations were developed for the implementation of the project.

3.2 Preliminary studies by the project team

Following these recommendations, the project team in Bandung came together in a series of workshops to discuss and plan the various aspects of the project. A strategy was set up for community participation. In connection with this strategy, manuals and guidelines were developed for training of related local sectoral officers (at Municipality, Regency and District level), as trainers, and of development cadres at village level. At the same time technical standards for the building of piped water supply with proper standposts were laid down, with provisions for simple constructions with labour input from the communities themselves.

See Appendix II for a list of all study reports, manuals and guidelines written by the team.

3.3 Selection of project areas

Following the recommendations of the National Seminar in March 1983, criteria for selection of project areas were:

- a) geographical
 - in the Province of West Java, at a reasonable distance from the IHS in Bandung;
 - preferably covering mountain as well as coastal areas;
- b) socio-economic
 - different types of communities, such as urban, semi-urban and rural, which also represent different kinds of economic sectors, such as fishing, agriculture and (urban) employment;
- c) different types of water supply-systems
 - in Indonesia in urban and rural areas the water supply is governed by the local authorities. For piped supply they are assisted by the Ministry of Public Work, for non-piped supply they are assisted by the Ministry of Health.

Another important criterion was the ongoing implementation of water supply projects in the area, with funds available for the hardware aspects of the PSWS project (these funds are not provided for in the PSWS budget). It was decided that all these criteria would be best met in the North-eastern part of West-Java, in the Municipality of Cirebon (urban, semi-urban), the Regency of Cirebon (a coastal area with fishing villages, as well as a mountainous area with farming population), and the adjoining Regency of Majalenka (mountainous, agricultural area).

3.4 Selection of villages

In discussions between the project team and officials of consecutively the Province, the Municipality of Cirebon and the Regencies of Cirebon and Majalenka, the Districts and the villages for the PSWS project were selected. Suitability was confirmed by field visits and informal discussions with the users.

These villages are:

- within the Municipality of Cirebon

1. District Cirebon Utara

Kampong Kasenden

- coastal area
- peri-urban community
- water supply through the Local Water Enterprise (PDAM)

2. District Cirebon Selatan

Kampong Karya Mulia

- flat area
- peri-urban community
- water supply through the Local Water Enterprise (PDAM)

- within the Regency of Cirebon

3. District Babakan

Village Playangan

- coastal area
- fishing and farming community
- water supply through community self reliance (with help from several projects)

4. District Astanajakura

Village Gumulung Tonggoh (block Kaliwon)

- hilly area
- farming community
- water supply through community self reliance (with help from several projects)

- within the Regency of Majalenka

5. District Cikijing

Village Cikijing

- hilly area
- peri-urban community
- water supply through Local Water Enterprise (PAB IKK)

6. District Cikijing

Village Jaqasari (block Sukamulia)

- hilly area
- farming community
- water supply through community self reliance (with help from other projects)

The Villages Kasenden and Cikijing (nos 1 and 5) were later excluded from the project. For Kasenden the reason was that during the preparation of the project it received a new water supply, (house connections and communal taps) through another project. For Cikijing the reason was difficulty in synchronizing the timing of the project inputs within the DAB IKK programme which was installing a large number of piped water supply schemes in the area.

The Governor of the Province of West-Java in February 1984 called an introductory meeting, where representatives from all institutions concerned were present, including village officials and village community leaders. During this meeting the final choice of the villages was established. The project team introduced the aims and objectives of the PSWS demonstration project and ensured official co-operation for its implementation.

3.5 Training of related sectoral officers at Regency and District level (the trainers)

During a 5 day training course in May 1984 members of the project team instructed officials of Regencies and Districts concerned. The training included aspects of

- health education
- technology and design of water supply
- operation and maintenance
- financial administration
- community participation
- community self survey.

The objective of this training was to establish a local group of people to act as facilitators and motivators for village communities in building of public standposts, and setting up a system of operation and maintenance. They are particularly expected to instruct and train the village leaders and community representatives of each village chosen for the PSWS project.

3.6 Forming and training of the village development cadres

The village leaders, who by attending the introductory meeting were already familiar with the objectives of the project, were asked to form a committee of formal and informal leading community members to be active as a group in planning, construction, operation and maintenance of the water supply system, public standposts and other connected facilities to be installed in the village. Usually the village head acts as chairman of the group. These committees, consisting of about 6-12 members, were subsequently trained by the group of trainers mentioned in paragraph 3.5. This training took place in the District head office.

Important subjects for the training were

- community participation in water supply and related aspects
- health aspects of water supply
- operation and daily care of water supply systems and standposts

- maintenance, execution of simple repairs
- financial aspects, administration.

Also the committees received instruction on the execution of a community self survey, covering items on

- frequency of diarrhoea
- patterns of water use
- wishes for location of standposts
- wishes concerning facilities for bathing and washing
- possibilities for contributing in labour or in kind toward the construction of the water scheme and standposts.

The outcome of this survey was discussed in the village gathering and subsequently choices for the location of standposts etc. were made.

3.7 Supervision of project implementation, technical assessment and cost calculation

For the supervision of project work in the villages, a supervisor for each village was selected from the project team at the IHS. Under his guidance a technical assessment for the water scheme and standposts in the village was carried out, based on the choices of the community. Also a calculation of costs and of the necessary contribution from the villagers (building material and labour) was made. Final decisions were then taken in discussion with the village committee.

During and after completion of the standposts the supervisor has given further guidance toward the solution of problems in operation, maintenance and financing, and further development of related facilities (e.g. bathing and washing places).

4. IMPLEMENTATION OF THE SCHEMES IN THE 4 SELECTED VILLAGES

4.1 Gumulung Tonggoh (Kaliwon)

4.1.1 Short description of the village

The village of Gumulung Tonggoh is located in the spur mountains, 26 km to the east of Cirebon. The environment is very hilly, with woods, ricefields and small streams. The village is divided into 4 blocks. One of these blocks, named Kaliwon, was chosen for the implementation of the project. The inhabitants of Kaliwon form a tight community of 85 households with a total of 486 inhabitants (counted in March 1986).

Main source of income in the village is agriculture on self-owned land, supplemented with gardening, poultry and fish from the many fish ponds. A large part of the population works seasonally in Jakarta and other towns.

Nearly all houses in the block are brick built, with a lot of space in between, used for gardens, fish ponds, etc. The environment looks clean; garbage is burnt or composted.

Educational level of the villagers is generally low, most people have only a few years of primary school. Children now generally finish this school, and a few of them may go on to the next level (middle school).

* Community organization in the village

There are active branches of the government organized community development organization (LKMD) and womens' organization (PKK). Besides, the traditional "gotong royong" (a mutual self-help system; groups of neighbours working together in agricultural activities, house building, money saving, etc.) is still very strong.

* Sanitation

About 10% of the houses in Kaliwon has a toilet with a septic tank. Most of the inhabitants go to a bamboo toilet above one of the fishponds; some who do not have a fishpond near, use their garden as a toilet.

From the point of view of health care this situation may be risky. The water in the fish ponds is visibly full of human excrement. The villagers may come frequently in contact with the water when they are fishing or handle the fish from the ponds.

* Health

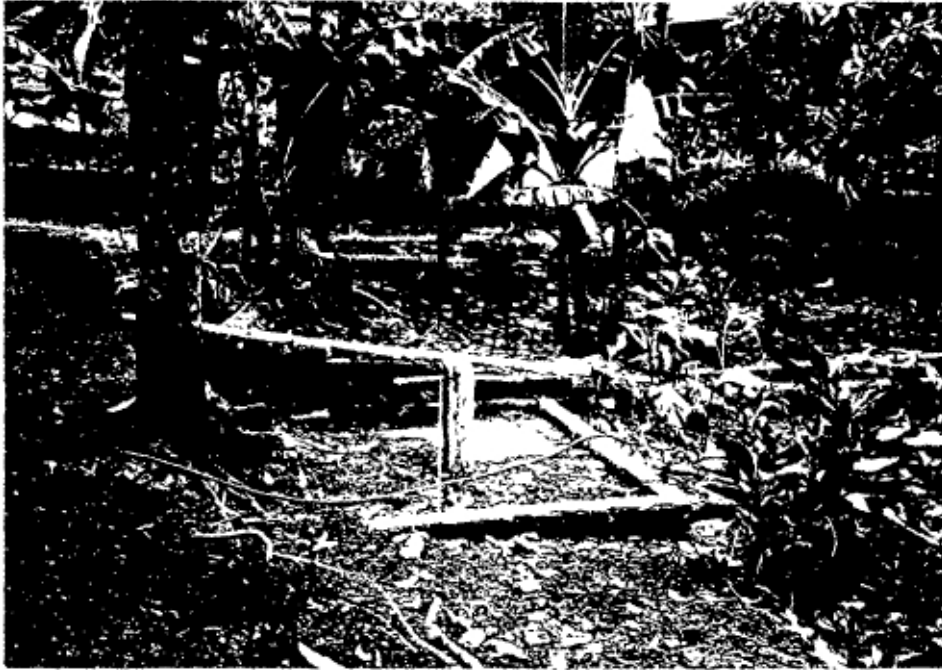
Health in the village seems to be generally good. There are no signs of undernourishment, and there have been no epidemics for a long time. In a small regional town about 7 km away there is a health centre, and a health unit visits Kaliwon each month. The villagers generally boil all their drinking water.

4.1.2 Water supply previous to the PSWS project

All water for Kaliwon comes from natural springs. Some of them are small, but there is one main spring. Most of the villagers used to come to this, to get their water and to wash themselves. However, there were problems: for a lot of inhabitants the spring was far from their houses; when it rained the water was dirty with mud running down from the mountain with the rainwater; it was often crowded and people had to wait a long time before they could get water.

Wishing to improve their situation, several years ago the villagers built a primitive capping with sand and bricks for their spring. The knowledge for this they gained from two earlier projects in their environment:

- INPRESS project: a springcapping in the mountain, some distance away had been built to provide water for another village block. Because there was plenty of water the system was extended and two standposts were built in Kaliwon. Unfortunately the whole system broke down after two months with no one to repair it (see photo no.1).
- CARE project: at the fringe of Kaliwon a capping was built for a small spring to supply some houses and the school downhill. However, in the dry season the spring dries up and there is no water.



1. Kaliwon: ineffective standpost from previous project.

These projects had been planned and implemented without involving the community. The results were: wrong choices, bad maintenance and accordingly a rapid breakdown of the system.

4.1.3 Implementation of the PSWS project

* Planning

The community was eager to improve its water supply, and the village head, assisted by LKMD-members and other inhabitants, played an active role in organizing the improvement. He made a request to the Governor of Cirebon for help and in this way influenced the choice of his village as a demonstration area for the PSWS project. Also he organized discussions among the villagers for selecting sites for standposts and the construction of bathing facilities.

As the whole procedure according to PSWS project methodology, with the training of Regency and District staff and the formal installment and training of a village committee, could take a long time, and the community had already sufficiently established a participation procedure, the authorities and the project team agreed to start immediately with the actual work, as soon as the technical assessment and cost calculation had taken place.

* Construction

Construction for the project in Kaliwon started in August 1984. It took about one month to build the springcapping, the pipelines and 4 standposts, one with 4 taps constructed inside a bathing and washing facility (see photos nos 2-4). The other standposts have 2 taps each and an adjoining bathing and washing facility (see photo no.5). The buildings are from plastered brick and cement. Two have a closed reservoir for bathing water, the other 2 have an open reservoir. Waste water is led directly into the fish ponds.

During construction work a technician from IHS in Bandung was present to assist and advise in the work. He also discussed with the villagers the function and need of clean water in relation to health and the operation and maintenance of the system and the standposts.

Co-ordinated by the village head the villagers did all construction work and contributed stones, sand and other materials available in the environment.

* Operation and maintenance

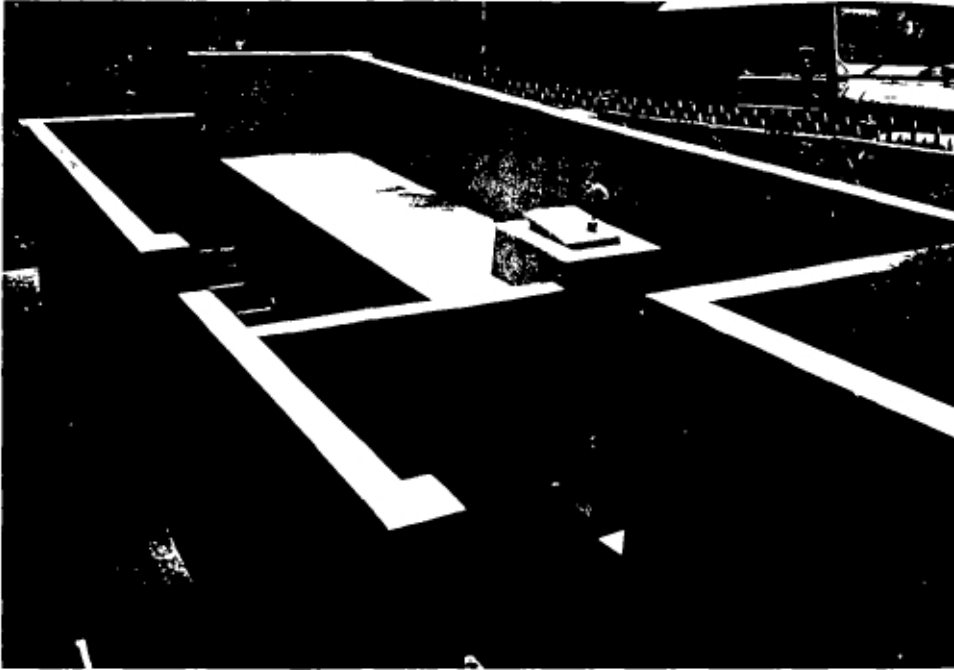
Each owner of the land on which the standposts were erected, gave the land in loan to the project. He then became the caretaker for the standpost and the bathing facilities. Also the users were held responsible for keeping the facilities clean. Until now, 2 years after construction, the whole system is in excellent order, clean and well maintained. There have been no major breakdowns. The caretaker can do small repairs if necessary.



2. Kaliwon: springcapping



3. Kaliwon: main standpost with 4 taps, inside bath and wash place built through the project



4. Kaliwon: main standpost (inside bath and wash place)



5. Kaliwon: standpost with 2 taps (inside bath and washplace). To the left is a covered water reservoir.

* Financial management

All 85 households of Kaliwon use the standposts and adjoining facilities. Each of them pays a flat rate of Rp 100,- (US \$ 0.06) per month toward maintenance of the water system. The money is collected by the caretakers and handed over to the head of block Kaliwon, who acts as treasurer of the committee. He is also head of the co-operative which in January 1985 has been founded by the community with the objective to make a fund for the collected money. The co-operative acts as a bank: it lends the money to villagers against an interest of 10% per month (normal interest-percentage in Indonesia). Money which is not needed for repairs of the water system will eventually be used to finance some other public facilities, probably for public toilets as a first priority.

4.1.4 General results of the project

The villagers are very satisfied with their water supply; they feel it has added to their well being and to the living standards of the village as a whole.

As the spring provides for plenty of water, which is now easily accessible through the standposts, consumption of water has increased considerably. Several inhabitants have built private bathrooms in their houses or yards. They have installed private "house connections" through a plastic tube which they connect with the nearest standpost during the quiet hours. Some villagers have built new fish ponds or expanded the existing ones because there is also plenty of waste water. The fish from the ponds are a considerable source of income.

In the village plans are being made for new improvements, to be (partly) financed with the funds collected in the co-operative. Many households could afford to pay at least Rp 100,- extra per month toward the fund. For the improvement of sanitary facilities the community would have to be assisted in the construction of an appropriate low-cost demonstration toilet and in setting up hygiene education.

4.2 Jagasari (Sukamulia)

4.2.1 Short description of the village

Kampong Sukamulia is part of the village Jagasari, which consists of 7 kampongs in total. The inhabitants of Sukamulia form a tight community consisting of 66 households with 209 inhabitants (situation in March 1986). The kampong is built against the slope of a mountain, about 3 km from the village centre of Jagasari, quite isolated and difficult to reach. The environment is mountainous, covered with woods, sawah's and dry agricultural land. A small river runs alongside.

Nearly all the houses are brick built, with a lot of space used for gardens, fishponds etc. Since the PSWS project the inhabitants have improved their environment considerably, probably due to the general feeling of improvement and well being that was introduced with the new water supply. The kampong looks really clean now; garbage is burnt or composed.

Most of the inhabitants obtain their income from agriculture and gardening on self-owned land, supplemented with poultry, small cattle raising and (after the project) fish from the many fish ponds.

Educational level is generally low; most of the people visited primary school for a few years only. The children now usually finish this school; very few of them continue their formal education.

* Community organization in Sukamulia

The kampong head and one other inhabitant are members of the LKMD (village community development organization) in Jagasari. None of the women is member of the PKK (official women's organization) in Jagasari.

The traditional "gotong royong" (mutual self-help system) is very strong. All men and women spend a lot of time working together in the fields, building each others houses, preparing parties etc.

* Sanitation

All the inhabitants use the bamboo toilets above the fish ponds. Into some of these toilets clean water from the mountain spring is led through bamboo or plastic pipes. In these cases the toilet is also used as a bathing and washing facility (see photos nos 6 and 7).

Because they are used as open sewers, the fish ponds may carry some health risks.

* Health

Health education is not too bad, but far from ideal. Diseases due to lack of knowledge about food, sanitation etc, occur frequently. In a small regional town, + 5 km away by foot, there is a health centre, which is used frequently by the inhabitants. A health unit visits the centre of Jagasari regularly each month.

4.2.2 Water supply previous to the PSWS project

All water for Sukamulia comes from a natural spring uphill across a small rift + 800 m outside the kampong.

From this spring the water was led through bamboo pipes to a location at the fringe of the kampong, which was quite difficult to reach. To collect the water people have to go down a muddy, steep slope. It was always busy and often they had to wait a long time to get water.

Although the spring supplied enough for the whole kampong, the people experienced a shortage due to frequent breakdown of the bamboo pipe supply system. When it rained the water was dirty with mud.

Before the project was implemented in Sukamulia there had been a water supply project in the district town + 5 km away. Water for this project was taken from the area of Kampung Sukamulia within Jagasari village. This caused a lot of protests: "Why do they take water from our area, while our own water supply is not sufficient?" These protests and the really bad water situation motivated the village leaders of Jagasari to promote implementation of the PSWS project in Sukamulia.



6. Sukamulia: toilet above fishpond

7. Sukamulia: toilet and washing place above fishpond



4.2.3 Implementation of the PSWS project

* Planning

Coordinated by the village committee (cadre) of Jagasari, which was formed and trained according to the methodology of the project, the kampong head of Sukamulia with some active inhabitants planned and organized the construction of the water supply system. The community, eager to improve its water supply was actively involved in all stages of planning and construction.

* Construction

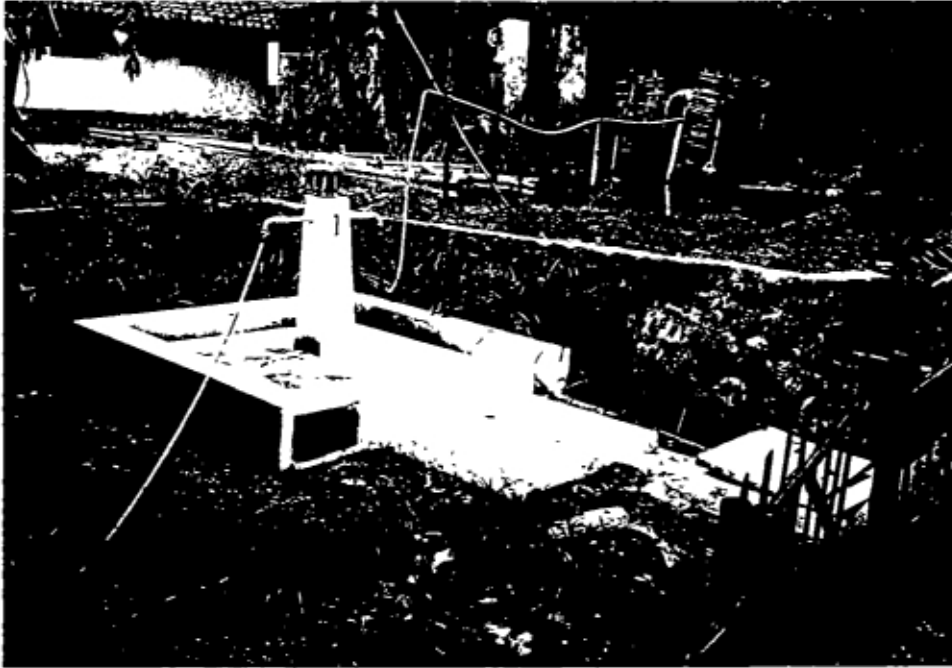
Construction for the project started in August 1985. It took about one month to build the springcapping, the pipelines and the 4 standposts, each with 2 taps (see photos nos 8-10). As far as possible the community provided the material for construction, such as stones, wood, bricks etc.

During construction a technician from the IHS was present in the kampong to supervise and co-ordinate the work of the inhabitants. After completion of the standposts the people connected plastic and bamboo pipes to the taps, which lead the water to some bamboo places above the fish ponds (see photo no.11).

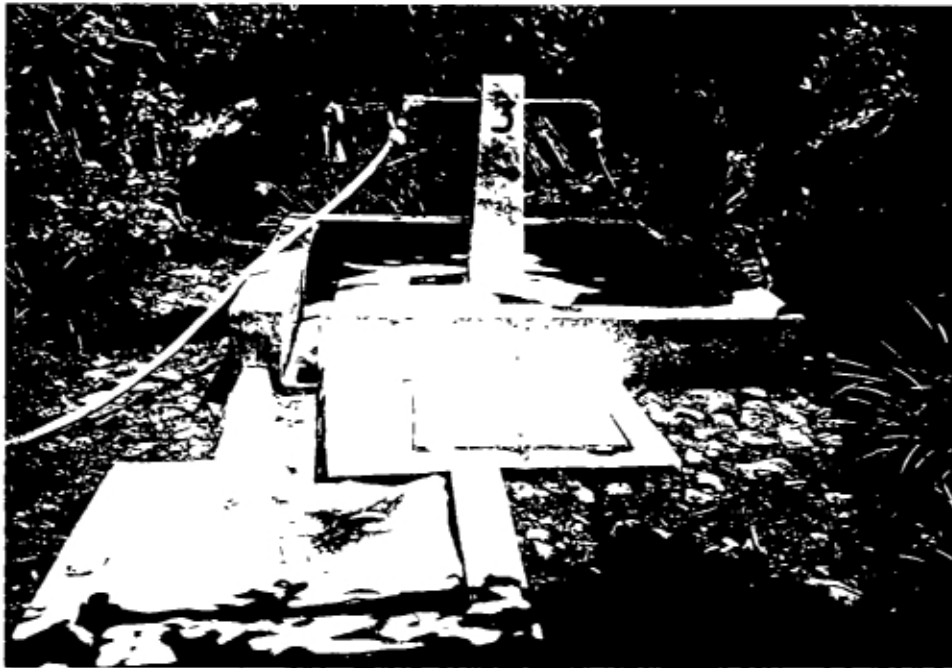
All waste water is led into the fish ponds.

8. Sukamulia: spring with capping and old bamboo and new PVC pipelines to the village.

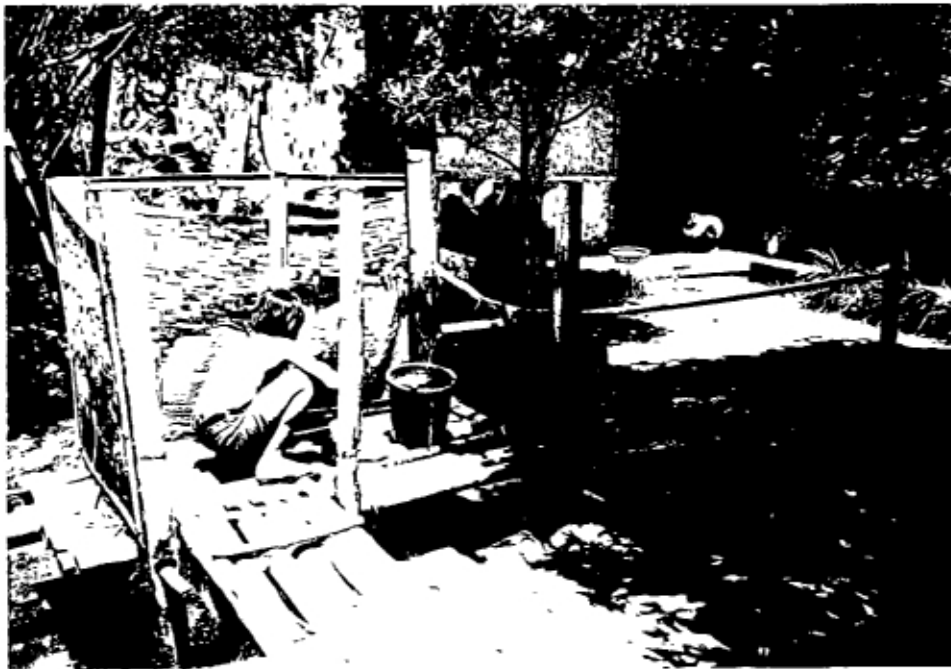




9. Sukamulia: standpost no.1 with plastic pipe extension to shared bath.



10. Sukamulia: standpost no. 3, with plastic pipe extensions



11. Sukamulia: bamboo bath above a fishpond with water supplied by an extension from a standpost

* Operation and maintenance

After completion of the work a committee (cadre) was formed in Sukamulia, and given some instruction by the cadre in Jagasari. The committee in Sukamulia is responsible for operation and maintenance of the water system. Regularly once a week a member of the cadre in Jagasari visits Sukamulia to control the system. Until now, 1 year after construction, the water supply works very well and there were no breakdowns.

The bamboo toilets and washing places above the fish ponds are looked after by the owners of the ponds.

* Financial management

All households in Sukamulia use water from the public standposts. They pay Rp 100,- per month (US\$ 0.06) per household toward maintenance of the system. Owners of fishponds have to pay Rp 5,000 to 8,000 (US \$ 3-5) extra per year because they benefit greatly from the project. The money is collected by the kampong committee; one member acts as treasurer and keeper of the money. The people of Sukamulia are not familiar with keeping and saving money in this way. They do not quite know how to handle and how to invest it.

Up to now they have collected Rp 45,000 (US \$ 28); for them quite a large sum. As it was not yet necessary to spend it on repairs they have started to lend it to villagers against an interest of 5% per month. There are plans to use the money for further improvements, like brick built bathing facilities and a public demonstration toilet.

4.2.4 Results of the project

The community is very satisfied with their water supply. It has not only resulted in availability of clean water at a short distance from all the houses, but also in a general feeling of well being, which is expressed in keeping the whole kampong clean and neat. The inhabitants have increased their earning possibilities by expanding the fishponds and building new ones, and by using more water for their gardens. They have recently planted some clove trees, with which good money can be made in the future. They hope to improve their kampong further by building more public facilities.

4.3 Playangan

4.3.1 Short description of the village

Playangan is situated at + 27 km to the east of Cirebon, in a flat landscape near the sea. It is crossed by the highway Cirebon-Semarang, and by a heavily polluted river. The river regularly floods the environment and enters the houses of the village.

The village is divided in blocks; the PSWS project is covering 3 blocks where no other adequate water supply was available.

The majority of the inhabitants earn their living by fishing (in the sea) and as seasonal agricultural labourers. They do not own any land and their income is usually very low. There is a small minority of rich landowners who employ the villagers as labourers on their land. Most of the houses in the village are bamboo built and in bad condition, with many people sharing one house. The environment is dirty, waste is thrown in the yards or in the river and there is a bad smell in the village.

Educational level of the villagers is very low: most people did not go to school at all, many children are not sent regularly to the primary school.

* Community organization

In the village there are branches of LDMK and PKK, which meet great problems in executing their programmes because of the low standard of living of most of the people.

There is a great gap between the village leaders and the active members of the organizations, who also are the more affluent members of the community on the one side, and the very poor majority of villagers on the other side. This impedes working together towards improvement of the village. Particularly it might make difficult the development of meaningful community participation.

* Sanitation

Most houses have no toilet. People who live near the river use bamboo toilets above the river (see photos nos 12 and 13); the others defaecate in the yards around the houses or in the fields around the village.



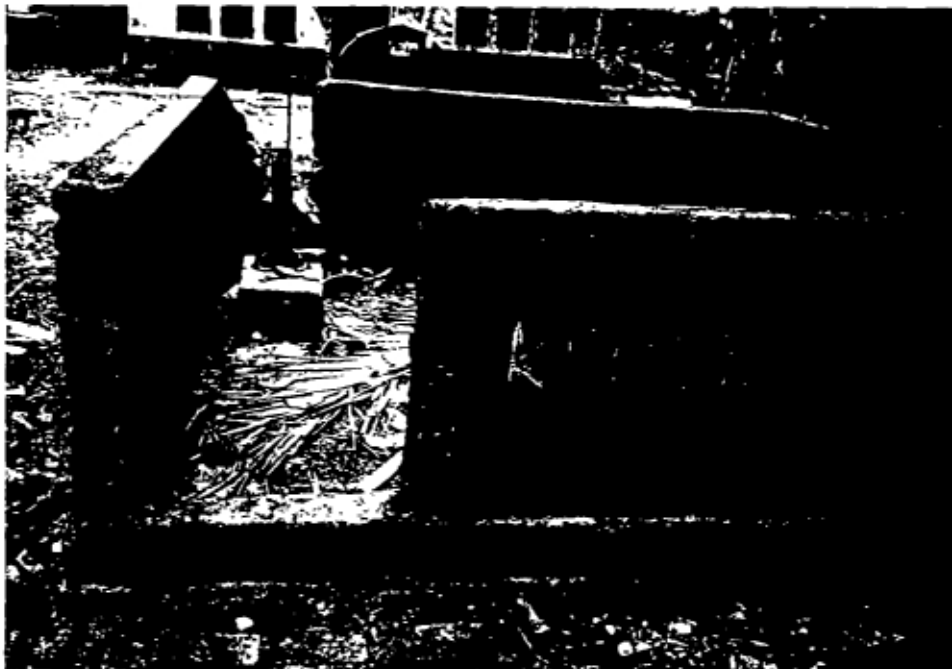
12. Playangan: toilet above river



13. Playangan: toilets above river



14. Playangan: old well, with salty water



15. Playangan: broken pump. + 2 years old

* Health

A lot of diseases occur, mainly due to the poverty of the people. Skin and eye diseases are noticeable, many children show signs of under nourishment and generally people are very skinny.

In Cirebon is a health centre, but most villagers prefer to go to the native doctor in the village or do not go to the doctor at all.

4.3.2 Water supply previous to the PSWS project

The villagers take their drinking water from a few pumps and wells in the village, which are installed through former water supply projects (see photo no. 14). Most of the pumps have been broken and repaired several times, some are completely out of order (see photo no.15). The water in the wells often tastes salty, because the nearby sea enters the groundwater. Because for many people the pumps and wells are far from their houses and often crowded, they take their washing water from the very dirty river.

4.3.3 Implementation of the PSWS project

* Planning

Playangan was selected by the authorities for implementation of the project because of its bad water situation. A committee of 10 inhabitants was formed and trained to organize community participation in the project. They selected locations for the standposts and told the villagers how to contribute towards the construction of the water scheme.

A major problem in the area is the shortage of good water sources. In discussions with the technicians of IHS it was decided to pump up the water from an existing but unused deep well, with the help of a windmill, into a reservoir from which the standposts would be supplied.

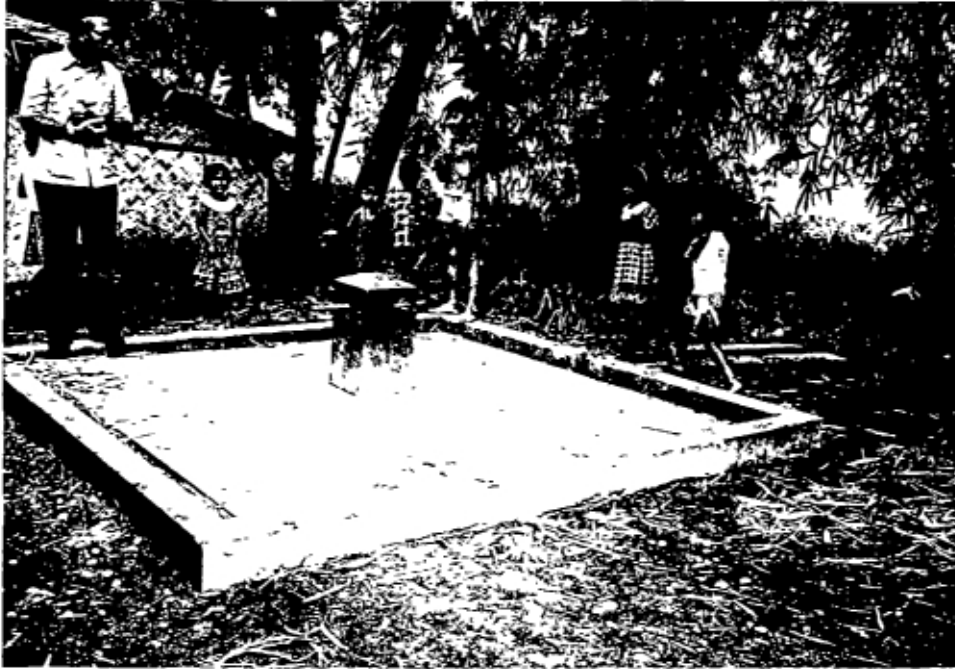
* Construction

The construction for the project started in December 1985. Every household in the village had to dig 3 metres of the trenches needed for the pipes to the standposts. The standposts themselves were built by some of the more skilled inhabitants of the village. Each standpost has 4 taps. The waste water is led into the river. This work took about one week. During this time a technician from IHS visited the village to give advise on construction. In the next months the reservoir was built by some skilled workers from the village and the windmill was installed by technicians from the Technical Institute in Bandung. In March 1986 the whole system was ready (see photos nos 16-19).

In spite of all the efforts the system really never worked well. The main problem is the lack of wind: most of the time there is not enough wind for the mill, and this means that no water is pumped into the reservoir. Another problem is the size of the reservoir: it takes, with enough wind, about 4 hours to fill it, where normal water use through the taps empties it in 2 hours. The capacity of the reservoir was designed to provide only for drinking water. It was thought that for washing and cleaning people would use the old wells and pumps. In practice the water from the tap is used for all purposes. Also, some members of the village committee installed themselves another tap at the village mosque, which they connected with the PSWS water system. As it is nearer to the reservoir than the other standposts, the water goes first to the mosque, often leaving the other taps dry. The tap at the mosque is used for ritual washing before prayers rather than domestic use. Finally, the windmill is not strong enough. It breaks down frequently and the villagers are unable to repair it themselves. Somebody has to come from Bandung, which often takes a long time and costs a lot of money.

* Maintenance and financial management

As the system has never worked properly, nobody wants to pay for water which most of the time is not available. Nobody seems to be really in charge of the system either, probably because it does not work anyhow and the breakdowns of the windmill are not repaired by anyone from the village. The village committee so far has not made any real moves toward an improvement of the system.



16. Playangan: standpost, unused because there is no water



17. Playangan: standpost, without water



18. Playangan:
windmill and
reservoir

19. Playangan: the windmill with
broken transmission



4.3.4 Results

The situation in Playangan is now a matter of discussion among the project team at IHS. A solution for the technical problems will be sought in co-operation with the Technical Institute, alongside attempted improvements in the social climate. Project staff recognize that the difficulties at Playangan can yield just as valuable learning experiences as the much more successful approaches at the other locations.

4.4 Karyamulia

4.4.1 Short description of the village

Kampong Karyamulia is situated at the southern outskirts of Cirebon, + 5 km from the towncentre, in a flat landscape. From this kampong 3 blocks (RW's) were chosen for implementation of the project:

- Kali Kebat with 2 standposts
- Sicalung " 2 "
- Karyamulia " 3 "

Total population of these blocks amounts to 3671 inhabitants in 522 households (situation in March 1986).

The environment is typical for a town fringe area: the kampong is surrounded by agricultural land, but linked to the town by a busy road, with other suburbs very near.

Nearly all the houses are brick built with some gardens in between. There are some open garbage piles, but most of the garbage is burnt or composted.

The majority of the men obtain their income from work in the town; the others, and many women, work as seasonal agricultural labourers on the nearby land. Their income is generally very low.

In spite of the presence of a primary and a secondary school many inhabitants are illiterate.

* Community organization

There is no strong mutual self-help (gotong-royong) in the kampong, probably because the population is not homogeneous; there are many newcomers from other areas among the original inhabitants. However, there are branches of the official community organizations LDMK and PKK. In particular some women are very active in the PKK.

* Sanitation

In October 1985 several public toilet facilities were built by the provincial government. It seems that they are not used very well; most inhabitants still go to the fields.

* Health

Data about health condition in the kampong are not available. Also it is not clear if and how the inhabitants use the public health services available in a nearby kampong and in town. Observations show a high number of skin diseases and there is some evidence of frequent diarrhoea.

4.4.2 Water supply previous to the PSWS project

There are several wells in the kampong, some of them with a handpump (see photos nos 20 and 21). During the dry season some of the wells fall dry, and there is not enough water. Besides, the water from most of the wells is very dirty, with a green or brown colour and an unpleasant smell. Although there was a main from the town water system not too far away, all the inhabitants of the kampong took their water from these wells; nobody had house connections.

4.4.3 Implementation of the PSWS project

* Planning

After the decision was taken to include Karyamulia in the PSWS project, a cadre was formed of 6 inhabitants for each block, and 2 boy scouts. The boy scouts were included because their organization was expected to help with construction work for the project. After the cadre got their training in November 1985, the members discussed the project with the inhabitants of each block, and sites for standposts were chosen. Because a lot of disagreement arose around this issue, as everybody wanted to have the standposts as near as possible to his or her own house, the cadre decided to choose "neutral" sites: near the mosque, the office of the village head or blockleader and near the main road.

20. Karyamulia: handpump on an old well



21. Karyamulia: old well with dirty water

* Construction

Construction of the whole scheme took 2 months (December 1985/January 1986). Every household had to help with digging trenches from the main pipe of the town water supply to the standposts. The boy scouts also did a lot of hard work. A technician from the PDAM (town water supply) in Cirebon was present to supervise the connection to the main and to give general technical instructions and advice. All standposts are metered.

* Operation and maintenance

The owners of the land on which the standpost are erected act as caretakers and operators. Standposts are open only three times a day for one hour. During this time people can come to fill their buckets (see photo no.22). The operator collects Rp 10,- (US \$ 0.006) for each bucket (+ 12 liter). Once a week the treasurer of the cadre reads the meters, collects at the operators the amount due according to the reading (Rp 150,-/m³) and pays the PDAM. An agreement with the PDAM is made: they are responsible for maintenance of the pipes, connections and meters, whereas the kampong committee (cadre) is responsible for maintenance of the standposts, which responsibility is passed on to the operator/caretakers.



22. Karyamulia: new standpost with "customers"

It seems that more money is collected than is needed for payment to the PDAM. In some cases the operator carries water from the standposts to wealthier families in the neighbourhood and sells it there for a higher price. It is not clear how all the money is kept or invested, which part of it is saved for costs of maintenance of the standposts and which part is or could be used for other purposes.

Approximately only 50% of the households in the 3 blocks use water from the standposts, mostly only for drinking and cooking. The others take still all their water from the wells, because the piped water is too expensive for them.

In the beginning many people refrained from using the piped water because it tasted and smelled strongly of chlorine. This has been considerably improved after the PDAM has adjusted the inputs of chemicals at a nearby water storage plant. Now the water is odourless and the taste is good.

4.4.4 General results of the project

Since the implementation of the project at least half of the households in Karyamulia have the opportunity to use clean uncontaminated water for drinking and cooking purposes. Probably it might be possible to give more people this opportunity when the operation of the standposts and the payment for water could be organized differently. The community would have to be assisted in finding the best solution to on one hand the problem of collecting a big enough amount of money each month to pay the PDAM bill and save something for maintenance of the standposts, and on the other hand include as many households as possible in the supply of clean water.

5. METHODOLOGY FOR COMMUNITY PARTICIPATION DEVELOPED IN THE PSWS PROJECT

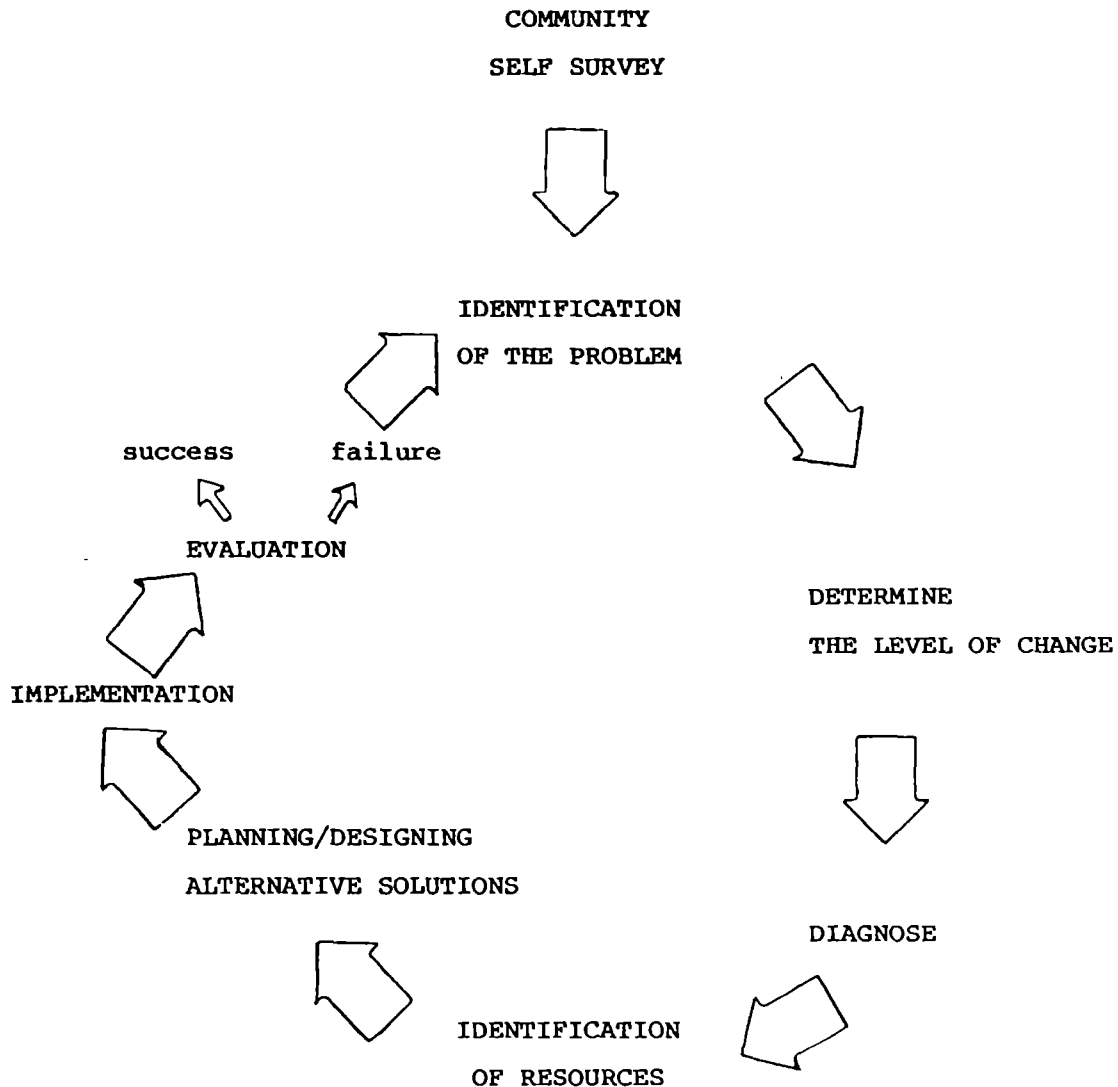
5.1 Summary of the methodology

In setting up a strategy for community participation and bottom-up planning in water supply the project team devised a two way approach. In the first place all the authorities concerned, from the Provincial level through Regency and District, down to the village leaders, were informed of the project's aims and objectives in a very early stage. Their co-operation was asked for the implementation of the project, technical and financial assistance if needed, and assistance with the necessary preliminary training. This would also ensure the involvement of the authorities in the good progress of the project: the authorities acting as facilitators. The training which the officials of Regency and District receive, emphasizes their role: they are intended to disseminate their knowledge and in turn to train the village leaders.

Secondly, in the village the process of participation is set in motion by giving information about the project to the village leaders at a very early stage, stimulating them to start discussing the project in the village.

After the water committee (cadre) is formed by the village head in co-operation with the local authorities, and the cadre members have received their training, subsequently they then will act as facilitators in involving the community.

An important method to fulfill this role is the community self survey, conducted by the members of the cadre in discussions with all the inhabitants of the village. A model for the participatory process through community self survey is given on the next page. It is taken from a paper written by A. Parwoto "A Model for Community Based Management Project. A Guideline for establishing a sectoral project at local level", September 1986. The project team in Bandung has developed a very simple questionnaire to be used in the community self survey. This questionnaire is to be found in the guideline for community leaders, which is unfortunately only available in Bahasa Indonesia: "Buku Petunjuk Kader Pembangunan Desa Bidang Air Bersih".



GUIDED PROCESS FOR PARTICIPATORY PLANNING AT COMMUNITY LEVEL
(Parwoto, 1986)

5.2 General results and possible improvements

In the PSWS project the methodology for community participation as developed by the project team, seems to have worked well. This approach takes certainly more time than is usual in traditionally managed water supply projects. But the results and the experiences are generally good, as the description of the implementation of the project and the results shows, particularly in the two small communities of Kaliwon and Sukamulia. However, there are some aspects which could be further elaborated and improved.

First, the training courses for the officials as well as those for the village community leaders, are set up quite formally. They consists for the greater part of lectures. Also each course lasts quite long, usually 5 days. For people who have had only little practice in following lectures and especially those from the villages who have only little formal education this might be a very tiring and confusing experience. Therefore plans are being made to improve the training methods further and develop new approaches, like including theatre (wayang orang) and puppet play (wayang golek). Also it would be necessary to further develop standard training material of a very simple kind, for example in the form of comic stories. Particularly also aspects of sanitation and hygiene should be included in this educational material.

Experience in the villages has shown that the handling of community money might be a problem. Therefore it is planned to set up a training item for simple bookkeeping and investment and handling of community funds. A discussion about advantages and disadvantages of various systems of paying for water supply and maintenance costs (e.g. the kiosk system in Karyamulia) could be incorporated in the training programme for officials and village leaders, and possibly also in the community self survey.

Another important aspect is the participation of women in matters concerning water supply and sanitation. They play a very important role in these issues as educators of their children and as those responsible for the good health of their families. Although women can be leaders and members of village committees and participate formally in community decisions, this is at present seldom the case. A special effort has to be made to involve women in community participation and to address them particularly in health and hygiene matters. It may be possible to find ways to promote this, for example through developing training courses in co-operation with the official women's organizations (PKK).

In cases where the population consists of a better off minority and a poor majority (as in Playangan) a special effort might be needed to involve and train particularly some of the poorest inhabitants, and to avoid a dominating position in the project of richer, better situated members of the community.

The project in Indonesia so far has concentrated mainly on the community participation aspects in the provision of good water supply. Demonstration of appropriate sanitation facilities as related to the supply of clean water have not yet been included in project activities.

From the description of the situation in the villages it is quite clear that proper sanitation would be one of the most important issues in the struggle against diseases, in promoting cleanliness of the environment and in raising the general well being of the people. Plans are being made to further develop models of low-cost toilets, constructed with cheap, locally available materials.

To be effective the introduction of new appropriate sanitation facilities must be accompanied by health and hygiene information and education earlier in the project an outline has been made for dissemination of health information in the villages through group discussions and community meetings as well as home visits for individual contacts. However, these have not received quite sufficient emphasis later on. Some aspects of health education have been included in the training of officials and community leaders and in the community self survey. These should be further developed and extended with reference to hygiene and sanitation. For the dissemination of knowledge on health and hygiene issues at village level, ways of working through and with the PKK are to be explored.

Equally it would be necessary to address the school children to promote better sanitary habits. For this purpose methods and material could be developed in co-operation with school teachers.

6. SHARING AND APPLYING THE METHODOLOGY ON A WIDER SCALE

6.1 Measures taken already

Right from the start of the project throughout the implementation measures have been taken to share the ideas of the project and the knowledge gained with authorities and experts on an international, national and local level.

* Of special importance were the two national seminars:

- Seminar on Potable Water Supply through Public Taps, Jakarta, 22-24 March 1983;
- Regional Seminar on Public Standpost Water Supplies as Infrastructure in Housing for Low-income Communities, Cirebon 6-10 March 1984.

During these seminars initial ideas were shared and general guiding principles and recommendations developed (see the Proceedings and Reports of these seminars).

* Methods and achievements of the Indonesian PSWS project have been shared widely by participation of Indonesian project team members in international workshops, organized by IRC and other agencies e.g.:

- First International Conference on Public Standpost Water Supply, Bangkok, 11-18 November 1984;
- National Workshop to Share Experiences of PSWS and Sanitation Planned and Implemented with Community Participation, Sri Lanka, 2-6 December 1985;
- Asia Water Technology Conference, Kuala Lumpur, 4-8 November 1985.

* At the IHS in Bandung regular workshops and seminars are held with staff members and other experts on subjects connected with housing, water supply, sanitation etc. In these meetings research and planning and implementation of projects are discussed. Successes and problems of the PSWS project are brought into these discussions by project team members who take part in them. There is a growing feeling that the methodology for community participation as

developed in the PSWS project might be a workable solution for general problems of getting support of authorities in developing projects and at the same time involving the community in planning and decision making.

- * In the PSWS project team a quite large group of experts from various disciplines got together, discussing in several team workshops technical and community participation aspects. Methods for research, participation planning and training were developed in these meetings.

- * The results of these discussions are laid down in a number of papers and guidelines, largely in Bahasa Indonesia, but some also in English (see the list of PSWS publications in Indonesia, in appendix II).

- * Dissemination of the philosophy and methodology of community participation embodied in the project approach takes place particularly through the approach itself: involving local authorities and community leaders from the start in all aspects of the project. If the project then proves to be a success (as is shown in the description of some results in par. 4), the leaders as well as the community will go on to make new efforts for improvement and development of their living conditions and their expertise.

6.2 Evaluation

An interim evaluation of the project in Indonesia has taken place in 1985 within the framework of a general evaluation of the participating PSWS project countries: Sri Lanka, Indonesia, Zambia and Malawi. Results and recommendations are laid down in an Evaluation Report, September 1985. The project team has held an internal evaluation of results so far during a PSWS team workshop in January 1986. For this evaluation guidelines were developed and the findings were laid down in a report (see the list of publications in Appendix II).

Some assessments of results at village level have been carried out by Ms. Y. van Dok, a student of the University of Wageningen, as part of a field study conducted in 1986 under the supervision of IHS. A report of this study has been submitted to IHS.

In January 1987 a national workshop was held in Jakarta to evaluate all project results and particularly the methods for community participation. This workshop was attended by representatives of national and international agencies concerned with community water supply and sanitation. Recommendations were developed and possibilities explored for application of the PSWS project approach on a wider scale in Indonesia.

6.3 Plans for the future

Among concerned authorities and experts in Indonesia it is recognized that the methodology for community participation as developed in the PSWS project is generally successful, particularly in small communities, and that it could be brought into existing national programme procedures and policies for community-based water supply. Also for other development activities, the approach could be applicable, especially those which are aimed at direct improvement of living conditions of small communities. In the general set-up of these activities it is necessary to take into account the extra time which is needed to properly involve leaders and communities.

At the IHS possibilities are discussed to introduce the methodology of the PSWS project in new housing projects, e.g. in West Kalimantan, South Sulawesi, Jokjakarta.

Other plans for further dissemination of knowledge gained in the project include:

- * developing a video film or slide set, describing the method for community participation in the PSWS project.
- * introducing the methodology in training for government staff members and experts involved in community water supply and sanitation.

- * translation into English some of the most important guidelines and manuals developed by the project team.

- * promoting exchange of information with national and international agencies concerned with community based piped water supply and sanitation through continued participation of PSWS project team members in workshops at IHS and in national and international meetings.



APPENDIX I: List of PSWS team members

OVERVIEW: Appendix I

List of PSWS Team Members

Team	Name	Institution
<p><u>First team:</u> <u>technical</u> guidelines for public standpost water supply</p>	<p>Drs. Soewardi Ir. Ace Ir. Nurhasanah Ir. Ratnangsih Tibin R. Prayudi BE M. Rosano</p>	<p>Min. of Health Min. of Health IHS, Min. of Public Works Directorate of Water Supply (DOWS) IHS, Min. of Public Works Local Water Enterprises</p>
<p><u>Second team:</u> guidance for community involvement</p>	<p>A. Parwoto MDS Ir. Buce Syahbudi Ir. Sri Endah Drs. Isrowandi Drs. Sri Widiwo Drs. Omay</p>	<p>IHS, Min. of Public Works Division of Public Work of Provincial Government IHS, Min. of Public Works Min. of Health Min. of Health</p>
<p><u>Third team:</u></p>	<p>R. Saleh B MuE A. Parwoto MDS Ir. Nurhasanah Tibin R. Prayudi BE Abdurahman, B MuE</p>	<p>IHS, Min. of Public Works IHS, Min. of Public Works IHS, Min. of Public Works IHS, Min. of Public Works IHS, Min. of Public Works</p>
<p><u>Fourth team:</u> <u>Planning/</u> Construction Training</p>	<p>Ir. Buce Syahbudi Tibin R. Prayudi BE Abdurahman, BE MuE Koko Dodo Pong Muhartono Djumaedi</p>	<p>Division of Public Work of Provincial Government IHS, Min. of Public Works IHS, Min. of Public Works Min. of Health Min. of Health</p>

APPENDIX II: List of PSWS project publications in Indonesia

List of PSWS project Publications in Indonesia

In Bahasa Indonesia:

First Team

- Buku Petunjuk Pelaksanaan Studi Kelayakan Utk Penyediaan Air Bersih Melalui Kran Umum Pada Proyek Sekala Kecil (Guideline for Feasibility Study for Public Standpost Water Supply), January 1984
- Buku Petunjuk Perencanaan Teknik Kran Umum (Guideline for Designing Public Standpost Water Supply), 1st ed. 1984, 2nd ed. 1985, 3rd ed. 1986
- Buku Petunjuk Teknik Pelaksanaan Kran Umum (Technical Guidelines for Construction PSWS), various editions 1984-1986
- Buku Petunjuk Umum Pengelolaan Kran Umum (Guidelines for Operation and Maintenance PSWS), various editions 1984-1986

Second Team

- Pedoman Merencanakan Dan Melak Sanakan Survai Kampung Sendiri (Guidelines for Community Self Survey), various editions 1984-1986
- Langkah Langkah Menumbuhkan Partisipasi Dearah (Guidelines for Generating Local Participation)
- Buku Petunjuk Latihan Pelatih Dan Kader (Guidelines for Training for the Trainer and Cadre)
- Buku Petunjuk Pelatih/Fasilitator Kader Pembangunan Desa Bidang Air Bersih (Guideline for Facilitator/Trainer)
- Buku Petunjuk Kader Pembangunan Desa Bidang Air Bersih (Guideline for Cadre)

Third Team

- Buku Pedoman Evaluasi Proyek PSWS (Guideline for Internal Evaluation PSWS Project), January 1986
- Laporan Temukarya Evaluasi Proyek Demonstrasi Kran Umum (Workshop Report of Evaluation Demonstration PSWS Project) January 1986

Water supply cadre at Playangan

- Penyediaan Air Bersih Melalui Kran Umum Desa Playangan (Water Supply System at Playangan), January 1986

Water supply cadre at Gumulung Tonggoh

- Penyediaan Air Bersih Melalui Kran Umum Desa Gumulung Tonggoh (Water Supply System at Gumulung Tonggoh), January 1986

Water supply cadre at Karyamulia

- Penyediaan Air Bersih Melalui Kran Umum Desa Karyamulia (Water Supply System at Karyamulia), January 1986

Water supply cadre at Sukamulia

- Penyediaan Air Bersih Melalui Kran Umum Desa Sukamulia (Water Supply System at Sukamulia), January 1986

In English:

- IHS, Proceedings Seminar on Potable Water Supply through Public Taps, March 1983
- IHS, Final Report of the Regional Seminar on Public Standpost Water Supplies as Infrastructure for low-income Communities, Cirebon, March 1984
- PSWS IRC Team, General Guidelines for Demonstration Project of PSWS-IRC Indonesia, March 1984
- PSWS IRC Team, Steps in Community Education/Participation and General Outline of Training Programme for Trainers and Cadres of water supply, March 1984
- IHS, Brief Report of the joint Project PSWS of IRC and the Centre for R & D on Human Settlements, June 1984
- Djayhari Sumuntardja, The IRC - Public Standpost Water Supply Co-operation Project in Indonesia. Paper presented at the internal seminar in Bangkok, October 1984
- PSWS IRC Team, General guideline for Demonstration Project for PSWS - IRC Indonesia. Paper presented at the internal seminar in Bangkok, October 1984
- IHS, Summary of Public Standpost Water Supply Demonstration Project in Indonesia, August 1985
- IRC, Interim Evaluation, September 1985
- Ir. Darmawan Saleh, The Public Standpost Water Supplies Project in Indonesia. Paper presented at the internal seminar in Kuala Lumpur, November 1985
- Ir. Buce Syahbudi, Technical Aspects in Community Based Management Project in Indonesia. Paper presented at the internal seminar at Sri Lanka, December 1985
- A. Parwoto MDS, A model for Community Based Management Project. A Guideline for Establishing a Sectoral Project at Local Level, September 1986.

