Published by the National Development Planning Agency (BAPPENAS) in cooperation with the World Bank Water and Sanitation Program – East Asia and the Pacific (WSP-EAP) for the Indonesia Sanitation Sector Development Program (ISSDP) with funding support from the Netherlands Government.

BAPPENAS

wsp

Urban Sanitation: PORTRAITS, EXPECTATIONS, AND OPPORTUNITIES

IT'S NOT A PRIVATE MATTER ANYMORE!

THIRD EDITION
September 2007

SECOND EDITION
September 2006

Published by:
The Government of Indonesia in cooperation with the World Bank Water and Sanitation Program – East Asia and the Pacific (WSP-EAP)

For:
the Indonesia Sanitation Sector Development Program (ISSDP)

Co-funded by the Government of Netherlands

FOREWORD

Domestic wastewater management, including sewage treatment, requires support from government, the public and the private sector. Sewage treatment has been seen as an internal household issue. If each house has a latrine, sewage treatment must be adequate. If the latrine is connected to a septic tank, so much the better. Yet data tell a disturbing story of large numbers of people suffering from diarrhea, and polluted groundwater. Research shows that the root cause of these problems is sewage.

Despite several government initiatives, significant progress has yet to be made, especially as regards wastewater management by households. What is more, not enough attention is paid to wastewater management at the household level to relieve the problem of urban sanitation. How and where people dispose of their sewage is no longer a personal problem, but one that affects us all. It is time for municipal and district governments to take more of a role in dealing with this issue.

This booklet provides an overview of the state of sanitation management in Indonesia's cities, the constraints faced, the damage caused by poor sanitation, and opportunities for improvement.

Basah Hernowo
Director of Settlements & Housing – National Development Planning Agency

wsp

ACKNOWLEDGMENTS

Content:
Nugroho Tri Utomo and Andre Kuncoroyekti from Bappenas; Isabel Blackett, Yosa Yuliarsa, and Reini Siregar from the World Bank WSP-EAP office; AKADEMIKA – Center for Public Policy Analysis (Knowledge, Attitude, Motivation study); PT Waseco Tirta and BaliFokus (The State of Sanitation in Indonesia study).

Input:
Sanitation Working Group, led by Basah Hernowo (Director for Settlements and Housing, Bappenas), with members from the Ministry of Home Affairs, Ministry of Health, Ministry of Public Works, Ministry of Industry, Ministry of Environment, and Bappenas; ISSDP consultant team.

Photos:
Waspola Office; WSP-EAP Office, PT Waseco Tirta, BaliFokus, Winarko (ESP), S. Wangsaatmaja (BPLHD Jawa Barat), Endro and Ricko (Qipra), and Roni.

CONTENTS

Design:

Qipra Galang Kualita

Rudy Yuwono – Isna Marifa
(concept and text)

Elvandri L. Martin – Zarkonie
(layout and graphics)

B. Kusuma – Meilani Dhamayanti
(editorial support)

Mia – Sahlan – Mistur
(administration & general affairs)


DSDP

foto: Roni

Q: WHAT ARE YOU WAITING FOR?
A: WHY, WHAT'S THE PROBLEM?

1

WHERE THERE'S SMOKE,

In Indonesia, out of every 1000 live births, almost 50 children die before reaching the age of five. According the Ministry of Health, one of the causes is diarrhea.

Diarrhea occurs when our stomachs are infected with sewage-borne microbes. It is not surprising that most cases of diarrhea occur where sanitation facilities are inadequate. Diarrhea also strikes people who do not care about health and health behavior. Have you ever seen a child defecating in a ditch? That's another example of behavior that results in the deaths of thousands of children each year.

EVERY YEAR, 100,000 CHILDREN DIE OF DIARRHEA

THERE'S FIRE

JUST 200 RUPIAHS PER PERSON PER YEAR

In the last 30 years, the government has spent only around 820 million US dollars on the sanitation. That's the equivalent of only 200 rupiahs a year for every man, woman and child in Indonesia. A figure far short of the 47 thousand rupiahs needed per person per year!

The budget for the sanitation sector is tiny, especially if compared with the budget for the water supply sector, which was more than 6 billion US dollars for the same period. Yet as far as public health is concerned, these two sectors are closely interdependent.

Is this small budget for the sanitation sector a cause of the high mortality rate of under-5s? Perhaps, perhaps not.

Latrines, sewage trucks, sewerage systems, and sludge treatment plants are examples of public investment in the sanitation sector. The number of existing facilities is insufficient. Worse still, many are no longer functioning.

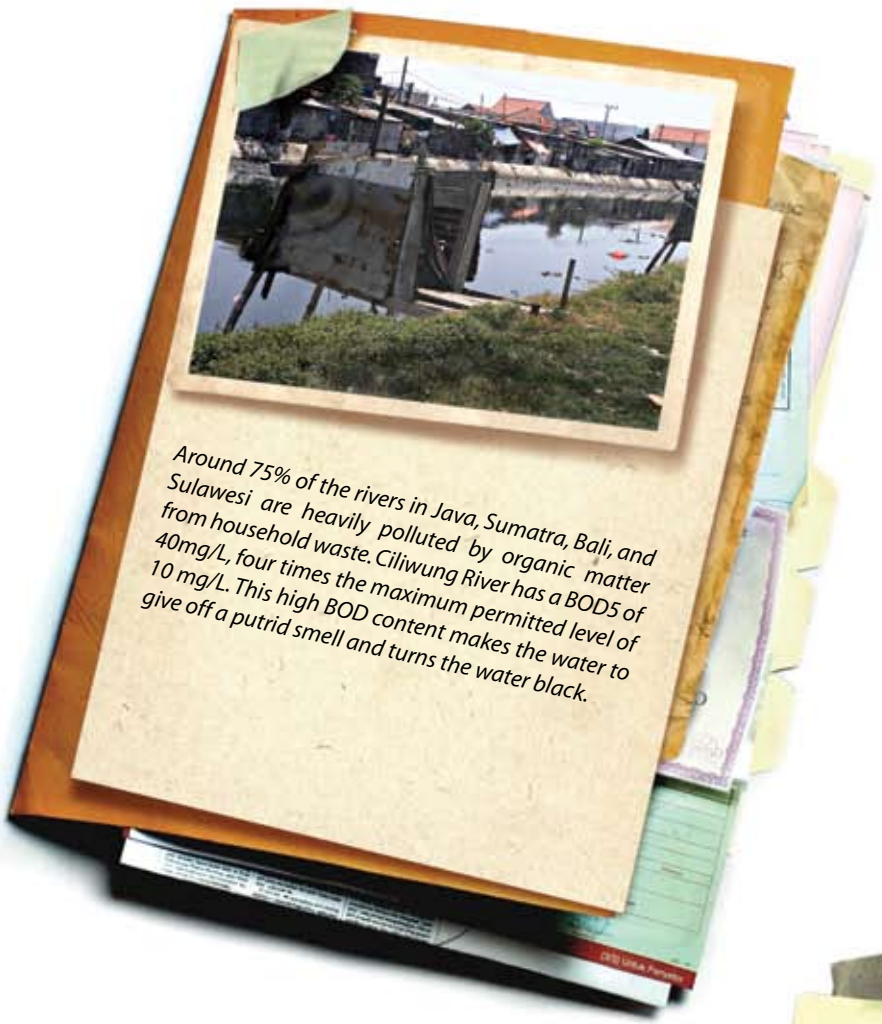
1001 CASES OF SEWAGE in THE CITIES

The management of sewage is not a small matter. Each day, one person disposes of 125 – 250 grams of sewage. If there are one hundred million people living in Indonesia's cities today, that means these urban areas produce 25,000 tons of sewage every day. The sheer amount of sewage aside, it also contains four potentially harmful components. And Indonesia's urban dwellers are all too aware of their effects.

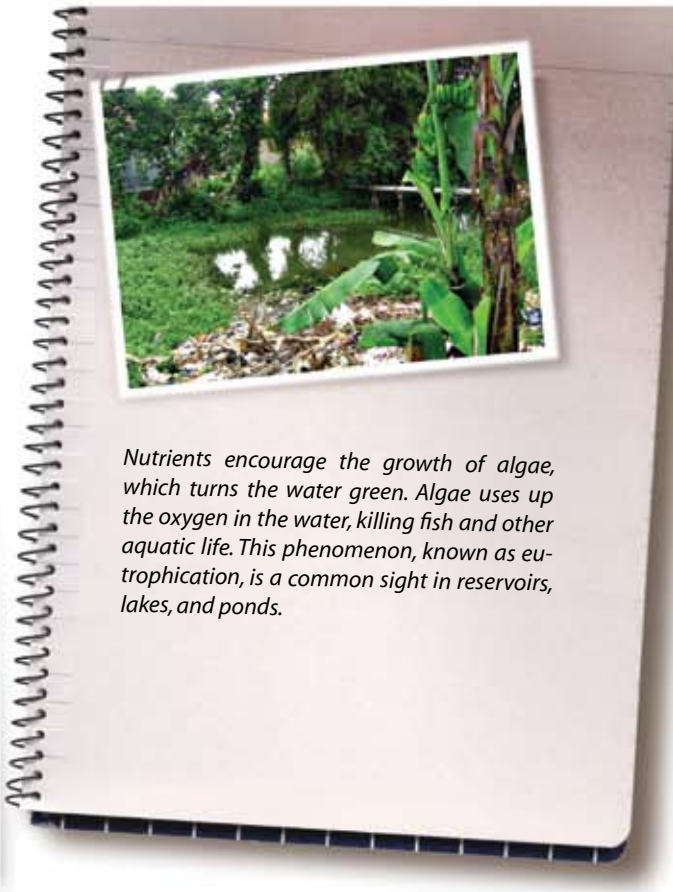
1 MICROBES. Some are pathogenic microbes, such as the **Salmonela typhi** bacteria that causes typhoid fever, the **Vibrio cholerae** bacteria that causes cholera, the hepatitis A virus, and the virus that causes polio. Human sewage contains billions of microbes, including fecal coliforms.

The incidence of disease caused by poor sanitation in Indonesia is very high. The incidence of typhoid fever is 800 cases per 100,000 population, the highest in Asia. There are 300 cases of diarrhea per 1000 population. Polio is still found in Indonesia, although very seldom in other countries.

2 ORGANIC MATTER. Includes undigested food residue and fiber, which consists of carbohydrates, proteins, enzymes, fats, microbes and dead cells. One liter of sewage contains organic matter with an average BOD5 of 200-300 mg.



Around 75% of the rivers in Java, Sumatra, Bali, and Sulawesi are heavily polluted by organic matter from household waste. Ciliwung River has a BOD5 of 40mg/L, four times the maximum permitted level of 10 mg/L. This high BOD content makes the water to give off a putrid smell and turns the water black.



Nutrients encourage the growth of algae, which turns the water green. Algae uses up the oxygen in the water, killing fish and other aquatic life. This phenomenon, known as eutrophication, is a common sight in reservoirs, lakes, and ponds.

4 NUTRIENTS. Mainly nitrogen (N) and phosphorus (P) contained in protein residue and dead cells. Nitrogen is released as ammonium, and phosphorus in the form of phosphate. One liter of human sewage contains around 25 mg of ammonium and 30 mg of phosphate.

3 WORM EGGS. A person who has worms produces waste that contains worm eggs. Many kinds of worms are found in our intestines. Whipworms, roundworms, hookworms, and threadworms are just a few. One gram of sewage contains thousands of worm eggs, ready and waiting to reproduce in the intestines of others.

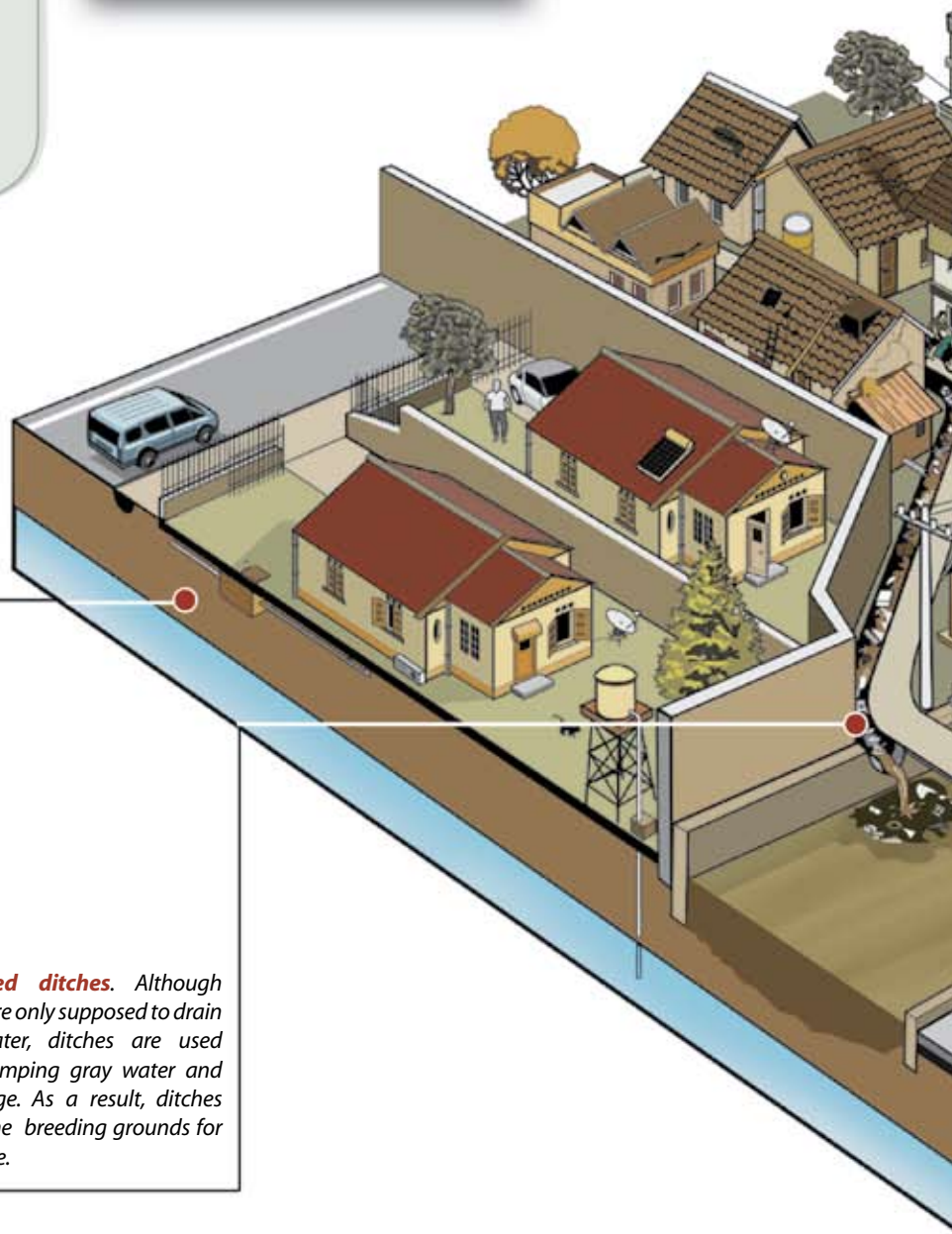
Worms in children is a common phenomenon in Indonesia. Hookworms and roundworms are the main culprits. The prevalence among under-5s is as high as 70%.

Everyone knows that sewage can cause disease. Unfortunately, not everyone wants or is able to do what's right. Residential areas are full of bad examples.

Don't just point the finger at slums. Sanitation is problem in elite residential areas, too. Don't just accuse the poor, the well-off are to blame for sanitation problems, as well. Even sanitation workers often set a bad example. Just look at the picture.

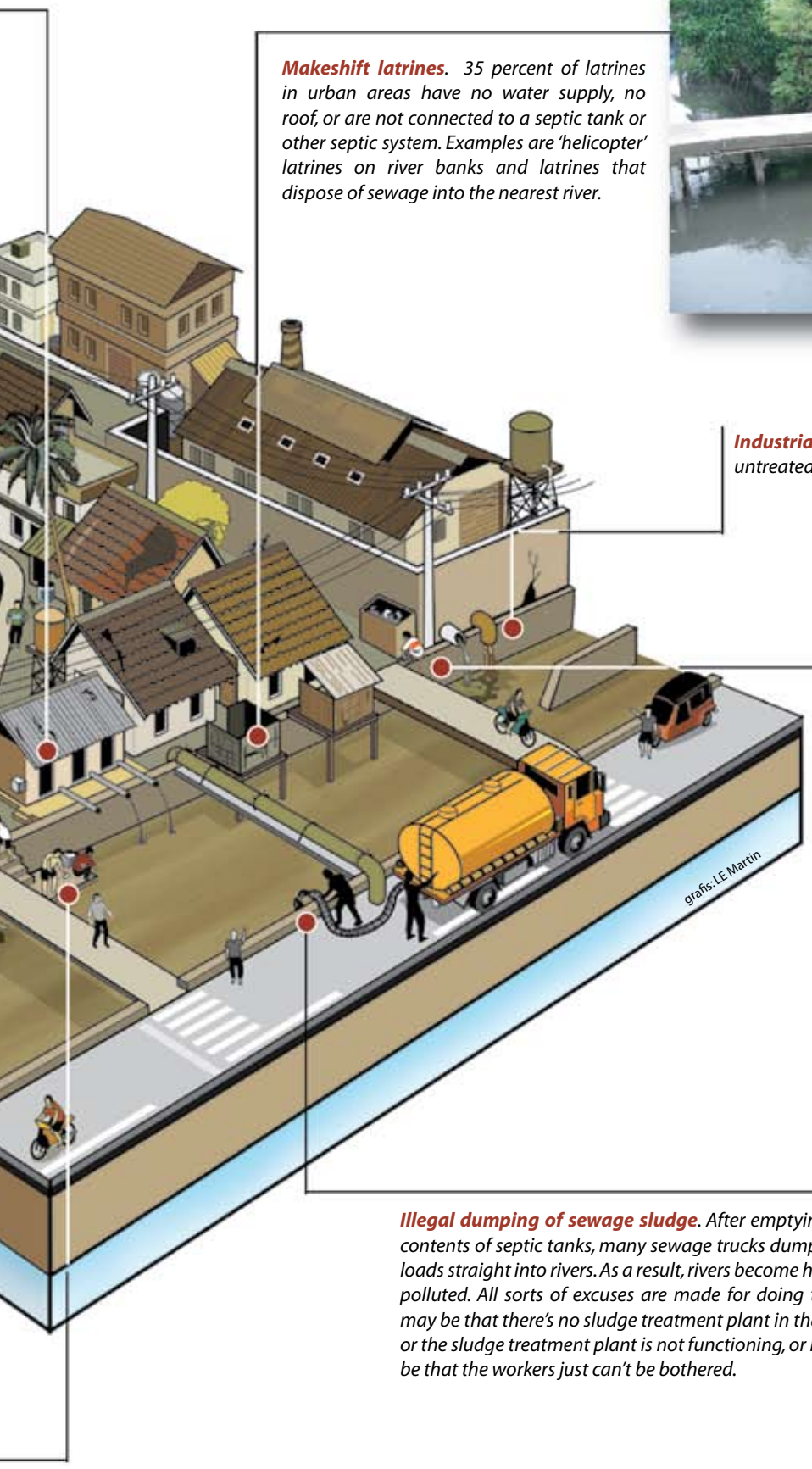
Defunct latrines. *As well as being out of order or not looked after, some have no water supply. Sadder still, many latrines have never been used. Maybe because they were constructed incorrectly, or perhaps because the local community was not ready to use them.*

Leaking septic tanks. *70% of groundwater in cities is heavily polluted with sewage bacteria as a result. Yet half of city dwellers use groundwater for their daily needs.*



Blocked ditches. *Although they are only supposed to drain rainwater, ditches are used for dumping gray water and garbage. As a result, ditches become breeding grounds for disease.*

Washing and bathing in polluted rivers. *With limited access to latrines and water supply, many urban dwellers in our country still use river water for washing and bathing, even though most rivers are polluted.*



***Makeshift latrines**. 35 percent of latrines in urban areas have no water supply, no roof, or are not connected to a septic tank or other septic system. Examples are 'helicopter' latrines on river banks and latrines that dispose of sewage into the nearest river.*

***Industrial effluent in residential areas**. Most is dumped untreated into rivers, contributing to poor river quality.*

***Open defecation.** More than 12% of Indonesia's city dwellers have no access to latrines (National Census, 2004). That means tens of millions of people in Indonesia's cities dispose of sewage in gardens, ditches, and rivers.*

***Illegal dumping of sewage sludge**. After emptying the contents of septic tanks, many sewage trucks dump their loads straight into rivers. As a result, rivers become heavily polluted. All sorts of excuses are made for doing this. It may be that there's no sludge treatment plant in that city or the sludge treatment plant is not functioning, or it may be that the workers just can't be bothered.*

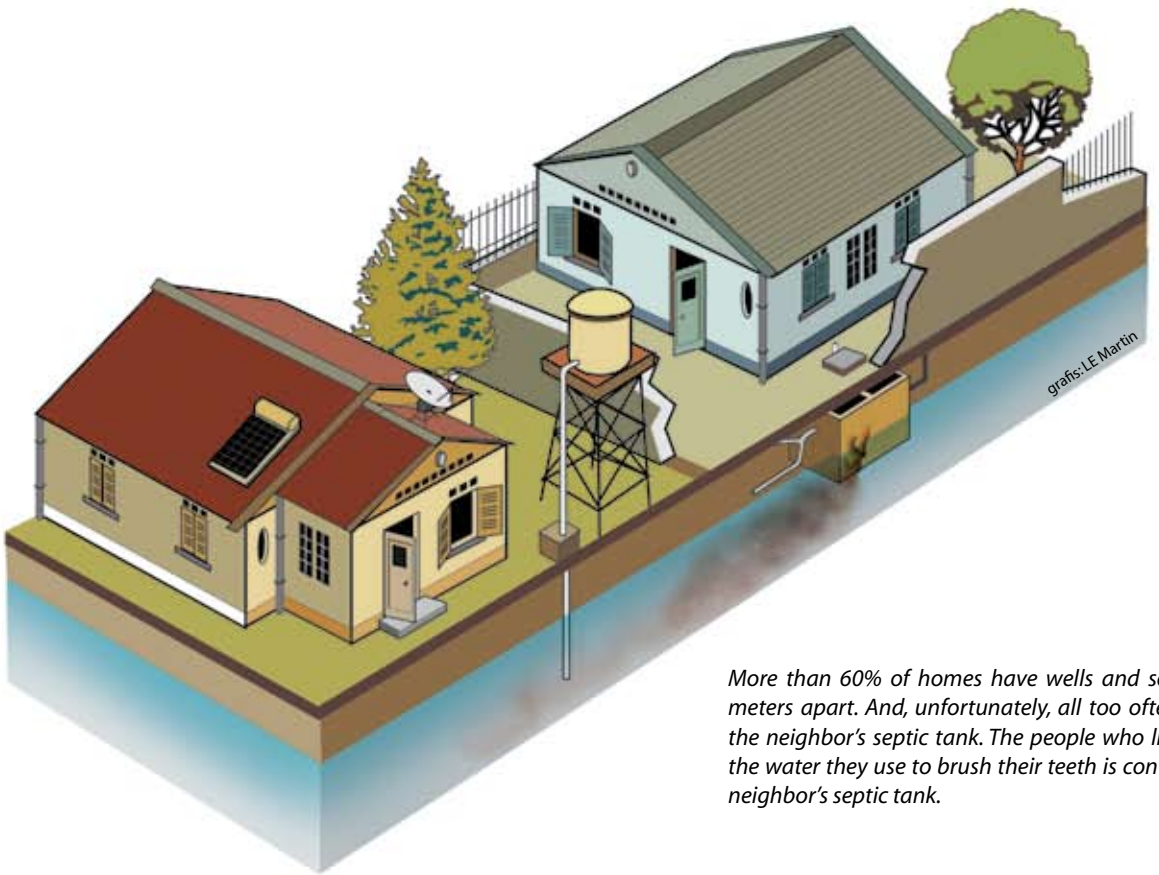
THE LAND OF A MILLION SEPTIC TANKS

In Indonesia, around 65% of houses in urban areas use septic tanks. In Jakarta alone there are more than one million septic tanks. Indonesia could get into the Guinness Book of Records as the country with the largest number of septic tanks.

What is worrying, is that there are almost no septic tank regulations in Indonesia. There are national standards for construction of septic tanks, but beyond that there are no regulations. None that restrict the number of septic tanks per area unit. None that require houseowners to have the contents of their septic tanks pumped out regularly. Worse still, no one feels the need to check on the condition of septic tanks in their area.

Sewage management is typically seen as the personal affair of the individual householder. It is the individual householder, it is argued, who bears the consequences of the state of his or her septic tank. That is not entirely true. Collectively, these millions of septic tanks have polluted the groundwater, creating a health risk to millions of other people.

foto:koleksi Dinas Tarkim dan BPLHD Propinsi Jawa Barat



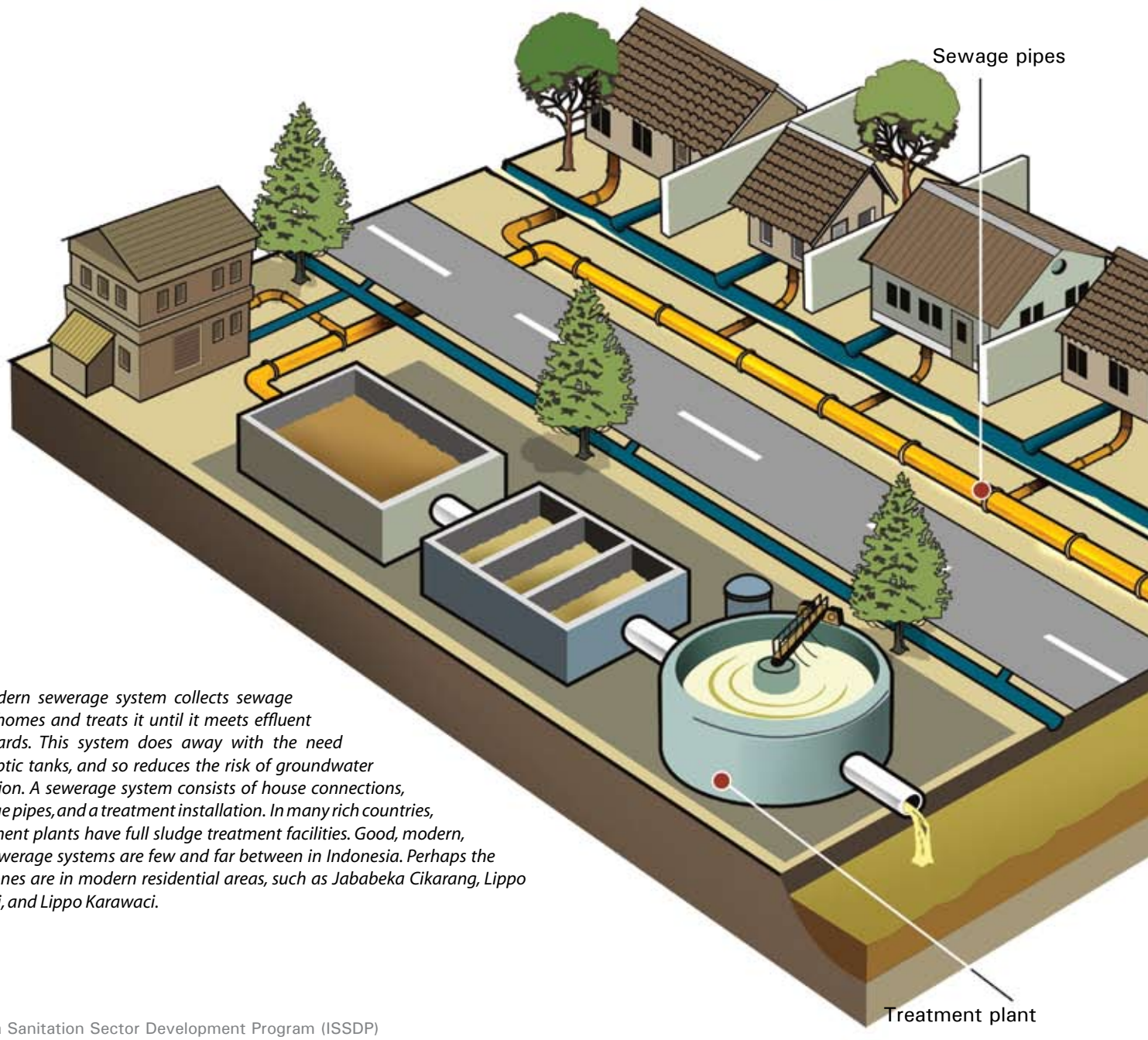
More than 60% of homes have wells and septic tanks that are less than ten meters apart. And, unfortunately, all too often the well is located too close to the neighbor's septic tank. The people who live in the house are unaware that the water they use to brush their teeth is contaminated with sewage from their neighbor's septic tank.

In a densely populated area like this one, there are countless numbers of septic tanks. Whether located on a 50m2 or 5000m2 plot, each house has to have at least one septic tank. Unwittingly, all this rule does is swell the number of septic tanks. Groundwater quality is adversely affected by the large numbers of sub-standard septic tanks. Some are more like pits because the base of the tank is not sealed. Some have walls made of ordinary bricks. Some are too small. Some have inlet pipes that are not functioning properly. Given these conditions, it would be natural to start thinking about a sewerage system to replace these millions of septic tanks.

We alone are still using septic tanks, while cities in other Asian countries are using **sewerage systems**. This is rather ironic as construction of **sewerage systems** was actually begun by the Dutch colonial administration in the early 1900s in Bandung, Cirebon, Solo, and Yogyakarta. Construction of these **sewerage systems** actually came to a halt after independence, and it wasn't until the 1980s that we resumed the construction of **sewerage systems** in several major cities.

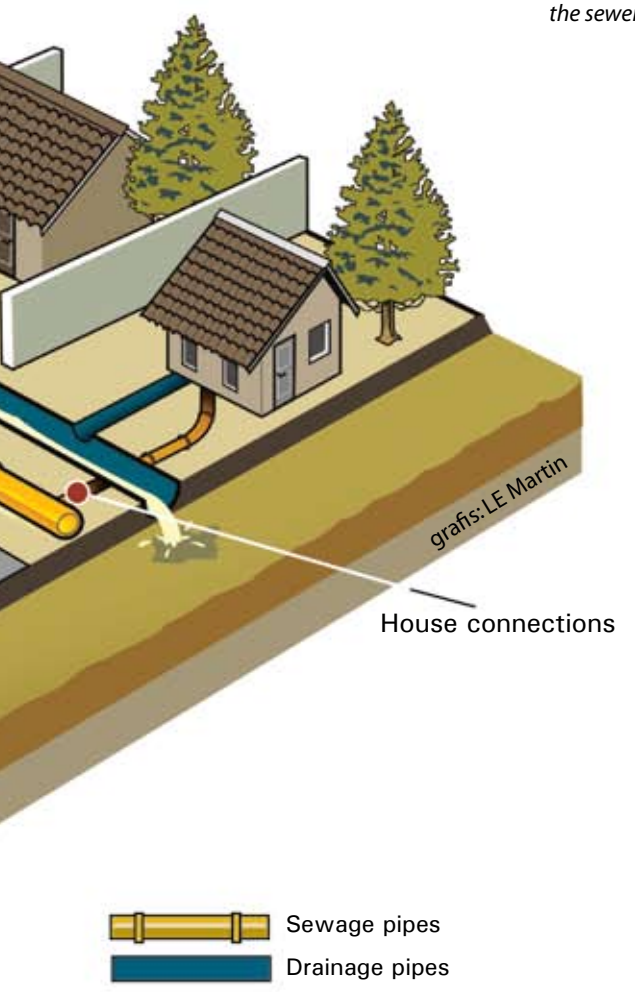
Today there are only ten cities that have **sewerage systems** (Balikpapan, Banjarmasin, Bandung, Cirebon, Jakarta, Medan, Prapat, Surakarta, Tangerang, and Yogyakarta). Unfortunately, the condition and performance of some of these systems is inadequate. Service coverage is typically less than 10% of the city population. Their management is inefficient. And their operating costs are heavily subsidized.

Despite the challenges, the fate of **sewerage systems** in Indonesia is not all bad. The operation of **sewerage systems** in Jakarta and Bandung is paid for 100% by their customers. Solo and Yogyakarta plan to expand the coverage of their services. The **sewerage system** in Denpasar is scheduled to begin operations soon.

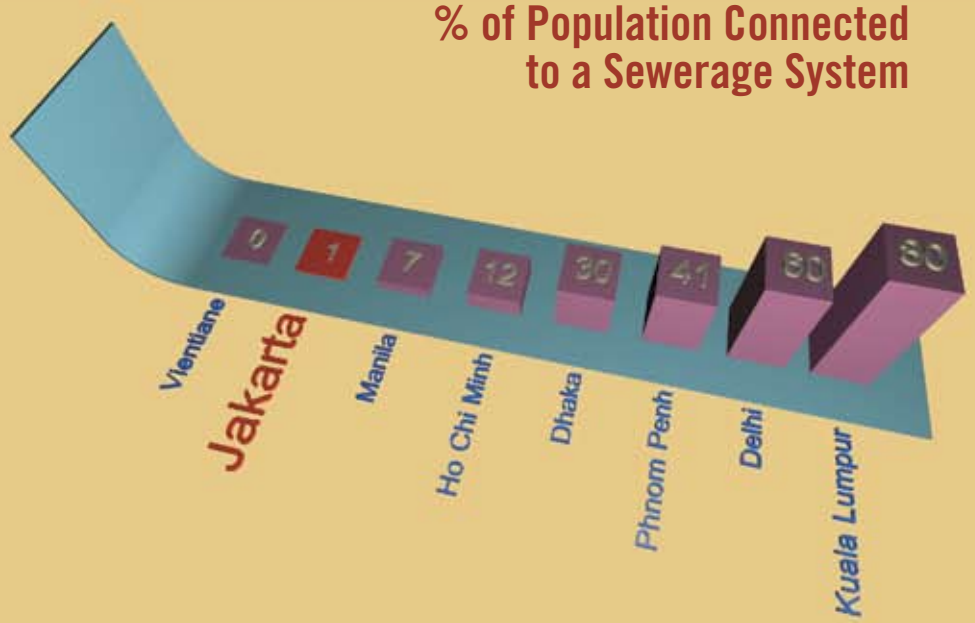


A modern sewerage system collects sewage from homes and treats it until it meets effluent standards. This system does away with the need for septic tanks, and so reduces the risk of groundwater pollution. A sewerage system consists of house connections, sewage pipes, and a treatment installation. In many rich countries, treatment plants have full sludge treatment facilities. Good, modern, full sewerage systems are few and far between in Indonesia. Perhaps the only ones are in modern residential areas, such as Jababeka Cikarang, Lippo Bekasi, and Lippo Karawaci.

The sewerage system in Bandung uses the simple treatment technology of oxidation ponds. In the near future, the Bandung city water utility, which manages the system, will be installing aerators in these ponds. Eventually, the sewerage system in Bandung should be able to offer a better service to 40% of the city's population.



% of Population Connected to a Sewerage System



The coverage of sewerage systems in Jakarta does not compare with that of other major cities in Asia. We are way behind Ho Chi Minh (Vietnam), Manila (Philippines), Kathmandu (Nepal), and Dhaka (Bangladesh). Jakarta fares better only than Vientiane, the capital of Laos, which has no sewerage and a population of under 500,000.

HOW EMBARRASSING, TRILLIONS MORE IN LOSSES!

Our groundwater and our river water is polluted by sewage from nearby communities. An Asian Development Bank report warns that water pollution in Indonesia could lead to 45 trillion rupiahs in losses each year, the equivalent of 2.2% of national GDP. A loss of this magnitude is the same as a loss of income of 100 thousand rupiahs a month for every Indonesian household.

The figure is even larger if we include losses arising from the indirect effects of water pollution. On the tourism sector, on investment, and on land prices, for example. Or from having our export products rejected because of their dubious cleanliness.

But worst of all is the damage to our image. Not only are our cities considered dirty, our nation could be seen as thinking a healthy lifestyle unimportant. Data show that almost 24 milion city dwellers in Indonesia do not have access to basic sanitation facilities. This figure is the highest in Southeast Asia (see figure).

Shrimp exports from Indonesia have been turned away by Japan because of suspicions that they carried the salmonella bacteria. Taiwan, the United States, the European Union, and other countries have done the same. And for the same reason: the products did not meet the sanitation standards of the importing countries.

Number of people without access to basic sanitation facilities (in millions)

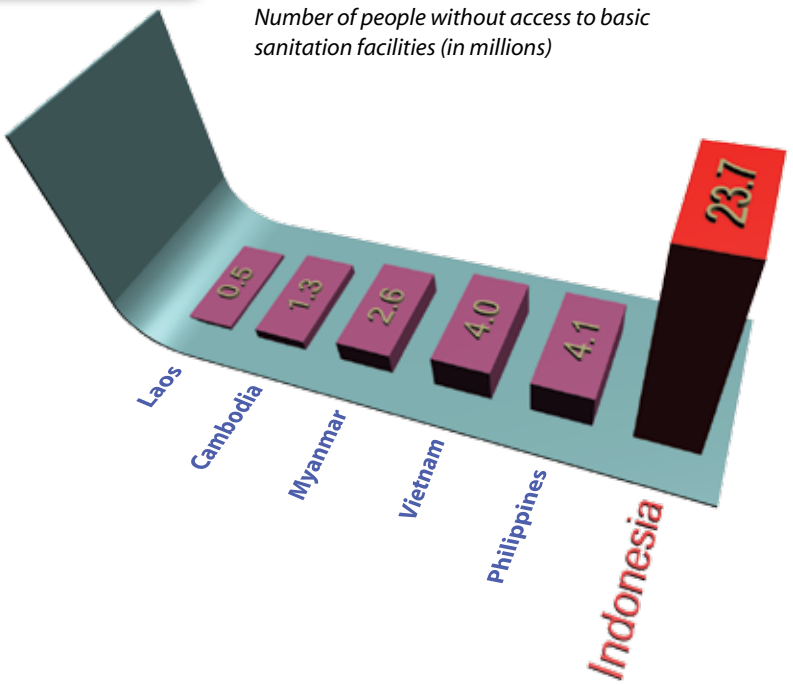


foto: Roni

Not Having Latrines Hurts Women More

A survey in Malang showed that sanitation is the number two priority for women. Among men, sanitation ranked eighth. What's more, in many communities, it is the women who suggest that the family has a latrine in the house. Why?

More so than men, women need a safe and comfortable place to go to the toilet, a place safe from prying eyes. That's why women prefer to have a closed latrine, either in or close to the house. A mother also wants to be sure that she and her children can go to the toilet in a safe place whenever they need to, even at night. Women are also usually responsible for cleaning the family latrine. Ultimately, they are the ones who know the kind of latrine that best suits the family's habits, the water supply, and so on. So, women should be the key stakeholders in sanitation improvement initiatives.

POOR=FREE?
NOT NECESSARILY !

Every city in Indonesia has a slum area. Most of the people who live there are poor. And it's not hard to guess, the sanitation facilities in slum areas are very limited indeed.

Every sanitation improvement project for slum areas invariably includes construction of latrines. The government recovers none of the cost of building these facilities. The residents are just asked to take care of them properly. Unfortunately, projects like these are not always successful. Latrines are constructed, but the people don't want to use them. Latrines or no latrines, free or not, they still prefer to defecate at the edge of the river.

Provision of sanitation facilities for the urban poor is not as easy as one might imagine. Without efforts to change their behavior, sanitation facilities may go unused. It may not be appropriate for the government to cover 100% of costs. If they are not involved in the planning and financing, the local people will have no sense of ownership. And the sanitation facilities are a complete waste.

Indonesia Sanitation Sector Development Program (ISSDP)

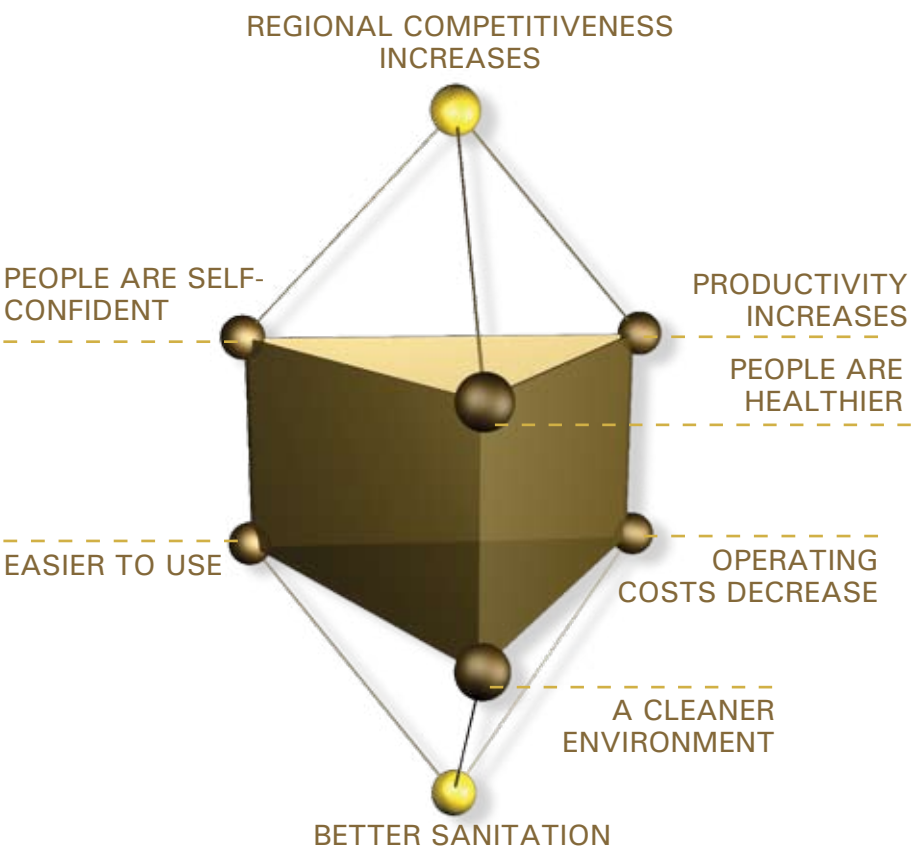
Q: WHY AREN'T YOU DOING SOMETHING?
A: IS IT REALLY MY PROBLEM?

2

Rehabilitation of urban sanitation needs to be done soon to avoid even bigger losses. Not only by increasing the number and quality of existing facilities, but also by changing people's behavior. Better sanitation makes a region more competitive (see diagram).

The Law on Regional Governments places the responsibility for sanitation with the district and city governments. Local governments do have the competitiveness of their regions at heart. Nothing makes leaders prouder than being in charge of a city renowned for being clean and tidy. And nothing makes them more embarrassed than leading a city known for its dirt and filth.

SANITATION: CITY AND DISTRICT RESPONSIBILITY



Access to basic sanitation facilities reduces environmental pollution, resulting in a cleaner physical environment. The aesthetics of an area improve when the bad smells and eyesores are gone. Regional expenditure on operating costs is reduced. For example, on water supply management and river maintenance. Customers have easier and more convenient access. They no longer have to waste time queuing to use the toilet. Users of sanitation facilities feel safer, too. This is especially important for women.

All this makes for a healthier population. Diseases resulting from poor sanitation are avoided. Children are better able to do their school lessons. And, last but not least, is the sense of pride and self-confidence it brings to everyone. Ultimately, the region will have a competitive edge over regions that do not pay attention to their sanitation. And this will attract tourism, investment, and at the end of the day, lead to better welfare for all.

INVESTMENT 1000, PROFIT 8000

According to the World Health Organization (WHO), every US dollar invested in sanitation provides an economic return of eight US dollars. Although the figures differ, other economic analysis come to a similar conclusion. Of course the returns are not direct, but instead come about from cost savings, fewer losses, increased productivity, and so on.
Don't think twice about increasing investment in sanitation. Investment is necessary, but the economic benefits we will get back are enormous. Perhaps even greater than the economic benefits of the development of other sectors.

Good sanitation means healthier children who have more time to study.

Good sanitation means more productive workers.

foto: Roni

Investors prefer to invest their money where sanitation conditions are good.

Good sanitation means better quality river water.

LET'S WORK TOGETHER! IT'S NOT A PPRIVATE MATTER ANYMORE!

Sanitation is the responsibility of district and city governments. But that does not mean that district and city governments have to bear the burden alone. All stakeholders must work together. Including central government, provincial government, people's representatives, communities, non government organizations (NGOs), and the private sector.

The main task of district and city governments is to formulate policy on the direction, plans and targets for sanitation improvement in their regions. In this policy, they need to ensure that all stakeholders will have the same right and responsibility to participate in development of the sanitation sector. Especially citizens groups that have initiatives for improving sanitation where they live. National policy is already in place (see box).

photo:WASPOLA collection

District and city governments need to ensure that sanitation improvement initiatives implemented by stakeholders do not overlap. Everything must be in keeping with policy direction for development of the sanitation sector. Take Denpasar as an example. The city government works in cooperation with central government to construct sewerage systems in busy locations (above). At the same time, the city government also works with NGOs and citizens groups to help develop community-based sanitation systems in residential areas not covered by these sewerage systems (left).

The Public Must be Considered

In 2003, the government, through the WASPOLA (**Water Supply and Sanitation Policy Formulation and Action Planning**) project, issued a series of national policies on development of the water supply and environmental sanitation (WSES) sector. One of the key points of these policies was the recognition of community-based management (type C) as a sanitation management option in Indonesia. The other options are management by institutions (type A) and joint management by institutions and communities (type B). This national policy will help regional governments to better optimize available potentials. Initiatives carried out by citizens groups and community self-reliant groups are on an equal footing with government schemes. Put simply, the development budget can be used to finance initiatives by citizens groups and community self-reliant groups.

photo:ESP collection

An example of the community-based management option (type C), a simple communal sewerage system. As in other cities, communal systems like this one have been developed in Bandung district.

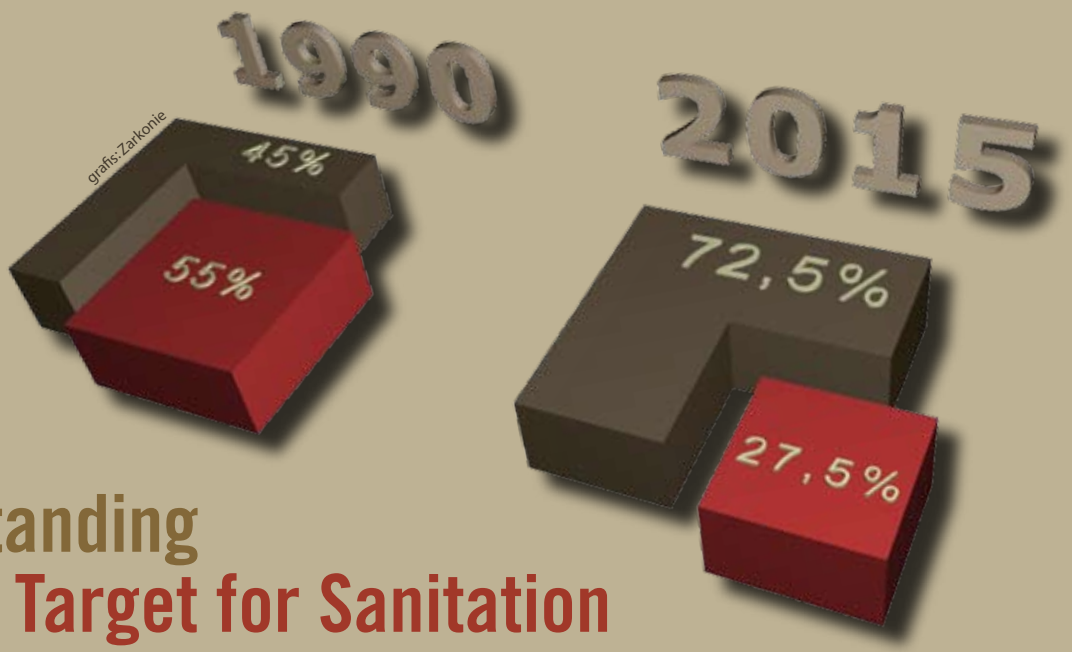
TARGETING NUMBER

Improved access to sanitation is one of the targets of the Millennium Development Goals (MDGs). To be exact, it is part of goal 7 (see box). We need around 50 trillion rupiahs to achieve the target of 72.5% of the population with access to sanitation. Fortunately, the MDGs are an international commitment, so donors and rich countries are obliged to help us meet these MDG targets.

Although sanitation is the responsibility of district and city governments, central government must continue to play a part and strive to meet this MDG target, by formulating regulations, policies, standards, and technical guidelines, through providing technical and financial assistance. Central government must also intervene to ensure that all donor assistance reaches its intended target.

We still have to work hard to achieve this target. By 2004, according to National Social Economic Survey data, only 55% of the Indonesian population had access to sanitation. The role of district and city governments in achieving this target is crucial. At the very least, they must work hard to meet the MDG targets for their own regions.

The MDGs are eight development goals agreed on in 2000 by 189 UN member states, one of which was Indonesia. Since then, all these countries have had to revise their development agendas so that the MDG targets can be achieved in the agreed time frame. In 2002, sanitation was included as part of the MDG 7, ensuring environmental sustainability. The target is to halve the number of people who have no access to basic sanitation by 2015.



Understanding the MDG Target for Sanitation

Where did the target for access to sanitation in Indonesia of 72.5% come from? In 1990, the MDG base year, just 45% of the Indonesian population (urban and rural) had access to latrines (connected to pits or septic tanks). Which means that 55% of the Indonesian population did not have access to basic sanitation facilities. To achieve the MDG target, this figure of 55% must be halved by 2015. So, by 2015, the percentage of the Indonesian population with access to basic sanitation facilities should be at least 45% +(0.5 x 55%) = 72.5%.

3

foto: koleksi ESP

Q: STILL DOING NOTHING?
A: WHAT AM I SUPPOSED TO DO?

Sanitation improvement will be better if we have comprehensive regulatory, policy and institutional frameworks. Very few district or city governments have all three.

Regulations must be prepared. At the very least, regulations requiring that people defecate in proper latrines. Or, regulations obliging houseowners to take care of their septic tanks.

Sanitation development policy needs to be made. There must be every opportunity for **stakeholder** participation. Budget policy needs to be made to increase investment in sanitation.

Cooperation between government institutions needs to be intensified. These include regional planning, public works, health, environmental, cleansing, health, and social services agencies. These agencies need to sit down together to set performance targets and indicators, clarify division of tasks, and intensify communication.

PREPARE WHAT NEEDS TO BE PREPARED

Regulations must strictly prohibit dumping of raw sewage in rivers. Helicopter latrines like this one should not be allowed.

Regulations on the use of septic tanks are needed. To put a limit on numbers and to make regular emptying of septic tanks mandatory.

The tasks of the various government institutions in sanitation development and management need to be clarified. This includes the task of monitoring the publics compliance to existing sanitation regulations and policies.

Budget for development of sanitation facilities must be guaranteed in district and city government policy.

Sanitation policy for slum areas must guarantee residents the same right as others to participate in planning and management of sanitation facilities in their areas.

AND IT STARTS WITH POLITICAL WILL

Let us not forget the political will of district and city leaders. And not only from the rank and file of government, but also from members of local parliament. At the end of the day, all development plans and budgets must be approved by local parliament. It is here that the interests of the sanitation sector will come face to face with the interests of other sectors. Despite financial constraints, it would seem hard for people's representatives to reject a sanitation improvement plan if they realize that good sanitation will improve the welfare of their constituents, stimulate the region, and make it more competitive.

Involving communities is not easy task. Often we need help from others to ensure that community participation is effective.

First, help to motivate communities to get involved. Community figures can persuade communities to trust and accept offers of cooperation from outside the community. These figures may be local neighborhood heads, religious leaders, teachers, elders, or anyone else.

Second, help to empower communities. Idealism, patience and consistency are crucial. NGOs and community-based groups can assume this role. There are community self-reliant groups, women's family welfare associations, youth groups, and religious groups.

Third, help to raise funds for community activities. Here, the business can play a role. Private businesses, state owned enterprises, and enterprises owned by regional governments have **corporate social responsibility** (CSR) funds that can be used for community-based activities.

There are many elements of the community that can be invited to help support community participation in sanitation improvement. We only have to identify them and ask them to do what they can.

Community figures can play an important role in motivating local people to get involved.

INVOLVE THOSE WHO WANT TO BE INVOLVED

Women's family welfare associations are one group easily motivated to participate. They are always interested in supporting initiatives that will be of benefit to the well-being of their families.

Motivating private companies to invest in the sanitation sector is not an impossibility. Some have already done so. On the small scale, is investment in emptying septic tanks and leasing public toilets. On the larger scale is investment in **sewerage systems** by **developers** of residential areas. More than that, unfortunately, there is nothing yet in Indonesia.

Much needs to be done to create a climate more conducive to private sector participation in the sanitation sector. They need legal certainty, policy consistency, investment guarantees, and, of course, reasonable returns. Without these, we cannot hope that private companies will want to invest in the development of urban **sewerage systems**. Creative innovations are needed to attract private investment. For example, by offering opportunities for investment in integrated water supply and **sewerage systems**.

NGOs play a crucial role in supporting the community participation process.

Development of these latrines in Surabaya was financed by a private company. There are many examples of private sector participation in similar ventures throughout Indonesia.

Many private companies provide emptying septic tank services. But their participation must be expanded, both in numbers and scope of work.

Sanitation improvement in a residential area will benefit from the participation of the local people. The key is, they must really understand the benefits and costs of good and bad sanitation. This is our main task – **creating the demand** for better sanitation.

If the demand is there, often the people will organize themselves. We can help them by explaining the technical, managerial, and operational options available, and their strengths and weaknesses.

Then let the residents do what they can. We can act as facilitators, but we mustn't take over their job just because we want the process to move forward more quickly. When they prove that they are unable to finance all their plans, we can find a way out.

This **demand-responsive approach** (DRA) to development will, it is believed, produce more sustainable sanitation systems, which means they are more durable, more efficient, and better maintained.

HELP THOSE WHO WANT TO BE HELPED

Contests in schools are an effective way of raising people's awareness about the importance of good sanitation. From a child, community awareness messages will pass to his or her parents. Examples include making posters or fliers, or giving talks at gatherings such as savings groups or prayer meetings.

foto: koleksi ESP

Organizations set up by citizens should be used to drive development of sanitation facilities in the local area. Armed with sufficient awareness and knowledge, they will be more successful at keeping up the momentum of the sanitation facility planning and development processes.

No one knows a residential area better than the people who live there. As long as they understand the goals and procedures, residents can conduct an assessment of the local sanitation condition better than anyone. This process of community participation assessment (CPA) will provide the basis for planning that is better understood by the local community. Making maps of the area that will later be used to decide where the sewerage pipes will be installed, is one example.

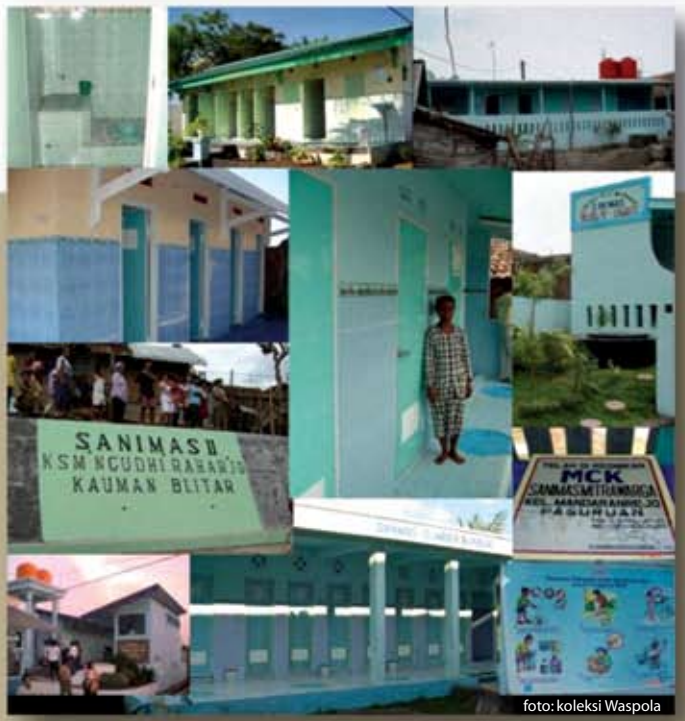


foto: koleksi Waspola

SANIMAS: Community demand and initiative

The physical output of SANIMAS is a communal sanitation system consisting of house connections, a sewerage pipe network, and an anaerobic sewerage treatment plant. The system can support between 75 and 200 houses in very densely populated neighborhoods. In technical terms, the SANIMAS concept is seen as a middle path between local sanitation systems and city-wide sewerage systems. SANIMAS began in 2003 as part of the WASPOLA project. By 2005, SANIMAS had been adopted in 14 urban areas in Bali and Java. SANIMAS will be replicated in other cities in Sumatera, Kalimantan, Sulawesi, and Nusa Tenggara.

SANIMAS activities aim to develop community-based sanitation systems in poor, densely populated urban residential areas. These activities have attracted a great deal of interest because they incorporate the latest in development approaches. Multi-stakeholder partnerships, community participation, CPA based participatory planning, and DRA based on informed choice, to name just a few.

A variety of stakeholders is actively involved in the implementation of SANIMAS. Central government and regional governments (provincial and district or city governments) are involved, from the selection of areas where residents are keen to improve the local sanitation condition, to providing support funds. Under the coordination of BORDA Indonesia, a number of NGOs are involved as facilitators.

The most important stakeholders are, of course, the people who live in the area. They make some of the decisions about what is best for their area and the people who live there. They are also involved in setting user fees and determining the form of organization that will manage the sanitation system

USE
WHAT IS APPROPRIATE

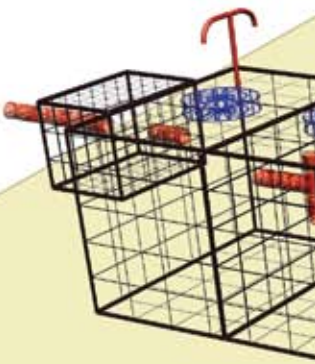
Sooner or later we have to decide on the kind of sewerage we want to develop.

There are many options available, but all are made up of the same components: latrines, sewage pipes, sewage treatment plants, and sludge treatment facilities.

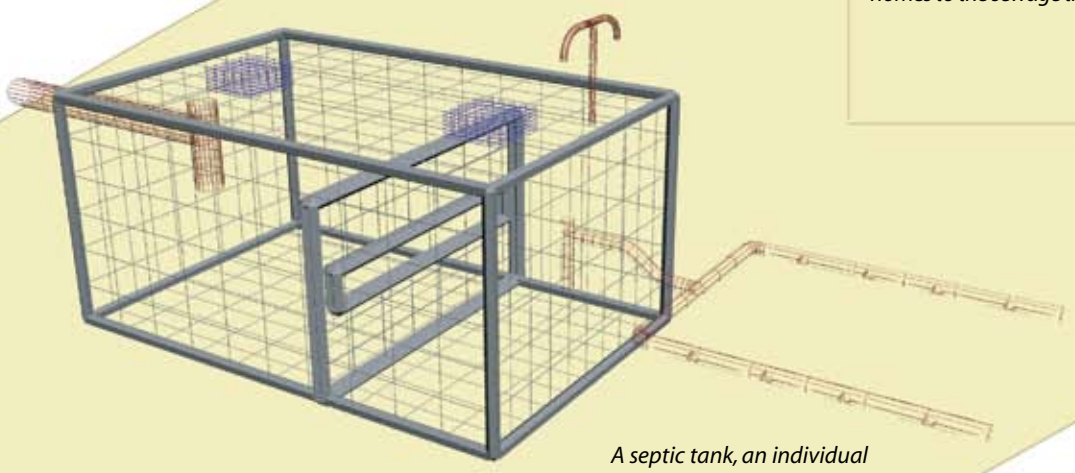
First there are latrines. They can be privately owned or communal. The important thing is that the privacy of users is protected and that the latrines have gooseneck water seals. These are the two conditions for a basic sanitation facility to qualify as an **improved sanitation facility**.

So, sewage must be piped to a facility that can control its impacts. The aim is to ensure that sewage cannot be seen, smelled or touched, and that it does not contaminate nearby water sources. These facilities must be able to reduce the polluting content of sewage. This is another criteria for an **improved sanitation facility**. The facility may be located **on-site**, or **off-site**. (see diagram).

At the end of the day, an appropriate system is determined by the **effective use** and **sustainability** aspects. In other words, a sanitation system must be able to stand effective and continuous use. To do this, a sanitation system must also be appropriate to the demands and needs of its users. It would be a costly waste if we could not operate it.



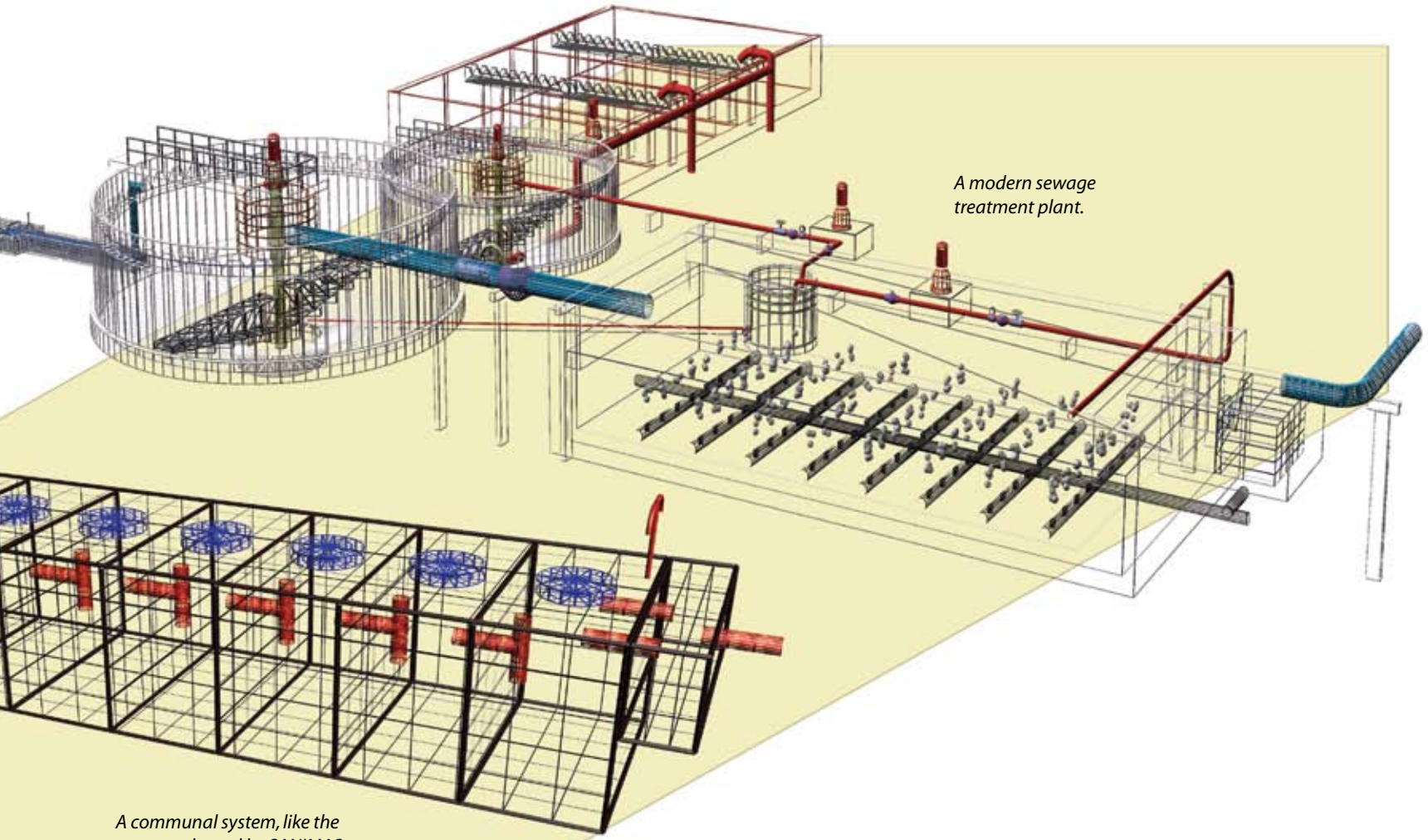
An off-site system is characterized by a sewage treatment facility located on a different site from the latrines that make use of the facility. Because they are communal or city-wide facilities, off-site systems usually incorporate a network of input pipes that connect homes to the sewage treatment plant.



An on-site system is characterized by a septic tank on the same site as the latrines.

A septic tank, an individual treatment plant

grafis:Zarkonie



A modern sewage treatment plant.

A communal system, like the system adopted by SANIMAS

Sludge treatment facilities are important, too. They make safe and dry sewage sludge before it is disposed of. Many technologies are available today. From simple technologies like those of sewage sludge treatment plants in Indonesia (left), through mechanical technologies like the installations operated by IndahWater Konsorsium Sdn Bhd, in Malaysia (right).

DO IT NOW, OTHER REGIONS HAVE!

Sanitation improvement must start now! It could start with strengthening **political will**, forming **stakeholder** partnerships, raising public awareness, revision of policy and regulations, institutional reorganization, program and project planning, or increasing the investment budget.

Many regions have worked to improve their sanitation condition. Some districts and cities have provided funds to support development of community-based sanitation systems in their areas. Solo city is continually developing its **sewerage system**; so is Yogyakarta. Bandung city has regulations prohibiting open defecation and imposing fines for those who do so.

Do what can be done with the resources available

There's no need to wait for help from outside. The capital that's needed is often available locally. From public awareness and will, regulations and policy, political will, human resources, and partner organizations, through financing. All that remains is to optimize their existence. Do what can be done with the resources available.

thanks

ISSDP
Jl. Cianjur No. 4C
Menteng, Jakarta 10310
PO Box 1317
JKT 10013
Tel (62-21) 3190 3909 and 3145137
Fax (62-21) 3924113
Email: dhv_issdp@cbn.net.id
Website: www.isdp.or.id

AMPL/WSES Working Group
Jl. Cianjur No. 4
Menteng, Jakarta 10310
Tel (62-21) 31904113
Email: pokja@ampl.or.id
Website: www.ampl.or.id