

Indonesian water and wastewater sector

The Indonesian water sector

1 Introduction

With an expected population in 2008 close to 230 million people, Indonesia is the world's fourth most populous country. The annual population growth rate in 2007 was 1.45% and the 2007 GDP per capita was USD 1,947. The emerging Indonesian middle class and a high level of urbanization have triggered a rapidly growing property sector in major cities like Jakarta, Surabaya, Bandung, Bali, Medan and Makassar putting pressure on the water supply.

Overall water supply in Indonesia is characterized by poor levels of access and service quality. Data on access to water in Indonesia vary significantly depending on the source consulted and the definition of access, but according to WHO and World Bank reports, access to "improved" water in urban areas are less than 90% and in rural areas around 70%. However, according to Indonesia's 2004 socio-economic survey (SUSENAS) only about 47% of the population has access to water from improved sources considered relatively safe. That includes 42% of the urban and 51% of the rural population. At the same time, piped water coverage in urban areas is as low as 30% and in rural areas below 10%.

The Government of Indonesia has recently started to take this issue serious with the commitment to the Millennium Development Goals (MDG). However, at current trends Indonesia will fall short by at least 10% of the 67% access to clean water target set by the MDG.

2 Public sector

The provision of water and sanitation services in urban areas is the responsibility of PDAMs, Local Government Owned Water Utilities. There are 318 local PDAMs operating in regencies (Kabupaten) and municipalities (Kotamadya). The PDAMs cover about 30% of the Indonesian population with 5.5 million connections nationwide. Poor service, polluted water, leakage and theft are common problems facing PDAMs throughout the country.

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Some local governments have given significant support to the infrastructure sector, including the water sector in order to spur economic growth. The argument is that with better economic conditions, the community will be able to pay higher water prices. Therefore, some local governments have allocated financing of new investments for the local PDAM in their budgets.

However, PDAMs are running their business with an average loss of 40% and only a few are financially healthy. The Indonesian government is starting to address the financial difficulties of the PDAMs more seriously. In August 2008 the Indonesian Minister of Finance, Sri Mulyani, issued a decree which stipulates the debt write-offs amounting IDR 3.61 trillion (USD 387 million) to 171 troubled PDAMs. The decision is made to encourage new investments in PDAMs.

Another initiative initiated in May 2008 is the WASAP-B, a sub-program of the Indonesia Water and Sanitation Assistance Program (WASAP). The project was launched in a forum with representatives of the Government of Indonesia, the World Bank Institute's water management team, 18 selected PDAMs, and the Indonesian Drinking Water Association (PERPAMSI). The aim of the project is to increase and enhance the number of PDAMs in Indonesia by transforming them into operationally efficient and financially sustainable water services providers responsive to consumer demands.

In order to help meet the Indonesian MDG, the government launched the National Program for Community Empowerment (PNPM Mandiri) in 2007, which provides funds directly to poor rural communities for infrastructure and other development needs. The Asian Development Bank will provide a USD 50 million loan and another USD 12.5 million will be funded by the government and project beneficiaries, which will be used to repair and expand infrastructure services, including water and sanitation. The project will rehabilitate and expand rural infrastructure services in about 1,650 villages in Jambi, Lampung, Riau and South Sumatra, benefiting about 2 million people, or about 400.000 households. The project is expected to start in the first quarter of 2009 and finish by the end of 2010.

A more recent project to further improve access to sanitation and clean water was launched by the government on 20 August 2008. The programme, called The National Strategy for Community-Based Total Sanitation, is a nationwide campaign aimed at providing access to sanitation and introduces more effective water treatment methods in 10,000 villages by 2012.

3 Public Private Partnership (PPP)

The government is beginning to realize the need of private initiatives in the water sector. Increasing efforts are given to get private investors to collaborate with the government.

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Infrastructure summits have been initiated by several ministers with the aim of developing regional infrastructure, e.g. the water sector.

In May 2008, a memorandum of understanding was signed between the government and Singapore based Aquatico Pte Ltd to service five districts in the Tangerang regency, West Java, with a target date of completion by December 2009. Aquatico have pledged to invest IDR 520 billion (USD 6.6 million) in the tap water provision. The project will consist of intake installations, water treatment plant, pipelines and installation of meters in homes. When finished, the plant will supply clean water for industries and residents living in Sepatan, Pasar Kemis, Cikupa, Balaraja and Jayanti districts. Aquatico is expected to provide 3,400 litres of water per second for households and 10,000 litres per second for industries.

Another type of PPP has been used in Jakarta. A 25-year concessionaire agreement was made in 1998 between PAM Jaya (Jakarta Water Supply Company) and two private foreign operators, PT Palya (owned by French based Suez Environment) and PT Aetra (formerly PT Thames, owned by Aquatico), for the provision and improvement of the Jakarta water supply service. The idea was that the private operators, splitting Jakarta in west and east, should invest in the replacement of old pipes, in order to reduce the high loss of tap water as well as poor water quality, and thereby increase efficiency. Despite good intentions, there have been some problems in the following years. The private operators have complained about too low water prices set by the city administration and on the other side, there have been complaints about poor service, water loss and low water quality delivered by the private operators.

However, the picture in Jakarta is starting to turn. In order to attract investments from existing investors as well as from new investors, the Jakarta Provincial government is starting to approve higher price on water to meet increasing operational costs. In the beginning of 2007 an increase of 10% was approved which resulted in an average price on water of approximately IDR 7,000 (about 75 US cent) per cubic meter. At the same time, Palya has been awarded the ISO 9001:2000 certification for the drinking water production and distribution process at the water treatment plant and transmission mains. Palya is also trying to end all use of groundwater in dense business districts by increasing the water supply. Even though it is going the right way, there are still some difficulties that need to be handled, e.g. only half of Jakarta's residents have access to tap water, the quality of water is insufficient and water loss is high due to leakages and theft.

4 Private sector

In 2004, the Law on Water Resources opened possibility of private investments in the water provision.

Since then, major property developers have invested heavily in water treatment facilities, due to the reluctance of investment in the public water companies. Major property developers include Sinar Mas Group, Ciputra, Agung Podomoro Group, Lippo Group and Summarecon.

According to The Global Property Guide June 2008, "Indonesia is in the grip of a building boom. Condominiums, offices, malls, mixed use complexes and even whole townships are in various stages of construction – from the heart of downtown Jakarta, to the most distant suburban fringes throughout the country" making private opportunities in Indonesia not only huge but also a necessity to increase access to safe drinking water.

One example is the Bumi Serpong Damai City (BSD), a satellite city complex west of Jakarta. BSD has been developed over the last 19 years with first class infrastructure. Currently there are 4,100 commercial outlets and 20,600 homes with 100,000 residents on 5,920 hectares of land with around three quarters of the available land yet to be developed. The plan is to build 140.000 houses that can accommodate 600.000 people. In May 2008, the developer issued shares with an expected gain of IDR 872 billion (USD 95 million), with about 30% allocated to developing the infrastructure, such as roads, water treatment facilities and electricity and phone networks.

Other examples could be mentioned. The Citra Garden City Jakarta was the first major development in West Jakarta with an area of about 400 hectares. A water treatment plant is located in the city and a recently developed artificial lake and green area does not only functions as Citra Garden City's water basin for processing clean water, but also as a flood control to its surrounding areas. Examples from other cities around Indonesia could be Surabaya Citra Raya located on 2,000 hectares with more than 9.200 houses, Citra Raya Tangerang on 2,760 hectares with more than 19.400 houses and Lippo Cikarang on 3,000 hectares with 25.000 houses.

Wastewater Sector in Indonesia

Background

Environmental pollution in Indonesia, especially at rivers, lakes and other public water bodies, has been increasing considerably over the past few years. The main sources of water pollution in Indonesia are domestic wastewater (40 percent) and industrial wastewater (30 percent) and the rest is contributed from agricultural wastewater, animal husbandry wastewater or others.

In Indonesia only around 25 percent of wastewater is being treated mostly at the primary level prior to disposal and the remaining 75 percent of untreated wastewater is discharged into the rivers or other public waters. This has created severe environmental pollution and health problems such as eutrophication and transmission of waterborne diseases.

Urban Sanitation

In urban areas, high density living, inadequate space between septic tanks and wells, open drains, poor refuse collection and regular flooding results in a highly polluted environment and high public health risks. The annual economic loss due to poor sanitation in Indonesia is estimated at USD 6.3 billion or \$28.60 per capita (WSP-EAP World Bank, Economic Impacts of sanitation in South East Asia: Summary (November 2007)). Of this amount 24 percent or USD 1.5 million is attributed to water pollution from poor sanitation.

Sanitation awareness is still low among both officials and residents - with many urban dwellers still using rivers for defecation with or without overhung latrines (toilets).

Institutional Set-Up

The institutional set-up in handling wastewater treatment at nine major cities in Indonesia is presented below. These nine major cities are: Jakarta, Cirebon, Bandung and Tangerang (West Java), Yogyakarta and Solo (Central Java), Balikpapan (East Kalimantan), Banjarmasin (South Kalimantan) and Medan (North Sumatra).

PDAM (Local Government Company for Drinking Water)

In Surakarta (Solo), Medan, Balikpapan, Banjarmasin, Bandung and Cirebon the wastewater treatment and sewerage system falls under the responsibility of the local PDAM. An advantage of this set-up is that PDAM often possesses competence to handle a wastewater installation from the organizational and technical side. The billing system is already in place, the customer database and relationship implemented, PDAM is used to treat water, and piping systems are utilized. Billing can be combined which is far more efficient than separate billing.

On the other hand, most PDAMs are not interested to operate a wastewater installation, because they are not healthy enough to fulfil their obligation regarding drinking water and are given an additional burden to operate a wastewater system.

PD (Local Government Company)

Up until now, only in Jakarta a PD organizational form is applied, separate from the Municipal Water utility. However, Banjarmasin and Bandung are interested in going in this direction.

An advantage is the independency from the government and PDAM. They have their own responsibility and can work independently. Disadvantages are that they do not have the backing of PDAM.

Billing through PDAM and fees based on water usage will not be so easy anymore. PD PAL drives its business successful, but it cannot be compared with other areas, because it serves mostly high rise buildings in the centre of Jakarta and can apply tariffs which cross-subsidize lower tariffs of households.

Also the existed industrial treatment plants in Bandung and Medan, which are owned or partly owned by the government; do not have a convincing set-up to achieve cost recovery and good operational performance.

Dinas (Local Government Department)

In Tangerang and Yogyakarta the facilities are managed by the local government (Dinas).

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In some of the other cities it was managed by Dinas before it has been moved to PDAM (e.g. Medan and Balikpapan). Most installations operated by Dinas suffer from budget problems and insufficient billing efficiency (if any billing at all). Only in Yogyakarta commitment by the management could be existed. However, budget problems at the beginning of every year and losing support in DPRD (Local Parliament) for subsidies will threaten the performance in the medium term.

Medium Term Development Plan RPJM

Government's ambitions, articulated in its medium-term development plan (RPJM) states that all communities are to be free of open defecation by 2009, and treatment of sewage and septic tank sludge will be increased due to better utilization of existing facilities and the construction of new systems.

For sanitation - the RPJM states that all households will have access to a basic toilet both for

- i) for fecal disposal
- ii) as a means to improve the quality of raw water for drinking.

The RPJM also states that wastewater disposal should be improved by utilizing existing wastewater and sludge treatment facilities up to 60 percent by the end of 2009. Further, river pollution will be reduced by improving sludge disposal by 50 percent by the end of 2009 from current conditions. In metropolitan and big cities, there will be a phasing in of centralised sewerage systems. With rapid urbanization and slow response to sector issues, the next decade will see only marginal improvement in domestic water and sanitation services and continuing hardship for the majority of Indonesians unless decisive reforms are taken to allow investments to flow back into the sector.

In decentralization period, the sanitation becomes the responsibility of the local government in provincial as well as district level (Law 32 in 2004, article 13 and 14). Law 32 in 2004 regulates the responsibility of local government in sanitation comprise of: designing and monitoring the construction, regional planning, providing facilities, and environmental management. The function of local government are monitored and assisted by central government, as written in Law 32 in 2004 article 217. Central government should deliver the norm, manual and standard (NSPM), training and course.

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Nationally, local government function in assisting and monitoring are coordinated by the ministry of home affair (article 222 Law 32 in 2004). In regency and city level coordinated by governor and in district level by the head of city.

Currently, the conditions of domestic wastewater facilities in cities are deprived. The concern of local government who responsible for the business are low and the consequences is the developments of domestic wastewater facilities are very slow. The government of Indonesia (GOI) had committed to the MDG target in 2015, this commitment are delivered in Rencana Pembangunan Jangka Menengah (RPJM-Mid Term Development Program) written in Government Rule - PP 7 2005.

RPJM targets for domestic wastewater is open defecation free in all cities in 2009; increasing the utility of IPLT and IPAL (Wastewater Treatment Plant) up to 60 percent; decreasing river water pollution form faeces up to 50 percent based on 2004 condition and centralized sewerage system development in metropolitan city. To achieve those targets, BAPPENAS (National Development Planning Board), Ministry of Public Works and Ministry of Health have been developed their strategies and plans.

BAPPENAS (National Planning Agency) creating a National Policy for Community Based Drinking Water Supply and Environmental Sanitation and Institutional Based Drinking Water Supply and Environmental Sanitation. On the other side, Ministry of Public Work setting the National Action Plan of Wastewater and the Ministry of Health establish the National Planning in Environmental Health 2005-2009.

So far, there isn't specific law in regulating city domestic wastewater management.

Government decree no. 16 in 2005 (PP No. 16 Tahun 2005) regulates the Drinking Water System Development: protecting the raw water, potency of solid and liquid waste to pollute the raw water.

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Law 23 in 1992 regulate that Ministry of Health are responsible in securing the solid waste as well as liquid waste in attempting environmental health as stated in article 22 that: “The environmental health is conducted to create the quality of the healthy environment in the public place, settlements, working environment, public transport and other environments including effort for a better water and air, preventing from solid waste, liquid waste, gas emission, radiation and noise, controlling diseases vectors and other efforts or security on the above matters”.

Infrastructure projects key to safeguarding economy

The government has said it will speed up government spending as early as January to boost the economy. Up to IDR 100 trillion (about US\$9.95 billion) of funds have been set aside to finance projects developing ports, highways, railways, bridges, water and others, with the government already putting out the tenders such as highways for some of these projects.

Sri Mulyani Indrawati, Finance Minister who is also acting Coordinating Minister for Economy, said recently that these ongoing tenders were mostly managed by the Public Works Ministry.

Conclusion

- Policy and regulation which related to domestic wastewater management in Indonesia are not well implemented in many sectors that responsible to the wastewater services.
- Law or regulation are need to be develop to increase the coordination between related institutions in domestic wastewater management both in local and central government
- There are no clear regulation and policy that state about operational and maintenance for domestic wastewater management both in central and local government.